

Environmental Assessment

San Joaquin River Parkway Sycamore Island Pond Isolation Project



January 2016

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Mission Statements

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to Indian Tribes and our commitments to island communities.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Contents

1.0	Introduction.....	1-1
1.1	Background.....	1-1
1.2	Purpose and Need	1-2
1.3	Study Area	1-3
2.0	Alternatives.....	2-1
2.1	No Action Alternative.....	2-1
2.2	Proposed Action.....	2-1
2.3	Environmental Commitments	2-12
3.0	Affected Environment and Environmental Consequences	3-1
3.1	Water Resources	3-1
3.2	Biological Resources	3-3
3.3	Cultural Resources.....	3-10
3.4	Air Quality	3-11
3.5	Global Climate Change and Greenhouse Gases	3-14
3.6	Noise	3-16
3.7	Transportation.....	3-19
3.8	Geology and Soils.....	3-22
3.9	Hazards and Hazardous Materials	3-24
3.10	Aesthetics.....	3-26
3.11	Recreation	3-28
4.0	Consultation and Coordination	4-1
4.1	Fish and Wildlife Coordination Act (16 USC Section 651 et seq.).....	4-1
4.2	Endangered Species Act (16 USC Section 1531 et seq.).....	4-1
4.3	Magnuson Stevens Fishery Conservation and Management Act	4-2
4.4	National Historic Preservation Act (54 USC § 300101 et seq.)	4-2
4.5	Migratory Bird Treaty Act (16 USC Section 703 et seq.)	4-3
4.6	Executive Orders 11988 – Floodplain Management and 11990 – Protection of Wetlands	4-3
4.7	Clean Air Act (42 USC Section 176 et seq.)	4-3
4.8	Clean Water Act (16 USC Section 703 et seq.).....	4-4
5.0	Public Comments and Responses	5-1

6.0 List of Preparers and Reviewers	6-1
U.S. Bureau of Reclamation	6-1
References	6-1

Tables

Table 1. Approximate Duration of Construction Phases	2-10
Table 2. Construction Equipment List	2-11
Table 3. Estimated Construction Emissions	3-14
Table 4. Typical Residential Noise Levels	3-20
Table 5. Typical Construction Equipment Noise Levels	3-21
Table 6. Typical Residential Noise Level	3-20
Table 7. Typical Construction Equipment Noise Levels	3-21
Table 8. Capacity per hour per Lane for Various Highway Facilities	3-22
Table 9. Project Road Use	3-22
Table 10. Existing Level of Service, All Project Roads	3-24
Table 11. Existing Level of Service, Project Intersections	3-23

Figures

Figure 1. Project Location	1-4
Figure 2. Project Features	2-2
Figure 3. Conceptual Temporary Crossing Option Diagram	2-4
Figure 4. Typical Sections of Equalization Saddle and Berm Design	2-6
Figure 5. Conceptual Floodplain Diagram	2-8

Appendices

- A – Revegetation Plan
- B - US Fish and Wildlife Service Species List
- C – Inventory and Calculation of Greenhouse Gas Emissions
- D – Fish and Wildlife Coordination Act Report

List of Abbreviations and Other Acronyms

AAQA	Ambient Air Quality Analysis
dBA	A-weighted decibel
Reclamation	U.S. Bureau of Reclamation
CARB	California Air Resources Board
NAHC	California Native American Heritage Commission
CVRWQCB	California Regional Water Quality Control Board, Central Valley Region
CO ₂	carbon dioxide
CO	carbon monoxide
Children's Hospital	Children's Hospital Central California
CWA	Clean Water Act
CNEL	community noise equivalent level
cy	cubic yards
dB	decibel
DWR	Department of Water Resources
ESA	Endangered Species Act
EPA	Environmental Protection Agency
L _{eq}	Equivalent noise level
EO	Executive Order
FEMA	Federal Emergency Management Agency
FWCA	Fish and Wildlife Coordination Act
GHGs	greenhouse gases
GAMAQI	<i>Guidance for Assessing and Mitigating Air Quality Impacts</i>
LOS	level of service
CH ₄	methane
MT	metric tons
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Protection Agency
NHPA	National Historic Preservation Act
NTUs	Nephelometric Turbidity Units
N ₂ O	nitrous oxide
NO _x	oxides of nitrogen
PM 10	Particulate Matter 10
PM 2.5	Particulate Matter 2.5
POS	Planned Open Space
RM	River Mile
River West Madera	River West Madera County Master Plan Initial Study/Mitigated Negative

Plan	Declaration
Conservancy	San Joaquin River Conservancy
Parkway	San Joaquin River Parkway
Saddle	Equalization Saddle
SJRRP	San Joaquin River Restoration Program
SJVAPCD	San Joaquin Valley Air Pollution Control District
Secretary	Secretary of the Interior
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SR	State Route
Settlement	Stipulation of Settlement in <i>NRDC, et al., v. Kirk Rodgers, et al.</i> ,
SF ₆	sulfur hexafluoride
SWAMP	Surface Water Ambient Monitoring Program
USACE	U.S. Army Corps of Engineers
VOC	volatile organic compounds

1.0 Introduction

1.1 Background

In 1988, the San Joaquin River Parkway and Conservation Trust was formed due to concern over the loss of San Joaquin Valley wetlands and river resources. Awareness of the need for comprehensive planning for resource management led to state legislative action. The State Legislature passed Assembly Bill 3121 in 1990, authorizing funds for the San Joaquin River Parkway Taskforce. Taskforce members included representatives of state and local governmental agencies and organizations with interest in the river and effects of the parkway. Through additional legislation, the San Joaquin River Conservancy (Conservancy) was created.

The Conservancy is a regionally-governed state agency created to develop and manage the San Joaquin River Parkway (Parkway), a planned 22-mile natural recreational area in the San Joaquin River floodplain extending from Friant Dam to Highway 99. The Conservancy's mission includes acquiring approximately 5,900 acres of land from willing sellers; developing, operating, and managing those lands for public access and recreation; and protecting, enhancing, and restoring riparian and floodplain habitat. In 1997, the Conservancy adopted the San Joaquin River Parkway Interim Master Plan (Parkway Plan), and certified the associated Environmental Impact Report. In 2012, the county of Madera and the Conservancy adopted the River West Madera County Master Plan Initial Study/Mitigated Negative Declaration (River West Madera Plan). The proposed project lies largely within, and is consistent with, the River West Madera Plan.

There are several reclaimed gravel pits created by mining operations along the river in the Conservancy's planning area. Many of these gravel pits are separated from each other and from the river by earthen berms. These earthen berms are not levees constructed to flood control standards, and tend to fail during high flow events. One reclaimed gravel pit, designated Pit 46e by the Department of Water Resources (DWR), is located just downstream of the Conservancy's Proctor Broadwell Cobb property (also known as the Van Buren Unit) and upstream of the Conservancy-owned Sycamore Island recreation area on the Madera County side of the river (Figure 1). The earthen berm that previously separated the gravel pit pond and river channel and provided a vehicle access road between the properties was breached in a 2005 high-flow event, eliminating the vehicle access route. The Conservancy is proposing to restore alternate vehicle access to the Sycamore Island recreation area by repairing the berm breach and isolating Pit 46e from the river channel. The Project would also construct an equalization saddle (saddle), strengthen the existing berm, create a gravel road on top of the saddle and berm and create floodplain habitat.

San Joaquin River Restoration Program

In 1988, a coalition of environmental groups, led by the Natural Resources Defense Council (NRDC) filed a lawsuit, entitled *NRDC, et al., v. Kirk Rodgers, et al.*, challenging the renewal of long-term water service contracts between the United States and the Friant contractors. On September 13, 2006, after more than 18 years of litigation, the Settling Parties, including NRDC, Friant Water Users Authority and the U.S. Departments of the Interior and Commerce, agreed on the terms and conditions of the Stipulation of Settlement in *NRDC, et al., v. Kirk Rodgers, et al.*, (Settlement) subsequently approved by the U.S. Eastern District Court of California on October 23, 2006. Public Law 111-11 authorizes and directs the Secretary of the Interior (Secretary) to implement the Settlement. The Settlement establishes two primary goals:

Restoration Goal – To restore and maintain fish populations in “good condition” in the main stem San Joaquin River below Friant Dam to the confluence of the Merced River, including naturally reproducing and self-sustaining populations of salmon and other fish.

Water Management Goal – To reduce or avoid adverse water supply impacts on all of the Friant Division long-term contractors that may result from the Interim and Restoration flows provided for in the Settlement.

In accordance with the Settlement, the San Joaquin River Restoration Program (SJRRP) is being implemented by the U.S. Bureau of Reclamation (Reclamation), U.S. Fish and Wildlife Service (Service), National Marine Fisheries Service (NMFS), DWR and State of California Department of Fish and Wildlife (CDFW). Reclamation and DWR, in coordination with the other implementing agencies, completed the SJRRP Programmatic Environmental Impact Statement/Report and related decision documents in 2012.

In addition to meeting the Conservancy’s objectives, the proposed repair of the berm breach would also contribute to achieving the Settlement Restoration Goal. As the project would contribute to achieving the Restoration Goal of the Settlement, Reclamation supports DWR and the Conservancy in implementation of this project and is proposing to provide partial funding for the project.

1.2 Purpose and Need

The earthen berm that previously separated Pit 46e from the San Joaquin River channel and provided a vehicle access road between Sycamore Island and the Van Buren Unit was breached in a 2005 high-flow event. Repair of the breached berm is necessary to provide access between Sycamore Island and the Van Buren Unit and to achieve consistency with the goals of the adopted Parkway Plan and the River West Madera Plan. The purpose of the proposed action is to repair the breached berm, restoring vehicle access between Sycamore Island and the Van Buren Unit and protecting the berm and road from river currents and floods while contributing to the goals of the Parkway Plan,

River West Madera Plan, and the Restoration Goal of the Settlement by providing floodplain habitat, reducing the pond's effect on river water temperature, improving salmon migration, and providing additional off-stream recreational fishing benefits.

1.3 Study Area

The project would be constructed near River Mile (RM) 253.5 on the right bank of the river about 1.6 miles downstream of the State Route (SR) 41 Bridge in Madera County and on the left bank of the river in Fresno County (Figure 1). The project and all features would be located within state property owned by the Conservancy or within State Sovereign Lands under the jurisdiction of the State Lands Commission.

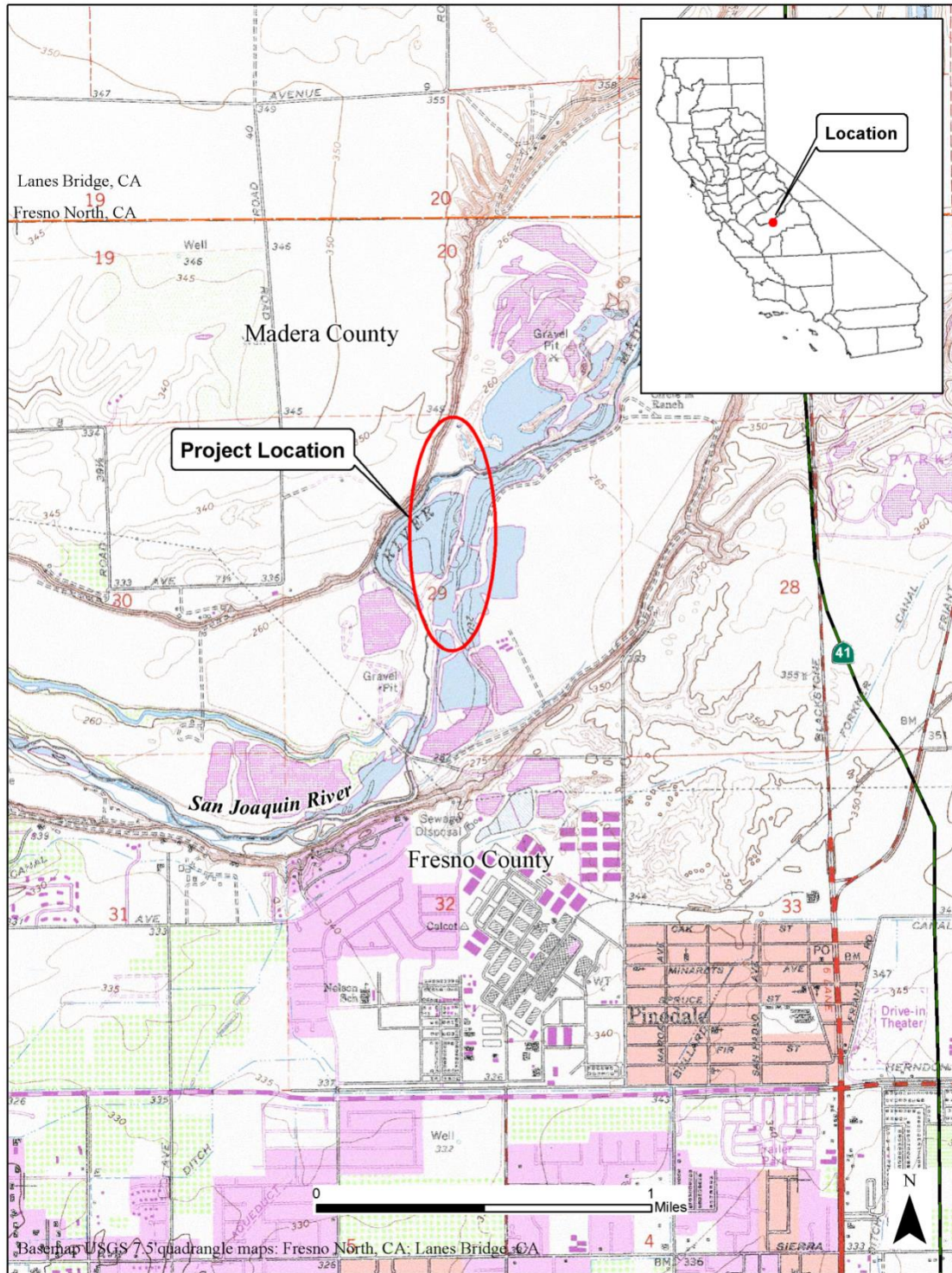


Figure 1. Project Location

2.0 Alternatives

2.1 No Action Alternative

Under the No Action Alternative, Reclamation would not provide partial funding for the proposed project. The Conservancy may pursue a smaller scale project that may meet some of the project objectives, but to a lesser extent than the current proposed action. The No Action Alternative would not contribute to achieving the Restoration Goal of the Settlement.

2.2 Proposed Action

The proposed action would restore alternate vehicle access to the Sycamore Island recreation area by repairing the berm breach and isolating Pit 46e from the river channel. The proposed action would repair the existing berm breach, including construction of an saddle, strengthening the existing berm, and creating a gravel road on top of the saddle and berm. The proposed action would also isolate the Pit 46e gravel pond from the river channel, create floodplain habitat, and restore habitat. Two onsite borrow sites may be excavated for fill. The borrow sites would be restored; a portion of the one closest to the river would be restored as floodplain habitat.

Under the proposed action, Reclamation would provide partial funding for project construction activities. In addition to meeting the Conservancy's objectives as stated above, the proposed project would also contribute to achieving the Settlement Restoration Goal by providing floodplain habitat, reducing the pond's effect on river water temperature, improving salmon migration, and providing additional off-stream recreational fishing benefits to support future efforts by the SJRRP to mitigate potential impacts on in-stream recreational fishing.

The following features would be included in the Project (Figure 2):

- Add gravel to improve existing dirt haul roads;
- Install a temporary crossing between Borrow Site 1 and Staging Area 1;
- Construct a saddle in the berm breach;
- Strengthen the existing berm;
- Create a floodplain along the river side of the strengthened berm;
- Create a gravel road on top of the berm and saddle to facilitate access between the Conservancy's Sycamore Island recreation area and the Van Buren Unit;
- Create about two acres of lower and upper floodplain along the river side of the strengthened berm and about two and one-half acres of lower and upper floodplain along the river in Borrow Site 1;

- Restore borrow sites, including filling a road breach on Borrow Site 1; revegetate floodplains and borrow sites.

The proposed action would involve approximately 0.84 acres of permanent fill and 0.43 acres of temporary fill in in-water areas. The proposed action would include the following fill materials:

- 4,600 cubic yards (cy) of rock slope protection
- 1,350 cy of clean spawning gravel
- 1,250 cy of river rock
- 30,000 cy of soil
- 1,100 cy of temporary fill material

Project features are described in detail below, and are shown in Figure 2.

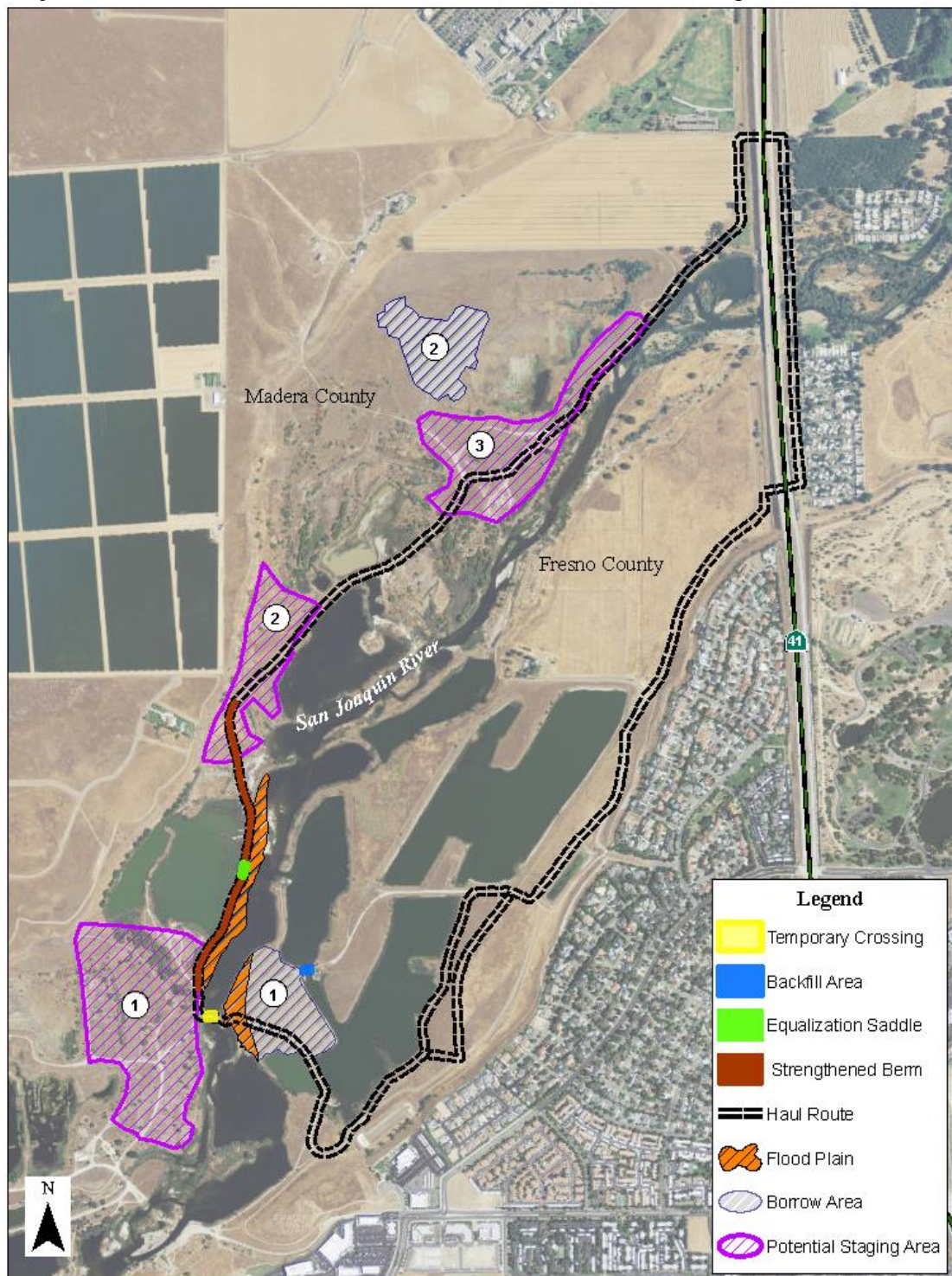


Figure 2. Project Features

Project Access and Staging

Various state, county, and local roads could be used for project access. SR 41, SR 99 and Madera County roads Avenue 9, Avenue 7 ½, Road 40, and Children's Boulevard could be used to transport equipment and crews to and from the project area. The following City of Fresno roads could also be used to transport equipment and crews: Herndon Avenue, Blackstone Avenue, Friant Road, Audubon Drive, North Del Mar Avenue, West Riverview Drive, Nees Avenue, and with the City of Fresno's permission, the intersection of Palm and Nees Avenues. Equipment would be brought into the project on flatbed trucks as needed for each construction phase, but would not exceed 20 trips throughout project construction. Approximately 850 truck trips would be needed to import project materials.

Two existing dirt roads in the project area would be used for equipment and crew access. One of the roads is on the Madera County side of the project; the other is on the Fresno County side. Each is approximately 2 miles long. A portion of the access road near Borrow Site 1 on the Fresno County side is currently under private ownership, but ownership is expected to be transferred to the San Joaquin River Parkway and Conservation Trust prior to construction of this project. It is expected that the River Parkway Trust, a nonprofit organization to benefit the Parkway, will allow access for construction purposes. The road on the Madera County side would include three staging and spoils areas. Staging Area 1 would be approximately 4.5 acres, Staging Area 2 would be approximately 2 acres, and Staging Area 3 would be approximately 3 acres. The staging areas would be located along the dirt haul road on the Madera County side. These areas would be used to store equipment, supplies, and borrow and fill material.

In order to transport equipment on the haul roads, gravel may be added to the surface of the Conservancy-owned road on the Fresno County side of the Project. Approximately 850 cubic yards (cy) of gravel would be placed on the haul roads. The existing dirt roads would be used to haul material from the borrow sites to the construction area. The overall haul route would include the two dirt roads as well as installation of a temporary crossing to connect Borrow Site 1 with Staging Area 1. Preliminary designs allowed for the option of using a rail car bridge or culvert pipes for the temporary crossing. However, the temporary crossing is anticipated to consist of a rail car bridge. The temporary crossing would require narrowing the low-flow river channel for the duration of project construction. The temporary crossing would be located at a bridge crossing previously used by a gravel mining operation; the damaged bridge was removed in 2005.

To install the crossing, the low-flow river channel would be narrowed to accommodate an approximately 12 foot wide, 89 foot long railroad flat car or several corrugated metal pipe culverts (Figure 3). Fill would be deposited in the channel, but only in areas to provide abutment support for the flat car.

Although not currently anticipated, if the culvert option is used, the size and number of culverts would be calculated based on the expected flow during construction; fill would be needed throughout the length of the crossing. If the culverts are used there would be approximately 3.5 feet of clearance between the 350 cfs water surface and the top of the

culverts; if the railroad flat car is used there would be approximately 3.5 feet of clearance between the 350 cfs water surface and the bottom of the flat car bridge. It is anticipated that fill material would be obtained from the borrow sites, but material may be imported from a permitted source if a sufficient amount is not available onsite.

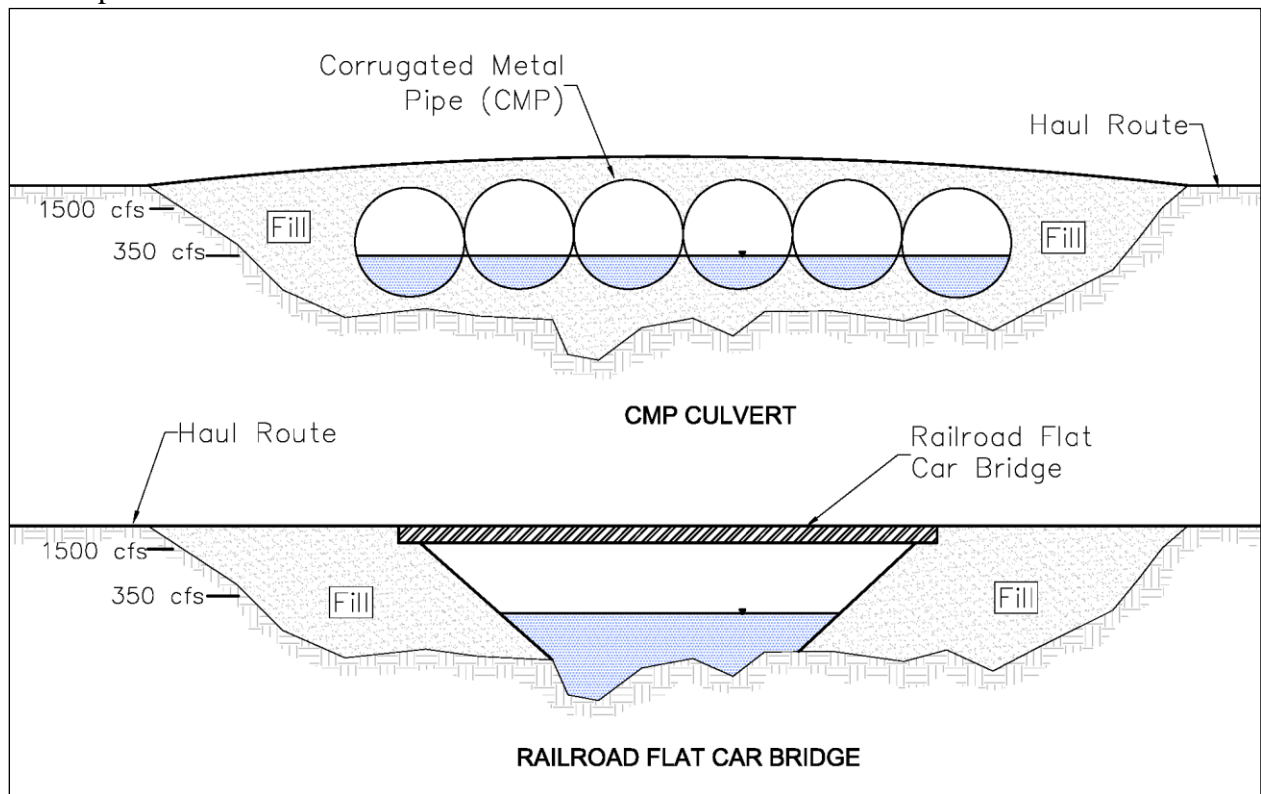


Figure 3: Conceptual Temporary Crossing Options Diagram

The channel would not be dewatered for construction of the crossing; materials for the railcar option would be placed by excavator or bulldozer from the bank on each side of the channel, and the railcar bridge would be placed by crane. Materials for the culvert option would also be placed by excavator and bulldozer, and the culverts would be placed using an excavator or crane. After project construction is complete, an excavator and crane would be used to remove the temporary crossing and fill materials from the low-flow channel.

If a temporary crossing is not installed between Borrow Site 1 and Staging Area 1, then materials from borrow sites would be transported only on the existing dirt roads. However, this option would be avoided if possible because hauling material without the use of the crossing would significantly lengthen the haul trips and would cause a less efficient use of construction time and resources.

During each phase of construction, equipment would be brought in on flatbed trucks using existing roads. Equipment would be stored in the staging areas or removed from the construction site when no longer needed.

Equalization Saddle

The saddle is the portion of the berm that would be constructed in the breach area and would be composed of large boulders and river cobbles. The saddle would allow the gravel pit pond to efficiently equalize its water level with the river channel during flow fluctuations by allowing water to pass through the pores between the boulders and cobbles more quickly than it would pass through standard compacted berm material (Figure 4). When flow in the channel increases, water would flow through the saddle to avoid creating high pressure differences in the berm between the river and pond sides, thus preventing berm failure. The saddle would be designed to overtop when flow exceeds 8,000 cfs. The approximate length of the saddle would be no more than 300 feet, the approximate top width of the saddle would be 32 feet, and the height would be about 9 feet.

A portion of the existing berm on both sides of the berm breach would be excavated using bulldozers and excavators to accommodate the proposed saddle and would be replaced with imported materials. The excavated material could be used either for berm improvement, mixed with other materials suitable for floodplain fill, or deposited in the designated spoils areas. Materials containing invasive plant species would only be used in ways consistent with California Department of Fish and Wildlife invasive species protocols. The saddle would be constructed using an excavator. A layer of geotextile material would be provided at the boulder-soil interface.

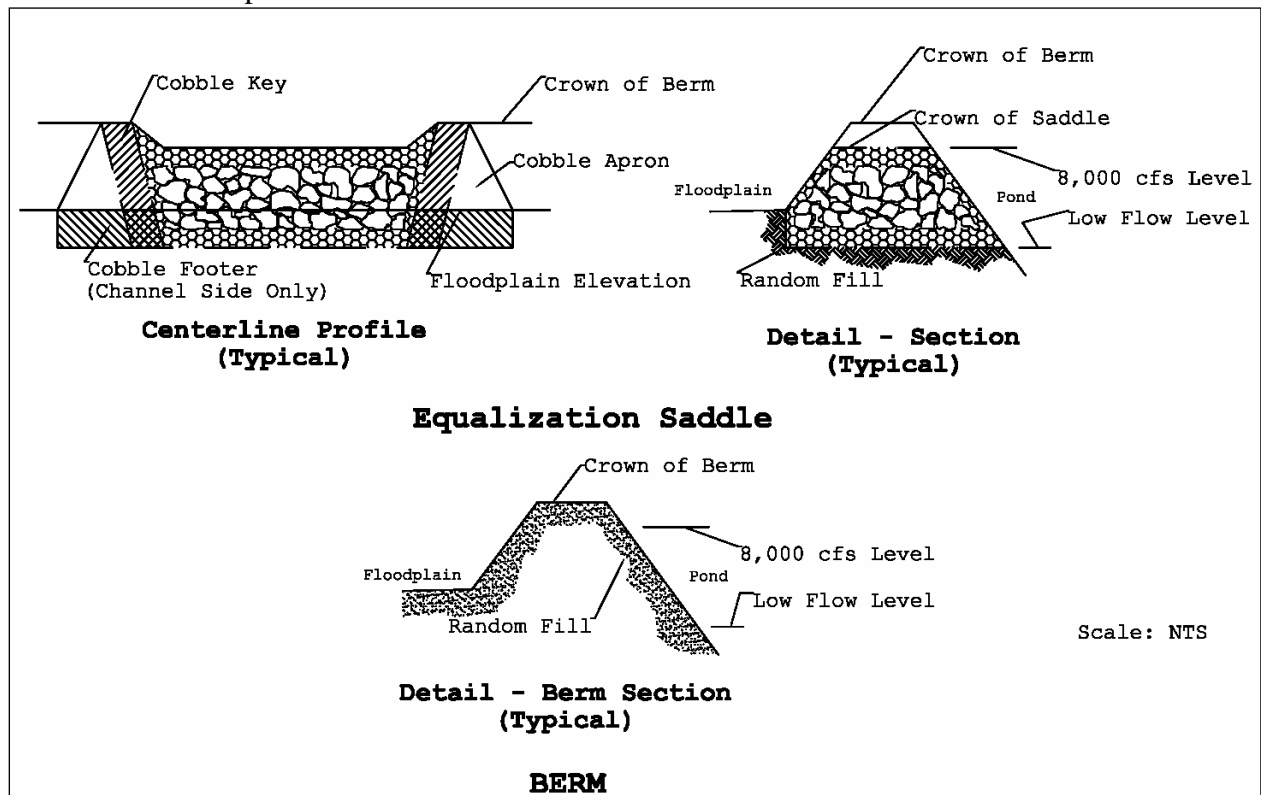


Figure 4: Typical Sections of Equalization Saddle and Berm Design

Berm Improvements

In addition to repairing the berm breach that occurred in 2005, improvements to the berm would be made to reduce the risk of future failure. Improvements would increase the berm crown elevation to at least three feet above the predicted 8,000 cfs water surface elevation, and would increase the width of the berm to about 20 feet. The height of the improved berm and road would be designed to overtop when flow exceeds approximately 13,000 cfs. The berm on both sides of the saddle would be raised to the design elevation using compacted fill material from the borrow sites or from imported sources. Narrow sections of the existing berm would be widened to meet design parameters.

Approximately 7,000 cy of material would be needed to complete the berm improvements. Berm improvements would be constructed using excavators, dump trucks, road graders, bulldozers, and rollers.

Gravel Road

A road would be constructed on top of the berm and saddle to facilitate access between the Sycamore Island recreation area and the Van Buren Unit. Approximately 700 cy of gravel would be used to construct a 12-foot-wide road surface on the crest of the berm and saddle. Decomposed granite may also be used for the road surface. The gravel or decomposed granite would be placed using dump trucks, loaders, and bulldozers or similar equipment and would be compacted.

Road stability over the saddle would be achieved either by using a polyethylene cellular confinement system or a precast concrete mat system. A layer of geotextile fabric would first be placed on the saddle before either of the road reinforcement systems is installed. If the cellular confinement system is used, then additional gravel would be added to the top of the polyethylene material. If the concrete mat system is used, then sheets of interlocked concrete mats would be laid out by a crane or excavator and tied together to ensure resistance to scour during high flow events. Spaces between the concrete blocks would be filled with the same type of gravel used on the road surface.

Borrow Sites

Approximately 50,000 cy of material would be needed to construct the saddle, create floodplain along the berm, install the temporary crossing, and backfill the road breach between Borrow Site 1 and the land on the Fresno County side.

Borrow Site 1 would be a new borrow site located across from Staging Area 1 on the Fresno County side of the river; Borrow Site 2 is a previously used site located on the Madera County side of the project, approximately one mile upstream of the Pit 46e breach. Both borrow sites are approximately 15 acres in size. To reduce the amount of construction-related travel and emissions and to increase habitat benefits achieved by the Project, use of Borrow Site 1 is preferred for this project, although material from Borrow Site 2 would be extracted if needed.

Material from the borrow sites would be excavated and used when fill is needed for the project. Borrowed material would be used during installation of the temporary crossing, construction of the saddle, and to strengthen the berm and create floodplain habitat along

the berm. Borrowed material would also be used to fill the area where a road washed out on the northeast side of Borrow Site 1.

Material excavated from the borrow pit in Borrow Site 1 would be suitable for the in-water construction of the temporary crossing, construction of the saddle, and to strengthen the berm and create floodplain along the strengthened berm. Material excavated during creation of floodplain habitat on the river side of Borrow Site 1 would be suitable to fill and reclaim the borrow pit in Borrow Site 1 at the end of construction. If sufficient material is not available in the borrow sites to complete in-water construction, then fill material would be imported from a permitted source.

Floodplain

Approximately 4.5 acres of upper and lower floodplain would be created as part of the project. Up to two acres would be created along the strengthened berm on the Madera County side of the river, and approximately 2.5 acres would be created on the river edge of Borrow Site 1 on the Fresno County side.

A portion of the river channel adjacent to the existing berm would be filled using material from the borrow sites and imported materials consisting of river silts, sands, and gravels. The floodplains would be designed to provide a gently sloping bank down to the low flow water line and a relatively flat upper surface extending from the toe of the berm to the new low flow water surface (Figure 5). The maximum width of the floodplain along the berm would be approximately 100 feet. To allow the saddle to operate at flows between the design low flow and bank-full flow, the floodplain directly between the saddle and the channel would be constructed so that the floodplain elevation would not be higher than the low-flow water elevation. Upon project completion, the river side of Borrow Site 1 would be re-graded as floodplain. Approximately 19,000 cy of borrow material would be used to fill the area where a road washed out on the northeast side of Borrow Site 1. The material excavated for creation of floodplain on Borrow Site 1 would be used to fill the portion of Borrow Site 1 that was excavated for project fill. The floodplains would be constructed using dump trucks, bulldozers, excavators, scrapers, and loaders.

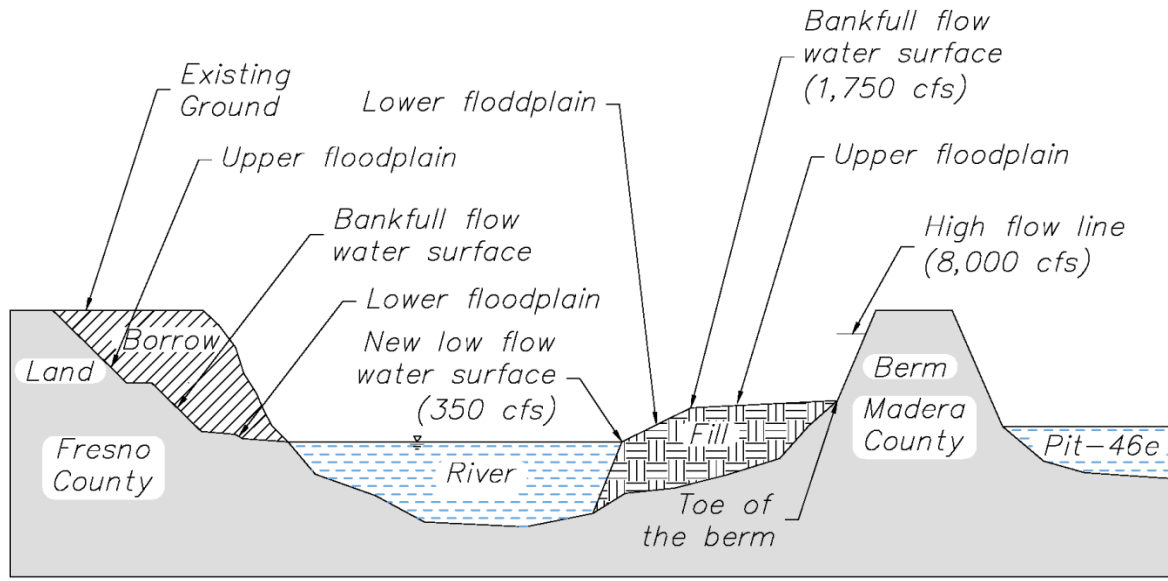


Figure 5: Conceptual Floodplain Diagram (looking downstream)

Revegetation

The floodplains would be planted with riparian vegetation. Riparian species may include valley oak, cottonwood, willow, sycamore, and other riparian species native to the area including shrubs, forbs, and grasses.

After construction is complete, and before the rainy season begins, topsoil would be replaced on the floodplains and the borrow sites. Hydroseeding and planting of pole cuttings would occur on the disturbed waterside slope areas of the strengthened berm. Pole cuttings would be installed at the low flow water level using a D-8 tractor equipped with a ripper shank with trailing flanges to penetrate the soil to a minimum depth of 48 inches, forming a “planting pocket.” As the shank moves along the predetermined planting lines, cuttings would be placed in the planting pocket so that the rooting end of the cutting is at a minimum soil depth of 42 inches. Cuttings would be placed about 12 feet apart along the planting lines, and the rows would be about 20 feet apart. Spacing of the cuttings would comply with Central Valley Flood Protection Board requirements to ensure that the vegetation will not obstruct high water flows. Planting would be conducted in late fall or early winter while the pole cuttings are dormant. The cuttings may initially be watered by a water truck or other mobile source to assist in establishment of the plants during the first growing season.

Site Preparation

Signage regarding the Project will be posted at least two weeks before the start of construction. The project area is adjacent to Sycamore Island, which is seasonally open for public recreation. Signs will be posted to prohibit the public from entering the

construction area and to redirect the public to recreation areas outside of the construction area. If permit conditions require resource protection, areas with sensitive resources such as wildlife habitat and waterways would be segregated from construction activities and protected by the contractor. Segregation measures may include erosion control devices, high visibility temporary fencing, and temporary chain-link fencing. Appropriate fencing would also be installed during this phase to restrict public access from the construction area. If a silt curtain is required, it would be installed in the water before construction begins. Staging and borrow areas would be mechanically cleared of vegetation and topsoil, and potentially fenced. A temporary site office would be established in one of the staging areas.

Prior to construction the following would occur:

- Pre-construction surveys for San Joaquin kit fox and nesting birds protected under the Migratory Bird Treaty Act (MBTA) will be conducted by DWR Environmental Scientists;
- Utility companies will be informed of the proposed construction;
- Signage will be posted two weeks prior to construction;
- Mowing would occur prior to construction as needed;
- Fencing, flags or other methods to protect private structures or facilities from construction will be installed.

Work Window

Project construction would require a total of six months of work. However, in the event of permit restrictions, increases in river flows, or other unforeseen circumstances, the six months of construction work may take place over two construction seasons. Depending on funding and permit requirements, construction could begin in mid-June of 2016. All work would take place beginning at 6:00 am and ending by 6:00 pm each day; no work would be done after dark.

Sequencing of Work

Multiple crews would likely work simultaneously on different components of the Project. Table 1 lists the expected duration of each construction phase; some phases may occur simultaneously.

Table 1. Approximate Duration of Construction Phases

Construction Phase	Length of time to complete
Mobilization	1 week
Site Preparation	2 weeks
Saddle Construction	6 weeks
Berm Improvements	4 weeks
Floodplain Restoration/Fill Material Hauling	12 weeks
Miscellaneous	5 weeks

Construction Crews and Equipment

Average daily commuter trip miles for DWR staff are estimated at 12 miles each way from the DWR Fresno office. The daily commuter trip for contractor crews is estimated to range from 15 to 25 miles each way. Heavy equipment for each phase would be dropped off at the site by the contractor prior to construction of the phase, and would remain on-site until the equipment is no longer needed. Equipment would be stored in the staging areas when not in use. Table 2 describes the type and horsepower of the heavy equipment that would likely be used during construction. Final equipment selection will depend on the contractor.

Table 2. Construction Equipment List

Equipment Type	Horsepower
Generator	9
Water Trucks 3600 Gal	400
Backhoe	75
Bobcats	50
Excavator (325L)	168
Compactor (815F Sheepfoot)	240
12H Motor Grader	165
140H Motor Grader	185
D-8N Dozer	270
623F Self Load Scrapers	365
Compressor 750 CFM	275
Off Highway Truck 18-22	381
Flatbed Truck	250
4x2 Pick Up	250
4x4 Pick Up	250
Foreman Operator 4x2 Pick	250
Dump Truck	250
Loader	120

Operation and Maintenance

Once construction is complete, the Conservancy would contract with service providers to water the revegetated area. A water truck or other mobile source would likely be used during the first season to establish the plantings. Irrigation and weed control may continue during additional growing seasons to optimize plant survival. The Conservancy would be responsible for berm, road, and saddle maintenance, and any additional vegetation plantings.

2.3 Environmental Commitments

The following Environmental Commitments and Best Management Practices will be implemented to avoid and minimize any potential impacts to the human environment:

Water Resources

1. DWR's construction contractor will obtain a National Pollutant Discharge Elimination System permit and implement the measures specified in the permit, including turbidity monitoring, which will be done in accordance with California Regional Water Quality Control Board, Central Valley Region (CVRWQCB), DFW and U.S. Army Corps of Engineers (USACE) permit requirements, as applicable.
2. Trees and other vegetation will only be removed if necessary; vegetation outside of the construction areas will not be removed.
3. Matting or netting will be placed on exposed soil surfaces to control erosion.
4. Fiber rolls will be used on steep slopes at appropriate intervals.
5. Sand bags will be placed, as necessary, to control sediment, runoff, or dissipate runoff energy.
6. Mulch will be applied to disturbed soils to minimize wind and rain effects.
7. Stockpiles will be located at least 50 feet away from drainage courses and sediment control measures will be installed around them.
8. Silt Fences will be installed at bottoms of slopes, stockpiles of fill material and other exposed sites. Silt fence will be accompanied with ponding area sufficient to prevent over topping.
9. Earthen dikes and drainage swales will be installed, as necessary to control runoff.
10. If water sensors are used they will be inspected as specified by the manufacturer recommendations.
11. The Revegetation Plan (Appendix A) will be further developed and implemented in coordination with the SJRRP Implementing Agencies.

12. Turbidity curtain(s) will be used around any construction areas located in water. The turbidity curtain used will extend approximately 500 feet and will be installed around the active construction area, remaining in place until the work in that area is completed. The curtain will not be moved until the water quality inside the curtain drops to a level appropriate to the Basin Plan threshold. There will be a gap between the curtain and the river bed that will be large enough to allow fish to move throughout the reach volitionally.
13. Construction vehicles will be cleaned at a cleaning station before being used for construction work in or near the water.
14. Turbidity will be monitored upstream and downstream of the project site in accordance with CVRWQCB, CDFW and USACE permit conditions, as applicable.

Biological Resources

Terrestrial

1. Replacement trees will be grown from on-site cuttings, or if obtained from a native plant nursery, will be locally adapted ecotypes of native tree or shrub species.
2. Mitigation replacement ratios, and other conditions, including control of invasive species, established during coordination with CVRWQCB, California State Lands Commission, DFW and USACE will be implemented as applicable.
3. Wetlands will be avoided during construction to the extent possible.
4. If the wetlands cannot be avoided, impacts will be minimized by covering the wetlands with Visqueen before fill is deposited. Once construction is complete, the fill would be excavated down to the Visqueen, and the Visqueen would be removed from the wetland. Alternatively, one or more bottomless culverts would be used as part of the temporary crossing to cover and protect the wetlands. The bottomless culverts and temporary crossing would be removed when construction is complete.
5. Topsoil will be protected. Top soils from wetlands and Other Waters of the U.S areas will be excavated and stockpiled separately from upland borrow site topsoil. Excavation of topsoil will be monitored by a qualified geologist to ensure that the soil is excavated and stockpiled correctly, and that the soil horizons are preserved.
6. After construction is complete, under the direction of a qualified geologist, the topsoil will be replaced using a minimum number of machine passes to reduce disturbance to microorganisms. Topsoil originally excavated from wetlands and Other Waters of the U.S. areas will be placed in the areas from which it was taken to rehabilitate the habitat.

7. Any excavated soils containing scarlet wisteria or star thistle will be placed upon a tarp or Visqueen and will not be placed in the water. Invasive species control will be coordinated with CDFW.
8. Invasive species will not be used in mulching, composting, or otherwise placed in or around the project site, nor will they be stockpiled in the riverbed or on the bank.
9. Control of invasive species will be coordinated with CDFW; permit conditions will be implemented as applicable.

Special Status Species

San Joaquin Kit Fox

1. A Service approved biologist will conduct pre-construction protocol level surveys for San Joaquin kit fox (SJKF) no fewer than 14 days and no more than 30 days prior to the onset of any ground-disturbing activity. If San Joaquin kit fox or their dens are detected at any time, all construction activities associated with the project will be halted immediately. The project will be placed on hold until consultation with the Service is completed.
2. An employee education program will be conducted. The program will consist of a brief presentation by a qualified wildlife biologist. The program will include the following: A description of the San Joaquin kit fox and its habitat needs; a report of SJKF occurrence in the Project Area; an explanation of the status of the species and its protection under the Endangered Species Act (ESA); and a list of measures being taken to reduce impacts to the species during project construction. A fact sheet conveying this information will be prepared for distribution to construction personnel.
3. Project-related vehicles will observe a daytime speed limit of 15-mph throughout the site in all project areas, except on state and federal highways; after dark, the speed limit will be reduced to 10-mph. Off-road traffic outside of designated project areas will be prohibited.
4. Work at night will not be allowed.
5. To prevent inadvertent entrapment of kit foxes or other animals during construction, all excavated, steep-walled holes or trenches more than 2 feet deep will be covered with plywood or similar materials at the end of each work day. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks will be installed. Before such holes or trenches are filled, they will be inspected for trapped animals.
6. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more

overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way.

7. All food-related trash items such as wrappers, cans, bottles, and food scraps will be disposed of in securely closed containers and removed at least once a week from the project site.
8. No firearms will be allowed on the project site.
9. No pets will be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.
10. Use of rodenticides and herbicides in project area will not be allowed except for control of invasive plant species. Only herbicide approved for use near water and anadromous fish will be used.
11. Upon completion of the project, all areas subject to temporary ground disturbances, including staging areas, temporary roads, and borrow sites will be re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions.
12. Sightings of SJKF will be reported to the CNDDB.

Central Valley Spring-Run and Fall-Run Chinook Salmon

1. SJRRP Central Valley spring-run and fall-run Chinook salmon trap and haul activities will be coordinated with DWR and the Conservancy during construction of the proposed action to avoid placing fish in the vicinity of the project area to the extent feasible. Reclamation, DWR and the Conservancy will coordinate with NMFS and CDFW prior to construction on potential construction phasing strategies to minimize in-channel work to the extent feasible when spring-run Chinook may be present in the Project Area.
2. Reclamation and DWR will coordinate with NMFS and CDFW on construction materials to be used for the temporary crossing.

Migratory Birds

1. Nest surveys for species protected by the MBTA will be conducted at least two weeks prior to the beginning of construction. Surveys will be coordinated with CDFW and USFWS.
2. Nests observed during pre-construction surveys will be avoided to the greatest extent possible.

Swainson's Hawk

1. If an active Swainson's hawk nest is located within a quarter mile radius of the Project Area, CDFW and USFWS will be consulted.
2. If required by CDFW, project-related disturbances near active Swainson's hawk and Osprey nests will be reduced or eliminated during the critical phase of the nesting cycle (March 1 –September 15).

Western Pond Turtle

1. Preconstruction surveys will be conducted for western pond turtles according to protocols established by CDFW. A qualified biologist with a scientific collecting permit will monitor construction activities and look for western pond turtle during construction. Additional mitigation measures, as necessary, including the possibility of moving western pond turtles out of the construction area, will be coordinated by DWR with CDFW.

Air Quality

1. All disturbed areas, including storage piles, which are not being actively used for construction purposes, will be effectively stabilized for dust emissions using water, chemical stabilizer/suppressant, covered with a tarp or other suitable cover or vegetative ground cover.
2. All on-site unpaved roads and off-site unpaved access roads will be effectively stabilized for dust emissions using water or chemical stabilizer/suppressant.
3. All land clearing, grubbing, scraping, excavation, land leveling, grading, cut & fill, and demolition activities will be effectively controlled for fugitive dust emissions by presoaking or water application.
4. When materials are transported off-site, all material will be covered, or effectively wetted to limit visible dust emissions, and at least six inches of freeboard space from the top of the container will be maintained.
5. All operations will limit or expeditiously remove the accumulation of mud or dirt from adjacent public streets at the end of each workday. The use of dry rotary brushes will be expressly prohibited except where preceded or accompanied by sufficient wetting to limit the visible dust emissions. Use of blower devices will be expressly forbidden.
6. Following the addition of materials to, or the removal of materials from, the surface of outdoor storage piles, the piles will be effectively stabilized for fugitive dust emissions using a sufficient amount of water or chemical stabilizer/suppressant.

7. In urban areas, trackout will be immediately removed when it extends 50 or more feet from the site, and at the end of each workday.
8. Any site with 150 or more vehicle trips per day will prevent carryout and trackout.
9. Traffic speeds on unpaved roads will be limited to 15 mph.
10. Excavation and grading activity will be suspended when winds exceed 20 mph.
11. Construction equipment will be maintained according to manufacturer's specifications.
12. Construction vehicle idling time will be limited.
13. On-road and off-road vehicle tire pressures will be maintained to manufacturer specifications. Tires will be checked and re-inflated at regular intervals.
14. Vehicles and equipment will be equipped with noise suppressing mufflers and exhaust systems and will be maintained to manufacturer's specifications.
15. Equipment will be shut off when not in use.

Noise

1. Construction activities will be limited to hours designated by Fresno and Madera County construction noise ordinances.

Hazards and Hazardous Materials

1. Equipment fueling and maintenance will only occur in the staging areas and away from the water.
2. All employees will be trained in the handling and storage of potentially hazardous materials.
3. All applicable federal and state regulations will be followed.
4. Construction equipment will be properly maintained and cleaned, especially when working in or near the water.
5. The contractor will develop a Spill Prevention and Clean-up Plan and will ensure that all employees understand and comply with it.
6. Spill containment and clean-up supplies will be available on all construction vehicles and in the staging areas and borrow sites.

7. Accidental spills and discharges, whether to soil or water, will be immediately contained and cleaned up.
8. Spills and discharges will immediately be reported to the Regional Board.
9. Spill containment materials will be placed in and under abandoned vehicles being removed from the project site prior to moving them to prevent hazardous fluids from contaminating soil or water.
10. The vehicles will be moved in a way that minimizes the possibility of leaking or spilling fluids.
11. The vehicles will be disposed of per Regional Board and county regulations.
12. The soil beneath the abandoned vehicles will be tested.
13. If volatile organic compounds (VOC)s are identified, the San Joaquin Valley Air Pollution Control District Rule 4651 will be implemented and the soil will be disposed of pursuant to applicable local, state, and federal laws and regulations.
14. The contractor will implement a fire prevention and suppression plan.
15. Construction crews will be given contact information for the nearest fire stations.
16. Dry brush and vegetation will be removed from access roads, shoulders, and work areas to reduce fire hazards.
17. All equipment and vehicles in the project area will be equipped with spark arrestors, fire extinguishers, and shovels.

Recreation

1. As part of the site preparation phase at least two weeks before equipment mobilization, signs will be posted at access roads and in recreational areas upstream and downstream of the construction area to notify recreationists of project area restrictions.
2. As part of the site preparation phase, and at least two weeks prior to equipment mobilization, signs redirecting boaters to boat ramps, picnic areas, trails, and river access points outside of the construction area will be posted.
3. Fencing will be installed, where feasible, to restrict public access to the construction area and borrow sites.

3.0 Affected Environment and Environmental Consequences

The Proposed Action would have no effects on the following resources, and therefore they are eliminated from further discussion: agricultural resources, Indian Trust Assets, socioeconomic resources, population and housing, land use, utilities and public services.

3.1 Water Resources

Affected Environment

The project area is located on the San Joaquin River, which has the Stanislaus, Tuolumne, Merced, and Fresno rivers as tributaries. The California Aqueduct extends the entire length of the bioregion. The southern portion of the bioregion includes the Kings, Kaweah, and Kern rivers, which drain into closed interior basins. No significant rivers or creeks drain into the valley from the Coast Range.

The proposed project is located in a reclaimed gravel mine on the San Joaquin River; Friant Dam is located approximately 10 miles upstream. Mining operations left behind an extensively modified channel and have impacted the historical flow paths in this part of the river. Further, breeched ponds and excavated portions of the river channel have slowed flows and increased water temperatures. Flows in this section of the river are further affected by releases from the dam. River flows in the project area fluctuate from season to season, but generally have a low flow of 350 cfs and a high flow of 8,000 cfs. Low flow conditions typically occur in the summer and fall; high flow conditions are typically in the spring. The project area has been designated by the Federal Emergency Management Agency (FEMA) to be within a 100-year flood zone (FEMA, 2014). Floodwaters in the project area are dominated by Friant Dam releases; runoff from local precipitation events is relatively minor.

Background turbidity levels were collected from two sites in the project area by the Regional Board as part of the Surface Water Ambient Monitoring Program. The Wildwood Native Park sampling location is approximately one mile upstream of the berm breach and the Palm and Nees sampling location is approximately one mile downstream of the breach. Average turbidity measured in Nephelometric Turbidity Units (NTUs) at Wildwood Native Park is 0.74 NTUs, and at Palm and Nees is 1.03 NTUs (CEDEN, 2012).

The San Joaquin River is considered Essential Fish Habitat (EFH) for Pacific Coast Salmon, and water quality is an essential component of maintaining this function of the river.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for the proposed project. Under the No Action Alternative, the Conservancy may pursue a smaller scale project. The No Action Alternative would have no impact on water supplies and groundwater resources. Earth moving and associated work under the No Action Alternative would result in exposing soils to erosion. The No Action Alternative would have some short-term turbidity impacts during construction. The construction of project features in the water, such as the saddle, strengthened berm, temporary crossing and floodplains would involve approximately 0.84 acres of permanent fill and 0.43 acres of temporary fill of in-water areas. The Proposed Action would include the following fill materials:

- 4,600 cubic yards (cy) of rock slope protection
- 1,350 cy of clean spawning gravel
- 1,250 cy of river rock
- 30,000 cy of soil
- 1,100 cy of temporary fill material

Operation and refueling of construction equipment could accidentally release fuel, oil, and lubricants into the water. The No Action Alternative would have some benefits to water quality by isolating the gravel pit pond and thus improving water temperatures in the San Joaquin River channel.

Proposed Action

The Proposed Action would have no impact on water supplies and groundwater resources. The proposed action would have slightly more temporary construction related impacts to water quality than the No Action Alternative due to an increased potential for erosion, sediment transport turbidity, and release of other pollutants into soils and water in the project footprint. However, construction-related impacts would be temporary, and implementation of the Water Quality environmental commitments, as described in Section 2.3, would avoid and minimize the potential for construction-related impacts to water quality to the extent feasible.

The Proposed Action would have a beneficial impact to water quality by isolating the gravel pit pond and thus improving water temperatures in the San Joaquin River channel. Riparian vegetation planted under the proposed action would also potentially contribute to improving water temperatures in the San Joaquin River channel.

3.2 Biological Resources

Affected Environment

Terrestrial Resources

The project is located in a disturbed area with little to no remaining natural topography. The riparian area adjacent to the river is fragmented. Wetland areas at the site are primarily associated with created water features such as excavated quarry ponds. There are only small bands of habitat that are relatively native in the project area, but the Project is not considered to be located in native wetland, riparian, woodland, or mixed chaparral habitat.

Grasslands are the primary vegetation type in the project area and make up the understory in the scattered remaining riparian and woodland habitats. Grassland species present include numerous ruderal and invasive noxious plants. Non-native annual grass species dominate the annual grassland habitat in the project area. Non-native grasses observed include soft chess (*Bromus hordeaceus*), foxtail chess (*Bromus madritensis*), and ripgut brome (*Bromus diandrus*). Coastal heron's bill (*Erodium cicutarium*) and black mustard (*Brassica nigra*) are common forbs in the annual grasslands of the project area, and in some areas vinegar weed (*Trichostema lanceolatum*) also occurs. Elderberry bushes (*Sambucus spp.*), are scattered throughout the project area, primarily in the grassland habitat, but also along the river banks. Density and maturity of the elderberry varies throughout the project area.

Cottonwood woodland is found in the project area along drainages and near channel banks. Vegetation in the mixed willow/Fremont cottonwood woodland is dominated by Fremont cottonwood (*Populus fremontii*), Gooding's willow (*Salix gooddingii*), and California ash (*Fraxinus dipetala*). Buttonbush (*Cephalanthus occidentalis*) and white alder (*Alnus rhombifolia*) are common understory species.

The willow riparian community consists primarily of homogenous stands of narrowleaf willow (*Salix exigua*) with little to no understory. Riparian scrub is dominated by wild rose (*Rosa sp.*), California/Himalayan blackberry (*Rubus armenicus x ursinus*), and scarlet wisteria (*Sesbania punicea*). Other scattered trees and shrubs are present in the riparian scrub community, such as valley oak (*Quercus lobata*), California ash (*Fraxinus dipetala*), white alder, Fremont cottonwood, and buttonbush. Scarlet wisteria, a highly invasive non-native species, dominates many of the banks, and is particularly prominent on the Pit 46e berm. Sycamore Woodland consists of scattered sycamore trees (*Platanus occidentalis*), elderberry, narrow leaf willow, and Gooding's willow. Only small patches of Sycamore Woodland are present in the project area. Scattered trees are found in Borrow Site 2. Sixteen special-status plant species were recorded within the quadrangle searches; none of these species occur in the Project Area.

The two dominant invasive plant species in the project area are scarlet wisteria, which grows along the berm separating Pit 46e from the river and on other river and pond banks

in the project area; and yellow-star thistle, which lines the top of the berm at Pit 46e amid invasive grasses and is scattered throughout grassland areas in the project vicinity.

The USACE and the Environmental Protection Agency (EPA) regulate the discharge of dredged and fill material into “waters of the United States” (waters of the U.S.) under Section 404 of the Clean Water Act (CWA). USACE jurisdiction over non-tidal waters of the U.S. extends to the “ordinary high water mark,” provided the jurisdiction is not extended by the presence of “wetlands” (33 CFR, Section 328.4). Project elements that would require the discharge of dredged or fill material into waters of the United States at the project site will require a Section 404 permit.

A preliminary delineation of waters of the U.S., including wetlands, was prepared for the project in July 2013. On September 15, 2014, and October 22, 2014, additional delineations were conducted and other waters of the U.S. were identified. A supplemental preliminary delineation of waters of the U.S. was submitted to the USACE. The wetlands delineated for the project are considered freshwater emergent wetlands and are classified under Cowardin’s Classifications as part of a Riverine system. The construction of project features in the water, such as the saddle, strengthened berm, temporary crossing and floodplains would involve approximately 0.84 acres of permanent fill and 0.43 acres of temporary fill of in-water areas. The Proposed Action would include the following fill materials:

- 4,600 cubic yards (cy) of rock slope protection
- 1,350 cy of clean spawning gravel
- 1,250 cy of river rock
- 30,000 cy of soil
- 1,100 cy of temporary fill material

Aquatic Resources

The project is located within three reclaimed gravel mines on the San Joaquin River; Friant Dam is located approximately 10 miles upstream. Mining operations left behind an extensively modified channel. Past mining operations may have impacted the historical flow paths in this part of the river, and the flows in this section of the river are further affected by releases from the dam. River flows in the project area fluctuate from season to season, but generally have a low flow of 350 cfs and a high flow of 8,000 cfs. Low flow conditions typically occur in the summer and fall; high flow conditions are typically in the spring. The pond and river harbor a warm-water fishery, detrimental to future reintroduction of cold- water species, such as salmon.

Lacustrine habitat is present in the ponded area near the berm breach where water in the reclaimed gravel pit can mix with river flows. Riverine habitat is characterized by unidirectional flow from upstream to downstream within a channel. It includes all wetlands and deep water habitats contained within a channel, with the exception of

wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens and habitats containing ocean derived salts in excess of 0.5 parts per thousand (Cowardin 1979). Riverine habitat is typically associated with intermittent or continually running rivers and streams. In the case of this project, riverine habitat exists within the river channel, where the flow is largely controlled by releases from Friant Dam. Project construction would occur in riverine habitat. Construction of the strengthened berm, saddle, and floodplain would occur in lake and riverine habitat.

Special Status Species

The USFWS species database was accessed to generate a list of Federally listed threatened and endangered species that may occur in the project area (Appendix B). According to the CNDDDB and USFWS databases, nine special-status species potentially occur within 10 miles of the project area. However, only San Joaquin kit fox, Swainson's hawk, western pond turtle, and hardhead have the potential to occur in the project vicinity. While elderberry shrubs in the project vicinity may be habitat for the California elderberry beetle (not a federally listed species), the project area does not fall into what is currently considered the species range for the valley elderberry longhorn beetle, which is listed as threatened under the Endangered Species Act (Appendix B). No special status plant species occur in the project area. There are no local ordinances protecting plant species or Habitat Conservation Plans or Natural Community Conservation Plans that apply to the project area.

San Joaquin Kit Fox

The nearest CNDDDB record of SJKF is for an area of fallow agricultural land near SR 99, approximately seven miles southwest of the Project Area. Another record is for an area 12.5 miles away near the foothills in the vicinity of Friant Dam. Both sightings were recorded in the early 1990's.

Central Valley Spring-Run and Fall-Run Chinook Salmon

Until the 1940s, the San Joaquin River sustained large populations of Central Valley spring-run and fall-run Chinook salmon, but salmon populations have become extirpated in the project area. The SJRRP has recently released fall-run Chinook salmon in the SJRRP Restoration Area. As salmon redds have been found about one mile up- and downstream of the Project Area (pers. comm., E. Meyers 2014), therefore Central Valley fall-run Chinook salmon are likely to be present in the project area during construction activities.

The SJRRP released Central Valley spring-run Chinook salmon into the San Joaquin River in the spring of 2014 and 2015. Central Valley Spring-run Chinook are likely to be released into the river in spring of 2016, as well as in future years. The SJRRP releases spring-run Chinook downstream of the most downstream fish passage barrier, downstream of SR 165 (pers. comm., E. Meyers 2014). These fish are designated a non-essential, experimental population in accordance with Section 10j of the ESA, and therefore are treated as a species that is proposed for listing under the ESA.

Possible future releases of Central Valley spring-run Chinook salmon may occur further upstream of the confluence with the Merced River if connectivity is re-established through actions of the SJRRP in future years. Although NMFS predicts Central Valley spring-run Chinook salmon released by the SJRRP could return to spawn in the San Joaquin River in 2016, the salmon would not be able to volitionally reach the Project Area until completion of the Mendota Pool Bypass Project (pers. comm., E. Meyers 2015), which is currently anticipated to occur in 2020. The SJRRP may trap and haul any Central Valley spring-run Chinook salmon returning to Reach 5 of the Restoration Area starting in 2016. While these fish would be placed in Reach 1, they would be placed upstream of the Project Area. It is thought that these adults will hold over the summer in pools upstream of the Project Area and spawn naturally in early fall. Additionally, the SJRRP is planning to potentially release adult spring-run Chinook Salmon in Reach 1 during the spring of 2016 for research purposes, and those fish would also be spawning naturally upstream of the Project Area. As in-river water temperatures in the project location typically exceed lethal levels for Chinook salmon from June through mid-October, it is not likely that adults would be present during that period nor spawn in the vicinity. Juveniles may be present beginning in December. Therefore, while it is possible that Central Valley spring-run Chinook salmon could be present in the project vicinity, they are not considered likely to occur during the proposed construction period.

Swainson's Hawk

Although the Swainson's hawk commonly forages in agricultural areas, which is not present in the project area, the species could use habitat in the Project Area for foraging and nesting. Swainson's hawks are known to occur in the project vicinity, however, neither birds nor nests were observed during biological surveys and site visits conducted in 2013 or 2014.

Migratory Bird Treaty Act Species

The project area provides potential nesting habitat for numerous species of birds protected under the MBTA and could support active roosting sites for bats. An occupied osprey nest located on a telephone pole was observed in June 2013 during a biological survey. The pole is located near the dirt road proposed as a haul route for the project. The bald eagle is listed as a State Endangered species and also protected under the MBTA and Bald and Golden Eagle Protection Act. This bird of prey is typically found near fish-filled water, such as seacoasts, lakes, rivers, reservoirs or other large bodies of open water. There are no CNDDDB records within the 10-mile occurrence radius, however bald eagle have been seen in the project area. Bald eagles have been recorded wintering in the Millerton Lake area, which is above the 10-mile CNDDDB search. Occasional bald eagles have been sighted foraging and flying in the Project Area, however, no bird or nests have been found during the biological surveys and site visits conducted in 2013 or 2014.

3.2.1 Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for the proposed project. Under the No Action Alternative, the Conservancy may pursue a smaller scale project. Native trees and shrubs would be removed along the embankment of the berm breach, and possibly in other areas where construction would occur. Construction in areas with scarlet wisteria and star thistle could inadvertently spread these invasive species. Construction in the project area would have the potential to impact several special status species, similar to the proposed action, as further described below.

Proposed Action

Terrstrial and Aquatic Habitats

Under the proposed action, construction-related impacts to biological resources would be similar to the no action alternative. Twenty trees would be removed during project construction activities. All of these trees have a diameter at breast height of greater than four inches, but less than 24 inches. The trees include valley oak, California ash, white alder, narrowleaf willows, Goodding's willow, button willow, and Chinese tallow. Of the trees to be removed, only ten are native species.

Construction of the temporary crossing near Borrow Site 1 may directly impact a jurisdictional wetland. The wetland is in Riverine habitat and is approximately 0.01 acres in size. Once the crossing is removed, all fill discharged during construction of the crossing would be removed to restore the topography in the area to pre-project conditions. Approximately 30,000 cy of fill would be used to create up to two acres of floodplain along the strengthened berm on the Madera County side of the river. This would be a beneficial effect of the proposed action. Fill would also be used to repair the berm breach and to repair a road crossing near the northeast side of Borrow Site 1. Riverine and Willow Riparian/Riparian scrub habitat would be impacted during construction activities in these areas. These activities would permanently fill other waters of the U.S., but function of the riverine habitat would continue.

The proposed action would isolate the warm water Pit 46e gravel pond from the river channel, and create floodplain habitat. Isolation of the gravel pond would benefit SJRRP salmon reintroduction objectives by reducing opportunities for the warm water species in the pond to prey on salmon eggs and young in the river; and creation of floodplain habitat will lead to natural development of improved fisheries habitat in the Project Area, which will also benefit SJRRP objectives. Therefore, while the proposed action may have some short-term construction impacts, it is anticipated to have a long-term beneficial effect on terrestrial and aquatic habitats.

Implementation of the Terrestrial and Water Quality environmental commitments, as described in Section 2.3 would avoid and minimize potential construction-related impacts on terrestrial and aquatic habitats.

Special Status Species

San Joaquin Kit Fox

It is unlikely that SJKF reside in the Project Area because of habitat conditions. However, construction activities could potentially impact SJKF if they enter the construction area.

The San Joaquin Kit Fox environmental commitments, as described in Section 2.3, were summarized from the USFWS Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance (USFSW, 2011) and are consistent with the SJRRP Conservation Strategy. Implementation of these measures will avoid and reduce potential impacts to SJKF potentially entering the area during construction.

Central Valley Spring-Run and Fall-Run Chinook Salmon

While the species is not anticipated to occur in the project area, there is a low potential that in-channel construction activities could directly affect Central Valley spring-run Chinook salmon, should they occur in the Project Area. The average width of the river channel in the Project Area is 350 feet, and the average width of the in-channel construction footprint would be 50 feet. If a turbidity curtain is used, it would extend the width of the channel, but would not extend all the way down to the river bed. Because only 50 of the 350 feet in-water channel would be involved in construction activities, and because a turbidity curtain would be open at the bottom, any fish in the Project Area could swim free of construction activities and equipment.

In-channel construction activities could indirectly affect Central Valley fall-run Chinook salmon through water quality impacts, as described in Section 3.1.

Implementation of the Water Quality and Central Valley Chinook Salmon environmental commitments, as described in Section 2.3, would avoid and minimize potential effects of the proposed action on Central Valley spring-run and fall-run Chinook salmon.

The proposed action would isolate the warm water Pit 46e gravel pond from the river channel, and create floodplain habitat. Isolation of the gravel pond would benefit SJRRP salmon reintroduction objectives by reducing opportunities for the warm water species in the pond to prey on salmon eggs and young in the river; and creation of floodplain habitat would lead to natural development of improved fisheries habitat in the Project Area, which would also benefit SJRRP objectives. Therefore, while the proposed action may have some short-term construction impacts, it is anticipated to have long-term beneficial effect on Central Valley spring-run and fall-run Chinook salmon.

Essential Fish Habitat

Construction of the proposed action would involve approximately 0.84 acres of temporary impact and approximately 0.43 acres to EFH. Once the crossing is removed, all fill discharged during construction of the crossing would be removed to restore the topography in the area to pre-project conditions. The Proposed Action would include the following fill materials:

- 4,600 cubic yards (cy) of rock slope protection
- 1,350 cy of clean spawning gravel
- 1,250 cy of river rock
- 30,000 cy of soil
- 1,100 cy of temporary fill material

Approximately 30,000 cy of fill would be used to create up to two acres of floodplain along the strengthened berm on the Madera County side of the river. This would be a beneficial effect of the proposed action. Implementation of the Terrestrial and Water Quality environmental commitments, as described in Section 2.3 would avoid and minimize potential construction-related impacts on EFH.

Migratory Birds

Construction activities could occur during the breeding and nesting season (February through August) and potentially cause impacts to nesting birds. However, implementation of the Migratory Birds environmental commitments, as described in Section 2.3, would avoid and minimize potential impacts to species protected by the MBTA.

Hardhead

The average width of the river channel in the Project Area is 350 feet, and the average width of the in-channel construction footprint would be 50 feet. If a turbidity curtain is used, it would extend the width of the channel, but would not extend all the way down to the river bed. Because only 50 of the 350 feet in-water channel would be involved in construction activities, and because a turbidity curtain would be open at the bottom, any fish in the Project Area, could swim free of construction activities and equipment. The Project would not substantially interfere with the movement of any native resident or migratory fish species. Implementation of the Water Quality and Central Valley Chinook Salmon environmental commitments, as described in Section 2.3, would avoid and minimize potential effects of the proposed action on hardhead.

Western Pond Turtle

If present in the project area, Western pond turtles would be less likely than other aquatic species to be able to quickly move out of the construction area during disturbance. Implementation of the Water Quality and Western Pond Turtle environmental commitments, as described in Section 2.3, would avoid and minimize potential effects of the proposed action on western pond turtles.

Swainson's Hawk

Because the Project Area may be used by Swainson's hawks for foraging and nesting, construction activities could have temporary effects on Swainson's hawks, if they are present. Implementation of the Migratory Birds and Swainson's Hawk environmental commitments, as described in Section 2.3, would avoid and minimize potential effects of the proposed action on Swainson's hawks.

3.3 Cultural Resources

Affected Environment

"Cultural resources" is a broad term that applies to prehistoric and historic-era archaeological sites and structures, components of the built environment, and traditional cultural properties or places, all of which provide evidence of human behaviors, economic activities, and cultural traditions and beliefs, both past and present. Cultural resources that are included in, or eligible for inclusion in, the National Register of Historic Places are known as "historic properties." 54 U.S.C. § 306108, commonly known as Section 106 of the National Historic Preservation Act (NHPA), requires Federal agencies to take into consideration the effects of their undertakings on historic properties. This is accomplished through the Section 106 process as outlined at 36 CFR Part 800.

Efforts to identify historic properties in the proposed project area of potential effects (APE) were conducted by DWR in June 2013 and July 2014. These identification efforts included communication and consultation with Native American representatives identified by the California Native American Heritage Commission (NAHC) and local historical societies, a records search through the Southern San Joaquin Valley Information Center, and two pedestrian surveys, one of which included monitoring of test pit excavation in a potential borrow area added to the APE after DWR's initial survey was completed. No historic properties were identified in the APE through any of these activities.

Native American consultation conducted by DWR included facilitating a site visit in January 2014 that was attended by representatives from the Santa Rosa Rancheria Tachi Yokut Tribe and the Picayune Rancheria of the Chukchansi Indians who had expressed interest in the project. No concerns regarding the proposed project were expressed by either tribal representative, or any other Native American organizations or individuals contacted by DWR. In March 2015, Reclamation contacted the NAHC, requesting a sacred lands file search and an updated Native American Contacts list for the project area. Pursuant to 36 CFR § 800.4(a)(4), through written correspondence dated June 21, June 29, and June 30, 2015, Reclamation contacted the federally recognized Indian tribes identified by the NAHC as having an interest in the project area, notifying them of Reclamation's involvement in the project, and inviting them to participate in the Section 106 process. Reclamation also sent letters to other Indian tribes not listed on the NAHC contacts list but with a known interest in the project area. Reclamation received no responses from any of the Indian tribes contacted.

Based on the results of both DWR's and Reclamation's historic properties identification efforts, Reclamation reached a Section 106 finding of no historic properties affected for the proposed undertaking. Through correspondence dated July 21, 2015, Reclamation notified the State Historic Preservation Officer (SHPO) of the finding of no historic properties affected, pursuant to 36 CFR § 800.4(d)(1). The SHPO responded through correspondence dated August 26, 2015, indicating no objection to Reclamation's finding.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would provide no funding for the proposed project and there would be no Federal undertaking requiring Section 106 or National Environmental Protection Agency (NEPA) cultural resources compliance. Under the No Action Alternative, the Conservancy could still pursue a smaller scale project. Given that no significant cultural resources (i.e., historic properties) were identified within the larger project footprint facilitated by Reclamation funding, however, it is unlikely that impacts to significant cultural resources would occur under such a scenario. The No Action Alternative would result in no significant impacts to cultural resources.

Proposed Action

Reclamation reviewed the proposed action pursuant to the requirements of Section 106 of the NHPA and reached a finding, with SHPO concurrence, of no historic properties affected pursuant to 36 CFR § 800.4(d)(1). Under the proposed action, there would be no significant impacts to cultural resources. The discovery of any historic properties or other cultural resources during project implementation would require further Section 106 review, in accordance with 36 CFR § 800.13, as well as compliance with applicable State law governing the protection of significant cultural resources.

3.4 Air Quality

Affected Environment

The project area is within the San Joaquin Valley Air Pollution Control District (SJVAPCD). Particulate Matter 10 (PM 10), Particulate Matter 2.5 (PM 2.5), and Ozone (as averaged over an 8-hour period) are the pollutants of greatest concern in the air basin; the basin is designated nonattainment for each of these pollutants (SJVAPCD, 2012). Primary contributors of PM 10 and PM 2.5 are use of heavy duty diesel trucks, use of on- and off-road equipment, agricultural waste burning, and forest management. The largest source of ozone is the use of heavy duty diesel trucks, on- and off-road mobile equipment, and fuel combustion at stationary sources (SJVAPCD, 2012).

The closest sensitive receptors to the project are residences located north of the Van Buren Unit and southwest of Children's Hospital Central California (Children's Hospital), residences located north of Sycamore Island along the top of the bluff in Madera County, residences located south of Sycamore Island along the top of the river

bluff in Fresno County, and students and staff at the Bluff View Preschool. Staff and customers at the River Park Golf Center, along with patients and staff at the Children's Hospital, both located north of the Van Buren Unit can also be included as sensitive receptors. Sensitive receptors in this case are people that may have health problems. The most common air quality effects from construction sites are dust (PM₁₀) and increased emissions from construction vehicles. These effects can be problematic for the young or the old or those with asthma or emphysema.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for the proposed project. Under the No Action Alternative, the Conservancy may pursue a smaller scale project. Temporary and short-term air quality impacts would be associated with construction and would generally arise from dust generation (fugitive dust) and operation of construction equipment. Fugitive dust results from land clearing, grading, excavation, concrete work, and vehicle traffic on paved and unpaved roads. It is a source of airborne particulates, including respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less (PM₁₀) and fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less (PM_{2.5}). Large earth-moving equipment, trucks, and other mobile sources powered by diesel or gasoline are also sources of combustion emissions, including oxides of nitrogen (NO_x), carbon monoxide (CO), VOC, sulfur dioxide, PM₁₀ and PM_{2.5}, and small amounts of air toxics.

Construction-related commuter traffic, operation of construction equipment, and construction activities such as excavation would temporarily generate additional dust, carbon monoxide and odors from diesel exhaust in the project area. These emissions could affect sensitive receptors. The nearest sensitive receptor to the project area is a residence located approximately 0.26 miles away from the project site, other residences lie within one-half mile of the project area. Children's Hospital is approximately 1.5 miles away from the project area. However, Diesel odors are typical with construction, and would be temporary, dissipating rapidly from the source. No long-term odors would result from project construction.

Proposed Action

The proposed action would have temporary air quality impacts similar to the no action alternative, but for a slightly longer duration, as the proposed action would allow for a larger scale project to be constructed. Table 3 provides a summary of the estimated emissions anticipated during construction of the Proposed Action.

Table 3. Estimated Emissions during Construction of the Proposed Action and Federal and Local Emissions Thresholds (Tons per Year)				
Pollutant	Federal Attainment Status	Threshold for Federal Conformity Determinations	Local Significance Thresholds	Estimated Project Emissions^a
VOC (as an ozone precursor)	Nonattainment/serious (8-hour ozone standard)	50	10	0.17
NO _x (as an ozone precursor)	Attainment/unclassified	50	10	6.23
PM ₁₀	Attainment	100	15	3.07
PM _{2.5} ^b	Nonattainment	100	--	3.07
CO	Attainment/unclassified	100	--	3.98
Notes: CO = carbon monoxide; NO _x = oxides of nitrogen; PM _{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM ₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; VOC = volatile organic compounds. ^a Construction emissions estimated by AECOM in 2011; assumes four construction crews working simultaneously. ^b The EMFAC 2007 model does not calculate PM _{2.5} .				

The SJVAPCD prepares *Guidance for Assessing and Mitigating Air Quality Impacts* (GAMAQI). The GAMAQI includes thresholds for significance for criteria pollutant emissions based on project type and size (SJVAPCD, 2002). The *Small Project Analysis Level* (SJVAPCD, 2012) pre-quantifies emissions and determines a size below which it is reasonable to conclude that a project would not exceed applicable thresholds of significance for criteria pollutants, and are therefore excluded from quantifying criteria pollutants. Qualifying projects that generate less than 1,453 vehicle trips per day are excluded from the need to conduct an Ambient Air Quality Analysis (AAQA).

Table 1 addresses the duration of the Project construction phases, Table 2 lists the types of equipment that would be used, and Appendix C (Inventory and Calculations of Greenhouse Gas Emissions) presents the types and amounts of emissions that would be generated by the proposed action.

Construction activities would temporarily contribute additional particulate matter to an air basin that is already classified as nonattainment. However, this project qualifies as a small project and does not require completion of an AAQA, will not conflict with or obstruct implementation of any air quality plan or result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under federal or state ambient air quality standards. The Air Quality environmental commitments, as described in Section 2.3, would avoid and minimize potential air quality impacts under the proposed action.

3.5 Global Climate Change and Greenhouse Gases

Affected Environment

“Global climate change” refers to the substantial change in measures of climate (e.g., temperature, precipitation, wind) lasting for decades or longer. Many environmental changes (e.g., solar intensity, ocean circulation, deforestation, urbanization, fossil fuel combustion) can contribute to global climate change (EPA 2009).

Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). Some GHGs, such as carbon dioxide (CO₂), occur naturally and are emitted into the atmosphere through natural processes and human activities. Other GHGs (e.g., fluorinated gases) are created and emitted solely through human activities. The principal GHGs that enter the atmosphere because of human activities are CO₂, methane, NO_x, and fluorinated gases (EPA 2009). During the past century, humans have substantially added to the amount of GHGs in the atmosphere by burning fossil fuels such as coal, natural gas, oil, and gasoline to power cars, factories, utilities, and appliances. The added gases, primarily CO₂ and methane, are increasing the natural greenhouse effect and likely contributing to an increase in global average temperature and related climate changes. At present, there are uncertainties associated with the science of global climate change (EPA 2009).

More than 20 million Californians rely on regulated diversion, storage, and delivery of water resources through facilities such as the CVP and SWP, as well as on established water rights from rivers. Increases in air temperature may lead to changes in precipitation patterns (snow versus rain), changes in runoff timing and volume, sea level rise, and changes in the amount of irrigation water needed related to modified evapotranspiration rates. These changes may lead to impacts on the state’s water resources and water project operations. Although there is general consensus in these trends, the magnitude and timing of impacts are uncertain and scenario dependent (Anderson et al. 2008).

The state has adopted Assembly Bill 32, which established the first comprehensive program of regulatory and market mechanisms to achieve quantifiable and cost-effective reductions of GHGs and made the California Air Resources Board responsible for monitoring and reducing GHGs. Even with such requirements in California, the effect of increased GHGs as they relate to global climate change is inherently an adverse environmental impact. Although the emissions of one project would not cause a significant impact on global climate change, GHG emissions from millions of projects and automobiles throughout the world are creating a cumulative impact with respect to global climate change. Consequently, global climate change is by definition a cumulative effect.

Warming of the climate system is now considered to be unequivocal (IPCC, 2007). Global average surface temperature has increased approximately 1.33 °F over the last one hundred years, with the most severe warming occurring in recent decades. Eleven of the years between 1995 and 2006 rank among the warmest years in the instrumental record of global average surface temperature (going back to 1850). Continued warming is projected to increase global average temperatures between two and 11 degrees Fahrenheit over the next one hundred years (IPCC, 2007). The causes of this warming have been identified

as both natural processes and as the result of human actions. Increases in greenhouse gas (GHG) concentrations in the Earth's atmosphere are thought to be the main cause of human-induced climate change. GHGs naturally trap heat by impeding the exit of solar radiation that has hit the Earth and is reflected back into space. The six principal GHGs of concern are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons, and perfluorocarbons.

In 2005, California Governor Arnold Schwarzenegger issued Executive Order (EO) S-3-05 (Office of the Governor 2005), making California the first state to formally establish GHG emissions reduction goals. In 2006, California passed the California Global Warming Solutions Act (also known as Assembly Bill Number 32 [AB 32]). AB 32 legally adopted the 2020 GHG emissions reduction target established in EO S-3-05, and identified the California Air Resources Board (CARB) as the state agency responsible for designing and implementing emissions limits, regulations, and other measures to meet the target. In December 2007, CARB approved the 2020 emissions limit of 427 million metric tons (MT) CO₂ equivalents of GHGs. In 2008, CARB adopted the AB 32 Climate Change Scoping Plan which outlined regulations, market mechanisms, and other actions that would be undertaken to meet the 2020 emissions target.

In 2005, the following GHG emission reduction targets were established for California (EO S-3-05):

- By 2010, GHG emissions were to be reduced to 2000 levels;
- By 2020, GHG emissions are to be reduced to 1990 levels;
- By 2050, GHG emissions are to be reduced to a level 80 percent below the 1990 levels.

Environmental Consequences

It is unlikely that a single project by itself could have a significant impact on the environment. However, the cumulative effect of human activities has been clearly linked to quantifiable changes in the composition of the atmosphere, which in turn have been shown to be the main cause of global climate change (IPCC, 2007). Therefore, the analysis of the environmental effects of GHG emissions from this project will be addressed as a cumulative impact analysis.

No Action Alternative

Although it is also unlikely that individual projects would have a significant positive impact, cumulatively, projects that protect or restore woodlands help sequester carbon, and help connect habitats to facilitate climate change adaptation for wildlife. This would be a beneficial impact of the project.

Project activities would involve use of various types of equipment and machinery, transport of the workforce to the project site, and transport and deliveries of materials.

GHG emissions generated by the proposed project would be primarily in the form of CO₂ from construction equipment exhaust.

Proposed Action

The Proposed Action has been designed to accommodate climate change over the 50 year project life. The Proposed Action would involve short-term impacts consisting of emissions during construction, similar to those under the no action alternative. Appendix C includes the results from the Inventory and Calculations of Greenhouse Gas Emissions for the proposed action. GHG emissions generated by the proposed project would be primarily in the form of CO₂ from construction equipment exhaust. The majority of the GHG emissions would be from operation of construction equipment, which accounts for 1,001 MT of CO₂e. Emissions from worker transportation to and from the work site accounts for 25 MT of CO₂e. Transportation of materials, including spoils and deliveries, would produce 124.37 MT of CO₂e. The total calculated amount of GHG emissions associated with the entire Project would be 1,150.2 MT of CO₂e, or 23.00 CO₂e per year over the 50 year project life.

The emissions calculated for the proposed action would occur only during the six month construction period. The amount of GHG emissions would not conflict with the reduction targets of AB-32. The emissions calculated for the proposed action would occur only during the six month construction period. The amount of GHG emissions would not conflict with the reduction targets of AB-32. Air Quality Environmental Commitments 11-14, as described in Section 2.3, are consistent with measures suggested in the manual, Quantifying Greenhouse Gas Mitigation Measures (Governor's Office of Planning and Research, 2010), and would avoid and minimize potential project-related GHG emissions.

3.6 Noise

Affected Environment

Noise is defined as unwanted or objectionable sound. Sound is usually considered unwanted when it interferes with normal activities, when it causes physical harm, and when it has adverse effects on health. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and, in the extreme, hearing impairment.

Decibel (dB) is the unit of measure used to describe the loudness of sound. Because the range of sound that humans can hear is quite large, the dB scale is logarithmic, making calculations more manageable. A number of factors affect people's perception of sound, including the actual level of noise, the frequencies involved, the period of exposure to the sound, and changes or fluctuations in the sound level during exposure. To measure sound in a manner that accurately reflects human perception, several measuring systems or scales have been developed. The A-weighted scale reflects the fact that the human ear does not perceive all pitches or frequencies equally; therefore, decibel measurements are

adjusted (or weighted) to compensate for the human lack of sensitivity to low-pitched and high-pitched sounds. The adjusted unit is known as the A-weighted decibel (dBA).

To reflect the fact that ambient noise levels from various sources vary over time, they are generally expressed as an equivalent noise level (L_{eq}), which is a computed steady noise level over a specified period as the noise varies. L_{eq} values are commonly expressed for 1-hour periods, but different averaging times may be specified.

For the evaluation of community noise effects, community noise equivalent level (CNEL) is often used. CNEL represents the average A-weighted noise level during a 24-hour day with a 5-db addition for the period from 7:00 p.m. to 10:00 p.m. and a 10-db addition for the period from 10:00 p.m. to 7:00 a.m.

The Proposed Action includes a single construction site located on the Sycamore Island Property. There is a residential area in the Project vicinity. The closest residence to the construction area is located approximately 0.26 miles away. West Riverview Drive, a possible route for construction equipment, materials, and personnel, is located in the approximate center of the residential area and lies about 0.60 miles from the construction area. The Project is located in a rural area with ambient noises attributed to small amounts of traffic and operation of agricultural equipment. The Project is not located near an airstrip.

The existing noise environment in the Proposed Action area is generally influenced by surface transportation noise emanating from vehicle traffic on local roads, agricultural equipment operations, and natural sounds (e.g., birds, water, wind, insects).

Local noise ordinances generally consider noise in the 50 to 70 decibel range above acceptable limits for prolonged exposure. However, Fresno County Ordinance Code Title 8.40.060 has set aside the hours from 6:00 a.m. to 9 p.m. Monday through Friday, and 7:00 a.m. to 5:00 p.m. Saturday and Sunday as exempted times for construction noise (Municode 2014a). Madera County Ordinance Code Title 9.58.020 has set aside the hours from 7:00 a.m. to 7:00 p.m. Monday through Friday, and 9:00 a.m. to 5:00 p.m. Saturday as exempted time for construction noise (Municode 2014b).

Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for the proposed project. Under the No Action Alternative, the Conservancy may pursue a smaller scale project, which could expose people to noise levels in excess of standards established in the local noise ordinance temporarily and intermittently during construction.

Proposed Action

The proposed action would have noise impacts similar to the no action alternative. Although the nearest residence to the construction area is about 0.26 miles away, noise levels for construction equipment could exceed the 50 to 70 dBA limits set by local ordinances especially if people are near the construction area. Project construction equipment would temporarily increase the ambient noise levels.

Table 6 identifies typical noise levels for common residential activities. Table 4 identifies typical construction equipment noise levels. Project-related construction equipment would include graders, dozers, and excavators. Noise levels for construction equipment can range from 79 to 101 dBA at 50 feet, which is similar to the noise level produced by a gas lawn mower (Table 5).

Table 4. Typical Residential Noise Levels

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

Source: modified from Caltrans Technical Noise Supplement, 1998
Table 5. Typical Construction Equipment Noise Levels

Type of Equipment		Noise Level in dBA at 50 feet
Without Feasible Noise Control		With Feasible Noise Control ¹
Pile Driver	101	95
Dozer or Tractor	80	75
Excavator	88	80
Scraper	88	80
Front-end Loader	79	75
Loader	85	75
Grader	85	75
Crane	83	75
Truck	91	75

¹ Feasible noise control includes the use of intake mufflers, exhaust mufflers, and engine shrouds in accordance with manufacturers' specifications. Sources: EPA 1971, Federal Transportation Administration 2006

Air Quality Environmental Commitments 15 and 16, and the Noise environmental commitment, as described in Section 2.3, would avoid and minimize noise impacts under the proposed action.

3.7 Transportation

Affected Environment

Roads are classified by the purpose of the road and by the road's level of service (LOS). The LOS describes the flow of traffic during particular times of use and varies depending on the type of road (Table 6). The LOS can change due to increases or decreases in traffic, and can increase in severity during road blockages and maintenance projects. In general, an increase of approximately 400 vehicles per hour on a major road segment is needed to increase the severity of the LOS (pers. comm., J. Carter 2014).

Table 6. Capacity per Hour per Lane for Various Highway Facilities

Level of Service	Freeways	Two-lane Rural Highway	Multi-lane Rural Highway	Expressway	Arterial	Collector
A	700	120	470	720	450	300
B	1,100	240	945	840	525	350
C	1,550	395	1,285	960	600	400
D	1,850	675	1,585	1,080	675	450
E	2,000	1,145	1,800	1,200	750	500

Source: Madera County Resource Agency, 2010.

The Project would be constructed on the river about 1.6 miles downstream of the SR 41 Bridge in Madera and Fresno. The roads that would potentially be used during Project construction are identified in Table 7.

Table 7. Project Road Use

Road Name	Classification	Jurisdiction
SR 41	Freeway	Caltrans
SR 99	Freeway	Caltrans
Avenue 9	Expressway	Madera County
Children's Boulevard	Arterial	Madera County

Friant Road	Arterial	Fresno City
Road 40	Local	Madera County
Avenue 7 ½	Local	Madera County
Audubon Drive	Local	Fresno City
North Del Mar Avenue	Local	Fresno City
West Riverview Drive	Local	Fresno City

All of the roads and intersections that would potentially be used during Project construction are classified with an LOS of C or better (Table 8). The current LOS for the intersections that will potentially be used during Project construction are also classified at LOS C or better, even during the worst peak hours (Table 9) (pers. comm., J. Gomley 2014).

Table 8. Existing Level of Service, All project roads

Road	Segment	Worst Peak Hour Level of Service
SR 41	Friant Road to Children's Blvd.	C
SR 99	Ave 7 to Children's Blvd.	B
Avenue 9	Road 36 to Road 40 ½	C
Children's Boulevard	Road 40 ½ to SR 41	B
Road 40	Avenue 9 to Avenue 7 ½	A
Avenue 7 ½	Road 40 to Road 39 ½	A
Audubon Drive	Friant Road to N. Del Mar Ave.	C
North Del Mar Avenue	Audubon Dr. to West Riverview Dr.	C
West Riverview Drive	From North Del Mar Avenue	A

Sources: Madera County Resource Agency, 2010; (pers. comm., J. Gomley 2014).

Table 9. Existing Level of Service, Project Intersections

Intersection	Worst Peak Hour Level of Service
Children's Blvd./SR 41	C
Avenue 9/Road 40	B
Audubon/SR 41	C
Audubon/N. Del Mar Ave.	C
N. Del Mar Ave./West Riverview Dr.	A
Palm and Nees	B

Source: (pers. comm., J. Gomley 2014)

Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for the proposed project. Under the No Action Alternative, the Conservancy may pursue a smaller scale project. Various state, county, and local roads could be used for project access. Highway 41, SR 99 and Madera County roads Avenue 9, Avenue 7 ½, Road 40, and Children's Boulevard could be used to transport equipment and crews to and from the project area. The following City of Fresno roads could also be used to transport equipment and crews: Herndon Avenue, Blackstone Avenue, Friant Road, Audubon Drive, North Del Mar Avenue, West Riverview Drive, Nees Avenue, and with the City of Fresno and landowners' permission, the intersection of Palm and Nees Avenues.

Proposed Action

The Proposed Action would have impacts similar to the No Action Alternative. Various state, county, and local roads could be used for project access. Highway 41, SR 99 and Madera County roads Avenue 9, Avenue 7 ½, Road 40, and Children's Boulevard could be used to transport equipment and crews to and from the project area. The following City of Fresno roads could also be used to transport equipment and crews: Herndon Avenue, Blackstone Avenue, Friant Road, Audubon Drive, North Del Mar Avenue, West Riverview Drive, Nees Avenue, and with the City of Fresno and landowners' permission, the intersection of Palm and Nees Avenues.

Equipment would be brought into the project on flatbed trucks as needed for each construction phase, but would not exceed 20 trips throughout Project construction. Approximately 850 truck trips would be needed to import Project materials. Construction crews would use established roads to access the project area five days each week throughout the construction period. Construction staff is expected to travel to the construction site in vehicles no larger than light duty pick-up trucks; the number of crew

vehicle round trips would be approximately 15 per day. The Project would not conflict with traffic or public transit plans, ordinances, or policies. Because of the small number of vehicles required for Project construction, there would be no increase in LOS on any of the access roads. Project equipment deliveries would avoid peak hours (7:00 to 9:00 AM and 4:00 to 6:00 PM) and the Project would not conflict with congestion management programs.

The Project would not construct new access roads, or alter any existing roads. The Project would not obstruct emergency access; in fact, once the berm breach is repaired, emergency access between Sycamore Island and the Van Buren Unit would be improved.

3.8 Geology and Soils

Affected Environment

The Project lies in the San Joaquin Valley, a flat expanse between the Sierra Nevada and Coast Ranges consisting of sediments that have deposited over time. On the eastern side of the valley, the soil is composed predominantly of soils derived from a granitic parent material originating from the Sierra Nevada. Over its geologic history, rivers have moved back and forth over the valley, depositing sediment worn from the mountains above, and fanning out into large alluvial floodplains. The most prominent landforms within the Project Area include the following:

- San Joaquin River main channel running from east to west through the Project Area;
- Steep, north and south facing bluffs creating the boundaries of the river floodplain; and
- Numerous man-made pits and ponds interrupting the otherwise relatively flat topography of the floodplain.

Ground surface levels within the Project Area and vicinity range from 249 feet at the river low flow channel to 331 feet at the top of the river bluff south of Children's Hospital. Bluff slopes range between a 60 percent and 80 percent grade on both the north and south sides of the river floodplain. The Project is located in a region of low seismicity, mainly due to the significant distance of the project site to active faults in the region. The Project is not located within an Alquist-Priolo Earthquake Fault Zone. The California Building Code categorizes the Project Area as being located in Seismic Zone 3, which is generally considered to be one of the least seismically active areas in California (California Geologic Survey, 2013).

The alluvial deposits present at the project site extend to approximately 1,200 feet below ground surface. Where they have not been extracted due to mining, the near surface soils that underlie the project site consist of a mix of Hanford Series, Grangeville Series, Cajon Series, Tujunga Series, Visalia Series, and Riverwash. Some of the Grangeville Series soils are saline-alkali soils. With the exception of Riverwash, soils onsite are generally characterized as having good drainage, high internal drainage, and severe erosion hazard. In general, the project site exhibits a high potential for erodibility. The Study Area is

located within, and bordered by, the remains of a reclaimed gravel mining operation to the north, east, and west, and by the San Joaquin River to the south. As a result of the gravel mining operations, which took place as recently as 2005, the Study Area is located in a very disturbed context, with little to no natural topography remaining. Slopes adjacent to former sand and gravel pits are high-energy environments for erosion processes. Rilling and gullying are currently evidenced onsite at the edge of former sand and gravel pits. However, landslides and slumping are not expected adjacent to former gravel pits due to the low slopes.

The Project is located in a low-severity earthquake zone, and no active faults are known to occur in the project site. The nearest faults to the project site are the Ortigalita Fault Zone and the San Andreas (Creep) Fault Zone, approximately 47 miles southwest and 67 miles southwest of the project site, respectively. The River West Madera Plan, pages 94-100 contain further information on geology and soils in the project area.

Land now owned by the Conservancy has a long history of sand and gravel mining. This land provided roughly one million tons of sand and gravel, annually, beginning in the early 1960s and ending in 2005. Approximately 40 million tons of sand and gravel are estimated to have been extracted from the area.

3.8.1 Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for the proposed project. Under the No Action Alternative, the Conservancy may pursue a smaller scale project.

The project would have no earthquake or seismic-related impacts (California Geologic Survey, 2013). Project construction would occur in a reclaimed gravel pit on the San Joaquin River just downstream of the Conservancy's Van Buren Unit, and upstream of the Conservancy-owned Sycamore Island recreation area. All construction activities would occur in the river bottom and in areas with shallow slopes where landslides and land slumping are unlikely to occur. Consequently, the Project would have no impacts associated with landslides. Collapsible soils undergo a volume reduction when the pore spaces become saturated, causing loss of grain-to-grain contact and possibly dissolving of interstitial cement holding the grains apart, potentially causing instability. The Project is not located in an area with collapsible soils.

The fill material used in the saddle, to strengthen the berm, and to create floodplain will comply with requirements of the California Buildings Standards Code (SC 8). Vehicles would be able to drive over the berm and saddle once construction is complete, however no structures would be constructed as part of the Project. Project construction would not cause soil to become unstable or collapse nor would the Project cause geologic or soil

impacts related to landslide, lateral spreading, subsidence, liquefaction or collapse. The Project would not create a substantial risk to life or property.

Proposed Action

The proposed action would have impacts similar to those described for the no action alternative. Excavation and construction of floodplains would expose soils to erosion. Increased erosion could occur during clearing of the staging areas for use, excavating material from the borrow site, when stockpiling fill material and topsoil, and when constructing floodplains. Excavation during Project construction would require removal of topsoil in the staging areas, in the borrow area, and during construction of the floodplains.

While the Project proposes to remove approximately 50,000 cy from borrow sites (Figure 2), the material would be used as fill for floodplain creation in the same geographical area. Borrow material extracted from Borrow Site 1 would be used to create floodplain in the river less than one mile away from the borrow site. Material in Borrow Site 2, if used, would be transported approximately one mile south to the project area to create the floodplain habitat. Since the borrowed materials would be used as fill in the same locale, the proposed action would not result in the loss of availability of any regionally or locally important mineral resources. If reclamation of the borrow sites is not implemented upon construction completion, impacts associated with excavation of the borrow sites could occur. Implementation of the Air Quality environmental commitments, as described in Section 2.3, would avoid and minimize potential impacts to geology and soils.

3.9 Hazards and Hazardous Materials

Affected Environment

The Project is located in a rural area approximately one and one-half miles from Children's Hospital in Madera County and one mile from the nearest school. Although Children's Hospital operates a helicopter pad, there are no public or private airstrips within 2 miles of the Project. There is a residential area in the Project vicinity; the closest residence to the Project Area is located approximately 0.26 miles away. The Project Area does not have any record of historic hazardous materials from previous land uses as designated under Government Code Section 65962.5, as shown on the Hazardous Waste and Substances Sites "Cortese" List (California Department of Toxic Substances Control, 2007). The County of Madera inspected and ensured the proper reclamation of the Calaveras Materials and San Joaquin Sand and Gravel mining operations, including proper cleanup of surface spills, removal of tanks and stored materials, etc. The County released the performance bonds the companies had posted to guarantee required reclamation and cleanup. However, two abandoned vehicles are located near Borrow Site 1 in the area proposed for backfilling of a road breach. The Regional Board has enforced a clean-up program to limit the spread of contamination in the area pursuant to California Government Code Section 65962.5.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for the proposed project. Under the No Action Alternative, the Conservancy may pursue a smaller scale project. Construction materials such as boulders, fill, and topsoil would be transported to the project area, but hazardous materials would not be transported into the Project Area. The project would not impair implementation of either the Fresno County or Madera County emergency response plans (Madera County, 2014; Fresno County, 2014). Potentially hazardous materials such as gasoline, oil, and other lubricants necessary for operation of construction equipment would be present at the project site and could accidentally be released into the environment.

Proposed Action

The proposed action would have impacts similar to those described for the no action alternative.

Potentially hazardous materials such as gasoline, oil, and other lubricants necessary for operation of construction equipment would be present at the project site and could accidentally be released into the environment. The two abandoned vehicles near the proposed road breach area near Borrow Site 1 would need to be removed before fill is placed to repair the road breach. Removal of the existing abandoned vehicles may also accidentally discharge hazardous material to soil or water. Contamination of the soil beneath the vehicles may have already occurred, and further contamination could occur when removing these vehicles.

Backfilling of the breach road on Borrow Site 1 would require grading and placement of fill. If the soil contains contaminants from the abandoned vehicles, these substances could further contaminate soil and water during construction. Soil with significant petroleum and/or VOC when exposed to the atmosphere can also affect air quality and San Joaquin Valley Air Pollution Control District's Rule 4651: "Volatile Organic Compound Emissions from Decontamination of Soil" will be implemented if contaminated soil is found (SJVAPCD 2007). Rule 4651 is a set of guidelines, with the purpose of limiting VOC emissions from excavation and treatment of soil that has been contaminated by organic fluid from spills, leakage from storage, or other types of leakage.

The project area is located in a floodplain composed of ruderal grassland. The closest residence is approximately 0.26 miles away. During the summer, the landscape becomes dry and the fire danger increases. Operation of construction vehicles and tools could increase fire risk especially in areas with dry grass.

Presence of a construction site in a recreation area could pose a public health and safety hazard. Public safety could be impacted if the public accesses the construction area, the borrow sites, or if people in boats or kayaks unexpectedly come across the temporary crossing or turbidity curtain (if one is used).

Implementation of the Hazards and Hazardous Materials environmental commitments, as described in Section 2.3, would avoid and minimize potential impacts from hazards and hazardous materials under the proposed action.

3.10 Aesthetics

Affected Environment

The Project is located in portions of Madera and Fresno Counties at River Mile 253.5 (Figure 1). The area is zoned as Planned Open Space (POS) on the Madera County side, and Agriculture Exclusive-5 acres (AE-5) and POS on the Fresno County side. Project construction would occur in the San Joaquin River floodplain on reclaimed gravel mines which have been converted to a recreation area called Sycamore Island and a conservation area called the Van Buren Unit. The surrounding habitat is highly disturbed with some remnant riparian and wetland vegetation.

The area surrounding the project area consists of a relatively flat floodplain surrounded by relatively steep river bluffs. The most prominent landforms within the project area include the steep, north and south facing bluffs, the San Joaquin River main channel, and numerous pits and ponds along the river from previous gravel mining operations. Ground surface levels in the project area and vicinity range from 249 feet at the river low water level to 331 feet at the top of the river bluff south of Children's Hospital Central California (Children's Hospital). Bluff slopes range between a 60 percent and 80 percent grade on both the north and south sides of the river floodplain. Elevations along the bluff in Madera County average 330 feet, and elevations along the river bottom average 250 feet.

The project area can be seen from vehicles on SR 41, the Avenue 7 ½ access to Sycamore Island, and the Avenue 9 access near SR 41. The project area can also be seen from the Palm and Nees Avenue access although the entry is currently closed to vehicular access. Open space and trail views of the project area can be seen from the northwest corner of Woodward Park in the City of Fresno and from a trail located along the bluff adjacent to residential communities in the City of Fresno. Other public views of the project area are limited due to obstruction by private residences, office buildings, and limited access due to the bluffs that surround the site. The Project Area is in the direct view of these residences and businesses.

Motorists can see the Van Buren Unit looking west of the SR 41 Bridge over the San Joaquin River. Additionally, direct views of the river, views of the River Park Golf Center, and Children's Hospital are available from the highway.

The southeast corner of the future Gunner Ranch development is situated 90 feet above the project area, and separated by a steep bluff with a greater than 80 percent grade. The bluff top offers uninterrupted views of the Van Buren Unit and the center of the project site. Views looking upriver are also afforded, as well as views of the opposite bluff and the City of Fresno. This area currently is largely undeveloped. All of Sycamore Island is

visible from the access from Avenue 7 ½ in Madera County, and nearly all of the open water ponds created by mining activity on the Moen property are visible. Views of the river channel are blocked by sycamore and eucalyptus trees. The southern river bluffs within the City of Fresno are visible, as well as residential and office developments on top of the bluff. A one-half mile public trail follows the southern bluff in the City of Fresno beginning at Del Mar Avenue and ending at Churchill Avenue. The trail offers expansive views of the river bottom. Views are offered east to SR 41 and the Van Buren Unit and westward including Sycamore Island. The entire northern bluff in Madera County is visible as well. Spano Park, located at the northern terminus of Palm Avenue in the City of Fresno, offers a bluff-top view of the entire project area. Spano Park offers the highest public vantage point in the vicinity of the project area from which to view the river bottom. Pages 18-32 of the River West Madera Plan contain more detailed information on aesthetic resources in the project area.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, Reclamation would not provide funding for the proposed project. Under the No Action Alternative, the Conservancy may pursue a smaller scale project. Project construction activities would be visible from the SR 41 Bridge, the Gunner Ranch property, the Avenue 7½ access, the bluff trail at Del Mar Avenue, from Spano Park, and the homes and offices on the edge of the bluff in Fresno. Although river views and hiking opportunities are available at Sycamore Island and the bluff trail, there are no designated scenic vistas in the project vicinity.

Although river views and hiking opportunities are available in the project vicinity, there are no designated scenic resources, historic buildings, or scenic highways in the project area (DOT, 2013). Ten native trees would be removed during project construction; most of these would be along the existing berm. After construction is completed, the berm area would be revegetated as part of the overall floodplain habitat restoration.

While construction equipment and activities would be visible during the six month construction period, once construction is complete, the area disturbed during construction would be revegetated. Because the habitat currently in the project area is disturbed with only remnants of native vegetation, the Project would ultimately improve the visual character and quality of the site and surroundings.

The project does not include any features that would involve introducing new sources of light or glare. Work on the Project would begin at 6:00 am and end by 6:00 pm each day. Work at night would not be allowed, and no light sources would be necessary. The project would not introduce light or glare.

Proposed Action

The proposed action would have impacts similar to the No Action Alternative, but construction related impacts would occur for slightly longer. Impacts to aesthetics would

still be minor and short term, given that construction is anticipated to only last for 6 months.

3.11 Recreation

Affected Environment

Project construction would occur in the San Joaquin River floodplain in a reclaimed gravel mine which has been converted to a recreation area called Sycamore Island and a conservation area and future recreation area called the Van Buren Unit. The surrounding habitat is highly disturbed with some remnant riparian and wetland vegetation.

Picnicking and hiking opportunities exist near the construction area as well as a boat ramp located approximately 280 feet from the Project's proposed temporary crossing. Two other boat ramps are located approximately one-half mile west of the project area.

Environmental Consequences

No Action Alternative

Under the No Action Alternative, no recreation facilities would be disturbed or replaced. No existing or proposed recreational opportunities would be adversely affected. Accordingly, there would be no adverse impacts on recreation.

Proposed Action

Implementation of the project would provide access continuity in the area designated in the 1995 *San Joaquin River Parkway Interim Master Plan*, including approximately 800 acres of publicly accessible park and recreation land. The Project would provide for secondary, emergency egress from Sycamore Island, and improve access for emergency response and public safety agencies. Public access in the construction area would pose a safety hazard; consequently access to some picnicking, hiking, kayaking, canoeing, rafting, and boating areas would be restricted during the six month construction period. The Project would not increase the use of Parkway facilities to the point that accelerated deterioration of facilities would occur. Implementation of the Recreation environmental commitments, as described in Section 2.3, would avoid and minimize impacts to recreation under the Proposed Action.

3.14 Cumulative Impacts

Cumulative impacts of the Proposed Action and other past, present and reasonably foreseeable future actions to restore habitat along the San Joaquin River, including implementation of other SJRRP projects contributing to achieving the Restoration Goal would have a beneficial effect on water quality and aquatic resources, including salmonid

habitat designated as Essential Fish Habitat in accordance with the Magnuson Stevens Fishery Conservation and Management Act. The Proposed Action would contribute to a cumulative beneficial effect on recreation as part of the Conservancy's Parkway Plan and River West Plan.

The proposed action would not contribute to cumulative impacts on cultural resources, noise, hazardous materials, transportation, public utilities and services, or aesthetics.

Terrestrial biological resources would continue to be affected by other types of activities that are ongoing or proposed but unrelated to the Proposed Action. Impacts on terrestrial biological resources from implementation of the Proposed Action would occur only during temporary and short-term construction activities. The Proposed Action, when added to other existing and proposed actions, would not contribute to the cumulative impact on terrestrial biological resources because construction activities would be short-term and because effects on these resources would be avoided or minimized with implementation of the environmental commitments.

Because this Project is consistent with the long-term implementation of plans that will restore river habitat, changing its recent gravel mining history to open space and recreational use, and because Project GHG emissions would be consistent with AB 32 emission targets and implementation of additional of the mitigation measures will further reduce GHG emissions, the Project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs would be less than cumulatively considerable. The Proposed Action, when added to other existing and proposed actions, would not contribute to cumulative impacts on global climate change because of the *de minimis* magnitude of annual GHG emissions and the short-term nature of construction-related GHG impacts. Implementing the Proposed Action would not change operations and, therefore, would not change long-term impacts on global climate change. Furthermore, according to SJVAPCD's definition of cumulative impacts, the Proposed Action would not considerably contribute to global climate change.

4.0 Consultation and Coordination

Reclamation has coordinated preparation of this EA with the Conservancy, SJRRP Implementing Agencies and Parties to the Settlement. A draft of this EA was made available for a 15 day public review period. Section 5 of this EA includes public comments received and responses.

As the lead agency in accordance with NEPA, Reclamation is documenting compliance with all applicable regulations, including Federal regulations, as further described, below. The Conservancy, as the lead agency in accordance with the California Environmental Quality Act, is documenting compliance with all other applicable regulations, including State and local regulations, as applicable. The Conservancy completed a Final Initial Study/Mitigated Negative Declaration in March 2015.

4.1 Fish and Wildlife Coordination Act (16 USC Section 651 et seq.)

The Fish and Wildlife Coordination Act (FWCA) requires that Reclamation consult with fish and wildlife agencies (Federal and state) on all water development projects that could affect biological resources. Consultation is to be undertaken for the purpose of “preventing the loss of and damage to wildlife resources.” The FWCA Report is included as Appendix D.

4.2 Endangered Species Act (16 USC Section 1531 et seq.)

Section 7 of the ESA requires Federal agencies to ensure that discretionary Federal actions do not jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of the critical habitat of these species. Reclamation has completed informal consultation with the FWS regarding the proposed action’s potential effects on San Joaquin kit fox, the only terrestrial species listed under the ESA potentially occurring in the project vicinity. Given the fact that the species is not anticipated to be present in the project vicinity and given the avoidance and minimization measures incorporated into the proposed action as described in section 3.2, Reclamation has determined that the proposed action is not likely to adversely affect San Joaquin kit fox, and has received FWS’ concurrence with this determination.

As described in Section 3.2, Central Valley spring-run Chinook salmon is the only aquatic species listed under the ESA potentially occurring in the project vicinity. However, the Central Valley spring-run Chinook salmon that could occur in the project vicinity have been designated as a NEP, in accordance with Section 10j of the ESA, and

therefore should be considered as a species proposed for listing under the ESA. As described in Section 3.2, it is not currently possible for Central Valley spring-run Chinook salmon to volitionally reach the project vicinity. However, the SJRRP may trap any Central Valley spring-run Chinook salmon that return to the downstream (Reach 5) part of the SJRRP Restoration Area in Spring 2016 and transport them to the upstream (Reach 1) part of the SJRRP Restoration Area, near Friant Dam. While construction activities under the Proposed Action could have temporary direct and indirect impacts on fish that may occur in the Project Area, implementation of Water Quality and Central Valley Spring-Run Chinook Salmon environmental commitments, as described in Section 2.3, would avoid and minimize the potential for these effects so that the proposed action would not jeopardize the NEP of Central Valley spring-run Chinook salmon. The Proposed Action would have an overall beneficial effect on Central Valley spring-run Chinook salmon in the long term. Reclamation requested informal conference with NMFS in accordance with Section 7(a)4 of the ESA, and has received concurrence with this determination.

4.3 Magnuson Stevens Fishery Conservation and Management Act

The Magnuson Stevens Fishery Conservation and Management Act establishes a management system for national marine and estuarine fishery resources. This legislation requires that all Federal agencies consult with NMFS regarding proposed actions that may adversely affect Essential Fish Habitat (EFH). The San Joaquin River is defined as (EFH). With the implementation of the environmental commitments listed in Section 2.3, the proposed action would avoid and minimize potential construction-related adverse effects to EFH to the extent feasible. The proposed action would have an overall beneficial effect on EFH. Reclamation consulted with NMFS on the proposed action's potential effects to EFH, and NMFS provided no additional EFH recommendations.

4.4 National Historic Preservation Act (54 USC § 300101 et seq.)

The NHPA of 1966, as amended, is the primary Federal legislation that outlines the Federal government's responsibility to consider the effects of its actions on historic properties. The 36 CFR Part 800 regulations that implement 54 USC § 306108, commonly known as Section 106 of NHPA, describe how Federal agencies address these effects. Through the NHPA Section 106 process, pursuant to 36 CFR § 800.4(d)(1), Reclamation reached a finding of no historic properties affected for the proposed action. The SHPO concurred with this determination.

4.5 Migratory Bird Treaty Act (16 USC Section 703 et seq.)

The MBTA implements various treaties and conventions between the United States, Canada, Japan, Mexico, and the former Soviet Union for the protection of migratory birds. Unless permitted by regulations, the MBTA provides that it is unlawful to pursue, hunt, take, capture or kill, possess, offer to or sell, barter, purchase, deliver or cause to be shipped, exported, imported, transported, carried, or received any migratory bird, part, nest, egg, or product, manufactured or not. Subject to limitations in the MBTA, the Secretary may adopt regulations determining the extent to which, if at all, the hunting, taking, capturing, killing, possessing, selling, purchasing, shipping, transporting, or exporting of any migratory bird, part, nest, or egg will be allowed, having regard for temperature zones, distribution, abundance, economic value, breeding habits, and migratory flight patterns. As described in section 3.2, the proposed action incorporates measures to avoid and minimize, to the extent feasible, the potential for impacts to species protected by the MBTA.

4.6 Executive Orders 11988 – Floodplain Management and 11990 – Protection of Wetlands

Executive Order 11988 requires Federal agencies to prepare floodplain assessments for actions located in or affecting floodplains. Executive Order 11990 places similar requirements regarding actions in wetlands. The proposed action would have a long-term beneficial effect of restoring floodplain habitat in the project area.

4.7 Clean Air Act (42 USC Section 176 et seq.)

Section 176(c) of the Clean Air Act (42 USC 7506[c]) requires that any entity of the Federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity must demonstrate that the action conforms to the applicable State Implementation Plan (SIP) required under Section 110(a) of the Clean Air Act (42 USC 7401 [a]) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the national ambient air quality standards and achieving expeditious attainment of those standards. Each Federal agency must determine that any action that is proposed by the agency and that is subject to the regulations implementing the conformity requirements will, in fact conform to the applicable SIP before the action is taken. As described in Section 3.4, implementing the Proposed Action would not result in air quality impacts that would exceed Federal, state, or local thresholds.

4.8 Clean Water Act (16 USC Section 703 et seq.)

Section 401 and 404

Section 401 of the CWA (33 USC Section 1311) prohibits the discharge of any pollutants into navigable waters, except as allowed by permit issued under Sections 402 and 404 of the CWA (33 USC Sections 1342 and 1344). If new structures (e.g., treatment plants) are proposed that would discharge effluent into navigable waters, relevant permits under the CWA would be required for the project applicant(s). Section 401 requires any applicant for an individual USACE dredge and fill discharge permit to first obtain certification from the state that the activity associated with dredging or filling will comply with applicable state effluent and water quality standards. This certification must be approved or waived before the permit for dredging and filling is issued. Section 404 of the CWA authorizes USACE to issue permits to regulate the discharge of “dredged or fill materials into waters of the United States” (33 USC Section 1344). DWR is preparing applications for permits in accordance with Section 401 and 404 of the CWA. Construction activity will not commence until completion of all applicable permits and certifications.

5.0 Public Comments and Responses

As previously mentioned, a draft of this EA was made available for a 15 day public review. The draft EA and appendices were posted on Reclamation's Mid-Pacific Region Environmental Documents website. A press release was issued on October 9, 2015 by Reclamation's Mid-Pacific Regional Public Affairs Office. Two comment letters were received and are included below, along with responses and resulting changes to the EA, as appropriate.

12/8/2015

DEPARTMENT OF THE INTERIOR Mail - Sycamor Island burn restoration



Sycamor Island burn restoration

1 message

Fri, Oct 9, 2015 at 9:54 PM

Mrs Victorine,

Currently, the only available boat access is inside the pond in question and will make access to the river impossible unless the current boat ramp on the river is repaired. What is the plan regarding re-establishing the integrity of the existing very dangerous boat ramp. 1-1

Sincerely
Earl Malan

Response 1-1:

The scope of the Sycamore Island Pond Isolation Project does not include construction or improvement of boat launches. As stated in Section 3.11 of this EA, there are two other river access boat launches located within approximately one-half mile west of the project area, the nearest of which is in very poor condition as the commenter noted. The River West Madera Master Plan, approved by the Conservancy, includes future plans to improve and construct new boat launches at Sycamore Island. One proposed new boat launch at Sycamore Island is currently in the initial environmental planning phase pursuant to CEQA. The Conservancy, as the lead agency in accordance with CEQA, will provide public notices for this project to those who provide contact information by email to info@sjrc.ca.gov.



State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Central Region
1234 East Shaw Avenue
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(559) 243-4005
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EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director



October 26, 2015

Becky Victorine
Natural Resource Specialist
United States Bureau of Reclamation
2800 Cottage Way
Sacramento, California 95825

**SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
SAN JOAQUIN RIVER PARKWAY SYCAMORE ISLAND POND
ISOLATION PROJECT**

Dear Ms. Victorine:

The California Department of Fish and Wildlife (Department) has reviewed the Draft Environmental Assessment for the San Joaquin River Parkway Sycamore Island Pond Isolation Project (Project), submitted by the Bureau of Reclamation (Reclamation). The Project proposes to repair and improve a berm on Sycamore Island recreation area Pit 46e and backfill a pond crossing road on the Fresno County side. The Project will consist of construction of a temporary river crossing, construction of an equalization saddle, strengthening the existing berm, creation of a gravel road on top of the saddle and berm and creation of floodplain habitat. The Project is located near River Mile 253.5 on the San Joaquin River less than one mile north of the city of Fresno and approximately 1.6 miles downstream of State Route 41 Bridge in Madera and Fresno Counties. Project activities are anticipated to begin June 2016 and construction is anticipated to last 6 months, however construction may be split into two construction seasons.

While Reclamation, as the Federal Lead Agency, is preparing an Environmental Assessment (EA) to satisfy the requirements of the National Environmental Policy Act (NEPA), it is understood that this is a joint State and Federal project and the San Joaquin River Conservancy, as Lead State Agency, has completed a Mitigated Negative Declaration (State Clearinghouse #2015011041) in compliance with the California Environmental Quality Act (CEQA). A completed CEQA document is required for any State or local permits necessary for Project development, including if appropriate, an Incidental Take Permit (ITP) pursuant to Fish and Game Code 2081 (b) and/or Lake or Streambed Alteration Agreement pursuant to Fish and Game Code sections 1600 *et seq*, respectively, if "take" of species listed pursuant to the California Endangered Species Act (CESA) or impacts to Department jurisdictional aquatic

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features and associated habitats would occur. The Department has reviewed the Project and has the following comments.

Potential Project Impacts and Recommendations

Nesting Birds: The trees, shrubs and grasses within and in the vicinity of the Project footprint likely provide nesting and foraging habitat for songbirds and raptors. Project activities have the potential to negatively impact nesting birds if appropriate avoidance and minimization measures are not implemented. In addition to direct impacts, such as nest destruction, nests might be affected by noise, vibration, odors and movement of workers or equipment. The Department agrees that surveys for nesting birds should be conducted prior to Project activities and recommends surveys be conducted no more than 10 days prior to the start of any ground or vegetation disturbance. If active nests are located, the Department recommends a minimum no-disturbance buffer of 250 feet around active nests of non-listed bird species and a 500-foot no-disturbance buffer around the nests of unlisted raptors until the breeding season has ended, or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. Variance from these no-disturbance buffers may be implemented when there is compelling biological or ecological reason to do so, such as when the Project area would be concealed from a nest site by topography.

2-1

Swainson's Hawk (*Buteo swainsoni*; SWHA): SWHA, a species listed as threatened pursuant to CESA, has the potential to nest and forage within the Project footprint. To evaluate potential Project-related impacts, the Department agrees that surveys for nesting raptors should be conducted and recommends following the survey methodology developed by the Swainson's Hawk Technical Advisory Committee (SWHA TAC, 2000). If ground-disturbing Project activities are to take place during the normal bird breeding season (February 1 through September 15), the Department recommends that additional pre-construction surveys for active nests be conducted by a qualified biologist no more than 10 days prior to the start of construction. A minimum no-disturbance buffer of 0.5 miles is advised, and we recommend the buffer be delineated around active nests until the breeding season has ended or until a qualified biologist has determined that the birds have fledged and are no longer reliant upon the nest or parental care for survival. If such a buffer cannot feasibly be implemented, and work will occur during the avian nesting season, consultation with the Department is advised well in advance of ground-disturbing activities to determine if the Project can avoid take. If the take cannot be avoided, then an Incidental Take Permit from the Department is necessary to comply with CESA.

2-2

The Department also recommends compensation following the Department's Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (CDFG, 1994) for any loss of Swainson's hawk foraging habitat.

2-3

Burrowing Owl (*Athene cunicularia*): Burrowing Owl may occur within or adjacent to the Project site. To avoid impacts to this species, focused surveys should be conducted

2-4

following protocols established in the Staff Report on Burrowing Owl Mitigation (CDFG, 2012). If any ground-disturbing activities will occur during the burrowing owl nesting season (approximately February 1 through August 31), and potential burrowing owl burrows are present within the Project footprint, implementation of avoidance measures are recommended. In the event that burrowing owls are found, the Department's Staff Report on Burrowing Owl Mitigation suggests that impacts to occupied burrows be avoided in accordance with the following table unless a qualified biologist verifies through non-invasive methods that either: 1) the birds have not begun egg laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

2-4
continued

Location	Time of Year	Level of Disturbance		
		Low	Med	High
Nesting sites	April 1-Aug 15	200 m*	500 m	500 m
Nesting sites	Aug 16-Oct 15	200 m	200 m	500 m
Nesting sites	Oct 16-Mar 31	50 m	100 m	500 m

* meters (m)

Failure to implement this buffer zone could cause adult burrowing owls to abandon the nest, cause eggs or young to be directly impacted (crushed), and/or result in reproductive failure in violation of Fish and Game code and the Migratory Bird Treaty Act.

Spring-run and Fall-run Chinook Salmon (*Oncorhynchus tshawytscha*): There is potential for spring-run Chinook salmon (spring-run) and fall-run Chinook salmon (fall-run) to be within or adjacent to the Project site depending on the construction timing and instream conditions present during construction. Beginning spring 2016, spring-run adults may be present in the upper reaches of the San Joaquin River due to San Joaquin River Restoration Program (SJRRP) activities, including trap-and-haul of returning adults entering the Restoration Area and releases of ancillary adult broodstock from the Interim Salmon Conservation and Research Facility. After these adults spawn, their offspring could also be present in the river beginning October 2016. Fall-run adults have previously been released and will continue to be released in the upper reaches of the San Joaquin River as part of SJRRP trap and haul activities. Coordination with the Department and National Marine Fisheries Service is recommended prior to and during construction to reduce the likelihood that Chinook salmon will be impacted.

2-5

Federally Listed Species: The Department also recommends consulting with the USFWS on potential impacts to federally listed species including, but not limited to, San Joaquin kit fox. Take under the Federal Endangered Species Act (FESA) is broadly defined; take under FESA includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Consultation with the USFWS in order to comply with FESA is advised well in advance of any ground disturbing activities.

2-6

Becky Victorine
October 26, 2015
Page 4

If you have any questions regarding these comments, please contact Benessa Espino, Environmental Scientist, at the address provided on this letterhead, by telephone at (559) 243-4014, extension 274, or by electronic mail at Benessa.Espino@wildlife.ca.gov.

Sincerely,


Julie Vance
Regional Manager

cc: Department of Water Resources
South Central Region Office
3374 East Shields Avenue
Fresno, California 93726

National Marine Fisheries Service Southwest Region
650 Capitol Mall, Suite 5-100
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Ms. Melinda Marks
San Joaquin River Conservancy
5469 E. Olive
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Gerald Hatler
California Department of Fish and Wildlife

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CDFW, 2013. San Joaquin River Restoration Program Stream Temperature Monitoring Study 2012 Annual Report. California Department of Fish and Wildlife, October 18, 2013.

SWHA TAC, 2000. Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley. Swainson's Hawk Technical Advisory Committee, May 31, 2000.

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Response 2-1: DWR will conduct pre-construction surveys for nesting birds, including Swainson's hawks, burrowing owls, and other birds protected by the MBTA no more than 10 days prior to ground disturbing activities. DWR will coordinate with CDFW regarding the results of the surveys and any avoidance and minimization measures (proposed buffers) to be implemented, as appropriate.

Response 2-2: See Response 2-1. The proposed action is not anticipated to result in any loss of Swainson's Hawk foraging habitat.

Response 2-3: See Response 2-1.

Response 2-4: As stated in Section 3.2.1, the EA analyzes potential impacts of the proposed action on Central Valley spring-run Chinook salmon and Central Valley fall-run Chinook salmon, should they occur in the project vicinity. Text in Section 3.2.1 has been revised to clarify that potential effects to both Central Valley spring-run Chinook salmon and Central Valley fall-run Chinook salmon are being analyzed in the EA. Text in Section 4.2 has been revised to clarify that Reclamation has completed informal conference with NMFS in accordance with Section 7(a)4 of the ESA, and has received concurrence with the determination that the proposed action would not jeopardize the NEP of Central Valley Chinook salmon.

Response 2-5: As stated in Section 4.2 of the EA, Reclamation has completed informal consultation with FWS, in accordance with Section 7(a)2 of the ESA, on the proposed action's potential effects on San Joaquin kit fox, and has received concurrence with the determination that the proposed action is not likely to adversely affect San Joaquin kit fox.

6.0 List of Preparers and Reviewers

U.S. Bureau of Reclamation

- Jessica Fontaine, Project Management Technician
- Rebecca Victorine, Natural Resource Specialist
- Joanne Goodsell, Archaeologist

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