Draft

Environmental Impact Report for the Milburn Pond Isolation Project

State Clearinghouse No. 2020100145

March 2021

State of California
Department of Water Resources

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Abbreviations and Acronyms

ALUCP	Airport Land Use Compatibility Plan
AB	Assembly Bill
BMPs	best management practices
BPS	best performance standards
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfs	cubic feet per second
CH_4	Methane
CLUPPs	Fresno County Airport Land Use Commission Airport Land Use Policy Plans
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CCR	California Code of Regulations
CESA	California Endangered Species Act
cfs	cubic feet per second
CH_4	Methane
CLUPPs	Fresno County Airport Land Use Commission Airport Land Use Policy Plans
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CRHR	California Register of Historical Resources

CRPR	California Rare Plant Ranks
CTR	California Toxics Rule
cy	cubic yards
CVRWQCB	Central Valley Regional Water Quality Control Board
CWA	Clean Water Act
dB	decibel
dBA	A-weighted sound levels
DFG	California Department of Fish and Game
DFW	California Department of Fish and Wildlife
DOC	California Department of Conservation
DPM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EFH	Essential Fish Habitat
DTSC	California Department of Toxic Substances Control
EFH	Essential Fish Habitat
EIR	Environmental Impact Report
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ESA	Federal Endangered Species Act
FGC	California Fish and Game Code
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GGERP	Greenhouse Gas Emissions Reduction Plan
GHG	greenhouse gas
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HAP	hazardous air pollutant
HCP	Habitat Conservation Plan
HFCs	Hydrofluorocarbons
IPaC	Information for Planning and Conservation
L_{dn}	day-night average level
L_{eq}	equivalent sound level
L_{max}	maximum sound level
L_n	Percentile-exceeded sound level
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
Milburn Restoration Project	Milburn Habitat Restoration and Improvements Project

MLD	Most Likely Descendant
MMRP	Mitigation Monitoring and Reporting Program
MT CO_2e	metric tons of carbon dioxide equivalents
μin/sec	micro inch per second
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Communities Conservation Plan
NF_3	nitrogen triflouride
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NOP	Notice of Preparation
NPDES	National Pollution Discharge Elimination System
NRHP	National Register of Historic Places
NTR	National Toxics Rule
O&M	operations and maintenance
Parkway	San Joaquin River Parkway
Parkway Master Plan	San Joaquin River Parkway Master Plan
PFCs	perfluorocarbons
$PM_{2.5}$	particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter
PM_{10}	particulate matter equal to or less than 10 micrometers in aerodynamicdiameter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PPV	peak particle velocity
PRC	California Public Resources Code
project	Milburn Pond Isolation Project
RWQCB	Regional Water Quality Control Board
River Parkway Trust	San Joaquin River Parkway and Conservation Trust
saddle	equalization saddle
SF_6	sulfur hexaflouride
SGMA	Sustainable Groundwater Management Act
SHPO	State Historic Preservation Officer
SJRC	San Joaquin River Conservancy
SJRRP	San Joaquin River Restoration Program
SJVAB	San Joaquin Valley Air Basin
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLC	California State Lands Commission

SO_2	sulfur dioxide
SPCCP	Spill Prevention Control and Countermeasures Plan
SR	State Route
SRA	shaded riverine aquatic
SSJVIC	Southern San Joaquin Valley Information Center
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
TCR	Tribal cultural resource
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
VMT	vehicle miles travelled
WCB	Wildlife Conservation Board
WEAP	Worker's Environmental Awareness Program

Executive Summary

ES.1. Introduction

The California Environmental Quality Act (CEQA) specifies that a public agency must prepare an environmental impact report (EIR) on any project that it proposes to carry out or approve that may result in a significant effect on the physical environment (California Public Resources Code, Section 21080[d]). Serving as the CEQA lead agency, the California Department of Water Resources (DWR) has prepared this project-level EIR in accordance with CEQA and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15000 et seq.) to evaluate the potential environmental impacts associated with implementing the Milburn Pond Isolation Project (project). This EIR is an informational document which will inform public agency decision makers and the public of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project (State CEQA Guidelines, Section 15121[a]).

ES.2. Project Purpose and Objectives

The project purpose is to increase native fish survival in the San Joaquin River by isolating Milburn Pond from the San Joaquin River channel to prevent fish from passing between the river and this abandoned gravel pit. Specific objectives of the pond isolation project are to:

- reduce the likelihood of future berm breaches during high-flow events to ensure the pond does not become reconnected,
- reduce movement of non-native warmwater fish species from the pond to the river to increase native fish survival in the river,
- reduce movement of native salmonids from the river to the pond to increase native fish survival in the river, and
- minimize the potential for project-related impacts that would reduce pond or riparian habitat quality.

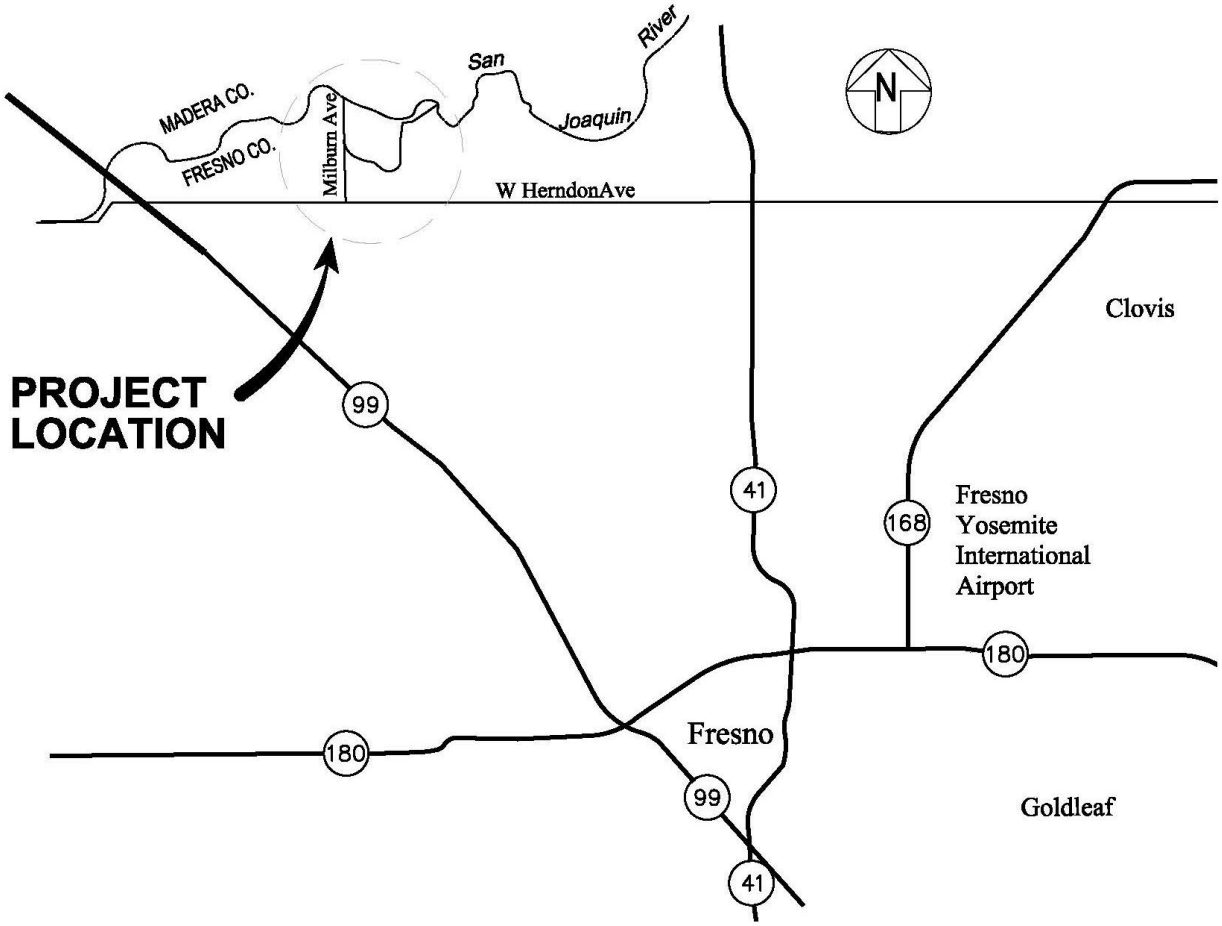
Isolating the pond from the river would also improve management access to the site.

ES.3. Proposed Project

The project is located on the south side of the San Joaquin River, immediately north of the City of Fresno and approximately 3 miles east of State Route 99, along the northern boundary of Fresno County, California (**Figure ES.1**).

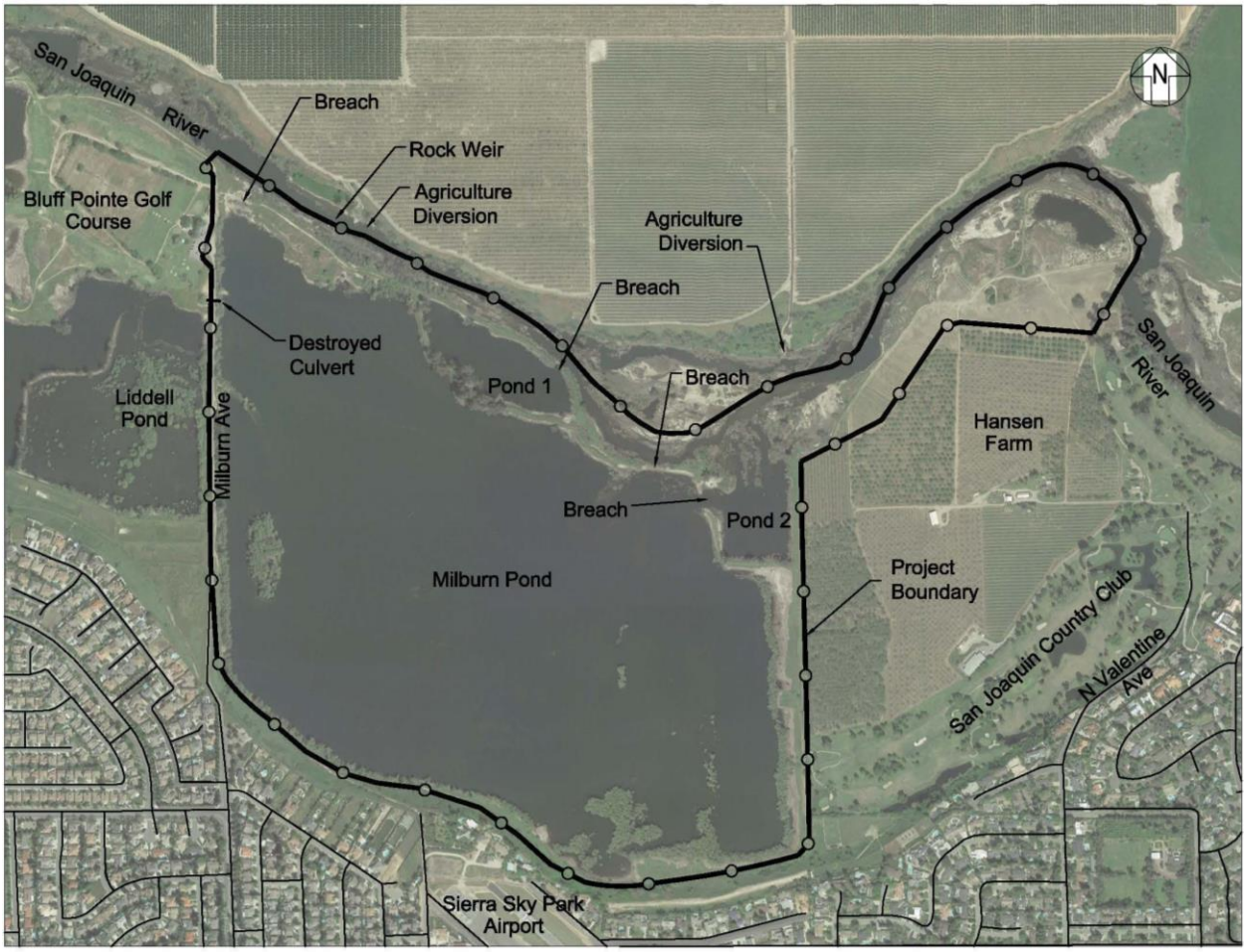
The project site includes the Milburn Unit and the Hansen Unit of the San Joaquin River Ecological Reserve, which is owned and managed by the California Department of Fish and Wildlife. The site, site, shown in **Figure ES.2,** is dominated by an abandoned gravel pit known as Milburn Pond.

Figure ES.1. Project Location



Source: California Department of Water Resources 2020

Figure ES.2. Project Site and Surrounding Project Area



Source: California Department of Water Resources 2020

DWR proposes to implement the following project elements:

- construct an equalization saddle between Pond 1 and Milburn Pond that will equalize Milburn during flow fluctuations;
- install a "modified" French drain under the equalization saddle to ensure water flow into Milburn Pond during low-flow conditions;
- modify the main berm to eliminate breaches, strengthen weak berm sections, and raise elevations of low berm sections to minimize future breaches;
- construct a new high-flow side channel;
- install rock slope protection and biotechnical erosion protection to minimize erosion;
- modify a portion of North Milburn Avenue to raise the berm elevation approximately 1 foot to avoid premature overtopping during flood releases from Friant Dam;
- plant native trees and other vegetation and manage invasive species for project mitigation and soil stabilization;

- improve construction access routes; and
- install and improve fencing, gates, and signage at Milburn and Hansen Unit boundaries.

ES.4. Project Alternatives

CEQA requires that an EIR describe and evaluate a range of reasonable alternatives to a project or to the location of a project that would feasibly attain most of the basic project objectives and avoid or substantially lessen significant project impacts (State CEQA Guidelines, Section 15126.6). In addition to evaluating the required No-Project Alternative, the alternatives to the proposed project considered in this Draft EIR were developed based on information gathered during preliminary project development and are summarized below.

Alternative 1: No High-flow Side Channel Alternative with On-site Borrow

Under this alternative, the high-flow side channel would not be constructed. This would reduce the size of the project footprint and avoid loss of riparian vegetation where the upstream end of the new channel would connect to the San Joaquin River. The potentially significant loss of riparian vegetation from the proposed project would be lessened but would remain potentially significant without mitigation under Alternative 1. Because the side channel would not be excavated and materials for project construction would be obtained onsite, the approximately 4.25-acre borrow area would not be returned to existing grade. The borrow area would be lower than the elevation of surrounding ground but would remain higher than the bank of the San Joaquin River.

Alternative 2: No High-flow Side Channel Alternative with Off-site Borrow

Similar to Alternative 1, under this alternative, the high-flow side channel would not be constructed, reducing the size of the project footprint and avoiding loss of riparian vegetation where the upstream end of the new channel would connect to the San Joaquin River. The potentially significant loss of riparian vegetation from the proposed project would be lessened but would remain potentially significant without mitigation under Alternative 2. In addition, the project footprint and impacts associated with ground-disturbing activities would be reduced by not excavating material from the on-site borrow area. Because the side channel would not be excavated and materials for project construction would be obtained from offsite, approximately 30,000 cubic yards of additional material would be imported. This material would be obtained from commercial sources within 40 miles of the project site.

ES.5. Areas of Controversy

DWR issued a Notice of Preparation (NOP) for this Draft EIR on October 8, 2020 in compliance with State CEQA Guidelines. DWR provided the NOP to local, State, and Federal agencies, as well as to organizations and individuals that have previously requested receipt of all DWR public notices for any project proposed by DWR. A virtual scoping meeting was held October 22, 2020. The NOP was circulated for comment for 30 days, ending on November 6, 2020.

Appendix A of this Draft EIR contains the NOP and copies of written comments that were received. Three State agencies and one adjacent property owner submitted written comments. No verbal comments were received. These comments discussed various topics recommended for consideration in the Draft EIR and potential required permits and authorizations, but no specific areas of controversy that pertain to the proposed project were identified through the scoping process. The only known area of controversy at this time is eliminating direct boat access to Milburn Pond from the San Joaquin River and related angling opportunities.

ES.6. Issues to be Resolved

There are no issues to be resolved.

ES.7. Public Review and Final EIR

DWR issued an NOP for this EIR on October 8, 2020, and the public comment period closed on November 6, 2020. A notice of completion for this Draft EIR has been filed with the State Clearinghouse, in accordance with the State CEQA Guidelines (Section 15085), and a notice of availability of this Draft EIR has been posted in accordance with State CEQA Guidelines (Section 15087). The public review period for providing comments on this Draft EIR is from Friday, April 2, 2021 to close of business at 5 p.m. on Monday, **May 17, 2021**. DWR will not conduct a public meeting on the Draft EIR.

This Draft EIR is being distributed to responsible and other potentially interested agencies, stakeholder organizations, and individuals. This distribution ensures that interested parties have an opportunity to express their views regarding the contents of the Draft EIR and that information pertinent to permits and approvals is provided to decision makers and CEQA responsible and trustee agencies by the lead agency. This document is available online at https://water.ca.gov/News/Public-Notices. A copy of this Draft EIR is available during walk-in business hours at:

Fresno County Public Library, Central Branch
2420 Mariposa Street
Fresno, CA 93721
Telephone: 559-600-7323
Walk-in library hours (at the time this Draft EIR was published):
10:00 a.m. to 6:00 p.m. on Tuesday and 10:00 a.m. to 4:00 p.m. on Friday and Saturday
(closed Sunday and closed to walk-in service Monday, Wednesday, and Thursday)

Madera County Library, Madera Headquarters
121 North G Street
Madera, CA 93637
Telephone: 559-675-7871
Walk-in library hours (at the time this Draft EIR was published):
10:00 a.m. to 6:00 p.m. on Monday and Wednesday, 10:00 a.m. to 3:00 p.m. on Saturday
(closed Sunday and closed to walk-in service Tuesday, Thursday, and Friday)

This Draft EIR is being distributed for a 45-day public review period that will end on Monday, May 17, 2021. Written comments must be received by the close of business (5 p.m.) on **May 17, 2021**. Written comments may be mailed, faxed, or e-mailed to:

Ms. Karen Dulik
California Department of Water Resources
South Central Region Office
3374 E. Shields Avenue
Fresno, CA 93726
Telephone: 559-230-3361
Fax: 559-230-3301
E-mail: Karen.Dulik@water.co.gov

Please indicate "Milburn Pond Isolation Project EIR" in the subject line. For comments by agencies and organizations, please include the name of a contact person for the agency or organization. All comments received, including names and addresses of commenters, will become part of the official administrative record and may be available to the public.

Upon completion of the public review period, DWR will review the comments received, prepare written responses to significant environmental points raised in the review and consultation process (State CEQA Guidelines, Section 15132), and, if necessary, revise the Draft EIR. Comments received, the responses to comments, and any necessary text revisions to the Draft EIR will be compiled as the Final EIR for consideration of the proposed project. Responses to comments on the Draft EIR will be made available for review by the commenting parties at least 10 days before certification of the complete EIR and project approval are considered.

DWR will adopt findings describing how each of the significant impacts identified in the EIR will be mitigated. The findings will also describe the reasons why project alternatives that were analyzed in the EIR were not selected for implementation. DWR will also adopt a Mitigation Monitoring and Reporting Program that describes how DWR will ensure the required mitigation measures are implemented. Finally, DWR will decide whether or not to approve the project as described in the EIR.

ES.8. Summary of Environmental Impacts and Mitigation Measures

CEQA requires that the environmental analysis contained in the Draft EIR also include a summary of the proposed project and its consequences, including identification of each potentially significant effect of the proposed project, the level of effect the proposed project may have, and proposed mitigation measures for all potentially significant or significant environmental effects. A full description of each of the proposed impacts and mitigation measures is found in Chapter 3.0, "Environmental Setting, Impacts, and Mitigation Measures," and a summary is provided in **Table ES-1**.

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.2 Aesthetics			
3.2.1 Adverse Effects on Scenic Vistas or Visual Character and Quality. The project would not substantially alter the existing visual character or quality of the project site, nor would it permanently impact scenic vistas. The project site would continue to be managed as an ecological reserve, and the visual character and scenic vista would be very similar to current conditions. Therefore, this impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.3 Agriculture and Forestry			
3.3.1 Conversion of Important Farmland. The project would convert approximately 0.5 acre of Important Farmland to nonagricultural land. However, the amount of land that would be converted compared to the overall amount of agricultural land in Fresno County is minimal. Therefore, this impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.3.2 Loss of Forestland. The project would result in removal of up to approximately 1.5 acre of forestland. This represents a small proportion of forestland on the project site and in the larger project vicinity. Therefore, this impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.4 Air Quality			
3.4.1 Conflict with Air Quality Plans. The project would generate construction-related mobile emissions and dust below the thresholds of significance and would not conflict with air quality plan	Less than significant	No mitigation is required.	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
implementation. Therefore, this impact would be **less than significant**.			
3.4.2 Increase in Criteria Pollutant Concentrations. Criteria air pollutant emissions would be below SJVAPCD's annual thresholds of significance. However, the project would generate maximum daily on-site construction-related NOx above SJVAPCD's screening level for ambient air quality. This would be a **significant** impact.	Significant	**3.4.2a: Implement Construction Equipment Nitrogen Oxides and Particulate Matter Controls.** DWR will reduce exhaust emissions for construction equipment greater than 50 horsepower used or associated with the proposed project by the following amounts from the Statewide average as estimated by CARB: ▪ 20 percent of the total NOx emissions ▪ 45 percent of the total PM10 exhaust emissions Emissions accounting methods will be as described in SJVAPCD Rule 9510. **3.4.2b: Implement San Joaquin Valley Air Pollution Control District Regulation VIII Fugitive PM10 Prohibitions Best Management Practices.** All projects are subject to SJVAPCD rules and regulations in effect at the time of construction. Control of fugitive dust is required by SJVAPCD Regulation VIII. DWR will implement or require its contractor to implement all SJVAPCD measures (SJVAPCD 2004) listed below that apply to the proposed project: ▪ Apply water to unpaved surfaces and areas. ▪ Use non-toxic chemical or organic dust suppressants on unpaved roads and traffic areas.	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		▪ Limit or reduce vehicle speed on unpaved roads and traffic areas. ▪ Maintain areas in a stabilized condition by restricting vehicle access. ▪ Install wind barriers. ▪ During high winds, cease outdoor activities that disturb the soil. ▪ Keep bulk materials sufficiently wet when handling. ▪ Store and handle material in a three-sided structure. ▪ When storing bulk material, apply water to the surface or cover the stage pile with a tarp. ▪ Do not overload haul trucks (overloaded trucks are likely to spill bulk materials). ▪ Cover haul trucks with a tarp or other suitable cover. Or, wet the top of the load enough to limit visible dust emissions. ▪ Clean the interior of cargo compartments on emptied haul trucks prior to leaving the site. ▪ Prevent trackout by installing a trackout control device. ▪ Clean up trackout at least once a day. If along a busy road or highway, clean up trackout immediately. ▪ Monitor dust-generating actives and implement appropriate measures for maximum dust control.	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.4.3 Expose Sensitive Receptors to Substantial Pollutant Concentrations. The project would generate construction-related mobile emissions and dust. Because of the temporary and localized emissions, and the distance from sensitive receptors to the primary work areas, this impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.5 Biological Resources			
3.5.1 Impacts on Special-status Plants. Construction activities would disturb potential habitat for special-status plants. Ewan's larkspur, Hoover's eriastrum, and Hoover's calycaldenia are unlikely to occur on the project site and be affected by project implementation. This would be a less-than-significant impact. Sanford's arrowhead, however, has been documented on the project site and could be impacted by construction activities. This would be a **potentially significant** impact.	Potentially Significant	**3.5.1: Minimize Potential Loss of Sanford's Arrowhead.** DWR and its construction contractor(s) will implement the following measures to reduce potential effects on Sanford's arrowhead: ▪ Within 1 year before ground-disturbing project activities begin, a qualified botanist shall conduct at least two focused surveys of suitable habitat for Sanford's arrowhead in and within 50 feet of the project disturbance footprint. The surveys shall be conducted during the specific blooming period for Sanford's arrowhead (May – October). If no individuals are found, no further mitigation is required. ▪ If Sanford's arrowhead is detected, impacts shall be avoided wherever possible by implementing a protective buffer around occupied habitat. A 50-foot buffer shall be implemented where feasible; where not feasible, the maximum buffer feasible shall be implemented. If feasible, given the site conditions, a protective barrier shall be	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		installed and maintained during construction activities to minimize impacts on occupied habitat that will be preserved adjacent to the construction footprint. If a barrier is not feasible, the avoidance area(s) shall be clearly marked with high-visibility flagging, stakes, and/or other means. ▪ If direct loss of Sanford's arrowhead plants cannot be avoided, a relocation and monitoring plan shall be developed and implemented. The plan shall outline methods for relocating unavoidable Sanford's arrowhead plants to other areas of suitable on-site habitat that will not be subject to project impacts, including potential future project phases. The plan shall include details about relocation methods, receptor site preparation, post-transplantation monitoring, and long-term protection and management.	
3.5.2 Impacts on Special-status Reptiles. Construction activities would disturb potential habitat for upland and aquatic special-status reptiles. Northern California legless lizard, California glossy snake, and coast horned lizard are unlikely to occur on the project site and be affected by project implementation. This would be a less-than-significant impact. Western pond turtle, however, has higher potential to occur on the project site and could be impacted by construction activities, if present. This would be a **potentially significant** impact.	Potentially Significant	**3.5.2: Minimize Potential for Death and Injury of Western Pond Turtle.** DWR and its construction contractor(s) will implement the following measures to reduce potential for death or injury of western pond turtle during project construction: ▪ A qualified biologist shall conduct a focused survey for western pond turtle in suitable aquatic and basking habitat within the construction footprint 10 days before onsite construction activities begin. If construction activities would begin during the pond turtle	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		nesting season (March through August), surveys shall also include suitable nesting habitat within the construction footprint. ▪ If a pond turtle nest is found, it shall remain undisturbed, if feasible, until the eggs have hatched. ▪ Before on-site project activities begin, all on-site project personnel shall attend a training program conducted by a qualified biologist. The program shall address special-status species that could occur on the project site and include a discussion of species identification, life history, general behavior, habitat, and sensitivity to human activities; State and Federal legal protections; and required avoidance and minimization measures. All on-site personnel also shall be provided contact information for the project biologist. ▪ If pond turtles are discovered in the construction area before or during construction activities, it shall be allowed to move out of the area on their own.	
3.5.3 Impacts on Special-status and Colonial-nesting Waterbirds. Construction activities could disturb occupied burrowing owl burrows and would remove suitable nest trees for Swainson's hawk, white-tailed kite, and colonial-nesting waterbirds. In addition, project activities adjacent to suitable burrows and nest trees could result in disturbance of nesting activities and potential abandonment. This would be a **potentially significant** impact.	Potentially Significant	**3.5.3a: Conduct Focused Surveys for Burrowing Owls and Avoid Loss of Occupied Burrows and Failure of Active Nests.** To minimize potential effects of project construction and maintenance on burrowing owl, DWR will ensure that the following measures are implemented, consistent with the Staff Report on Burrowing Owl Mitigation (DFG 2012).	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		▪ A qualified biologist shall conduct focused surveys for burrowing owls, in accordance with Appendix D of the Staff Report on Burrowing Owl Mitigation (DFG 2012). At a minimum, surveys shall be conducted during the breeding season of the year in which ground-disturbing project activities begin, and one survey shall be conducted within 10 days before on-site project construction or maintenance activities begin. ▪ If occupied burrows are observed, protective buffers shall be established and implemented. A qualified biologist, in consultation with DFW, shall determine the appropriate buffer for each occupied burrow; the buffer will depend on type and intensity of project disturbance, presence of visual buffers, and other variables that could affect susceptibility of the owl(s) to disturbance. A qualified biologist shall monitor the occupied burrows during project activities and adjust buffers, if needed, to ensure their effectiveness. ▪ Before on-site project activities begin, all on-site project personnel shall attend a Worker's Environmental Awareness Program conducted by a qualified biologist. The program shall address special-status species that could occur on the project site and include a discussion of species identification, life history, general behavior, habitat, and sensitivity to human activities; State and Federal legal protections; and required avoidance and minimization	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		measures. All on-site personnel also shall be provided contact information for the project biologist. ▪ If it is not feasible to implement a buffer of adequate size and it is determined, in consultation with CDFW, that passive exclusion of owls from the area of direct disturbance is an appropriate means of minimizing impacts, an exclusion and passive relocation plan shall be developed and implemented in coordination with CDFW. Passive exclusion will be conducted during the breeding season (February 1 – August 31), unless a qualified biologist verifies through noninvasive means that either (1) the birds have not begun egg laying or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival. ▪ If passive exclusion is conducted, each occupied burrow that is destroyed will be replaced with at least one artificial burrow on a suitable portion of the project site that will not be subject to project impacts, including potential future project phases. **3.5.3b: Conduct Focused Surveys for Swainson's Hawk, White-tailed Kite, and Colonial-nesting Waterbirds, Implement Buffers Around Active Nests, and Compensate for Removal of Known Swainson's Hawk Nest Trees.**	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		To minimize potential effects of project construction and maintenance on nesting Swainson's hawk, white-tailed kite, and colonial-nesting waterbirds, DWR will ensure that the following measures are implemented: ▪ A qualified biologist shall conduct surveys of potential Swainson's hawk nesting habitat within 0.5 mile of the project site, in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). Surveys shall be conducted during the breeding season before construction begins to determine if an active nest is present within 0.5 mile of the project site. In addition, surveys shall be conducted during the breeding season of the year in which ground-disturbing project activities begin, including within at least the two survey periods immediately before on-site construction or maintenance activities begin. If a lapse in project-related activities of 14 days or longer occurs, another focused survey shall be conducted before project activities resume. ▪ A qualified biologist shall conduct surveys of suitable nesting habitat for white-tailed kite and colonial-nesting waterbirds within 500 feet of project activities. Surveys shall be conducted within 10 days before on-site construction or maintenance activities begin near suitable nesting habitat during the nesting	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		season (March through August). If a lapse in project-related activities of 14 days or longer occurs, another focused survey shall be conducted before project activities resume. ▪ If active nests are found, DFW shall be consulted to determine if incidental take authorization may be required. Protective buffers shall be established and implemented during project construction until the nests are no longer active. A qualified biologist, in consultation with DFW, shall determine the appropriate buffer for each nest; the buffer will depend on type and intensity of project disturbance, presence of visual buffers, and other variables that could affect susceptibility of the nest to disturbance. A qualified biologist shall monitor the nests during project activities and adjust buffers, if needed, to ensure their effectiveness. ▪ Before on-site project activities begin, all on-site project personnel shall attend a WEAP conducted by a qualified biologist. The program shall address special-status species that could occur on the project site and include a discussion of species identification, life history, general behavior, habitat, and sensitivity to human activities; State and Federal legal protections; and required avoidance and minimization measures. All on-site personnel also shall be provided contact information for the project biologist.	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		▪ If a Swainson's hawk nest is found on the project site and the nest tree must be removed during project construction, compensation shall be provided by planting three appropriate native trees for each known Swainson's hawk nest tree that is removed. Replacement trees shall be planted at or near the project site or in another area that will be protected in perpetuity.	
3.5.4 Impacts on Special-status Mammals. Construction activities would disturb poor-quality habitat for American badger and San Joaquin kit fox. These species are unlikely to occur on the project site and be affected by project implementation. This impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.5.5 Construction-related Impacts on Special-status Fish. Project construction would include activities in and adjacent to ponds and the San Joaquin River, which support special-status fish. Potential for direct impacts during in-water work is low, and riverside vegetation removal would be very limited. These impacts would be less than significant. However, construction activities in and adjacent to aquatic habitat have potential to result in sediment and hazardous materials entering surface waters and indirectly affecting special-status fish. This would be a **potentially significant** impact.	Potentially Significant	**3.5.5a: Implement Mitigation Measure 3.7.2, "Prepare and Implement a Stormwater Pollution Prevention Plan and Best Management Practices to Reduce Erosion."** **3.5.5b: Implement Mitigation Measure 3.9.1, "Implement a Spill Prevention Control and Countermeasures Plan and Other Measures to Reduce the Potential for Environmental Contamination during Construction Activities."**	Less than significant
3.5.6 Long-term Impacts on Special-status Fish. The project would disconnect the typically warm water of Milburn Pond from the typically cooler water of the San Joaquin River. This disconnect would	Beneficial	No mitigation is required.	Beneficial

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
improve habitat conditions in the San Joaquin River for special-status fish species and reduce exposure to warmwater predators. This would be a **beneficial** impact.			
3.5.7 Riparian Habitat Removal. Project construction would remove up to approximately 5 acres of riparian habitat. The habitat quality is relatively low due to past mining activities and presence of nonnative species. However, riparian habitat has been greatly reduced along the San Joaquin River is critical to sustaining remaining wildlife populations. Therefore, the loss of riparian habitat would be **potentially significant**.	Potentially Significant	**3.5.7: Minimize Riparian Vegetation Removal and Compensate for Unavoidable Removal.** DWR and its construction contractor(s) will implement the following measures to minimize and compensate for riparian vegetation removal: ▪ Impacts on riparian vegetation outside the construction footprint shall be avoided by installing and maintaining a protective barrier, if feasible given the site conditions. If a barrier is not feasible, the avoidance area(s) shall be clearly marked with high-visibility flagging, stakes, and/or other means. ▪ An on-site Habitat Restoration and Enhancement Plan shall be developed and implemented in coordination with DFW land managers. The benefit of increased acreage or improved ecological function of on-site riparian habitat resulting from plan implementation will be considered before additional compensatory measures are proposed. ▪ If implementing the on-site Habitat Restoration and Enhancement Plan would not ensure no net loss of riparian habitat function or acreage, additional compensation shall be provided by otherwise creating, restoring, enhancing, or preserving riparian habitat	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		elsewhere at a sufficient ratio to ensure no net loss of habitat function or acreage. The appropriate ratio shall be determined in coordination with DFW during the FGC Section 1602 permitting process.	
3.5.8 Impacts on Federally and State-Protected Waters. Project construction would include activities in the San Joaquin River channel and ponds and connecting channels that are waters of the United States and waters of the State. Approximately 2 acres of waters would be at least partially filled along the north edge of Milburn Pond and channels connecting the river and pond. Project implementation would result in an overall improvement of habitat quality, but temporary impacts on water quality could occur during construction. This would be a **potentially significant** impact.	Potentially Significant	**3.5.8a: Implement Mitigation Measure 3.7.2, "Prepare and Implement a Stormwater Pollution Prevention Plan and Best Management Practices to Reduce Erosion."** **3.5.8b: Implement Mitigation Measure 3.9.1, "Implement a Spill Prevention Control and Countermeasures Plan and Other Measures to Reduce the Potential for Environmental Contamination during Construction Activities."**	Less than significant
3.5.9 Impacts on Fish and Wildlife Movement Corridors and Nursery Sites. Project construction would disturb a very small portion of the San Joaquin River channel and small portion of the associated terrestrial corridor. Construction activities would not occur at night or when anadromous salmonids are likely to be present. Therefore, impacts on fish and wildlife movement and potential anadromous salmonid spawning and rearing would be minor. This impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.5.10 Conflict with Local Ordinances and Policies. Project implementation would be consistent with goals and policies of local plans and the SJRRP. Some impacts related to habitats and species	Less than significant	No mitigation is required.	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
addressed in these plans would occur, but the overall result would be an improvement of habitat quality and ecological values. This impact would be **less then significant**.			
3.6 Cultural Resources and Tribal Cultural Resources			
3.6.1 Substantial Adverse Change in the Significance of a Historical Resource or an Archaeological Resource. Though unlikely, it is possible buried historical or archaeological resources are present on the project site. If encountered during project-related, ground-disturbing activities, these resources could be substantially impacted. This would be a **potentially significant** impact.	Potentially Significant	**3.6.1a: Implement Procedures for Inadvertent Discovery of Cultural Material.** If an inadvertent discovery of buried or otherwise previously unidentified historical resources, including archaeological resources (e.g., unusual amounts of shell, animal bone, any human remains, bottle glass, ceramics, building remains), is made at any time during project-related construction activities or project planning, DWR, with input from other interested parties, will develop and implement appropriate protection and avoidance measures, where feasible. If such resources are discovered during project construction, all work within a 100-foot-radius of the find shall cease. DWR shall retain a professional archaeologist meeting the Secretary of the Interior's Professional Standards for Archaeologists to assess the discovery and recommend what, if any, further treatment or investigation is necessary for the find. Culturally affiliated Native American Tribes will also be contacted concerning resources of Native American origin. Avoidance is the preferred mitigation measure for cultural resources. If avoidance is not possible, any necessary	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		treatment/investigation shall be developed in coordination with interested Native American Tribes providing recommendations to DWR and shall be completed before project activities continue in the vicinity of the find. The final disposition of archaeological, historical, and paleontological resources recovered on state lands under SLC jurisdiction will be approved by SLC. An inadvertent discovery plan shall be developed before construction begins and shall be implemented in the event of a discovery during project construction. **3.6.1b: Conduct Cultural Resource Awareness and Sensitivity Training.** DWR will conduct a pre-construction training session for all construction personnel before beginning any project-related, ground-disturbing work. Participants will sign a form acknowledging that they have received the training and agree to keep resource locations confidential and to stop work within 100 feet of any unanticipated discovery. Topics to be addressed in training sessions will include but are not limited to: regulations protecting cultural resources, including archaeological sites and TCRs; basic identification of archaeological resources and potential TCRs; and proper discovery protocols. Training will be provided by DWR and conducted by a qualified archaeologist who meets the Secretary of the Interior's Standards for Archaeology (36 CFR Part 61). If requested by a culturally affiliated Tribe, the training presentation will be developed in	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		consultation with Tribal representatives. Topics will include the potential presence and type of Native American and non-Native American resources potentially found during construction or other activities, required procedures in the event of a discovery, proper behavior in the presence of sacred remains and human remains, and necessary reporting protocols. Written materials will be provided to trained personnel, as appropriate.	
3.6.2 Disturbance of Human Remains, including Remains Interred Outside of Dedicated Cemeteries. Though unlikely, it is possible that undiscovered, buried, human remains are present on the project site and could be encountered during project-related, ground-disturbing activities. This would be a **potentially significant** impact.	Potentially Significant	**3.6.2: Avoid Potential Effects to Previously Unknown Human Remains.** If an inadvertent discovery of human remains is made at any time during project-related construction activities or project planning, DWR will implement the procedures listed below. If human remains are identified on the project site, the following performance standards shall be met prior to implementing or continuing actions, such as construction, that may result in damage to or destruction of human remains: ▪ In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, DWR will immediately halt potentially damaging excavation in the area of the burial and notify the Fresno County Coroner and a professional archaeologist to determine the nature of the remains. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (California Health and	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		Safety Code Section 7050.5[b]). If the Coroner determines that the remains are those of a Native American, he or she must contact NAHC by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]). After the Coroner's findings have been made, the archaeologist and the NAHC-designated MLD, in consultation with the landowner, shall determine the ultimate treatment and disposition of the remains. The responsibilities of DWR for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.9 et seq. ▪ Upon the discovery of Native American human remains, DWR will require that all construction work within 100 feet of the discovery stop, until consultation with the MLD has taken place. The MLD will have 48 hours to complete a site inspection and make recommendations to the landowner after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. PRC Section 5097.98(b)(2) suggests that the concerned parties may mutually agree to extend discussions beyond the initial 48 hours to allow for the discovery of additional	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		remains. DWR will record the site with NAHC or SSJVIC and record a document with Fresno County. ▪ If agreed to by the MLD and DFW land managers, DWR or its authorized representative will rebury the Native American human remains and associated grave goods with appropriate dignity on the project site, in a location not subject to further subsurface disturbance. If NAHC is unable to identify an MLD, the MLD fails to make a recommendation within 48 hours after being granted access to the site, or recommendation of the MLD is rejected and mediation by NAHC fails to provide measures acceptable to DWR, DWR or its authorized representative may also reinter the remains at a location not subject to further disturbance. DWR will implement mitigation to protect the burial remains. Construction work in the vicinity of the burials shall not resume until the mitigation is completed. ▪ If the human remains are of historic age and are determined not to be of Native American origin, DWR will follow the provisions of the California Health and Safety Code Section 7000 (et seq.) regarding the disinterment and removal of non-Native American human remains.	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.6.3 Substantial Adverse Change in the Significance of an Unidentified Tribal Cultural Resource. Though unlikely, it is possible that unidentified TCRs, in the form of a subsurface site, occur on the project site. If such a TCR is inadvertently discovered during project-related, ground-disturbing activities, it could be substantially impacted. This would be a **potentially significant** impact.	Potentially Significant	**3.6.3a: Implement Mitigation Measure 3.6.1a, "Implement Procedures for Inadvertent Discovery of Cultural Material."** **3.6.3b: Implement Mitigation Measure 3.6.1b, "Conduct Cultural Resource Awareness and Sensitivity Training."** **3.6.3c: Implement Mitigation Measure 3.6.2, "Avoid Potential Effects to Previously Unknown Human Remains."**	Less than significant
3.7 Geology, Soils, and Paleontology			
3.7.1 Impacts from Seismic or Soil Hazards. The design of engineered project features is based on site-specific geotechnical evaluation that considers and minimizes potential seismic and soil hazards. Therefore, this impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.7.2 Potential Temporary, Short-term Construction-related Erosion. The project includes construction activity adjacent to the San Joaquin River and Millburn Pond. Soil materials exposed during construction would be subject to wind and water erosion hazards. Therefore, implementing the project would result in a **potentially significant** impact.	Potentially Significant	**3.7.2: Prepare and Implement a Stormwater Pollution Prevention Plan and Best Management Practices to Reduce Erosion.** In addition to compliance with all applicable Federal, State, and local regulations, DWR will implement the following measures to further reduce construction-related erosion: ▪ Construction activities would likely be subject to construction-related stormwater permit requirements of the NPDES program. Any permits by the CVRWQCB will be obtained by DWR before any ground-disturbing construction activity. A SWPPP will be prepared that identifies BMPs to prevent or	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		minimize the introduction of contaminants into surface waters. Such BMPs could include, but would not be limited to, silt fencing, straw bale barriers, fiber rolls, storm drain inlet protection, hydraulic mulch, and a stabilized construction entrance. The SWPPP will include development of site-specific structural and operational BMPs to prevent and control impacts on runoff quality, measures to be implemented before each storm event, inspection and maintenance of BMPs, and monitoring of runoff quality by visual and/or analytical means. ▪ Water (e.g., trucks, portable pumps with hoses) will be used to control fugitive dust during construction activities that could cause substantial wind erosion.	
3.7.3 Potential Damage to or Destruction of Unique Paleontological Resources. The project site is underlain by recent sedimentary deposits that do not represent fossil-bearing geologic formations. This impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.8 Greenhouse Gas Emissions			
3.8.1 Direct Emission of Greenhouse Gases. Project construction activities would directly emit GHGs, but these emissions would be below the threshold of significance. This impact would be **less than significant**. In addition, DWR would implement project-level BMPs to reduce GHG emissions.	Less than significant	No mitigation is required.	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.9 Hazards and Hazardous Materials			
3.9.1 Possible Accidental Spills of Hazardous Materials used during Construction Activities. Project construction activities would include use of hazardous materials, including fuels, oils, lubricants, solvents, and corrosives. Construction contractors would be required to use, store, and transport hazardous materials in compliance with Federal, State, and local regulations during project construction. However, an accidental spill of hazardous materials could occur during project construction. This impact would be **potentially significant**.	Potentially significant	**3.9.1: Implement a Spill Prevention Control and Countermeasures Plan and Other Measures to Reduce the Potential for Environmental Contamination during Construction Activities.** In addition to compliance with all applicable Federal, State, and local regulations, DWR will implement the measures described below to further reduce the risk of accidental spills and protect the environment. ▪ Prepare and Implement a Spill Prevention Control and Countermeasures Plan. A written SPCCP will be prepared and implemented. The SPCCP and all material necessary for its implementation will be accessible onsite prior to initiation of project construction and throughout the construction period. The SPCCP will include a plan for the emergency cleanup of any spills of fuel or other material. Construction personnel will be provided the necessary information from the SPCCP to prevent or reduce the discharge of pollutants from construction activities to waters and to use the appropriate measures should a spill occur. In the event of a spill in waters, work will stop immediately and DFW and CVRWQCB will be notified within 24 hours. ▪ Dispose of All Construction-related Debris and Materials at an Approved Disposal Site. All debris, litter, unused materials, sediment,	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		rubbish, vegetation, or other material removed from the construction areas that cannot reasonably be secured will be removed daily from the project work area and deposited at an appropriate disposal or storage site. ▪ Use Safer Alternative Products to Protect Waters. Every reasonable precaution will be exercised to protect waters from pollution with fuels, oils, and other harmful materials. Safer alternative products (such as biodegradable hydraulic fluids) will be used where feasible. ▪ Prevent Any Contaminated Construction By-products from Entering Flowing Waters; Collect and Transport Such By-products to an Authorized Disposal Area. Petroleum products, chemicals, fresh cement, and construction by-products containing, or water contaminated by, any such materials will not be allowed to enter flowing waters and will be collected and transported to an authorized upland disposal area. ▪ Prevent Hazardous Petroleum or Other Substances Hazardous to Aquatic Life from Contaminating the Soil or Entering Waters. Gas, oil, other petroleum products, or any other substances that could be hazardous to aquatic life and resulting from project-related activities, will be prevented from contaminating the soil and/or entering waters.	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		▪ Properly Maintain All Construction Vehicles and Equipment and Inspect Daily for Leaks; Remove and Repair Equipment/Vehicles with Leaks. Construction vehicles and equipment will be properly maintained to prevent contamination of soil or water from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease. Vehicles and equipment will be checked daily for leaks. If leaks are found, the equipment will be removed from the site and will not be used until the leaks are repaired. ▪ Refuel and Service Equipment at Designated Refueling and Staging Areas. Equipment will be refueled and serviced at designated refueling and staging sites. All refueling, maintenance, and staging of equipment and vehicles will be conducted in a location where a spill will not drain directly toward aquatic habitat. Appropriate containment materials will be installed to collect any discharge, and adequate materials for spill cleanup shall be maintained onsite throughout the construction period. ▪ Store Heavy Equipment, Vehicles, and Supplies at Designated Staging Areas. All heavy equipment, vehicles, and supplies will be stored at the designated staging areas at the end of each work period. ▪ Install an Impermeable Membrane between the Ground and Any Hazardous Material in Construction Storage Areas. Storage areas for	

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
		construction material that contains hazardous or potentially toxic materials will have an impermeable membrane between the ground and the hazardous material and will be bermed as necessary to prevent the discharge of pollutants to groundwater and runoff water. ▪ Use Water Trucks to Control Fugitive Dust during Construction. Water (e.g., trucks, portable pumps with hoses) will be used to control fugitive dust during temporary access road construction. ▪ Use Only Nontoxic Materials and Materials with No Coatings or Treatments Deleterious to Aquatic Organisms for Placement in Any Waters. All materials placed in the river or other waters will be nontoxic and will not contain coatings or treatments or consist of substances deleterious to aquatic organisms that may leach into the surrounding environment in amounts harmful to aquatic organisms.	
3.9.2 Result in a Safety Hazard Related to Airport Operations. A portion of the project site is within the airport influence areas for the Fresno Yosemite International Airport and the Sierra Sky Park. However, the project would not introduce people or create hazards related to airport operations at either airport. This impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.9.3 Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan. The project site is accessed via two dead-end roads. Although project construction would include some heavy truck traffic and a portion of North Milburn Avenue may be temporarily closed, these activities would not interfere with emergency response or evaluation. This impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.10 Hydrology and Water Quality			
3.10.1 Impacts on Water Quality or Implementation of a Water Quality Control Plan. Project implementation would not contribute to increased water temperatures in Milburn Pond; this would be a less-than-significant impact. The project includes components within portions of the San Joaquin River and on-site ponds that have potential to impact water quality during project construction and O&M; this would be a **potentially significant** impact.	Potentially significant	**3.10.1a: Implement Mitigation Measure 3.7.2, "Prepare and Implement a Stormwater Pollution Prevention Plan and Best Management Practices to Reduce Erosion."** **3.10.1b: Implement Mitigation Measure 3.9.1, "Implement a Spill Prevention Control and Countermeasures Plan and Other Measures to Reduce the Potential for Environmental Contamination during Construction Activities."**	Less than significant
3.10.2 Impacts on Groundwater Supplies, Recharge, and Management. The project includes construction within a high priority, critically over-drafted groundwater basin. However, construction activities are unlikely to affect groundwater supplies, recharge, or sustainability in the project vicinity. This impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.10.3 Impacts on Drainage Patterns, Stormwater Facilities, and Flood Flows. The project includes construction within and near to the San Joaquin River. However, project components would improve the	Beneficial	No mitigation is required.	Beneficial

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
existing on-site drainage patterns and reduce long-term potential for erosion and siltation, improve on-site stormwater drainage, and reduce likelihood of berm failure during a flood event. These impacts would be **beneficial**.			
3.11 Land Use and Planning			
3.11.1 Conflict with Relevant Plans, Policies, and Zoning. The project would be consistent with the City of Fresno General Plan, the Fresno County General Plan, and the Parkway Master Plan. This impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.12 Noise			
3.12.1 Substantial Increase in Ambient Noise Levels. Project construction would temporarily increase noise levels in the project area and, in some cases, would exceed local noise level standards. However, construction projects are exempt from these standards during most hours when construction would occur. Therefore, this impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.12.2 Excessive Groundborne Vibration. Project construction would cause temporary groundborne vibration on the project site and in the immediate surroundings. Vibrations may in rare cases exceed local standards. However, construction projects are exempt from these standards. Therefore, this impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
3.12.3 Exposure of People Working in the Project Area to Excessive Airport Noise. The project site is within the ALUCP area for a local airport. However, aircraft noise levels would be relatively low, and workers at the site would not be exposed to excessive noise due to the project's location within an ALUCP. Therefore, this impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.13 Recreation			
3.13.1 Impacts on Existing Land-based Recreation. The project includes construction activity within the Parkway, but it would not limit access to or substantially degrade existing, land-based recreational use of the area. This impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.13.2 Impacts on Existing Water-based Recreation. The project would permanently remove direct access to Milburn Pond from the San Joaquin River by anglers. Although similar recreational activities exist nearby, this impact would be **potentially significant**.	Potentially significant	No feasible mitigation measures are available.	Potentially significant and unavoidable
3.14 Transportation			
3.14.1 Increase in Traffic Volumes along Designated Roadways in the Project Area. Construction activities would slightly increase traffic on North Milburn Avenue and North Valentine Avenue but would not lead to substantial delays. Construction traffic impacts would be temporary, and traffic would return to pre-project conditions following completion of construction activities. Traffic associated with O&M activities would be	Less than significant	No mitigation is required.	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation
minimal. Therefore, this impact would be **less than significant**.			
3.14.2 Increased Emergency Response Times or Inadequate Emergency Access. Construction-related vehicle trips would slightly increase traffic on local roadways, but this temporary increase would not affect emergency access and response times. O&M activities would be minimal and have no effect on emergency response or access. During potential temporary closure of North Milburn Avenue, a route passable for emergency vehicles would be maintained to provide access to areas beyond the closure. These impacts would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.14.3 Impacts on Alternative Transportation Modes. The project would not conflict with any adopted policies, plans, or programs related to transit, bicycle, or pedestrian facilities, nor would the project decrease the performance or safety or any existing facilities. Therefore, this impact would be **less than significant**.	Less than significant	No mitigation is required.	Less than significant
3.15 Wildfire			
3.15.1 Increase in Wildfire Risk. The project does not include any components that would increase wildfire risks, due to slopes, prevailing winds, or other factors. However, construction activities could temporarily increase fire risk. Therefore, implementing the project would result in a **potentially significant** impact.	Potentially significant	**3.15.1: Prepare and Implement an Emergency Fire Plan.** DWR will prepare and implement an emergency fire plan complying with all sections of California Fire Code Chapter 33 during project construction. The plan shall include preventative measures and emergency procedures specific to the project and site, current emergency telephone numbers, and an area map.	Less than significant

Table ES.1. Summary of Impacts and Mitigation Measures

Impact	Significance Before Mitigation	Mitigation Measure	Significance After Mitigation

Notes: ALUCP = Airport Land Use Compatibility Plan, BMPs = best management practices, CARB = California Air Resources Board, CVRWQCB = Central Valley Regional Water Quality Control Board, DFW = California Department of Fish and Wildlife, DWR = California Department of Water Resources, FGC = California Fish and Game Code, MLD = Most Likely Descendant, NAHC = Native American Heritage Commission, NOx = nitrogen oxides, NPDES = National Pollution Discharge Elimination System, O&M = operations and maintenance, PM10 = particulate matter equal to or less than 10 micrometers in aerodynamic diameter, SJRRP = San Joaquin River Restoration Program, SJVAPCD = San Joaquin Valley Air Pollution Control District, SLC = California State Lands Conservancy, SPCCP = Spill Prevention Control and Countermeasures Plan, SSJVIC = Southern San Joaquin Valley Information Center, SWPPP = Storm Water Pollution Prevention Plan, TCR = Tribal cultural resource.

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Chapter 1. Introduction

1.1 Project Overview

The California Department of Water Resources (DWR) is proposing the Milburn Pond Isolation Project (project). The project is the first phase of a potentially three-phase Milburn Habitat Restoration and Improvements Project, which was developed to a preliminary design level by DWR in 2019 with funding from the Wildlife Conservation Board (WCB), the San Joaquin River Conservancy (SJRC), and DWR's San Joaquin River Restoration Program (SJRRP). This document focuses on pond isolation, because it is a distinct action with independent utility that must be completed before any potential future phases, and its detailed design has been funded and initiated. Pond isolation is in no way dependent on potential future improvements and would independently achieve a primary objective of the larger multi-phase project (i.e., reducing salmon mortality). In addition, potential later phases are conceptual, do not yet have funding, and may not necessarily be implemented. This initial project would isolate the abandoned gravel pit known as Milburn Pond from the San Joaquin River channel to increase native fish survival by reducing movement of non-native warmwater fish species from the pond to the river and movement of native salmonids from the river to the pond.

1.2 Purpose of the EIR

The California Environmental Quality Act (CEQA) specifies that a public agency must prepare an environmental impact report (EIR) on any project that it proposes to carry out or approve that may result in a significant effect on the environment (California Public Resources Code [PRC], Section 21080[d]). Serving as the CEQA lead agency, DWR has prepared this project-level EIR in accordance with CEQA and the State CEQA Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3, Section 15000 et seq.) to evaluate the potential environmental impacts associated with implementing the proposed project. An EIR is an informational document used to inform public agency decision makers and the general public of the significant environmental impacts of a project, identify feasible ways to avoid or minimize the significant impacts, and evaluate a reasonable range of alternatives to the project that could feasibly attain most of the basic project objectives while substantially lessening or avoiding any of the significant environmental impacts (State CEQA Guidelines, Section 15121[a]).

1.3 Agency Roles and Responsibilities

According to the State CEQA Guidelines (Section 15064[f][1]), an EIR must be prepared whenever a project may result in a significant environmental impact. The State CEQA Guidelines (Section 15367) identify the lead agency as the public agency that is responsible for approving and implementing a project. As both the lead agency and the project proponent, DWR intends to use this EIR as a key document to fulfill major CEQA requirements.

CEQA requires that State, regional, and local government agencies consider the environmental impacts of projects over which they have discretionary authority before taking action on those

projects (PRC Section 21000 et seq.). CEQA also requires that each public agency avoid or reduce to less-than-significant levels, wherever feasible, the significant environmental impacts of projects it approves or implements. If a project would result in significant and unavoidable environmental impacts that cannot be feasibly reduced to less-than-significant levels, the adverse environmental effects may be considered "acceptable" if the specific economic, legal, social, technological, or other benefits, including region-wide or Statewide environmental benefits, of the project outweigh the significant and unavoidable adverse environmental impacts. In this case, the project can be approved if the lead agency makes a written "statement of overriding considerations" explaining the specific reasons to support its action.

The EIR also can be used as an informational document by responsible and trustee agencies that may have permitting or approval authority over aspects of the project.

A CEQA responsible agency is a State agency, board, or commission or any local or regional agency other than the lead agency that has a legal responsibility for reviewing, carrying out, approving, or permitting aspects of a project. Responsible agencies must actively participate in the lead agency's CEQA process and review its CEQA document. This EIR will be used by responsible agencies as a substantial basis in deciding whether to approve or permit project elements over which they have authority.

A CEQA trustee agency is a State agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. The California Department of Fish and Wildlife (DFW) is a trustee agency for the project, because the project would be implemented on a DFW ecological reserve, and the project could have an effect on fish and wildlife resources. The California State Lands Commission (SLC) is a trustee agency for the project because it has jurisdiction over State-owned sovereign lands, such as the San Joaquin River.

Federal agencies are not responsible agencies under CEQA. However, Federal agencies are required to comply with the National Environmental Policy Act in making determinations, and they may use the CEQA document as a basis for their analyses, if needed.

1.3.1 Lead Agency

DWR is responsible for providing documentation and implementing steps necessary to satisfy CEQA requirements for the proposed project. As the lead agency, DWR has prepared this Draft EIR, will be responsible for preparation of the Final EIR, and is responsible for ensuring that the EIR is available for review by the public and interested agencies and parties. DWR also will be responsible for EIR certification and project approval.

1.3.2 Responsible and Trustee Agencies

The following responsible and trustee agencies are anticipated to have jurisdiction over some aspects of the proposed project:

- DFW,
- SJRC,
- WCB,

- SLC,
- Central Valley Flood Protection Board,
- Central Valley Regional Water Quality Control Board (CVRWQCB),
- San Joaquin Valley Air Pollution Control District (SJVAPCD),
- Native American Heritage Commission (NAHC),
- State Office of Historic Preservation, and
- Fresno County.

1.3.3 Federal Agencies with Permitting/Approval Authority

The following Federal agencies are anticipated to have permit or approval authority over some aspects of the proposed projects:

- U.S. Army Corps of Engineers (USACE),
- National Marine Fisheries Service (NMFS), and
- U.S. Fish and Wildlife Service (USFWS).

1.4 EIR Scoping, Preparation, and Review Process

On October 8, 2020, DWR issued a notice of preparation (NOP) for this EIR. The NOP concluded that the project may have significant impacts on the environment, and informed agencies and the general public that an EIR was being prepared. The NOP invited comments on the scope and content of the EIR and participation at a virtual public scoping meeting. The NOP was electronically filed with the State Clearinghouse of the Governor's Office of Planning and Research and was sent electronically to agencies and members of the public. It was also posted on DWR's Web site and the CEQAnet Web Portal. The NOP was circulated for 30 days, as mandated by CEQA. The public comment period for the NOP closed on November 6, 2020.

DWR conducted a virtual public scoping meeting to solicit input from the community and public agencies to be considered in the selection and design of project alternatives and on the scope and content of the EIR. The virtual meeting was held on October 22, 2020 at 5 p.m. Notice of the scoping meeting was provided in the NOP, which was distributed in accordance with the State CEQA Guidelines (Section 15082[c]). **Appendix A** of this Draft EIR contains the NOP and written comments that were received (no verbal comments were received).

A notice of completion for this Draft EIR has been filed with the State Clearinghouse, in accordance with the State CEQA Guidelines (Section 15085), and a notice of availability of this Draft EIR has been posted in accordance with State CEQA Guidelines (Section 15087). The public review period for providing comments on this Draft EIR is from Friday, April 2, 2021 to close of business at 5 p.m. on Monday, **May 17, 2021**. DWR will not conduct a public meeting on the Draft EIR.

This Draft EIR is being distributed to responsible and other potentially interested agencies, stakeholder organizations, and individuals. This distribution ensures that interested parties have an opportunity to express their views regarding the contents of the Draft EIR and ensures that information pertinent to permits and approvals is provided to decision makers and CEQA

responsible and trustee agencies by the lead agency. This document is available online at https://water.ca.gov/News/Public-Notices. A copy of this Draft EIR is available during walk-in business hours at:

Fresno County Public Library, Central Branch
2420 Mariposa Street
Fresno, CA 93721
Telephone: 559-600-7323
Walk-in library hours (at the time this Draft EIR was published):
10:00 a.m. to 6:00 p.m. on Tuesday and 10:00 a.m. to 4:00 p.m. on Friday and Saturday
(closed Sunday and closed to walk-in service Monday, Wednesday, and Thursday)

Madera County Library, Madera Headquarters
121 North G Street
Madera, CA 93637
Telephone: 559-675-7871
Walk-in library hours (at the time this Draft EIR was published):
10:00 a.m. to 6:00 p.m. on Monday and Wednesday, 10:00 a.m. to 3:00 p.m. on Saturday
(closed Sunday and closed to walk-in service Tuesday, Thursday, and Friday)

This Draft EIR is being distributed for a 45-day public review period that will end on Monday, May 17, 2021. Written comments must be received by the close of business (5 p.m.) on **May 17, 2021**. Written comments may be mailed, faxed, or e-mailed to:

Ms. Karen Dulik
California Department of Water Resources
South Central Region Office
3374 E. Shields Avenue
Fresno, CA 93726
Telephone: 559-230-3361
Fax: 559-230-3301
E-mail: Karen.Dulik@water.co.gov

Please indicate "Milburn Pond Isolation Project EIR" in the subject line. For comments by agencies and organizations, please include the name of a contact person for the agency or organization. All comments received, including names and addresses of commenters, will become part of the official administrative record and may be available to the public.

1.5 Final EIR and EIR Certification

Upon completion of the public review period, DWR will review the comments received, prepare written responses to significant environmental points raised in the review and consultation process (State CEQA Guidelines, Section 15132), and, if necessary, revise the Draft EIR. Comments received, the responses to comments, and any necessary text revisions to the Draft EIR will be compiled as the Final EIR for consideration of the proposed project. Responses to comments on the Draft EIR will be made available for review by the commenting parties at least 10 days before certification of the complete EIR and project approval are considered.

If the project is approved, DWR will adopt findings describing how each of the significant impacts identified in the EIR will be mitigated. The findings also will describe the reasons why project alternatives that were analyzed in the EIR have not been adopted, if DWR chooses not to adopt a project alternative.

Finally, DWR will adopt a Mitigation Monitoring and Reporting Program (MMRP) that describes how it will ensure the required mitigation measures are implemented. CEQA (PRC Section 21081.6(a)(1)) requires public agencies to prepare and approve an MMRP as part of EIR certification. Throughout this Draft EIR, mitigation measures are clearly identified and presented in language that will facilitate development of the MMRP. A complete list of these mitigation measures is provided in Table ES-1 in the Executive Summary of this EIR. The MMRP will identify the specific timing, roles, and responsibilities for implementation of the mitigation measures.

1.6 Scope and Focus of the EIR

This Draft EIR does not address the following resources and associated impact mechanisms, because there is no potential that these resources would be significantly impacted by the proposed project:

- **Energy**
  - **Wasteful, inefficient, or unnecessary consumption of energy resources.** Project implementation would not include wasteful or unnecessary consumption of energy resources, because it would be required to meet air quality and greenhouse gas (GHG) emissions criteria that require the use of efficient equipment. In addition, project construction would be completed within the shortest period feasible, expected to be approximately 9 months, depending on San Joaquin River hydrologic conditions.
  - **Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.** The project would be constructed using efficient equipment and would not change operations and maintenance (O&M) from existing conditions. There would be no long-term impacts to energy resources, and the project would not conflict with or obstruct renewable energy or energy efficiency plans.
- **Mineral Resources**
  - **Loss of availability of a known mineral resource of value.** The project site is designated MRZ-1 in the Fresno County General Plan; an MRZ-1 designation means that adequate information indicates no significant mineral deposits are present on the project site. All mineral deposits of value were likely extracted from the site during previous mining activities, and known mineral resources of value would not be impacted.
  - **Loss of availability of a locally important mineral resource recovery site.** Because the project site is designated MRZ-1 in the Fresno County General Plan, the project would not impact a locally important mineral resource recovery site.
- **Population and Housing**

- **Induce substantial unplanned population growth in an area.** The project does not include housing or commercial development that would directly or indirectly induce population growth.
- **Displace substantial numbers of existing people or housing.** Project construction would occur in an undeveloped area, would not displace people or housing, and would be completed by local construction workers that would not need temporary housing. There would be no displacement of people or housing.

- **Public Services**
  - **Significant environmental impacts associated with new or physically altered governmental facilities.** The project would not require any new or increased government facilities to maintain public services, acceptable service ratios, response times, or other performance objectives for fire protection, police protection, schools, parks, or other public facilities. The project would not have any or only minimal effects on existing public services because it would be constructed on an existing ecological reserve without public services.
- **Utilities and Service Systems**
  - **Require or result in the relocation or construction of new or expanded utilities or service systems.** The project does not require new or expanded utilities or service systems.
  - **Have sufficient water supplies available to serve the project and reasonably foreseeable future development.** The project does not include and would not facilitate future development and does not require additional water supplies.
  - **Have adequate capacity to serve the project's projected wastewater treatment demand.** The project does not require wastewater treatment capacity.
  - **Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure.** The amount of waste estimated to be generated by the project is small and would not be in excess of standards or capacity of appropriate local disposal facilities.
  - **Comply with Federal, State, and local management and reduction statutes and regulations related to solid waste.** The project would comply with all statutes and regulations pertaining to solid waste.

This Draft EIR evaluates 14 environmental issue areas and other CEQA-mandated issues (e.g., cumulative impacts, growth-inducing impacts). The 14 environmental issue areas are:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources and Tribal Cultural Resources

- Geology, Soils, and Paleontological Resources
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Recreation
- Transportation
- Wildfire

1.7 Document Organization and Terminology

This Draft EIR is organized as follows:

- "Executive Summary" summarizes the findings and conclusions of this Draft EIR.
- Chapter 1, "Introduction," describes the purpose of this Draft EIR and associated agency roles and responsibilities, provides an overview of the CEQA and Draft EIR review processes, outlines the scope and focus of this Draft EIR, and describes its organization and terminology.
- Chapter 2, "Project Description," describes the project location, background, and context; discusses the project purpose and objectives; and describes the project components, including specific features, construction sequencing and methods, labor force, and O&M.
- Chapter 3, "Environmental Setting, Impacts, and Mitigation Measures," includes 14 environmental issue area sections pertinent to the project, each of which presents a discussion of the environmental setting; regulatory background; thresholds of significance, issues not discussed further in this EIR, and analysis methodology; environmental impact analysis (identifying beneficial impacts, less-than-significant impacts, potentially significant impacts, and significant impacts); mitigation for potentially significant and significant impacts; and impacts remaining significant after implementing mitigation.
- Chapter 4, "Other CEQA-Required Sections," describes the project's potential for growth-inducement, summarizes significant and unavoidable impacts and irreversible environmental changes, and describes impacts of implementing the prescribed mitigation measures.
- Chapter 5, "Cumulative Impacts," describes the impacts of implementing the project in combination with impacts of related past, present, and reasonably foreseeable future projects.
- Chapter 6, "Alternatives to the Proposed Project," describes CEQA requirements to consider alternatives to the proposed project, summarizes alternatives that were considered but rejected from detailed analysis, analyzes and compares impacts of alternatives evaluated in detail, and identifies the "environmentally superior alternative."
- Chapter 7, "Report Preparers and Reviewers," names the individuals who have contributed to preparation or review of this Draft EIR.
- Chapter 8, "References," lists the sources of information cited throughout this Draft EIR.

- "Appendices" provide background and technical information.

This Draft EIR uses the following defined standard terms:

- "Construction footprint" refers to the specific area in which construction activities would occur and generally relates to the area of direct project impact.
- "Project site" refers to the whole of the disjunct portions of the construction footprint and the intervening areas.
- "Project area" refers to areas adjacent to the project site.
- "Project vicinity" generally refers to an area that is broader than the project area but shares similar characteristics.

Chapter 2. Project Description

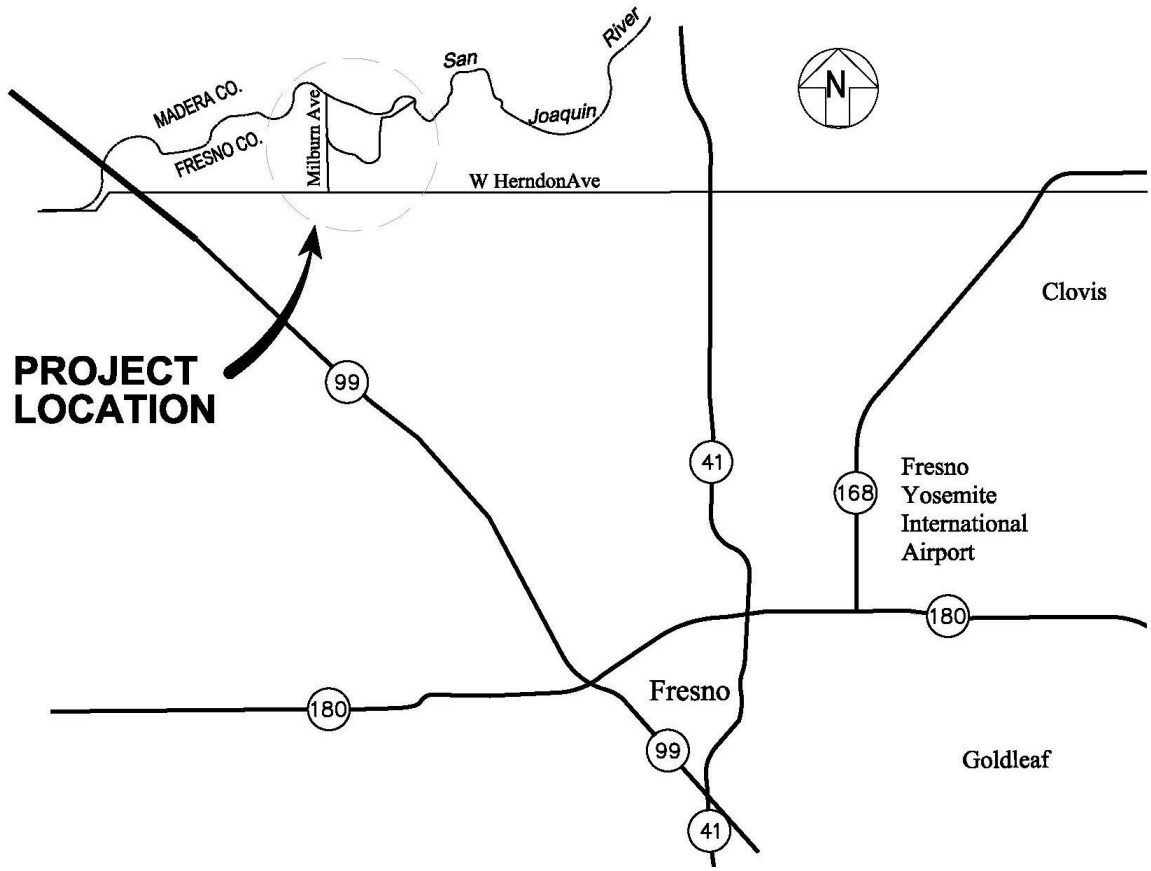
This chapter has three primary sections:

- Section 2.1, "Project Location," describes the regional location of the project site and its general surroundings, including the project area and vicinity;
- Section 2.2, "Project Purpose and Objectives," describes the overall purpose and specific objectives of project implementation; and
- Section 2.3, "Description of Proposed Project," describes the proposed project, including construction details and O&M.

2.1 Project Location

The project is located on the south side of the San Joaquin River, immediately north of the City of Fresno and approximately 3 miles east of State Route (SR) 99, along the northern boundary of Fresno County, California (**Figure 2.1**).

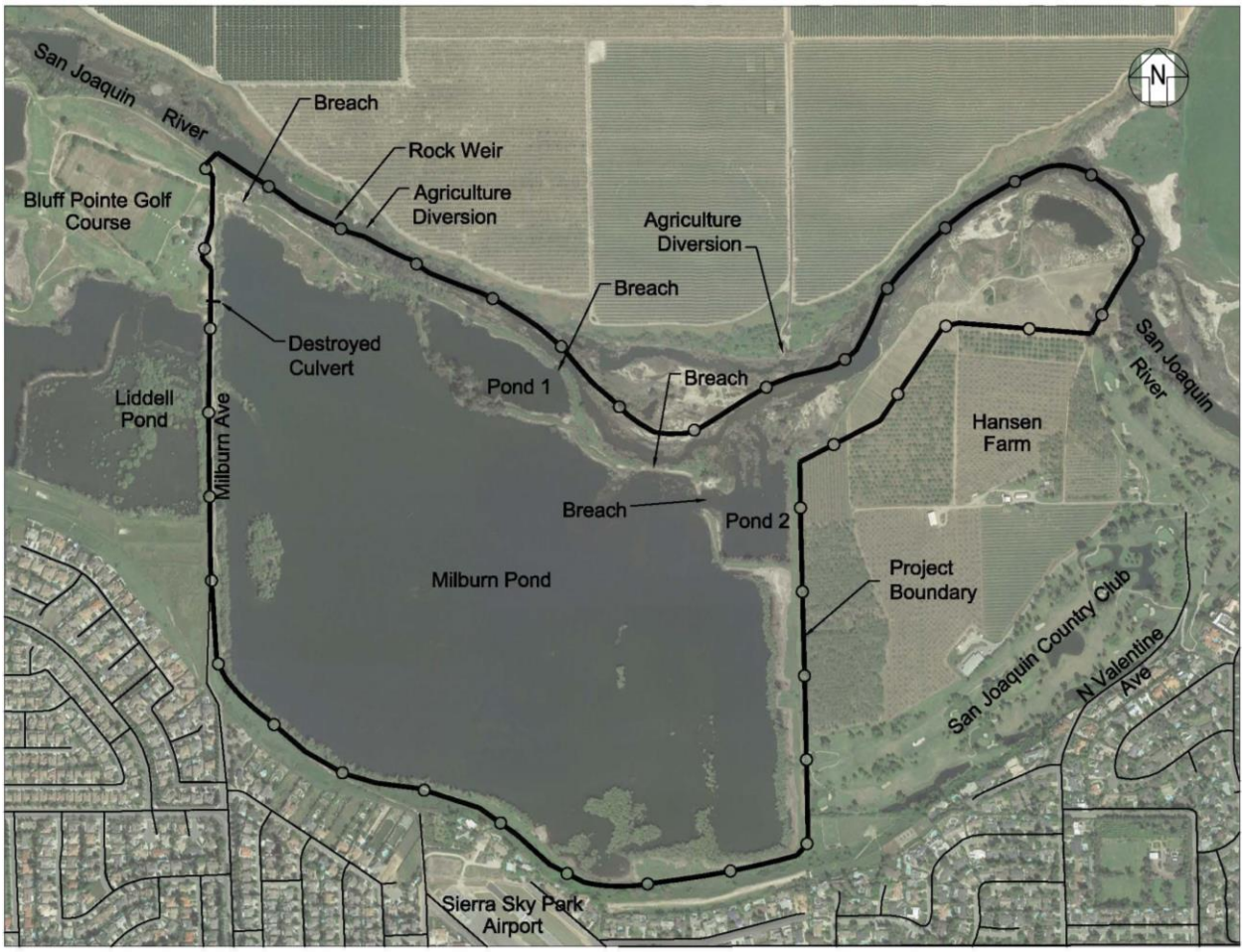
Figure 2.1. Project Location



Source: California Department of Water Resources 2020

The project site includes the Milburn Unit and the Hansen Unit of the San Joaquin River Ecological Reserve, which is owned and managed by DFW. The site, shown in **Figure 2.2,** is dominated by the abandoned gravel pit known as Milburn Pond. The eastern (upstream) portion of the site is a high terrace along the river channel that was previously mined for gravel. The surrounding project area includes privately-owned orchards at Hansen Farm and the San Joaquin Country Club to the east and the SJRC property currently leased to Bluff Pointe Golf Course and Learning Center to the west.

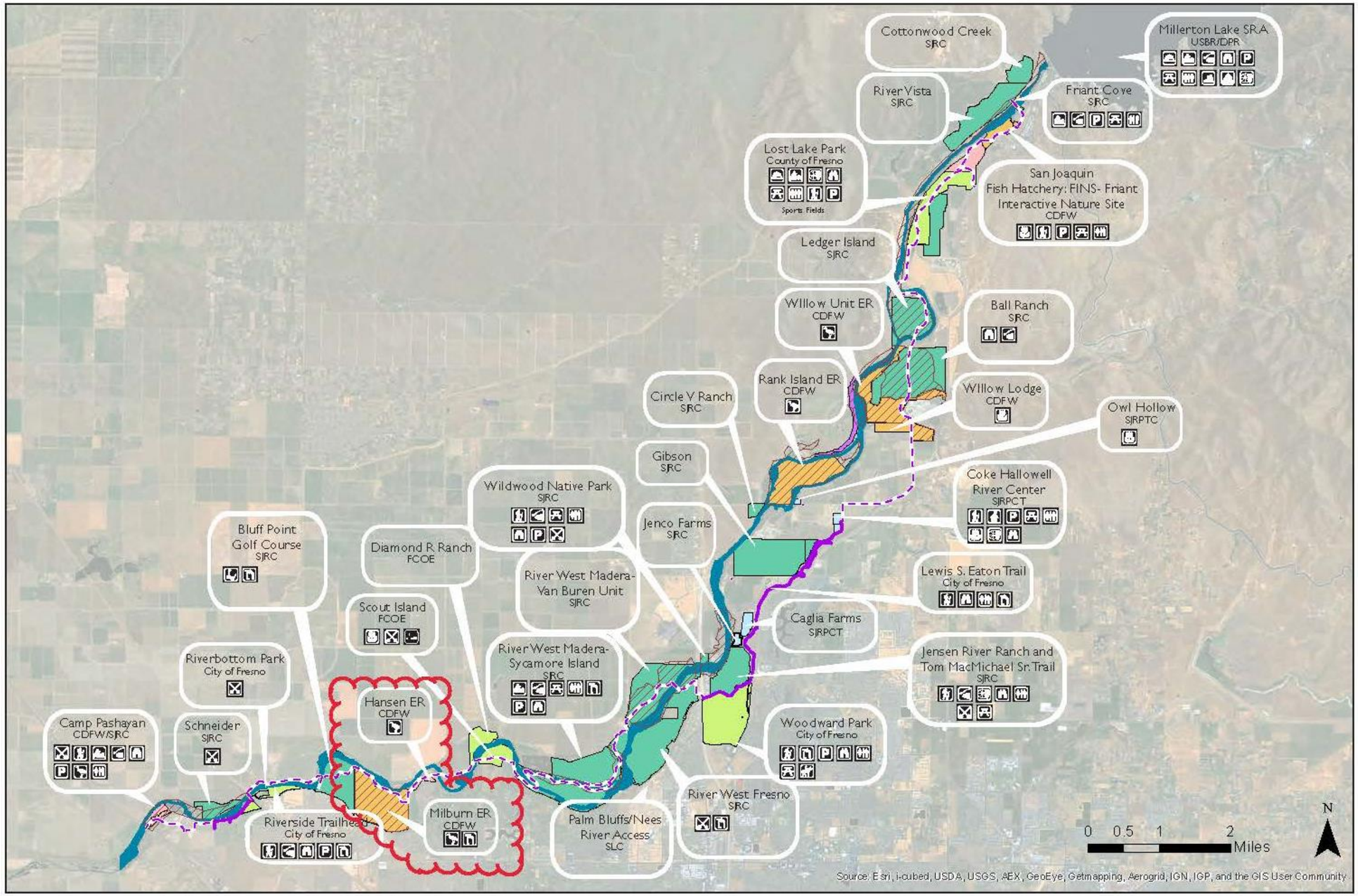
Figure 2.2. Project Site and Surrounding Project Area



Source: California Department of Water Resources 2020

The project site is also within the downstream portion of the San Joaquin River Parkway (Parkway) Planning Area, an approximately 22-mile-long river corridor extending from the face of Friant Dam to SR 99 (**Figure 2.3**). The San Joaquin River Parkway Master Plan Update (Parkway Master Plan; SJRC 2018) is the guiding document for developing the Parkway. The SJRC was established by the State Legislature in 1992 to create the Parkway and is the lead agency responsible for preparing, approving, and implementing the Parkway Master Plan. The plan envisions a primary multi-use trail along the entire parkway; wildlife habitat and movement corridors; a regional, multifaceted parkway experience for visitors, including river access, low-impact recreation, and conservation education; and regional habitat, watershed, and ecosystem conservation and restoration.

Figure 2.3. San Joaquin River Parkway Master Plan Update – Existing Features



Source: San Joaquin River Conservancy 2018, adapted by GEI Consultants, Inc. in 2021

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North Milburn Avenue extends parallel to the western boundary of the Milburn Unit and is the sole access to Bluff Pointe Golf Course and the SJRC land west of the project site (see Figure 2.2). Several golf course storage buildings are adjacent to the project site, near the end of North Milburn Avenue. A fence extends along the eastern side of the road to limit public access to the Milburn Unit. DFW launches boats onto Milburn Pond from an informal access point through a gate along North Milburn Avenue, which is not publicly accessible. Another gate along North Milburn Avenue provides DFW O&M access to an existing dirt road that extends along the perimeter of the south and east sides of Milburn Pond.

The Milburn and Hansen Units are not actively managed by DFW for public use. Gravel mining previously occurred on the Hansen Unit, and some associated structures and sorting and storage equipment remain. DFW wardens patrol the units and DFW staff maintain fences and gates to limit public access from North Milburn Avenue. DFW also has allowed other parties to conduct weed removal projects and other activities on the units.

A rock weir diversion is located in the river channel along the northern boundary of the site; this weir is used and maintained by agricultural operators on the north side of the river. An electrical service that may have been used for past mining operations is located on the existing berm on the project site, approximately 1,200 feet upstream (east) of the end of North Milburn Avenue. A wooden deck lookout with interpretive signage is located near the midpoint of the main existing berm, adjacent to Milburn Pond, but the associated interpretive trail is no longer open to the public, and the lookout is not maintained.

2.2 Project Purpose and Objectives

The State CEQA Guidelines (Section 15124[b]) require that the project description contain a clear statement of the project objectives, including the underlying purpose of the project. The statement of objectives is important under CEQA in helping the lead agency to develop a range of reasonable alternatives for evaluation in the EIR. These objectives also define the underlying need for the project.

The overall project purpose is to increase native fish survival in the San Joaquin River by isolating gravel pits on the Milburn Unit from the San Joaquin River channel to prevent fish from passing between the river and Milburn Pond. Specific objectives of pond isolation are to:

- reduce the likelihood of future berm breaches during high-flow events to ensure the pond does not become reconnected,
- reduce movement of non-native warmwater fish species from the pond to the river to increase native fish survival in the river,
- reduce movement of native salmonids from the river to the pond to increase native fish survival in the river, and
- minimize the potential for project-related impacts that would reduce pond or riparian habitat quality.

Isolating the pond from the river would also improve DFW access to the Milburn Unit and ability to manage invasive plants in the pond area.

2.3 Description of Proposed Project

DWR proposes to implement the following project elements:

- construct an equalization saddle between Pond 1 and Milburn Pond to equalize Milburn Pond with the river during flow fluctuations;
- install a "modified" French drain under the equalization saddle to ensure water flow into Milburn Pond during low-flow conditions;
- modify the main berm to eliminate breaches, strengthen weak berm sections, and raise elevations of low berm sections to minimize future breaches;
- construct a new high-flow side channel;
- install rock slope protection and biotechnical erosion protection to minimize erosion;
- modify a portion of North Milburn Avenue to raise the berm elevation approximately 1 foot to avoid premature overtopping during flood releases from Friant Dam;
- improve construction access routes; and
- install and improve fencing, gates, and signage at Milburn and Hansen Unit boundaries.

2.3.1 Project Elements

The proposed site plan is shown in **Figure 2.4**, and key project elements are described below.

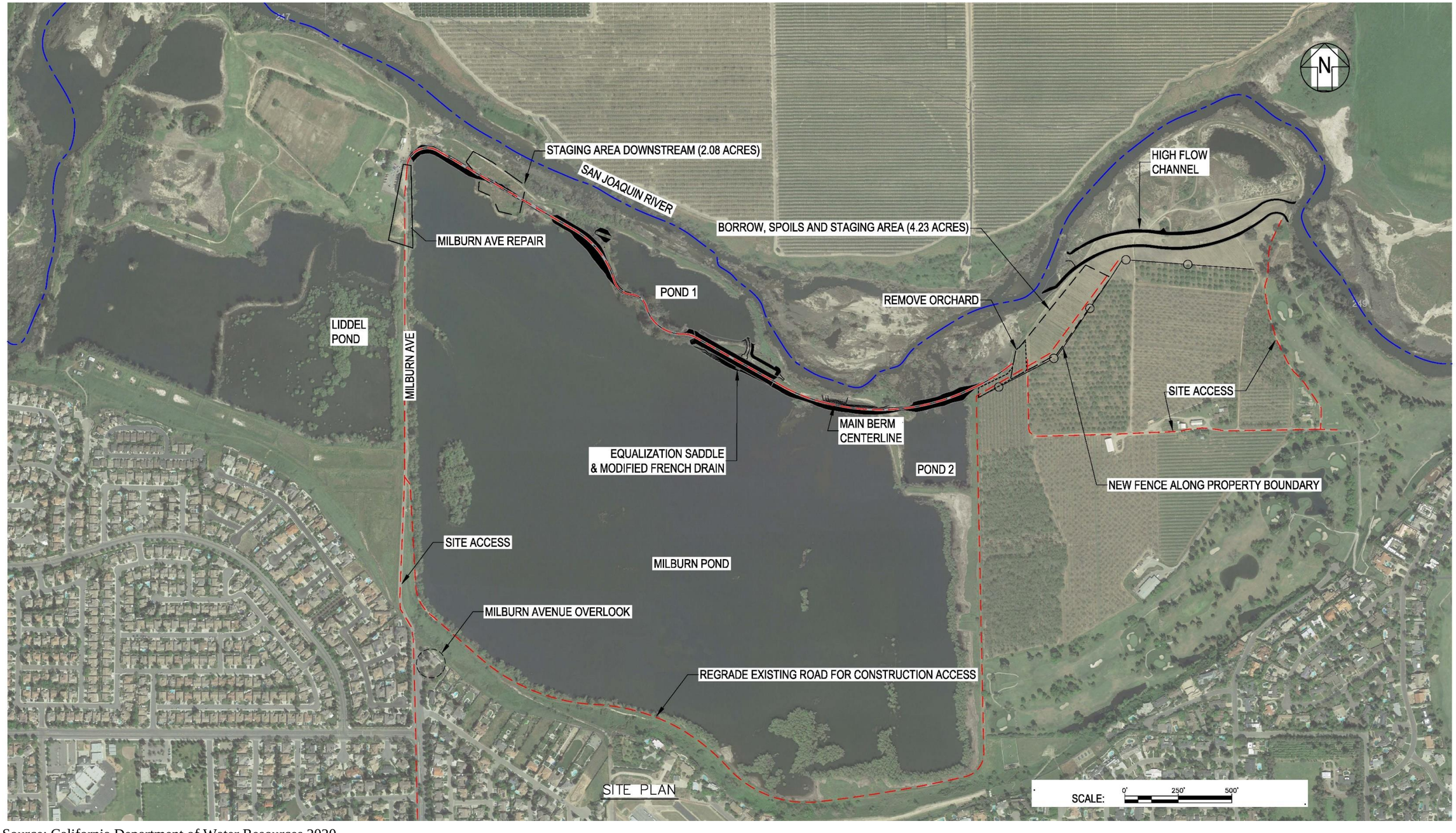
Equalization Saddle

The equalization saddle (saddle) portion of the berm would be constructed of large boulders and river cobbles. The saddle would help Milburn Pond equalize its water level with the river channel during flow fluctuations, by allowing water to pass through the pores more quickly than through standard berm materials. As flow in the river channel increases, water would flow through the saddle and equalize water levels in the river and pond, without creating high pressure differences between the two sides. The saddle is also designed to overtop and remain stable when flow exceeds 9,000 cubic feet per second (cfs). This design facilitates rapid water level equalization and reduces risk of damage when flows overtop the berm. The saddle would be approximately 700 feet long, 32 feet wide, and 15 feet tall. The saddle crown would be approximately 3 feet lower than the crown of the rest of the berm.

Modified French Drain

DWR monitoring of other disconnected gravel pit ponds has indicated that water tends to seep through the berms very slowly, potentially causing evaporation rates to exceed infiltration and reducing pond levels during high-temperature months. Water quality also is impacted by this condition because fresher river water circulates into the pond very slowly. The project would include a modified French drain to allow higher volumes of river water to compensate for pond evaporation and seepage and help maintain a minimum water surface elevation in the pond during warmer months.

Figure 2.4. Design Site Plan



Source: California Department of Water Resources 2020

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A French drain is a trench filled with cobbles or gravel that allows water to flow through the larger pore spaces more quickly than it would flow through finer compacted soil. Drain design would be based on the design implemented for the Sycamore Island Fishing Pond Project constructed in 2020 approximately 5 miles upstream of the project site. This modified French drain includes perforated pipes to allow water to travel more efficiently through the interior of the berm, while keeping the ends of the pipes covered with perforated pipe caps and cobbles to minimize potential fish passage. The drain would be constructed by embedding perforated pipes in cobbles placed in an area under the saddle.

Berm Improvements

A large section of new berm would be constructed across the main opening to the pond located at the eastern end of the existing berm, and three existing sections of berm would be realigned. The new section would isolate the pond from the river channel, and the realignment would set back sections of the berm that are closer to the river channel to help establish a more consistent channel floodplain width and a smoother berm crown alignment. The smoother crown alignment would maximize long-term durability of the berm, despite exposure to periodic flood releases in the river. Additional berm improvements to reduce the risk of future failure would include raising or lowering the berm crown elevation to 3 feet above the predicted 9,000 cfs water surface elevation and adjusting the berm crown width to approximately 20 feet. Some side slopes also would be modified to decrease the levee slope and improve stability.

High-flow Side Channel

A new high-flow side channel would be constructed in the upstream portion of the project site. This would have multiple benefits, including increasing channel habitat complexity, increasing channel flood capacity, and generating material for berm improvements and borrow area restoration. The side channel would be approximately 2,000 feet long and up to 150 feet wide, with a channel invert that begins to inundate when river flows exceed 4,000 cfs.

Erosion Protection

Erosion protection is necessary to prevent erosion that may jeopardize berm integrity in some areas. Sections of the bank along the berm and along the river channel immediately upstream of the berm require protection from erosion. Treatments would include placing rock slope protection (river cobble with a boulder footing to prevent undercutting), planting vegetation, and/or implementing other means to stabilize erodible soils in these areas.

North Milburn Avenue Modification

Up to approximately 500 feet of the western berm, upon which North Milburn Avenue is located, may be slightly lower than the final design elevation of the berm along the river. If North Milburn Avenue is lower, based on updated surveys and modeling, a section of the road or area adjacent to the road would need to be raised to meet berm design elevations and ensure the berm and road have the same level of protection from overtopping. The potential road height increase is expected to be no more than 1 foot.

Construction Access

Existing O&M access allows DFW land managers to reach most of the project site. Access includes a minimally maintained dirt road that extends from a gate at North Milburn Avenue on the west side of Milburn Pond, around the south and east sides of the pond, to the river channel in the northeast portion of the site. Dirt and gravel roads remaining from past mining operation also occur throughout the eastern portion of the project site. These roads would be improved, as necessary, for construction purposes. Improvements would likely include minor grading and gravel placement and would be left in place after construction for DFW O&M access.

Fencing, Gates, and Signage

New permanent fencing would be installed between the Hansen Unit and the adjacent orchards to the south. At least two gates would be installed in the new fencing to provide long-term DFW access. Fence repairs and gate improvements also would be implemented, as needed, along North Milburn Avenue. DFW-approved signs indicating the Milburn and Hansen Unit boundaries, similar to those currently in place on the Milburn Unit, would also be installed.

2.3.2 Construction Methods and Activities

Equalization Saddle

A portion of the existing berm would be excavated using bulldozers, loaders, and excavators to accommodate equalization saddle construction. The excavated material would be used for berm improvements or deposited in the designated on-site spoils area. The saddle would be constructed with excavators and loaders. Approximately 30,000 cubic yards (cy) of imported large boulders, river cobbles, and gravel would be required for saddle construction (including the modified French drain described below). A layer of geotextile material would be placed at the boulder-soil interface. Material imported for the equalization saddle is anticipated to come from commercial quarries within the San Joaquin Valley and/or adjacent foothills, within 100 miles of the project site; up to approximately 1,500 truck trips are anticipated to be required to transport this material.

Modified French Drain

The modified French drain would be constructed below the low-flow water surface elevation, requiring in-water construction. A turbidity curtain may be used during in-water work, if necessary, to minimize project-related turbidity in the adjacent pond and river channel. An excavator would excavate the modified French drain area, and imported gravel fill would be used to create a base to support the drain. Pipes would be placed in the excavated area and buried with gravel or soil. Pipes may be solid-walled in the middle and perforated toward each end. The excavated area may be lined with geotextile fabric before placing rounded cobble and pipes, to avoid mixing of fines if soil fill is used in the non-perforated area.

Berm Improvements

The existing berm would be raised, and narrow sections would be widened and reconfigured to meet design parameters, using compacted fill material from the on-site borrow area, high-flow side channel excavation, and/or berm excavation. Approximately 57,000 cy of material would be

required to complete the berm improvements. Approximately 24,000 cy of overburden would be temporarily removed from and stockpiled at the borrow/spoils/staging area before the underlying borrow material is excavated. The overburden would then be placed back in the borrow area after it is backfilled with material excavated from the high-flow side channel, to bring the borrow area up to original grade. Berm improvements would be constructed using excavators, dump trucks, road graders, bulldozers, and rollers.

High-flow Side Channel

Material would be excavated to construct the high-flow side channel using dump trucks, bulldozers, excavators, scrapers, and loaders. Scrapers or dump trucks would haul excavated material to fill locations along the berm. In some cases, this material may be temporarily stockpiled at the upstream borrow/spoils/staging area and later placed and graded to backfill the borrow area to pre-project grades and elevations.

Erosion Protection

Erosion protection would be installed at key locations where the river may erode banks on the south side of the channel and compromise long-term project effectiveness. Up to approximately 400 feet of bank protection would be installed at the downstream end of the high-flow side channel, and up to approximately 700 feet would be installed along the berm. Material would be placed from up to approximately 5 feet below the river channel bottom to within a few feet of the berm crown. River cobble rock slope protection and vegetation-based material are most likely to be used. River cobble slope protection would include placing geotextile fabric along the soil face and covering it with 6 inches of coarse gravel to help prevent soil erosion under the gravel. An 18- to 24-inch-deep layer of 6- to 18-inch rounded cobbles would be placed on the gravel. At the toe of the slope, a trench would be dug approximately 5 feet below the channel invert and filled with 1/4- to 3/4-ton boulders to provide a footing to prevent undercutting. Up to approximately 3,500 cy of cobble and 650 cy of boulders are anticipated to be imported from a commercial quarry within the San Joaquin Valley and/or adjacent foothills, within 100 miles of the project site; up to approximately 300 truck trips are anticipated to be required to transport this material.

North Milburn Avenue Modification

Up to approximately 500 feet of one-lane paved road up to 20 feet wide may need to be raised by up to 1 foot. The existing asphalt pavement would be removed and hauled to an appropriate disposal facility in Fresno County within 20 miles of the project site. Soil would be hauled from the on-site borrow area to build up this section of the road to the design elevation then compacted by a sheepsfoot roller compactor. A 4-inch layer of crushed gravel would be placed on the soil and compacted by a roller compactor before a 2-inch layer of hot-mix asphalt is applied.

Construction Access

A road grader or bulldozer would be used to grade approximately 8,000 feet of existing dirt access road that extends along the perimeter of the south and east sides of Milburn Pond to fill ruts and gullies and improve slopes to reduce erosion potential. In up to approximately four locations, 12-inch corrugated metal pipe culverts would be installed by using a small backhoe or

excavator to dig a small trench across the road, place the culvert, and backfill the road to allow drainage to pass to Milburn Pond without eroding the road.

Fencing, Gates, and Signage

Fencing would consist of T-posts and barbed wire, and fencing and gates would be installed by standard post-driving methods. Signs would be placed on fences or small posts. No heavy equipment is expected to be required for fence, gate, or sign installation.

2.3.3 Material Needs, Sources, and Disposal

Project construction is estimated to require a total of approximately 130,000 cy of on-site material excavation, manipulation and/or movement. Material excavated from the borrow area would be suitable for in-water berm improvements and fill beneath the saddle structure. Material excavated during berm improvements and to create the high-flow side channel would be used in dry sections of berm construction or as backfill in the borrow area. Approximately 10,000 cy of large river cobble; 5,000 cy of gravel; and 20,000 cy of large boulders would be imported for saddle and modified French drain construction and bank protection.

Deleterious materials encountered during project construction would be disposed of at an appropriate disposal facility in Fresno County within 20 miles of the project site. Anticipated deleterious materials for disposal include concrete left over from the mining operation, concrete rubble used for bank stabilization on the existing berm, asphalt on North Milburn Avenue, and invasive exotic plants. Up to approximately 10 truck trips may be required for debris removal. Invasive exotic plants that are removed by project activities would be bagged before removal from the site.

2.3.4 Construction Schedule and Phases

Project construction is anticipated to occur over an approximately 9-month period, beginning in the middle of 2023 and ending in early 2024. Construction would start as early as allowed by permits, typically at or near the end of flood season, depending on flood forecasts and conditions. The flood season ends July 15, but site work would begin by May 1, if conditions allow. The flood season begins November 1, which should not require work stoppage if all low-elevation work is complete by then. Permit extensions into November and December may also be possible, if conditions allow. Final project activities may continue into January and February, if allowed. If hydrologic conditions on the San Joaquin River require a shorter construction window in 2023, construction activities may extend into July 15 – November 1, 2024. Construction activities would occur during daylight hours, typically between 7:00 a.m. and 7:00 p.m., Monday through Friday. Work hours may be extended into the evening or weekend at key points in construction, as needed. However, nighttime construction and lighting are not anticipated to be required.

Table 2.1 lists the anticipated construction phases and their durations. Mobilization and site preparation would occur concurrently. The modified French drain would be constructed before the saddle, but both would occur concurrently with the berm improvements. Overburden would be removed from the borrow area and stockpiled before the berm materials are excavated and used. Most of the berm improvements and high-flow side channel construction also would be concurrent. Erosion protection would be placed after the berm improvements are complete.

Table 2.1. Anticipated Construction Phases and Estimated Durations

Construction Phase	Phase Duration (number of weeks)
Mobilization	2
Site preparation	2
Modified French drain construction	4
Saddle construction	20
Berm improvements	12
High-flow side channel excavation	12
Erosion protection	3
North Milburn Avenue modification	3
Fencing, gate, and signage improvements	1
Seeding, demobilization and site cleanup	1

Source: California Department of Water Resources 2020

Fencing installation, seeding, and demobilization and site cleanup would occur concurrently, after all other work is completed. All temporarily disturbed areas that are barren after construction activities would be seeded with a native seed mix approved by DFW; these areas would be hydroseeded with a mulch or other weed-free straw.

2.3.5 Construction Personnel and Equipment

The number of construction personnel would vary depending on project activities. Up to approximately 12 personnel are estimated to be on-site daily during project construction.

Table 2.2 lists the types and number of pieces of equipment anticipated to be used during construction. However, the construction contractor may use different equipment or more or less equipment, based on the construction schedule, the contractor's capabilities, and equipment availability. Equipment associated with different construction activities may be used concurrently, if activities overlap.

2.3.6 Site Access, Staging, and Project-related Transportation

Access to the project site is provided by North Milburn Ave and North Valentine Avenue (see Figures 2.2 and 2.4). North Milburn Avenue would provide access to downstream staging and work areas, and North Valentine Avenue would provide access to upstream borrow/spoils/ staging and work areas. North Milburn Avenue also provides access to Bluff Pointe Golf Course, and North Valentine Avenue also provides access to San Joaquin Country Club and Hansen Farm. An existing unimproved road along the southern and eastern boundaries of Milburn Pond (see Figure 2.4) connects the upstream and downstream portions of the project site; this road would be graded for use during construction and post-construction O&M.

Two areas totaling approximately 6.3 acres have been identified for borrow, spoils, and/or staging, based on topographic information and avoidance of sensitive vegetation (see Figure 2.4). Fill material from the borrow area and high-flow side channel excavation in the upstream portion of the project site would be transported directly to the berm improvement area along the

upstream portion of the existing berm and to the downstream berm improvement area using the access route south of Milburn Pond.

Table 2.2. Anticipated Equipment and Estimated Work Durations

Construction Activity	Equipment Type	Duration of Use (number of workdays)
Mobilization	Extended boom loader	10
	Lowboy truck	10
	Pickup truck	10
Site preparation	Haul truck	10
	Excavator	10
	Bulldozer	10
	Road grader	10
	Water truck	10
	Pickup truck	10
Modified French drain construction	Front-end loader	20
	Large excavator	20
	Haul truck	20
	Pickup truck	20
Saddle construction	Front-end loader	110
	Large excavator	110
	Pickup truck	110
	Haul truck	110
	Water truck	110
Berm improvements	Large bulldozer	60
	Small bulldozer	60
	Off-road haul trucks (3)	60
	Excavators (2)	20
	Sheepsfoot roller	60
	Pickup truck	60
High-flow side channel excavation	Scrapers (4)	40
	Excavators (2)	20
	Long-reach excavator	10
	Bulldozers (2)	90
	Pickup truck	90
Erosion protection	Front-end loader	15
	Haul trucks (3)	15
	Pickup truck	15

Table 2.2. Anticipated Equipment and Estimated Work Durations

Construction Activity	Equipment Type	Duration of Use (number of workdays)
North Milburn Avenue modification	Scraper	2
	Small bulldozer	5
	Grader	5
	Roller compactor	15
	Haul truck	2
Fencing, gate, and signage improvements	Pickup truck	5
	Backhoe/skid steer	5
	Haul truck	5
Seeding, demobilization and site cleanup	Hydroseeding truck	5
	Backhoe	10
	Pickup truck	10
	Road grader	5
	Lowboy truck	10

Note: One piece of each equipment type is anticipated to be used, unless specified in parentheses.
Source: California Department of Water Resources 2020

Material imported for equalization saddle and modified French drain construction would be delivered to the site via haul truck. A total of up to 1,500 truck trips over 5 months are anticipated to be required. These are anticipated to include approximately 15 truckloads per day delivered via North Milburn Avenue to the downstream staging area.

Construction personnel would most likely come from the local workforce in the Fresno area and outlying communities. Worker vehicles would be parked in the on-site staging areas or elsewhere onsite in close proximity to work areas.

2.3.7 Existing Uses, Utilities, and Other Considerations

The project site is not actively managed by DFW for public use. DFW wardens patrol the units and DFW staff maintain fences and gates to limit public access from North Milburn Avenue. No pedestrian or vehicle access is allowed, but the Milburn Unit, including Milburn Pond, can be accessed by boat from the river. Anglers use the existing connection to enter the ponds to fish, but gas-powered motors are prohibited in the Milburn Unit. Local residents use North Milburn Avenue for walking, as allowed by SJRC. North Milburn Avenue north of the overlook near the southwest corner of the Milburn Unit may periodically be closed to pedestrians during project construction.

The only access to Bluff Pointe Golf Course is via North Milburn Avenue. The course is open daily to the public. Golf course facilities include the parking lot, storage, and other improvements adjacent to the project site. Access to these facilities would be maintained to the maximum extent feasible. However, North Milburn Avenue north of the overlook may require full closure during road modifications, which would last approximately 3 weeks.

Hansen Farm, which includes actively cultivated orchards and associated agricultural and residential structures, is located south and east of the project site. Construction-related vehicles and equipment travelling from North Valentine Avenue to upstream portions of the project site would likely need to pass through the farm. Approximately 1 acre of orchard land is on the project site, and up to approximately 0.5 acre of orchard trees would be removed to accommodate haul truck travel between the borrow area and berm improvements area and to allow borrow excavation. The removed trees would not be replaced, because they encroach on the Hansen Unit of the DFW reserve. Agricultural activities elsewhere on the farm are not anticipated to be disrupted.

An electrical service is located on the existing berm; the service appears to be active but is not thought to be used by DFW. If DFW wants to retain the service, any associated facilities that are disrupted or temporarily removed during project construction would be restored after construction activities are completed. If DFW does not require the service to remain active, the facilities would not be restored. A City of Fresno well may be present near Milburn Pond; the well location is yet to be confirmed, but it is not anticipated to be impacted by the project.

2.3.8 Land Acquisition/Easements

No land acquisition or easements are anticipated to be required for project implementation. However, temporary access approval from SJRC and Hansen Farm would be required during construction. An SLC lease is also anticipated to be required.

2.3.9 Maintenance and Monitoring

Periodic monitoring and cleaning of debris in cobbles at the modified French drain intake by DFW land managers would be required to ensure long-term capacity and function. Monitoring for potential bank erosion also would be conducted periodically by DWR, depending on river flow magnitudes and duration.

Chapter 3. Environmental Setting, Impacts, and Mitigation Measures

3.1 Approach to the Environmental Analysis

3.1.1 Scope of the Analysis

State CEQA Guidelines require an EIR to include an evaluation of potentially significant effects on the physical environment associated with the proposed project and to identify feasible mitigation for those effects. All phases of the proposed project, including construction and O&M, are evaluated in the analysis. CCR Title 14, Section 15126.2 (14 CCR Section 15126.2) states that:

> An EIR shall identify and focus on the significant environmental effects of the proposed project. In assessing the impact of a proposed project on the environment, the lead agency should normally limit its examination to changes in the existing physical conditions in the affected area as they exist at the time the notice of preparation is published, or where no notice of preparation is published, at the time environmental analysis commences. Direct and indirect significant effects of the project on the environment shall be clearly identified and described, giving due consideration to both the short-term and long-term effects. The discussion should include relevant specifics of the area, the resources involved, physical changes, alterations to ecological systems, and changes induced in population distribution, population concentration, and human use of the land (including commercial and residential development), health and safety problems caused by the physical changes, and other aspects of the resource base such as water, historical resources, scenic quality, and public services. The EIR shall also analyze any significant environmental effects the project might cause by bringing development and people into the area affected.

An EIR must also discuss inconsistencies between the proposed project and adopted applicable general plans and regional plans (14 CCR Section 15125[d]).

According to 14 CCR Section 15126.4, an EIR must describe potentially feasible measures that could avoid or minimize significant adverse impacts (14 CCR Section 15126.4[a][1]) and feasible and practicable measures that are fully enforceable through permit conditions, agreements, or other legally binding processes (14 CCR Section 15126.4[a][2]). Mitigation measures are not required for impacts that are found to be less than significant.

Before beginning preparation of this Draft EIR, the potential for significant impacts to environmental resource topic areas contained in Appendix G of the State CEQA Guidelines was evaluated. This Draft EIR focused on those environmental resources that were determined to have a potential to be significantly affected by project implementation. The following environmental topics have been eliminated from detailed consideration, were presented as such

in the NOP, and are not discussed further in this Draft EIR because they have no potential to cause a significant impact for the reasons described in Section 1.6, "Scope and Focus of the EIR:" Energy, Mineral Resources, Population and Housing, Public Services, and Utilities and Service Systems.

The remaining environmental resource topic areas contained in Appendix G of the State CEQA Guidelines are addressed in this chapter of the Draft EIR because the project could have significant direct, indirect, and/or cumulative environmental effects on them.

3.1.2 Format of the Analysis

This chapter is organized by topic area, generally corresponding (with some minor deviation) to those in the CEQA Environmental Checklist (State CEQA Guidelines Appendix G, as amended). Each section follows the format described below.

Environmental Setting

The "Environmental Setting" subsection provides an overview of the baseline physical environmental conditions (i.e., the environmental baseline) on the project site, and in surrounding areas as appropriate, in accordance with 14 CCR Section 15125, at the time the NOP was published on October 8, 2020.

Regulatory Setting

The "Regulatory Setting" subsection identifies formally adopted plans, policies, laws, regulations, and ordinances potentially relevant to each topic area and describes required authorizations, permits, permissions, and other approvals necessary to implement the proposed project. The EIR must address possible conflicts between the proposed project and the objectives of applicable Federal, State, regional, and local adopted land use plans, policies, or controls for the area. DWR is not subject to local regulation unless expressly authorized by the Legislature, but local regulations are addressed for informational purposes because they may be relevant to responsible agencies.

According to State CEQA Guidelines 14 CCR Section 15125(d), an EIR "shall discuss any inconsistencies between the proposed project and applicable general plans and regional plans." Although the EIR discusses potential inconsistencies with applicable plans and policies for several jurisdictions, the final authority for interpreting policy statements and determining the proposed project's consistency with adopted policies rests with the governing body of the jurisdiction in question, either the City Council or the County Board of Supervisors. Where inconsistencies do occur, they are addressed as topical impacts within each applicable issue area in this chapter. For some issue areas, there may not be any applicable policies of a particular jurisdiction's general plan based on the type of improvements or changes proposed within that jurisdiction. Where this is the case, the "Regulatory Setting" subsection includes a note that there are no applicable policies from this jurisdiction's general plan.

Environmental Impacts and Mitigation Measures

The "Environmental Impacts and Mitigation Measures" subsection identifies the impacts of the proposed project on the existing human and natural environment, in accordance with the State

CEQA Guidelines (14 CCR Sections 15125 and 15143). The following discussions are included in the "Environmental Impacts and Mitigation Measures" subsection.

Thresholds of Significance

This subsection identifies the criteria established by the lead agency to define the level at which an impact would be considered significant in accordance with CEQA. Thresholds may be quantitative or qualitative and may be based on examples found in CEQA regulations or the State CEQA Guidelines; scientific and factual data relative to the lead agency's jurisdiction; legislative or regulatory performance standards of Federal, State, regional, or local agencies relevant to the impact analysis; City or County goals, objectives, and policies (e.g., City or County General Plan); views of the public in the affected areas; the policy/regulatory environment of affected jurisdictions; or other factors. Generally, however, the thresholds of significance used are derived from Appendix G of the State CEQA Guidelines, as amended.

Issues Not Discussed Further

This subsection describes specific issues related to a given topic area's thresholds of significance for which there would be no impact and no further impact discussion is required. No impact indicates that the construction and O&M activities, including specific project elements, would not have any direct or indirect effects on the environment. It means no change from existing conditions would occur.

Analysis Methodology

This subsection describes the methods, process, procedures, and/or assumptions used to formulate and conduct the impact analysis. This subsection also summarizes any comments received on the NOP and how the comment was considered in the impact analysis.

Impact Analysis and Mitigation Measures

This subsection identifies the impacts of the proposed project on the existing human and natural environment, in accordance with the State CEQA Guidelines (14 CCR Sections 15125 and 15143) and mitigation measures identified to avoid, minimize, rectify, reduce, or compensate for significant and potentially significant impacts of the proposed project, in accordance with the State CEQA Guidelines (14 CCR Sections 15370, 15002[a][3], 15021[a][2], and 15091[a][1]).

The impact analysis assesses potential impacts of the proposed project (including off-site components, such as staging and borrow areas, haul routes, access roads, and mitigation sites) on the physical environment. This assessment also specifies why impacts are found to be significant and unavoidable, significant or potentially significant, or less than significant. Some of the potential impacts that may result from implementation of the proposed project would be temporary and short-term impacts resulting from construction activities, while other impacts would be permanent.

Project impacts can be direct or indirect. Direct impacts are those that would be caused by the project and would occur at the same time and place as the project. Indirect effects are reasonably foreseeable consequences that may occur at a later time, or at a distance that is removed from the

project site. Examples of indirect impacts include growth-inducing impacts and other impacts related to changes in land use patterns and resulting effects on the physical environment.

Impacts are listed numerically and sequentially throughout each section. For example, impacts in Section 3.4 are identified as 3.4.1, 3.4.2, and so on. An impact statement precedes the discussion of each impact and provides a summary of the impact. The discussion that follows the impact statement includes the evidence on which a conclusion is based regarding the level of impact.

The level of impact is determined by comparing anticipated impacts with baseline conditions. Under CEQA, the environmental setting as it exists at the time the NOP is published (as defined above and as described in the "Environmental Setting" sections of Chapter 3) normally represents baseline physical conditions. The levels of impact are defined as follows:

- A **beneficial** impact is an impact that is considered to cause a positive change or improvement in the environment and for which no mitigation measures (which may include measures to avoid, minimize, rectify, reduce, or compensate for effects) are required.
- A **less-than-significant impact** conclusion indicates that a substantial or potentially substantial adverse change in the physical environment would not occur. This impact level does not require mitigation under CEQA.
- A **potentially significant impact** is one that, if it were to occur, would be considered a significant impact as described above; however, the occurrence of the impact cannot be determined with certainty at this time. For CEQA purposes, a potentially significant impact is treated as if it were a significant impact.
- A **significant impact** is defined by CEQA Section 21068 as "a substantial, or potentially substantial, adverse change in the environment." Levels of significance can vary by project element, based on the change in the existing physical condition. Under CEQA, mitigation measures must be identified, where feasible, to reduce the magnitude of significant impacts.

Mitigation measures to avoid, minimize, rectify, reduce, or compensate for significant and potentially significant impacts of the proposed project, in accordance with the State CEQA Guidelines (14 CCR Sections 15370, 15002[a][3], 15021[a][2], and 15091[a][1]), where feasible, are identified for each potentially significant or significant impact. Each mitigation measure is identified numerically to correspond with the number of the impact being reduced by the measure. For example, Impact 3.3.1 would be mitigated by Mitigation Measure 3.3.1. Where no mitigation is required because the impact conclusion is "less than significant," then the statement "no mitigation is required" is provided.

In accordance with PRC Section 21081.6(a), the lead agency, if it approves the project, must adopt an MMRP when it certifies the EIR. The lead agency also must adopt findings identifying each significant effect of the project and the extent to which feasible mitigation measures have been adopted.

Residual Significant Impacts

The "Residual Significant Impacts" section identifies all significant impacts that would remain significant after implementation of the mitigation measures. Where no feasible mitigation is

available to reduce impacts to a less-than-significant level, the impacts are identified as remaining "significant and unavoidable" and the statement "no feasible mitigation measures are available" is provided with an explanation. In some cases, all feasible and available mitigation measures are not sufficient to reduce an impact to a "less-than-significant" level. When this occurs, the impacts are described as remaining "significant and unavoidable." Significant and unavoidable impacts are also summarized in Chapter 4, "Other CEQA-required Sections," under the subsection "Significant and Unavoidable Environmental Impacts.

3.2 Aesthetics

This section describes the existing visual character, viewer sensitivity, and overall visual quality of the project area. Representative photographs showing the existing visual character at the project site are also included. The impact analysis determines whether implementing the project would adversely change the visual character and quality of existing scenic resources.

3.2.1 Environmental Setting

Visual Character and Quality

Both natural and created features in a landscape contribute to its visual character and quality. Landscape characteristics that influence visual character and quality include geologic, hydrologic, botanical, wildlife, recreational, and urban features. The basic elements that comprise the visual character and quality of landscape features are form, line, color, and texture. The appearance of the landscape is described in terms of the dominance of each of these elements.

An overview of the project area is shown in Figures 2.2 and 2.4 provided in Chapter 2 "Project Description." The project site is on the south side of the San Joaquin River, extending from North Milburn Avenue at the downstream end to approximately 1.5 miles upstream along the riverbank and approximately 0.5 mile south toward the Fresno urban area. The visual character and quality of the project site is primarily formed by vegetation along the riverbank, ponds (dominated by Milburn Pond), and native and naturalized vegetation surrounding the ponds. The San Joaquin River is immediately adjacent to the project site and a dominant feature of the area's visual character and quality. Other adjacent areas include orchards (which encroach slightly onto the project site), golf courses, residential development, and the Sierra Sky Park Airport. Representative photographs of the project site, taken in November 2020, are provided in **Figures 3.2.1** through **3.2.4**.

Viewer Sensitivity

In addition to visual character and quality, viewer sensitivity is considered in assessing the effects of visual change and is a function of several factors. Viewer sensitivity is based on the visibility of resources in the landscape, proximity of the viewers to the visual resources, elevation of the viewers relative to the visual resources, frequency and duration of views, numbers of viewers, and types and expectations of individuals and viewer groups. Landscape elements are considered higher or lower in visual importance based on their proximity to the viewer. Generally, the closer a resource is to the viewer, the more dominant, and thus the more visually important. Visual sensitivity is generally higher for views that are observed by residents of an area and people who are driving for pleasure or engaging in recreation activities such as walking, cycling, fishing, or bird watching. Sensitivity is lower for people engaged in work activities or commuting to work.

Viewer sensitivity is considered high for residents immediately south the project site, recreationists along the river, and viewers at the scenic overlook adjacent to the southwest corner of the project site. Sensitivity is considered moderate to high for recreationists at the adjacent golf courses and pedestrians, cyclists, and drivers along the adjacent North Milburn Avenue.

Figure 3.2.1. Northeast view across Milburn Pond, from bluff at southwest corner

Source: California Department of Water Resources 2020

Figure 3.2.2. North view across Milburn Pond, from bluff south of the project site

Source: California Department of Water Resources 2020

Figure 3.2.3. Northeast view across Milburn Pond, from North Milburn Avenue

Source: California Department of Water Resources 2020

Figure 3.2.4. Southeast view of berm, from northwest corner of the project site

Source: California Department of Water Resources 2020

Scenic Vistas, Corridors, and Highways

A scenic vista is generally considered a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Some scenic vistas are officially designated by public agencies, or informally designated by tourist guides. Typical scenic vistas in the region include locations where views of rivers, hillsides, and open space areas can be obtained and locations where valued urban landscape features can be viewed in the distance (City of Fresno 2014a). The City of Fresno has not identified or designated scenic vistas, but indicates scenic vistas may occur in the city, such as views of the San Joaquin River along the northern boundary of city limits (City of Fresno 2014a). The San Joaquin River borders the project site, and views of the river from some locations include the project site as either a foreground or background element. For example, the scenic overlook adjacent to the southwest corner of the project site provides scenic views of the site and the San Joaquin River corridor.

Scenic corridors are enclosed areas of landscape, viewed as a single entity that includes the total field of vision from a specific point or series of points along a linear route. The City of Fresno General Plan (City of Fresno 2014b) identifies scenic corridors and boulevards within the city. The project site is located within the City of Fresno's scenic corridor planning area, but the nearest scenic corridor is approximately 4 miles east of the site. Fresno County has one officially designated State Scenic Highway, SR 180, which is approximately 8 miles south of the project site (Caltrans 2007 and 2019).

3.2.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No Federal plans, policies, regulations, or laws related to aesthetics apply to the project.

State Plans, Policies, Regulations, Laws

No State plans, policies, regulations, or laws related to aesthetics are relevant to the project.

Regional and Local Plans, Policies, Regulations, and Ordinances

No regional or local plans, policies, regulations, or ordinances related to aesthetics are relevant to the project.

The Parkway Master Plan (SJRC 2018) includes policies mentioning aesthetics, with respect to bridge crossings and parking areas at recreational facilities, but it does not include policies relevant to the analysis of this project.

3.2.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. Implementing the project would have a significant impact on aesthetics if it would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings, within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

Issues Not Discussed Further

State Scenic Highways. There are no officially designated State scenic highways or eligible State scenic highways located in the project vicinity. The nearest designated highway is SR 180, approximately 8 miles south of the project site. Therefore, no impact to scenic resources within a State scenic highway would occur, and this issue is not discussed further.

New Sources of Light or Glare. The project would not create any new sources of light or glare. No project features would create light or glare, and project construction would occur during daylight hours, typically 7:00 a.m. to 7:00 p.m. Nighttime construction and associated lighting are not anticipated to be required. Therefore, this issue is not discussed further.

Analysis Methodology

This analysis of visual resources uses a qualitative approach for characterizing and evaluating the visual resources of the area that could be affected by project implementation. Potential impacts on aesthetics were evaluated based on the following three steps:

- an objective inventory of the visual features or visual resources that comprise the landscape,
- an assessment of the character and quality of the visual resources in the context of the overall character of the regional visual landscape, and
- a determination of the importance to viewers (i.e., sensitivity of the viewers) and the potential viewer response, to the identified visual resources in the landscape.

The aesthetic value of an area is a measure of the variety and contrast of the area's visual features, the character and quality of those features, and the scope and scale of the scene, combined with the anticipated viewer response. The above factors were considered in combination with the project components and the type and duration of anticipated construction activities.

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis. No comments related to aesthetics were received.

Impact Analysis and Mitigation Measures

Impact 3.2.1: ***Adverse Effects on Scenic Vistas or Visual Character and Quality.*** *The project would not substantially alter the existing visual character or quality of the project site, nor would it permanently impact scenic vistas. The project site would continue to be managed as an ecological reserve, and the visual character and scenic vista would be very similar to current conditions. Therefore, this impact would be* ***less than significant****.*

The existing visual character of the project site is dominated by Milburn Pond and vegetation along the pond edges and between the pond and San Joaquin River. Although no officially designated scenic vistas occur in the project vicinity, the overlook at the southwest corner of the project site provides an expansive scenic public view of the site and river corridor beyond.

The visual character of the project site and scenic vista from the overlook would be temporarily degraded by presence of heavy equipment during project construction, but this impact would be short-term and temporary (i.e., anticipated to last approximately 9 months). Some vegetation would be permanently removed, but the majority of project activities would occur in unvegetated and sparsely vegetated areas far from the overlook, and the overall aesthetic effect of vegetation removal would be minor.

Noticeable, permanent changes in the visual character and quality of the project site and/or scenic vista from the overlook would primarily be limited to berm improvements and equalization saddle construction in the western portion of the site and excavation of the high-flow side channel in the eastern portion. The effect of these changes would be relatively minor. The appearance of the berm would be similar to the current conditions and consistent with the overall character of the site. Although channel excavation would be a more substantial change, the channel's appearance also would be similar to existing side channels in this portion of the river. Other project components would result in much more minor changes. Potential raising of North Milburn Avenue by a maximum of 1 foot is unlikely to be noticed. The same is true for excavation and backfill of the borrow area, which is difficult to see from the overlook, residences, and other accessible locations. Additionally, new fencing, gates, and signage would be similar to that currently in place and represent a very minor visual change.

For these reasons, the project would not have a substantial adverse effect on the scenic vista from the overlook or other publicly accessible locations and would not substantially degrade the visual character and quality of the project site or surroundings. Therefore, this would be a **less-than-significant** impact.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impacts related to aesthetics.

3.3 Agriculture and Forestry

This section describes agricultural uses and forestry resources on and adjacent to the project site, evaluates the significance and quality of agricultural land, summarizes the regulatory setting related to agricultural and forestry resources, and analyzes the potential impacts to agricultural and forestry resources from implementing the project.

3.3.1 Environmental Setting

Fresno Area Agricultural Resources

Fresno County is one of the leading agricultural counties in the United States in the value of farm production. Much of Fresno County's arable land is devoted to orchards, vineyards, and other commercial crops. The total gross value of agricultural commodities produced in Fresno County in 2018 (the most recent year for which data are publicly available) was almost $8 million, a more than 12 percent increase over the 2017 total. Almonds were the leading commodity in 2018, representing 15 percent of the total gross value of crops in 2018), followed by grapes (14 percent) and pistachios (11 percent) (County of Fresno 2018).

The high-quality agricultural soils in Fresno County can also easily accommodate urban, rural residential, and other non-agricultural uses (County of Fresno 2000a). The City of Fresno is experiencing the negative effects of leapfrog development (development that is not contiguous to the existing urban area) in areas of agricultural production (City of Fresno 2014a). When this occurs, crop production is diminished due to conflict between urban and agricultural uses. Crop lands can suffer economic loss, while urbanized areas experience disturbances caused by normal agricultural activities, such as farm-generated dust, noise, and odor (City of Fresno 2014a).

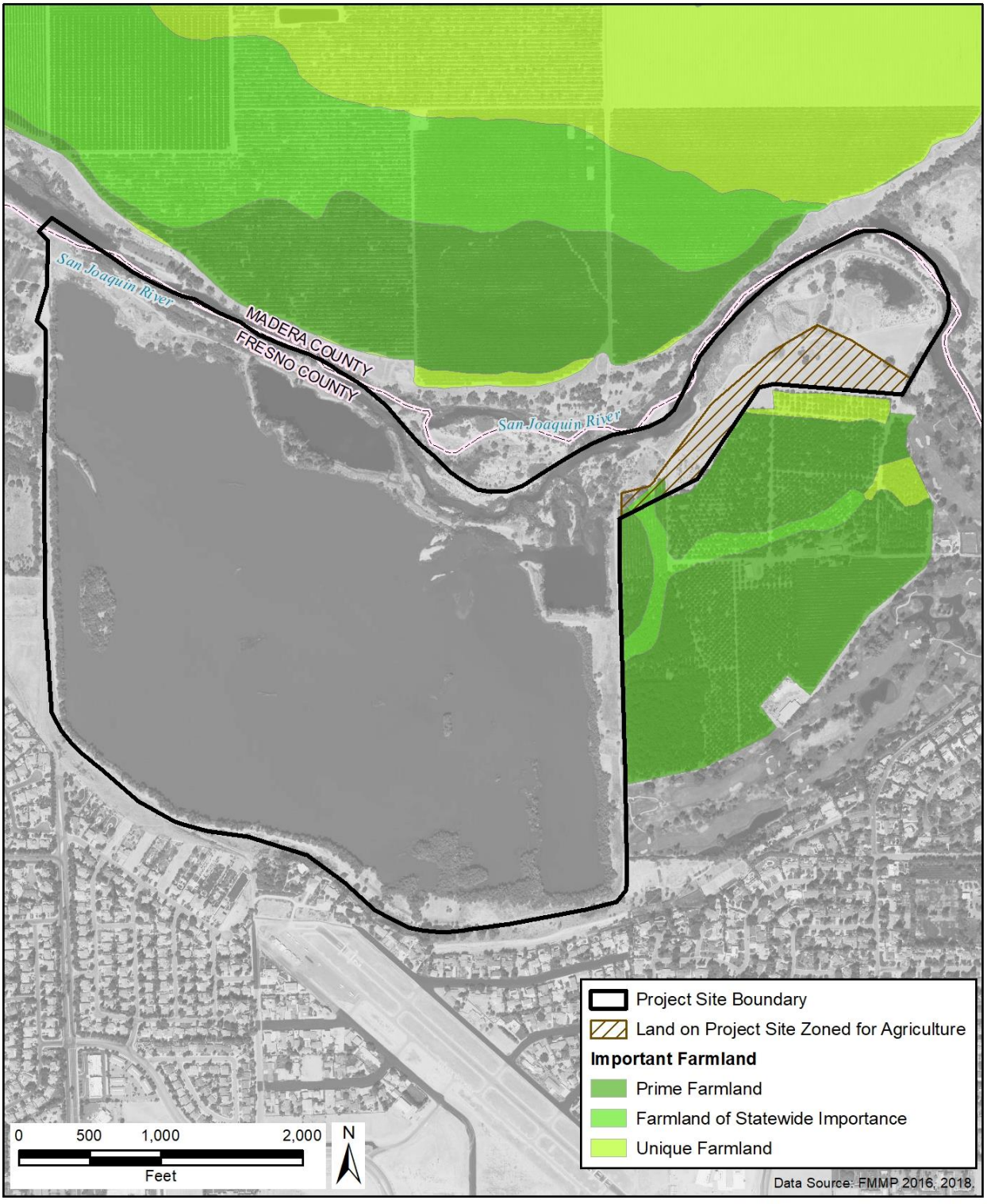
Existing Agricultural Uses

The Hansen Unit does not officially include agricultural production, but approximately 1 acre of the adjacent parcel's pistachio orchard encroaches on this unit. As shown in **Figure 3.3.1**, the parcel (Assessor Parcel Number 50102138ST) where this orchard segment occurs is zoned for agriculture (AL-20) (County of Fresno 2019). The orchard is designated by the California Department of Conservation (DOC) as Prime Farmland and Farmland of Statewide Importance (DOC 2018). The rest of the Hansen Unit is not currently used for agricultural production, but a large portion of the unit was cultivated in the past. Because the Hansen Unit is State-owned, it is not subject to local land use regulations.

Williamson Act Contracts

The Williamson Act is designed to preserve agriculture and open space lands by discouraging their premature and unnecessary conversion to urban uses. The act enables local governments to enter into 10-year contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based on farming and open space uses as opposed to full market value. No portion of the project site is under a Williamson Act contract (County of Fresno 2020).

Figure 3.3.1. Important Farmland in the Project Area and Land on the Project Site that is Zoned for Agriculture



Source: California Department of Conservation 2018

Forestry Resources

Appendix G of the State CEQA Guidelines defines "forestland" as land that can support 10 percent native tree cover and forest vegetation of any species under natural conditions and that allows for management of one or more forest resources—including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation—and other public benefits (PRC 12220[g]). Woodland vegetation occurs along the San Joaquin River and boundaries of the ponds on the project site. These areas appear to meet the CEQA definition of forestland and support tree species such as Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), Gooding's black willow (*Salix gooddingii*), valley oak (*Quercus lobata*), black walnut (*Juglans californica* var. *californica*), and eucalyptus (*Eucalyptus* spp.).

3.3.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No Federal plans, policies, regulations, or laws related to agriculture and forestry resources are relevant to the proposed project.

State Plans, Policies, Regulations, Laws

Farmland Mapping and Monitoring Program

The DOC's Farmland Mapping and Monitoring Program (FMMP) was established by the State in 1982 to continue the Important Farmland mapping efforts begun in 1975 by the U.S. Soil Conservation Service (now the U.S. Natural Resources Conservation Service). Under the FMMP, DOC prepares agricultural resource maps based on soil quality and land use, that include the following categories:

- **Prime Farmland**—Land that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the 4 years before the mapping date.
- **Farmland of Statewide Importance**—Land similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the 4 years before the mapping date.
- **Unique Farmland**—Land of lesser quality soils used for the production of the State's leading agricultural cash crops. This land is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the 4 years before the mapping date.
- **Farmland of Local Importance**—Land that is of importance to the local agricultural economy, as defined by each county's local advisory committee and adopted by its board of supervisors. Farmland of Local Importance either is currently producing or has the capability to produce, but does not meet the definition of Prime Farmland, Farmland of Statewide Importance, or Unique Farmland.

- **Grazing Land**—Land with existing vegetation that is suitable for grazing.
- **Urban and Built-Up Lands**—Land that is used for residential, industrial, commercial, institutional, and public utility structures and for other developed purposes.
- **Land Committed to Nonagricultural Use**—Land that has a permanent commitment to development but has an existing land use of agricultural or grazing lands.
- **Other Lands**—Land that does not meet the criteria of any of the previously described categories and generally includes low-density rural developments, vegetative and riparian areas not suitable for livestock grazing, confined-animal agriculture facilities, strip mines, borrow pits, and vacant and nonagricultural land surrounded on all sides by urban development.

DOC classifies Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance under the collective term "Important Farmland." CEQA refers to Prime Farmland, Farmland of Statewide Importance, and Unique Farmland collectively as "Agricultural Land" (PRC Section 21060.1), and Appendix G of the State CEQA Guidelines refers to Prime Farmland, Unique Farmland, and Farmland of Statewide Importance collectively as "Farmland."

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

San Joaquin River Parkway Master Plan

The following Parkway Master Plan (SJRC 2018) goals and policies related to agriculture may be relevant to the proposed project for certain responsible agencies:

GOAL: Design, construct, and manage the Parkway in a manner that is compatible with agricultural uses.

GOAL: Encourage the preservation of agricultural uses in the Parkway planning area.

- **Policy AGRI.3.** Provide buffers, fencing, signage and other measures to reduce potential conflicts between public Parkway use and nearby agriculture.
- **Policy AGRI 4.** Encourage agricultural uses as buffers between the Parkway and more intensive urban/suburban uses

Fresno County General Plan

The following goals and policies from the Agriculture and Land Use Element and Open Space and Conservation Element of the Fresno County General Plan (County of Fresno 2000b) may be relevant to the proposed project for certain responsible agencies:

GOAL LU-A: To promote the long-term conservation of productive and potentially productive agricultural lands and to accommodate agricultural-support services and agriculturally related activities that support the viability of agriculture and further the County's economic development goals.

- **Policy LU-A.1.** The County shall maintain agriculturally designated areas for agriculture use and shall direct urban growth away from valuable agricultural lands to cities, unincorporated communities, and other areas planned for such development where public facilities and infrastructure are available.
- **Policy LU-A.6.** The County shall maintain twenty (20) acres as the minimum permitted parcel size in areas designated Agriculture, except as provided in Policies LU-A.9, LUA.10, and LU-A.11. The County may require parcel sizes larger than twenty (20) acres based on zoning, local agricultural conditions, and to help ensure the viability of agricultural operations.
- **Policy LU-A.12.** In adopting land uses policies, regulations and programs, the County shall seek to protect agricultural activities from encroachment of incompatible land uses.
- **Policy LU-A.13.** The County shall protect agricultural operations from conflicts with nonagricultural uses by requiring buffers between proposed non-agricultural uses and adjacent agricultural operations.
- **Policy LU-A.14.** The County shall ensure that the review of discretionary permits includes an assessment of the conversion of productive agricultural land and that mitigation be required where appropriate.

GOAL OS-B: To maintain healthy, sustainable forests in Fresno County, conserve forest resources, enhance the quality and diversity of forest ecosystems, reduce conflicts between forestry and other uses, encourage a sustained yield of forest products, protect and conserve lands identified as suitable for commercial timber production within the county, and conserve forest lands that have other resource values including recreation, grazing, watershed, and wildlife habitats.

- **Policy OS-B.1.** The County shall encourage the sustained productive use of forest land as a means of providing open space and conserving natural resources.
- **Policy OS-B.2.** The County shall work closely with agencies involved in the management of forest ecosystems and shall coordinate with State and Federal agencies, private landowners, and private preservation/conservation groups in habitat preservation and protection of rare, endangered, threatened, and special concern species, to ensure consistency in efforts and to encourage joint planning and development of areas to be preserved. The County shall encourage State and Federal agencies to give notice to and coordinate with the County on any pending, contemplated, or proposed actions affecting local communities and citizens of the County. The County will encourage State and Federal agencies to address adverse impacts on citizens and communities of Fresno County, including environmental, health, safety, private property, and economic impacts.
- **Policy OS-B.5.** The County shall encourage and promote the productive use of wood waste generated in the county.

City of Fresno General Plan

The following goals and policies from the Resource Conservation and Resilience Element and the Parks, Open Space, and Schools Element of the City of Fresno General Plan (City of Fresno 2014b) related to agriculture and forestry may be relevant to the proposed project for certain responsible agencies:

GOAL RC-9: Preserve agricultural land outside of the area planned for urbanization under this General Plan.

- **Policy RC-9-a. Regional Cooperation.** Work to establish a cooperative research and planning program with the Counties of Fresno and Madera, City of Clovis, and other public agencies to conserve agricultural land resources.
- **Policy RC-9-c. Farmland Preservation Program.** In coordination with regional partners or independently, establish a Farmland Preservation Program. When Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is converted to urban uses outside City limits, this program would require that the developer of such a project mitigate the loss of such farmland consistent with the requirements of CEQA. The Farmland Preservation Program shall provide several mitigation options that may include, but are not limited to the following: Restrictive Covenants or Deeds, In Lieu Fees, Mitigation Banks, Fee Title Acquisition, Conservation Easements, Land Use Regulations, or any other mitigation method that is in compliance with the requirements of CEQA. The Farmland Preservation Program may be modeled after some or all of the programs described by the California Council of Land Trusts.

GOAL POSS-1: Provide an expanded, high quality and diversified park system, allowing for varied recreational opportunities for the entire Fresno community.

- **Policy POSS-1-g. Regional Urban Forest.** Maintain and implement incrementally, through new development projects, additions to Fresno's urban forest to delineate corridors and the boundaries of urban areas, and to provide tree canopy for bike lanes, sidewalks, parking lots, and trails.

3.3.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. Implementing the project would have a significant impact on agricultural and forestry resources if it would:

- convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Natural Resources Agency, to nonagricultural use;
- conflict with existing zoning for agricultural use or a Williamson Act contract;

- conflict with existing zoning for, or cause rezoning of, forestland (as defined in PRC Section 12220[g]), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]);
- result in the loss of forestland or conversion of forestland to nonforest use; or
- involve other changes in the existing environment that, because of their location or nature, could result in conversion of Farmland to nonagricultural use or conversion of forest land to nonforest use.

Issues Not Discussed Further

Conflict with Agricultural Zoning or Williamson Act Contract. The project would remove up to approximately 0.5 acre of orchard trees that infringe on the Hansen Unit, to accommodate a haul route between the borrow area and berm improvements area. The portion of the project site where the high-flow side channel and borrow/spoils/staging area would be constructed and where orchard removal would occur is on land zoned by Fresno County as AL-20. This land is within the boundaries of the Hansen Unit owned by DFW and, as such, is not subject to local land use regulations. Therefore, the project would not conflict with existing agricultural zoning. Additionally, the project would not conflict with any active Williamson Act contracts, because none apply to the project site. These issues are not discussed further.

Conflict with Forestland Zoning. No land zoned as forestland or timberland occurs on the project site. Project construction would remove up to approximately 1.5 acre of native and eucalyptus woodland, but this removal would not conflict with existing zoning or cause rezoning of forestland. The site is zoned as Park and Recreation by the City of Fresno (City of Fresno 2014b) and AL-20 by Fresno County (County of Fresno 2020b). The project site is currently managed as an ecological reserve and would continue to be used for this purpose following project construction. Additionally, all riparian woodland is within the boundaries of the DFW-owned reserve and, as such, is not subject to local land use regulations. Therefore, this issue is not discussed further.

Analysis Methodology

Evaluation of potential project impacts on agricultural and forestry resources is based on a review of City of Fresno and Fresno County planning documents and associated EIRs. In addition, the Important Farmland Map for Fresno County (DOC 2018) was used to evaluate the agricultural significance of the lands on the project site.

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis. No comments related to agriculture and forestry were received.

Impact Analysis and Mitigation Measures

Impact 3.3.1: ***Conversion of Important Farmland.*** *The project would convert approximately 0.5 acre of Important Farmland to nonagricultural land. However, the amount of land that would be converted compared to the overall amount of agricultural land in Fresno County is minimal. Therefore, this impact would be* ***less than significant****.*

According to the FMMP, Fresno County had 672,208 acres of Prime Farmland, 395,148 acres of Farmland of Statewide Importance, 95,352 acres of Unique Farmland, and 192,434 acres of Farmland of Local Importance in 2018 (DOC 2018). PRC Section 21060.1 and Appendix G of the State CEQA Guidelines focus the analysis of conversion of agricultural land on Prime Farmland, Farmland of Statewide Importance, and Unique Farmland, collectively referred to in this section as Important Farmland. Project implementation is anticipated to remove up to approximately 0.5 acre of orchard trees designated as Important Farmland (DOC 2018); the removed trees would not be replaced, because they encroach on the Hansen Unit of the DFW reserve. This loss of Important Farmland would be an extremely small proportion (less than 0.01 percent) of the total agricultural land in Fresno County, and continued use of agricultural lands adjacent to the project site would not be disrupted by project construction or O&M. Additionally, the land where orchard trees would be removed is not legally part of the privately owned Hansen Farm. Therefore, the project would have a **less-than-significant** impact on Important Farmland.

Mitigation Measure: No mitigation is required.

Impact 3.3.2: ***Loss of Forestland.*** *The project would result in removal of up to approximately 1.5 acre of forestland. This represents a small proportion of forestland on the project site and in the larger project vicinity. Therefore, this impact would be* ***less than significant****.*

Forestland occurs along portions of the banks of the San Joaquin River and the pond edges. The project was specifically designed to minimize tree removal by locating project features in areas that do not support woodland habitat to the greatest extent feasible. However, approximately 0.8 acre of riparian woodland and 0.5 acre of eucalyptus grove is anticipated to be unavoidable and would be removed from the equalization saddle and berm improvement areas. Oak woodland occurs along the southern edge of Milburn Pond, but little or no tree removal is anticipated to result from improving the existing access road in this area. Although portions of the riparian woodland on the project site would be removed, this represents a relatively small proportion of the overall amount of forestland on the project site and along the San Joaquin River in the project vicinity. Therefore, the project would have a **less-than-significant** impact on forestland.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impacts to agriculture or forestry resources.

3.4 Air Quality

This section discusses the existing air quality conditions in the local air basin, describes applicable regulations, analyzes potential impacts of the project related to air quality, and identifies mitigation measures to reduce significant impacts to a less-than-significant level.

3.4.1 Environmental Setting

San Joaquin Valley Air Basin

Air quality in a specific area is affected by the location of air pollutant sources and the quantity of pollutants they emit. Topography and meteorology also influence air quality. Physical features of the landscape and atmospheric conditions, such as wind speed, wind direction, and air temperature gradients, determine the movement and distribution of air pollutants.

The California Air Resources Board (CARB) divides California into regional air basins based on topographic and meteorological features. The proposed project is in Fresno County, which is in the San Joaquin Valley Air Basin (SJVAB). The SJVAB is bounded by the Sierra Nevada Mountains in the east, the Coast Ranges in the west, and the Tehachapi Mountains in the south. It includes all of Fresno, Kings, Madera, Modesto, San Joaquin, and Tulare Counties, and western and central Kern County. The SJVAB is influenced by a subtropical high-pressure cell most of the year, with sparse rainfall occurring primarily during winter. Temperature inversions in the valley can act like a lid, inhibiting vertical mixing of air and trapping pollutants below the inversion (SJVAPCD 2015). Sunlight and elevated temperatures contribute to ozone formation, and the SJVAB averages over 260 sunny days per year. Photochemical air pollution (primarily ozone) is produced by the atmospheric reaction of organic substances and nitrogen dioxide under the influence of sunlight. Generally, the higher the temperature, the more ozone is formed, because reaction rates increase with temperature. Ozone levels are low during winter when there is much less sunlight to drive the photochemical reaction (SJVAPCD 2015).

The SJVAB is generally flat, with a slight downward gradient from the southeast to the northwest of the valley. Especially in summer, winds in the Valley most frequently blow from northwest to southeast. The region's topography limits air movement and channels the air mass towards the southeastern end of the Valley. Marine air can flow into the basin from the San Joaquin River Delta and over Altamont Pass and Pacheco Pass. Air then flows southeastward and exits the SJVAB over the Tehachapi pass. The Coastal Range is a barrier to air movement to the west and the higher Sierra Nevada range is a significant barrier to the east. Many winter days are marked by stagnation events where winds are very weak, limiting transport of pollutants.

A secondary wind pattern can occur during summer, with winds from the southeast to northwest. Two significant wind cycles that occur frequently in the Valley are the sea breeze and mountain-valley upslope and drainage flows. The sea breeze can accentuate the northwest wind flow, especially on summer afternoons, while nighttime drainage flows can accentuate the southeast movement of air down the valley. Nighttime and drainage flows are especially pronounced during winter when flow from the easterly direction is enhanced by nighttime cooling in the Sierra Nevada. Eddies can re-circulate a polluted air mass for an extended period. Such an eddy occurs in the Fresno area during winter and summer (SJVAPCD 2015).

Existing Air Quality Conditions

The U.S. Environmental Protection Agency (EPA) and CARB have established ambient air quality standards for six "criteria air pollutants," pursuant to the Federal Clean Air Act (CAA) of 1970 and the California CAA, respectively. The criteria pollutants are ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), particulate matter equal to or less than 2.5 micrometers in aerodynamic diameter ($PM_{2.5}$), particulate matter equal to or less than 10 micrometers in aerodynamic diameter (PM_{10}), sulfur dioxide (SO_2), and lead (EPA 2016). CARB oversees standards for four additional pollutants: hydrogen sulfide, sulfates, vinyl chloride, and visibility-reducing particles. Existing air quality conditions in the project area are characterized by comparing the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for these pollutants with monitoring data collected in the region. **Table 3.4.1** lists the NAAQS and CAAQS.

Criteria air pollutants are monitored at several stations in the SJVAB. **Table 3.4.2** presents air quality data from monitoring stations near the project site for the most recent 3 years of available data. Fresno-Sierra Skypark #2 (approximately 1,000 feet south of the project site) records ozone measurements. Measurements for PM_{10} and $PM_{2.5}$ were taken from the Fresno-Drummond Street Station (approximately 12 miles southeast of the project site) and Fresno-Garland Station (approximately 6.5 miles southeast of the project site) respectively.

Table 3.4.1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS Primary	NAAQS Secondary	CAAQS	Compliance Criteria
Ozone	1 Hour	N/A	N/A	0.09 ppm (180 µg/m^3)	CAAQS: Not to be exceeded
	8 Hour	0.070 ppm	Same as Primary	0.070 ppm	NAAQS: Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
		(137 µg/m^3)		(137 µg/m^3)	CAAQS: Not to be exceeded
		(137 µg/m^3)		(137 µg/m^3)	CAAQS: Not to be exceeded
Inhalable Particulate Matter (PM_{10})	24 Hour	150 µg/m^3	Same as Primary	50 µg/m^3	NAAQS: Not to be exceeded more than once per year on average over 3 years. CAAQS: Not to be exceeded
	Annual	N/A	N/A	20 µg/m^3	CAAQS: Not to be exceeded
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	35 µg/m^3	Same as Primary	N/A	NAAQS: 98th percentile, averaged over 3 years CAAQS: Not to be exceeded
	Annual	12 µg/m^3	15 µg/m^3	12 µg/m^3	NAAQS: Annual mean, averaged over 3 years

Table 3.4.1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS Primary	NAAQS Secondary	CAAQS	Compliance Criteria
					CAAQS: Not to be exceeded
Carbon Monoxide	1 Hour	35 ppm	N/A	20 ppm	NAAQS: Not to be exceeded more than once per year
		(40 mg/m^3)		(23 mg/m^3)	CAAQS: Not to be exceeded
	8 Hour	9 ppm	N/A	9.0 ppm	NAAQS: Not to be exceeded more than once per year
		(10 mg/m^3)		(10 mg/m^3)	CAAQS: Not to be exceeded
Nitrogen Dioxide	1 Hour	100 ppb	N/A	0.18 ppm	NAAQS: 98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		(188 $\mu g/m^3$)		(339 $\mu g/m^3$)	CAAQS: Not to be exceeded
	Annual	53 ppb	Same as Primary	0.030 ppm	NAAQS: Annual mean
		(100 $\mu g/m^3$)		(57 $\mu g/m^3$)	CAAQS: Not to be exceeded
Sulfur Dioxide	1 Hour	75 ppb	N/A	0.25 ppm	NAAQS: 99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		(196 $\mu g/m^3$)		(655 $\mu g/m^3$)	CAAQS: Not to be exceeded
	3 Hour	N/A	0.5 ppm (1,300 $\mu g/m^3$)	N/A	NAAQS: Not to be exceeded more than once per year
	24 Hour	N/A	N/A	0.04 ppm (105 $\mu g/m^3$)	CAAQS: Not to be exceeded
Lead (Particulate)	Rolling 3-Month Average	0.15 $\mu g/m^3$	Same as Primary	N/A	NAAQS: Not to be exceeded
	30- day Average	N/A	N/A	1.5 $\mu g/m^3$	CAAQS: Not to be equaled or exceeded
Visibility Reducing Particles	8 Hour	N/A	N/A	extinction of 0.23 per kilometer	CAAQS: Not to be exceeded

Table 3.4.1 National and California Ambient Air Quality Standards

Pollutant	Averaging Time	NAAQS Primary	NAAQS Secondary	CAAQS	Compliance Criteria
Sulfates	24 Hour	N/A	N/A	25 µg/m^3	CAAQS: Not to be equaled or exceeded
Hydrogen Sulfide	1 Hour	N/A	N/A	0.03 ppm (42 µg/m^3)	CAAQS: Not to be equaled or exceeded
Vinyl Chloride	24 Hour	N/A	N/A	0.01 ppm (26 µg/m^3)	CAAQS: Not to be equaled or exceeded

Notes: CAAQS = California Ambient Air Quality Standard, NAAQS = National Ambient Air Quality Standard, ppb = parts per billion, ppm = parts per million, µg/m^3 = micrograms per cubic meter, mg/m^3 = milligrams per cubic meter, N/A = not applicable, FR = Federal Register
Source: California Air Resources Board 2016

Table 3.4.2. Summary of Ambient Air Quality Data (2017-2019)

Ozone	2017	2018	2019
Maximum Concentration (1-hour/8-hour average, ppm)	0.128/0.107	0.100/0.087	0.097/0.084
Number of Days State Standard Exceeded (1 hour/8 hour)	6/46	4/30	2/9
Number of Days National Standard Exceeded (8 hour)	44	27	9
Fine Particulate Matter ($PM_{2.5}$)			
Maximum Concentration (24 hour, ug/m^3)	86.0	95.7	51.3
Number of Days National Standard Exceeded (24-hour Measured)	31.1	36	10
National Annual Average (ppm)	14.8	16.2	11.1
Annual standard exceeded?	Yes	Yes	No
Inhalable Particulate Matter (PM_{10})			
Maximum Concentration (ug/m^3)	115.6	152.2	175.6
Number of Days National Standard Exceeded	0	0	6.1
Number of Days State Standard Exceeded	111.6	116.0	78.3

Notes: Measurements from the Fresno-Sierra Skypark #2 Station for Ozone, Fresno-Drummond Street Station for PM_{10}, and the Fresno-Garland Station for $PM_{2.5}$.
Source: California Air Resources Board 2020a

Existing on-site air emissions are limited to very occasional O&M activities. The nearest sources of air emissions to the project site include area roadways (primarily North Milburn Avenue) and the Sierra Sky Park Airport. The nearest sensitive receptors are residences south of Milburn Pond, which range from approximately 100 to 500 feet south of the existing access road that would be improved. Residences at Hansen Farm are approximately 1,100 feet from the nearest

construction area. No schools or other non-residential sensitive receptors occur within 1,500 feet of construction areas.

Attainment Status

Both EPA and CARB designate areas of the State as attainment, nonattainment, maintenance, or unclassified for the various pollutant standards according to the Federal CAA and the California CAA, respectively. An "attainment" designation for an area signifies pollutant concentrations did not violate the NAAQS or CAAQS for that pollutant in that area. A "nonattainment" designation indicates a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as identified in the criteria. A "maintenance" designation indicates the area previously had nonattainment status and currently has attainment status for the applicable pollutant; the area must demonstrate continued attainment for a specified number of years before it can be re-designated as an attainment area. An "unclassified" designation signifies data do not support either an attainment or a nonattainment status. **Table 3.4.3** presents the attainment status for pollutants in the SJVAB.

Toxic Air Contaminants

Toxic Air Contaminants (TACs) are defined as air pollutants that may cause or contribute to an increase in mortality or serious illness or may pose a present and potential hazard to human health (California Health and Safety Code Section 39655[a]). Toxic air pollutants are called hazardous air pollutants (HAPs) in Federal terms; however, the lists of TACs and HAPs are not the same. For example, California recognizes diesel particulate matter (DPM) and environmental tobacco smoke as toxic air pollutants, but the Federal Government does not (40 CFR Part 63 Subpart C).

The health effects associated with TACs vary but generally fall into three main categories: cancer risks, chronic noncancer risks, and acute noncancer risks. Health risks are a measure of the chance that an individual will experience health problems. For construction activities, the primary source of TACs is DPM. CARB estimated the health risk from exposure to DPM at 520 excess cancer cases per million people statewide in 2012. Between 1998 and 2010, ambient DPM concentrations decreased by 68 percent (CARB 2020b). Vehicles on roadways near the project site contribute to DPM and other mobile-source TAC emissions. Sierra Skypark Airport and commercial and industrial enterprises within 10 miles of the project site may contribute to ambient TAC emissions.

Odors

Odors are generally regulated as nuisances and do not typically pose a health risk. Odorous processes or facilities often lead to citizen complaints to local governments, including the SJVAPCD. Odor impacts are subjective because different people have different sensitivities to odor. As such, the significance of odor impacts is usually determined by the number of complaints received for a source (SJVAPCD 2015). Examples of facilities that could adversely affect area receptors because of odors include wastewater treatment facilities, landfills, petroleum refineries, chemical manufacturing, food processing facilities, dairy lots, and rendering plants.

Table 3.4.3. Federal and State Attainment Status of San Joaquin Valley Air Basin

Pollutant	Designation/Classification National Standards [a]	Designation/Classification California Standards [b]
Ozone - One hour	No Federal Standard[c]	Nonattainment/Severe
Ozone - Eight hour	Nonattainment/Extreme[d]	Nonattainment
Inhalable Particulate Matter (PM_{10})	Attainment[e]	Nonattainment
Fine Particulate Matter ($PM_{2.5}$)	Nonattainment[f]	Nonattainment
Carbon Monoxide	Attainment/Unclassified	Attainment/Unclassified
Nitrogen Dioxide	Attainment/Unclassified	Attainment
Sulfur Dioxide	Attainment/Unclassified	Attainment
Lead (Particulate)	No Designation/Classification	Attainment
Hydrogen Sulfide	No Federal Standard	Unclassified
Sulfates	No Federal Standard	Attainment
Visibility Reducing Particles	No Federal Standard	Unclassified
Vinyl Chloride	No Federal Standard	Attainment

Notes:
a See 40 CFR Part 81
b See CCR Title 17 Sections 60200-60210
c Effective June 15, 2005, the U.S. Environmental Protection Agency (EPA) revoked the Federal 1-hour ozone standard, including associated designations and classifications. EPA had previously classified the San Joaquin Valley Air Basin (SJVAB) as extreme nonattainment for this standard. EPA approved the 2004 Extreme Ozone Attainment Demonstration Plan on March 8, 2010 (effective April 7, 2010). Many applicable requirements for extreme 1-hour ozone nonattainment areas continue to apply to the SJVAB.
d Though the Valley was initially classified as serious nonattainment for the 1997 8-hour ozone standard, EPA approved Valley reclassification to extreme nonattainment in the Federal Register on May 5, 2010 (effective June 4, 2010).
e On September 25, 2008, EPA re-designated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.
f The Valley is designated nonattainment for the 1997 PM2.5 NAAQS. EPA designated the Valley as nonattainment for the 2006 $PM_{2.5}$ NAAQS on November 13, 2009 (effective December 14, 2009).
Source: San Joaquin Valley Air Pollution Control District 2020

Sensitive Receptors

Sensitive receptors are areas where human populations (especially children, seniors, and sick persons) are located and where there is reasonable expectation of continuous human exposure to air pollutants of concern. Typical sensitive receptors are residential subdivisions, schools, day care facilities, nursing homes, or hospitals. The nearest sensitive receptors to the project site are residences on the bluff, to the south of the Milburn Unit. These residences are within several hundred feet of the existing access route that would be improved and used during construction, but there are no sensitive receptors within 1,500 feet of the primary construction areas.

3.4.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

Federal air quality is regulated by EPA. The Federal CAA was created in 1970 and was amended in 1977 and 1990 to regulate air emissions from mobile and stationary sources to protect public health and welfare. The law authorized EPA to establish NAAQS for six air pollutants, known as "criteria" air pollutants: CO, lead, NO_2, particulate matter (PM_{10} and $PM_{2.5}$), ozone, and SO_2. Pursuant to the Federal CAA, states are required to prepare state implementation plans to achieve these standards.

State Plans, Policies, Regulations, Laws

CARB implements Federal air quality regulations and sets additional regulations at the State level. CARB is responsible for protecting public health, welfare, and ecological resources by reducing air pollutants. CARB's regulations are contained in CCR Title 13, Division 3, and Title 17, Division 3. CARB is responsible for establishing ambient air quality standards and determining if an area is in attainment, nonattainment, or unclassified for each CAAQS.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

The Parkway Master Plan (SJRC 2018) includes goals and supporting policies related to air resources, climate change adaptation, and sequestration, but these goals and policies are not directly relevant to the analysis of this project.

San Joaquin Valley Air Pollution Control District

SJVAPCD is the local entity responsible for implementing Federal and State air quality regulations in San Joaquin, Stanislaus, Merced, Madera, Fresno, Tulare, Kings, and part of Kern County.

Air Quality Plans

SJVAPCD is required to adopt plans describing how they intend to meet CAAQS and NAAQS. These plans require, among other emissions-reducing activities, control technology for existing sources; control programs for area sources and indirect sources; a permitting system designed to ensure no net increase in emissions from any new or modified permitted sources of emissions; transportation control measures; sufficient control strategies to achieve a 5 percent or more annual reduction in emissions (or 15 percent or more in a 3-year period) for volatile organic compounds, nitrogen oxides (NO_x), CO, $PM_{2.5}$, and PM_{10}; and demonstration of compliance with CARB's established reporting periods for compliance with air quality goals.

Air Quality Rules

SJVAPCD enforces the following rules and regulations that may be relevant to the proposed project for certain responsible agencies:

- Regulation VIII: Fugitive Dust. This regulation includes rules to reduce PM_{10} emissions (predominantly dust), including construction and demolition activities, road construction, bulk materials storage, paved and unpaved roads, and carryout and track out.
- Rule 3135: Dust Control Plan Fee. This rule requires applicants to submit a fee to accompany dust control plans to cover SJVAPCD's cost for reviewing such plans and conducting compliance inspections.
- Rule 9510: Indirect Source Review. This rule was adopted to fulfill SJVAPCD's emissions reduction commitments in the PM_{10} and ozone attainment plans and reduce emissions through both on-site and off-site measures. SJVAPCD has established screening levels, and projects that exceed a screening level must file an Air Impact Assessment application with SJVAPCD. The Air Impact Assessment lists project attributes, including on-site mitigation measures, so that SJVAPCD can estimate emissions and assess the appropriate fee to offset project-related emissions. The rule requires that applicants quantify NO_x and exhaust PM_{10} emissions and reduce construction emissions by 20 percent for NO_x and 45 percent for PM_{10} when compared to the Statewide fleet average. For operations, NO_x emissions must be reduced by 33.3 percent and exhaust PM_{10} emissions must be reduced by 50 percent. Both construction and operations emissions can be reduced by implementing on-site measures and/or paying an off-site fee.

Guidance for Assessing and Mitigating Air Quality Impacts

SJVAPCD published the *Guidance for Assessing and Mitigating Air Quality Impacts* advisory document to provide CEQA lead agencies, consultants, and project applicants with uniform procedures for addressing air quality in environmental documents (SJVAPCD 2015). This document contains qualitative and quantitative significance thresholds for assessing impacts from construction and operations activities.

Fresno County General Plan

The Fresno County General Plan Open Space and Conservation Element (County of Fresno 2000) includes the following general air quality goal that may be relevant to the proposed project for certain responsible agencies:

GOAL OS-G: To improve air quality and minimize the adverse effects of air pollution in Fresno County.

The Fresno County General Plan includes policies and implementation measures that relate to CEQA review of projects where the County is the lead agency, but does not include policies or implementation programs potentially relevant to the analysis in this EIR.

City of Fresno General Plan

The City of Fresno General Plan (City of Fresno 2014) includes the following Resource Conservation and Resilience objective and policy that may be relevant to the proposed project for certain responsible agencies:

Objective RC-4: In cooperation with other jurisdictions and agencies in the San Joaquin Valley Air Basin, take necessary actions to achieve and maintain compliance with State and federal air quality standards for criteria pollutants.

- **Policy RC-4-a: Support Regional Efforts.** Support and lead, where appropriate, regional, State and federal programs and actions for the improvement of air quality, especially the SJVAPCD's efforts to monitor and control air pollutants from stationary and mobile sources and implement Reasonably Available Control Measures in the Ozone Attainment Plan.

3.4.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

According to Appendix G of the State CEQA Guidelines, significance criteria established by the applicable air quality management district or air pollution control district may be relied on to make significance determinations for potential impacts on environmental resources. For the proposed project, significance criteria are established by SJVAPCD. Analysis requirements and suggested thresholds of significance for construction- and operations-related pollutant emissions for proposed projects are described in SJVAPCD's *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015). **Table 3.4.4** presents SJVAPCD thresholds of significance below which a project can safely be considered to have a less-than-significant impact on air quality standards or less-than-cumulatively considerable contributions to a significant cumulative impact on regional air quality.

Table 3.4.5. Air Quality Thresholds of Significance – Criteria Pollutants

Pollutant/Precursor	Construction Emissions (tons per year)	Operational Emissions	
		Permitted Equipment and Activities (tons per year)	Non-Permitted Equipment and Activities (tons per year)
Carbon Monoxide	100	100	100
Nitrogen Oxides	10	10	10
Reactive Organic Gases	10	10	10
Sulfur Oxides	27	27	27
Inhalable Particulate Matter (PM_{10})	15	15	15
Fine Particulate Matter ($PM_{2.5}$)	15	15	15

Source: San Joaquin Valley Air Pollution Control District 2015

SJVAPCD also identifies thresholds of significance for ambient air quality based on CAAQS and NAAQS. As a screening tool, SJVAPCD recommends an ambient air quality analysis be performed when on-site construction emissions would exceed 100 pounds per day of any criteria pollutant, after implementation of all enforceable mitigation measures.

The criteria established by SJVAPCD were used to determine whether the project would:

- conflict with or obstruct implementation of the applicable air quality plan,
- result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable Federal or State ambient air quality standard,
- expose sensitive receptors to substantial pollutant concentrations, or
- result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Issues Not Discussed Further

Result in other Emissions Such as Odors Adversely Affecting A Substantial Number of People. Project construction activities would generate exhaust from diesel-powered vehicles and equipment, but would not create other sources of objectionable odors. Most of the project site is isolated from concentrations of people; the nearest residential area is more than 1,500 feet from the primary work areas. Although there would be minor improvements to an access road approximately 100 feet away from the closest residences and this road would be used by construction vehicles, road improvements would be completed in approximately 5 days, and use of this access route is unlikely to result in objectionable odors and would not result in objectionable odors adversely affecting a substantial number of people. Therefore, this issue is not discussed further.

Analysis Methodology

The California Emissions Estimator Model (CalEEMod) version 2016.3.2 was used to calculate potential emissions associated with project construction and O&M. Estimates of equipment and usage input were provided for the air quality analysis by DWR engineers. Emissions model analysis results are provided in **Appendix B**, "Air Quality and Greenhouse Gas Emissions Modeling Results."

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis and mitigation measure development. No comments related to air quality were received.

Impact Analysis and Mitigation Measures

Impact 3.4.1: ***Conflict with Air Quality Plans.*** *The project would generate construction-related mobile emissions and dust below the thresholds of significance and would not conflict with air quality plan implementation. Therefore, this impact would be* ***less than significant****.*

The proposed project would generate construction-related mobile emissions and dust (discussed under Impact 3.4.2), but these emissions would not impede attainment of NAAQS or CAAQS because emissions would be below the thresholds of significance. Accordingly, the project would not conflict with the measures and commitments included in SJVAPCD's attainment plans or the State Implementation Plan Strategy. Therefore, this impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Impact 3.4.2: ***Increase in Criteria Pollutant Concentrations.*** *Criteria air pollutant emissions would be below SJVAPCD's annual thresholds of significance. However, the project would generate maximum daily on-site construction-related NO_x above SJVAPCD's screening level for ambient air quality. This would be a* ***significant*** *impact.*

Project construction is expected to occur over a 9-month period, beginning as early as May 1, 2023 and continuing into February 2024. Equipment and materials would be transported to the project site by haul trucks. Equipment anticipated to be used during project construction is listed in Table 2.2 in Chapter 2, "Project Description." Smaller vehicles would also be used to transport construction workers to and from the project site. The small number of truck and construction worker trips that would temporarily occur on local roadways during project construction would have no long-term effect on the level of service of any local roadways and would not create a CO hotspot.

SJVAPCD significance thresholds and potential maximum annual reactive organic gas and criteria pollutant emissions estimated for project construction and operations activities are presented in **Table 3.4.5**. These estimates include the reductions of 20 to 45 percent for NO_x and PM_{10} that would be achieved with implementation of Mitigation Measures 3.4.2a and 3.4.2b. Annual emissions of all pollutants and precursors resulting from project construction and operation would be well below SJVAPCD thresholds.

Table 3.4.5. Estimated Annual Mitigated Emissions, Construction and Operations

Pollutant/Precursor	Significance Threshold (tons per year)	Construction Emissions (tons per year)	Operational Emissions from Non-Permitted Equipment and Activities (tons per year)
Carbon Monoxide	100	4.67	0.03
Nitrogen Oxides	10	4.90	0.03
Reactive Organic Gases	10	0.64	0.004
Sulfur Oxides	27	0.02	<0.001
Inhalable Particulate Matter (PM_{10})	15	0.85	0.001
Fine Particulate Matter ($PM_{2.5}$)	15	0.49	<0.001

Sources: San Joaquin Valley Air Pollution Control District 2015, modeling conducted by Tetra Tech in 2020

As a screening tool for compliance with ambient air quality standards, SJVAPCD recommends an ambient air quality analysis be performed when on-site construction emissions would exceed 100 pounds per day of any criteria pollutant, after implementation of all enforceable mitigation measures. **Table 3.4.6** presents maximum daily emissions estimates for on-site construction activities. Maximum daily NO_x emissions would exceed the SJVAPCD's recommended daily screening level. This impact would be **significant**. Mitigation Measure 3.4.2a has been developed to reduce this impact to a less-than-significant level. Therefore, the project is presumed to comply with ambient air quality standards and an ambient air quality analysis is not necessary. Additionally, projects must comply with SJVAPCD Regulation VIII (Fugitive PM_{10} Prohibition) to be considered less-than-significant. Mitigation Measure 3.4.2b has been developed to ensure full compliance with this regulation.

Table 3.4.6. Estimated Maximum Daily On-Site Construction Emissions

Pollutant/Precursor	Screening Level (pounds per day)	On-Site Construction Emissions (Unmitigated) (pounds per day)	On-Site Construction Emissions (Mitigated) (pounds per day)
Carbon Monoxide	100	89.2	89.2
Nitrogen Oxides	100	**112.7**	90.1
Reactive Organic Gases	100	12.4	12.4
Sulfur Oxides	100	0.3	0.3
Inhalable Particulate Matter (PM_{10})	100	32.3	14.2
Fine Particulate Matter ($PM_{2.5}$)	100	17.6	9.8

Note: **Bold** text indicates emission above significance threshold
Sources: San Joaquin Valley Air Pollution Control District 2015, Tetra Tech 2020

Mitigation Measure 3.4.2a: Implement Construction Equipment Nitrogen Oxides and Particulate Matter Controls.

DWR will reduce exhaust emissions for construction equipment greater than 50 horsepower used or associated with the proposed project by the following amounts from the Statewide average as estimated by CARB:

- 20 percent of the total NO_x emissions
- 45 percent of the total PM_{10} exhaust emissions

Emissions accounting methods will be as described in SJVAPCD Rule 9510.

Timing: During construction activities.

Responsibility: DWR.

Mitigation Measure 3.4.2b: Implement San Joaquin Valley Air Pollution Control District Regulation VIII Fugitive PM_{10} Prohibitions Best Management Practices.

All projects are subject to SJVAPCD rules and regulations in effect at the time of construction. Control of fugitive dust is required by SJVAPCD Regulation VIII. DWR will implement or require its contractor to implement all SJVAPCD measures (SJVAPCD 2004) listed below that apply to the proposed project:

- Apply water to unpaved surfaces and areas.
- Use non-toxic chemical or organic dust suppressants on unpaved roads and traffic areas.
- Limit or reduce vehicle speed on unpaved roads and traffic areas.
- Maintain areas in a stabilized condition by restricting vehicle access.
- Install wind barriers.
- During high winds, cease outdoor activities that disturb the soil.
- Keep bulk materials sufficiently wet when handling.
- Store and handle material in a three-sided structure.
- When storing bulk material, apply water to the surface or cover the stage pile with a tarp.
- Do not overload haul trucks (overloaded trucks are likely to spill bulk materials).
- Cover haul trucks with a tarp or other suitable cover. Or, wet the top of the load enough to limit visible dust emissions.
- Clean the interior of cargo compartments on emptied haul trucks prior to leaving the site.
- Prevent trackout by installing a trackout control device.
- Clean up trackout at least once a day. If along a busy road or highway, clean up trackout immediately.
- Monitor dust-generating actives and implement appropriate measures for maximum dust control.

Timing: During construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measures 3.4.2a and 3.4.2b would reduce the potentially significant impact related to criteria air pollutants to a less-than-significant level because the reductions from the Statewide average required by the measure would limit maximum daily NO_x emissions to less than the SJVAPCD daily

threshold, and implementing Regulation VIII requirements would meet requirement for a less-than-significant conclusion for fugitive dust emissions under SJVAPCD rules.

Impact 3.4.3: ***Expose Sensitive Receptors to Substantial Pollutant Concentrations.*** *The project would generate construction-related mobile emissions and dust. Because of the temporary and localized emissions, and the distance from sensitive receptors to the primary work areas, this would result in a* ***less-than-significant*** *impact.*

Project-related pollutants would include exhaust from construction vehicles and equipment. Exhaust from diesel-powered vehicles and equipment would also be a source of TACs, with DPM the primary TAC of concern. For exposure to TACs, the primary concern is the dose to receptors. Dose levels account for substance concentration and exposure duration. A longer exposure period results into a higher dose and correspondingly higher level of health risk. The project's emission of potential construction-related pollutants, including TACs would be localized and temporary (occurring over an approximately 9-month construction season compared to the 30-year exposure period typically prescribed for a Health Risk Assessment) and would not affect a substantial number of people because of the distance (at least 1,500 feet) of the nearest sensitive receptors from the primary work areas. Although access road improvements would occur in closer proximity to sensitive receptors, these activities would be completed in approximately 5 days, and use of the access route during construction would be periodic. Construction-related pollutants, including PM_{10} (a surrogate for DPM) would be further reduced by implementing best management practices (BMPs) to minimize exhaust emissions included in DWR's *Climate Action Plan Phase 1: Greenhouse Gas Emissions Reduction Plan* (GGERP) (see Section 3.8, "Greenhouse Gas Emissions").

Long-term, project-related O&M activities would include patrols via pickup truck after high- or long-duration flows. Periodic maintenance to remove accumulated debris at the modified French drain intake would be conducted, as needed, and may require an excavator or similar equipment. No permanent pollutant sources would be generated by the project, and inspections and debris removal would occur infrequently. Because of the periodic and short-term nature of these activities, as well as the distance of the nearest sensitive receptor to project features that may require maintenance, ongoing project O&M would result in very minimal exposure of sensitive receptors to pollutants.

Because project emissions would be short term and temporary, and most emissions would occur at a substantial distance (at least 1,500 feet) from sensitive receptors, project construction and O&M activities would not expose sensitive receptors to substantial pollutant concentrations. Therefore, this impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impact associated with air quality.

3.5 Biological Resources

This section discusses the existing setting for aquatic and terrestrial biological resources in the project vicinity, summarizes applicable regulations, analyzes potential impacts of the project related to biological resources, and identifies mitigation measures to reduce potentially significant impacts to a less-than-significant level.

The discussion presented in this section is based on information from a variety of sources that address biological resources in the project vicinity and larger region. Several biological resource databases were queried, including DFW's California Natural Diversity Database (CNDDB) (DFW 2020a) and the California Native Plant Society (CNPS) online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2020). List of resources under NMFS or USFWS jurisdiction that could occur in the project vicinity were obtained from the Information for Planning and Conservation (IPaC) website (USFWS 2020) and online California Species List Tools (NMFS 2020), respectively. Additional sources of information on individual plant and wildlife species also were reviewed. Information relating directly to the project is based on that compiled by DWR to support project planning and design, a habitat evaluation report prepared for the Milburn and Hansen Farm Units (URS 2003), and observations made during a field survey conducted by DWR biologists in October 2020. The primary purposes of the field survey were to update information presented in the previous reports and evaluate potential for the proposed project to impact biological resources, based on current conditions.

3.5.1 Environmental Setting

The project site is within a DFW ecological reserve on the south side of the San Joaquin River and extends along approximately 1.5 miles of the river (between river miles 247 and 249). The Fresno urban area is immediately to the south. The project site is dominated by Milburn Pond and other smaller ponds and off-river channels created by past mining activities. Vegetated and barren berms and upland terraces separate the ponds from the San Joaquin River.

Habitats and Cover Types

Table 3.5.1 lists the habitat and cover types and their acreages in the construction footprint. **Figure 3.5.1** shows habitat and cover types in the construction footprint and within a 100-foot buffer of the footprint. This figure was developed based on the October 2020 field survey and review of Google Earth© aerial imagery. Habitat types were determined by identifying dominant general features such as vegetation compositions and structure, presence of water, and current land use. Habitat types were not identified based on specific natural communities and may support one or more natural community. Areas that were inaccessible during the field survey were categorized based on aerial imagery interpretation.

Open Water

Open water includes portions of the San Joaquin River, Milburn Pond, Pond 1, and channels between Pond 2 and the river.

Table 3.5.1. Habitat and Land Cover Types in the Construction Footprint

Habitat/Land Cover Type	Acres in Construction Footprint
Open Water	1.97
Wetland Vegetation	0.22
Riparian Scrub	3.41
Riparian Woodland	0.78
Oak Woodland	0.68
Silver Bush Lupine Scrub	0.92
Nonnative Grassland	7.35
Eucalyptus Grove	0.52
Former Agriculture	8.02
Orchard	1.29
Disturbed	0.63

Source: Data collected by California Department of Water Resources in 2020

Wetland Vegetation

Wetland Vegetation includes areas of emergent vegetation cover along the river and pond edges. It occurs in a narrow band dominated by common native species, including rush (*Juncus* spp.), swamp smartweed (*Polygonum hyrdropiperoides*), punctate smartweed (*Polygonum punctatum*), common spikerush (*Eleocharis macrostachya*), and rice-leaf cutgrass (*Leersia oryzoides*). Southern cattail (*Typha domingensis*) and broadleaved cattail (*Typha latifolia*) also occur intermittently along the edge of Milburn Pond.

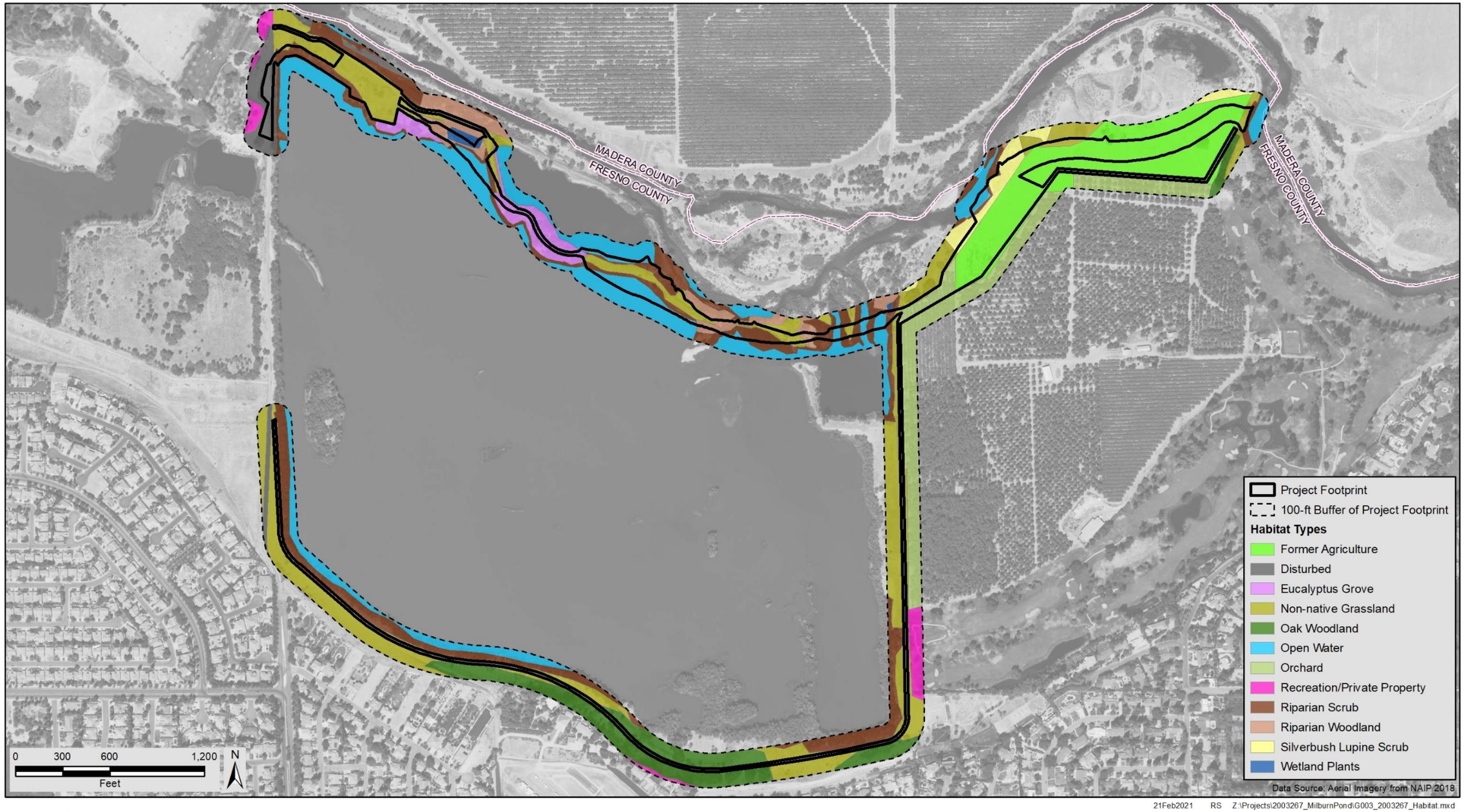
Riparian Scrub

Riparian Scrub lacks a well-developed tree layer and is dominated by sandbar willow (*Salix exigua*) and Goodding's black willow shrubs, saplings, and young trees. Other shrubs include mulefat (*Baccharis salicifolia*) and giant reed (*Arundo donax*). Rushes occur in the herbaceous layer.

Riparian Woodland

Riparian Woodland consists of riparian shrubs, trees, and an understory of grasses and forbs. Dominant trees found in this habitat include Goodding's black willow, valley oak, California sycamore, Fremont cottonwood, Oregon ash (*Fraxinus latifolia*), white alder (*Alnus rhombifolia*), and California black walnut. The shrub layer primarily consists of sandbar willow, California button willow (*Cephalanthus occidentalis*), and blue elderberry (*Sambucus nigra* ssp. *cerulea*). The herbaceous vegetation layer consists primarily of exotic annual grasses and occasional patches of mugwort (*Artemesia douglasiana*).

Figure 3.5.1. Habitat and Land Cover Types within the Construction Footprint and a 100-foot Buffer



Source: California Department of Water Resources 2020

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Oak Woodland

Oak woodland on and adjacent to the project site includes valley oak as a co-dominant species in the tree canopy with walnut, California sycamore, Fremont cottonwood, and Gooding's willow. Along the San Joaquin River, associated shrubs include Himalayan blackberry (*Rubus armeniacus*).

Silver Bush Lupine Scrub

Silver bush lupine scrub occurs in areas adjacent to the San Joaquin River where sand has deposited, creating a sandbar or dry alluvial dunes. Silver bush lupine (*Lupinus albifrons*) is the dominant shrub, with areas of California buckwheat (*Eriogonum fasciculatum*) nonnative grasses and California poppy (*Eschscholzia californica*).

Nonnative Grassland

Nonnative Grassland is dominated by exotic annual grasses and ruderal vegetation. Dominant grasses include ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceous*), wild oats (*Avena fatua*), zorro grass (*Vulpia myuros*), hairgrass (*Aira* sp.), and red brome (*Bromus madritensis* ssp. *rubens*). In some Grassland areas, yellow star-thistle (*Centaurea* spp.) and short pod mustard (*Hirschfeldia incana*) are abundant. In 2003, several patches of creeping wildrye (*Leymus triticoides*), a native, perennial grass, were observed, but this species was not observed during the 2020 survey.

Eucalyptus Grove

Eucalyptus occurs in two groves along the berm between the San Joaquin River and Milburn Pond. In these groves, the eucalyptus trees grow close together, shading out other tree and shrub species, and ground cover is limited to a thick layer of leaves and fallen branches. Eucalyptus were often planted as groves and windbreaks because of their fast growth, and they have become naturalized in areas such as the project site.

Orchard

The eastern portion of the project site is bordered by an actively maintained and cultivated pistachio orchard. A small portion of this orchard land extends onto to Hansen Unit and overlaps the construction footprint.

Former Agriculture

The area mapped as former agricultural is fallow; this area has not been actively cultivated for many years but is regularly maintained. It is regularly disced to manage weeds, and no vegetation was growing in this area at the time of the site visit.

Disturbed

Disturbed areas include those altered by human activities, such as paving and grading. Areas mapped as disturbed habitat include North Milburn Avenue and large, sandy areas adjacent to the river channel. Well-established dirt roads and other disturbed barren areas occur throughout the construction footprint but are not specifically mapped due to the scale. In most cases, these fall within areas shown as nonnative grassland.

Fish and Wildlife

Fish and wildlife populations that use the San Joaquin River and associated corridor in the project area have been highly altered by upstream dam construction, past mining activities, adjacent urban and suburban development, agricultural production, and other human land uses. Most of the floodplain and its native habitats and migration corridors have been lost or severely degraded. As a result, the high abundance and wide diversity of native fish and wildlife species have been greatly reduced, and some species are no longer present. Riparian habitat on the project site occurs in narrow bands and is generally considered to be of low quality due to the prevalence of nonnative species. However, the project site provides habitat for a variety of common birds, amphibians, reptiles, and mammals, particularly those that are able to use the narrow corridors of remnant vegetation. Nest colonies of great blue heron (*Ardea herodias*), great egret (*Ardea alba*), and double-crested cormorant (*Phalacrocorax auritus*) have been documented in the past in the eucalyptus grove near the northwest corner of Milburn Pond.

Fish communities in the project area have changed markedly in the past 150 years (BOR and DWR 2011). Native fish assemblages were historically adapted to widely fluctuating riverine conditions, ranging from large winter and spring floods to low summer flows, and had migratory access to extensive upstream habitat. These environmental conditions resulted in a broad diversity of fishes, including anadromous species, occurring throughout the San Joaquin River. Currently, the project area is almost completely separated from the lower San Joaquin River and the ocean fishery by fish barriers (i.e., Hills Ferry Barrier) and insufficient flows downstream of the project site.

Native fish that persist in the San Joaquin River in the project area include Sacramento pikeminnow (*Ptychocheilus grandis*), Sacramento sucker (*Catostomus occidentalis*), prickly sculpin (*Cottus asper*), and rainbow trout (*Oncorhynchus mykiss*). Milburn Pond provides habitat for many warmwater fish species, such as largemouth bass (*Micropterus salmoides*), green sunfish (*Lepomis cyanellus*), redear sunfish (*L. microlophus*), bluegill (*L. macrochirus*), and black crappie (*Pomoxis nigromaculatus*). In 2012-2014, USFWS assessed predator abundance and distribution in mine pit habitat along the San Joaquin River. The study was intended to estimate predatory fish species distribution, richness, and abundance and inform prioritization of mine pits for restoration. Each year, sampling in Milburn Pond had some of the highest predatory fish densities of all locations sampled (DFW 2018).

Special-status Species

Plants and animals addressed as special-status species in this section include taxa (distinct taxonomic categories or groups) that fall into any of the following categories:

- taxa officially listed, candidates for listing, or proposed for listing by the Federal government or the State of California as endangered, threatened, or rare;
- taxa that meet the criteria for listing;
- wildlife identified by DFW as species of special concern and plant taxa considered by DFW to be “rare, threatened, or endangered in California;”
- species listed as Fully Protected under the California Fish and Game Code (FGC); or
- species afforded protection under local or regional planning documents.

Plant taxa are assigned by DFW to one of the following six California Rare Plant Ranks (CRPRs):

- CRPR 1A—Plants presumed to be extinct in California;
- CRPR 1B—Plants that are rare, threatened, or endangered in California and elsewhere;
- CRPR 2A—Plants that are presumed extirpated in California, but are more common elsewhere;
- CRPR 2B—Plants that are rare, threatened, or endangered in California but more common elsewhere;
- CRPR 3—Plants about which more information is needed (a review list); or
- CRPR 4—Plants of limited distribution (a watch list).

All plants with a CRPR are considered "special plants" by DFW, but this is a broad term used to refer to all plant taxa inventoried in the CNDDB, regardless of their legal or protection status. Plants ranked as CRPR 1 or 2 may qualify as endangered, rare, or threatened species within the definition presented in Section 15380 of the State CEQA Guidelines. DFW recommends, and local governments may require, that CRPR 1 and 2 plants be addressed in CEQA projects. In general, CRPR 3 and 4 species do not meet the definition of endangered, rare, or threatened pursuant to State CEQA Guidelines Section 15380; however, these species may be evaluated by the lead agency on a case-by-case basis when developing significance criteria under CEQA. This analysis considered all plants with a CRPR.

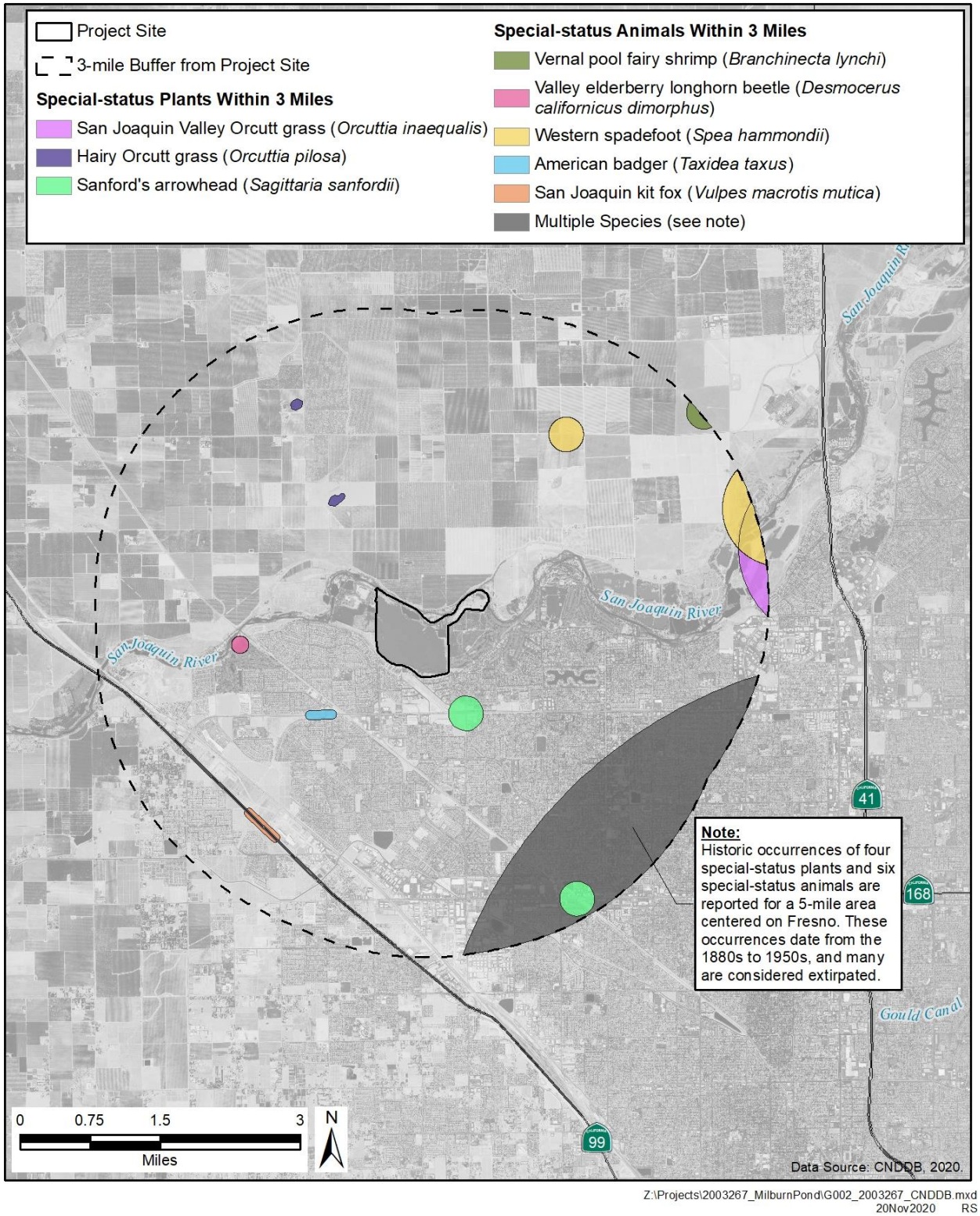
DFW applies the term "California species of special concern" to wildlife species that are not listed under the Federal Endangered Species Act (ESA) or California Endangered Species Act (CESA) but that are nonetheless declining at a rate that could result in listing, or that historically occurred in low numbers and are subject to current known threats to their persistence.

The CNDDB and CNPS inventory queries included the U.S. Geological Survey Fresno North 7.5-minute quadrangle and the surrounding eight quadrangles. These queries yielded occurrences of 16 special-status plant taxa and 21 special-status animal taxa. Occurrences that have been documented within 3 miles of the project site are shown in **Figure 3.5.2.** The USFWS IPaC list three plant taxa, seven wildlife taxa, and one fish taxon that are listed as Federally threatened or endangered. The NMFS species lists include one Federally listed anadromous fish taxon. Results of the CNDDB and CNPS inventory queries and the IPaC and NMFS lists are provided in **Appendix C**.

Special-status Plants

Table 3.5.2 provides information on special-status plant species for which potentially suitable habitat was determined to be present on the project site during the October 2020 field survey. These species are also discussed below. The two Orcutt grasses that have been documented in the project vicinity are restricted to vernal pool habitat, which does not occur on the project site; these and other special-status plants for which suitable habitat does not occur on the project site are not discussed further.

Figure 3.5.2. California Natural Diversity Database Occurrences of Special-status Plants and Animals within 3 Miles of the Project Site



Source: California Department of Fish and Wildlife 2020, adapted by GEI Consultants, Inc. in 2020.

Table 3.5.2. Special-status Plants with Potentially Suitable Habitat on the Project Site

Species	Blooming Period	Status[1]		Habitat Associations	Potential to Occur on Project Site
		Federal	State		
Ewan's larkspur *Delphinium hansenii* ssp. *ewanianum*	March–May	–	4.2	Rocky soils in cismontane woodland and valley and foothill grassland	Very low; the project site provides poor-quality habitat from past mining activities and periodic flood flows; no occurrences are known from the project vicinity.
Hoover's calycadenia *Calycaldenia hooveri*	July–September	–	1B.3	Rocky soils in cismontane woodland and valley and foothill grassland	Very low; the project site provides poor-quality habitat from past mining activities and periodic flood flows; no occurrences are known from the project vicinity.
Hoover's eriastrum *Eriastrum hooveri*	February–July	–	4.2	Chenopod scrub, pinyon and juniper woodland, and valley and foothill grassland	Very low; the project site provides poor-quality habitat from past mining activities and periodic flood flows; no occurrences are known from the project vicinity.
Sanford's arrowhead *Sagittaria sanfordii*	May–October	–	1B.2	Assorted shallow freshwater marsh habitats in freshwater wetlands and wetland-riparian communities	Moderate; suitable habitat occurs on the project site, and the species was observed on-site in 2002 and approximately 2006; dominance of scarlet wisteria is likely a limiting factor to current distribution.

[1] Status Definitions
– = No status
California Rare Plant Ranks
1B = Plants that are rare or endangered in California and elsewhere
4 = Plants of limited distribution (a watch list)
California Rare Plant Rank Extensions
.2 = Fairly endangered in California (20 to 80 percent of occurrences are threatened and/or have a moderate degree and immediacy of threat)
.3 = Not very threatened in California (<20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)
Sources: Battistoni, pers. comm. 2021, DFW 2020a, CNPS 2020, DWR observations made in 2020, URS 2003

Sanford's arrowhead (*Sagittaria sanfordii*) is a CRPR 1B.2 plant. It is a perennial aquatic herb typically found in standing or slow-moving, shallow freshwater marsh in ponds, ditches, and sloughs. Sanford's arrowhead grows from a tuber and has large, lance-shaped leaf blades that emerge above water, while the lower parts of the plant are submerged. A small population of Sanford's arrowhead was observed along the northeast edge of Milburn Pond in August 2002 (URS 2003). More recently (approximately 2006) a population was observed on the eastern shore of Milburn Pond (Battistoni, pers. comm. 2021). No individuals were observed during the 2020 field survey. Scarlet wisteria (*Sesbania punicea*) was observed growing in many areas along the shoreline of the San Joaquin River and the on-site ponds, and its presence may have negatively impacted the Sanford's arrowhead population observed in 2002. Sensitive plant species, such as Sanford's arrowhead, that compete for similar habitat are unlikely to occur in areas with scarlet wisteria, due to the highly invasive nature of this species.

Special-status Wildlife

Table 3.5.3 provides information on special-status aquatic and terrestrial wildlife taxa for which potentially suitable habitat was determined to be present on the project site during the October 2020 field survey. Most of the species that were previously documented in the project vicinity, as shown on Figure 3.5.2, have no potential to occur on the project site because they are restricted to vernal pool habitat, which does not occur onsite, or they have been extirpated from the region. In addition, most of the species listed in Table 3.5.3 are unlikely to occur onsite because of poor habitat quality and likely extirpation from the Fresno area. Only species with low or moderate potential to occur are discussed further.

Table 3.5.3. Special-status Wildlife with Potentially Suitable Habitat on or Adjacent to the Project Site

Species	Status		Habitat Associations	Potential to Occur on or Adjacent to the Project Site
	Federal	State		
Invertebrates				
Crotch bumble bee *Bombus crotchii*	–	CE	Open grassland and scrubland	Very low; no known occurrences in the San Joaquin Valley since 1970s; nearest more recent occurrence is from Millerton Lake in 1982.
Reptiles				
northern California legless lizard *Anniella pulchra*	–	SSC	Sandy or loose, loamy soils with high moisture content, under sparse vegetation	Very low; soil conditions are poor due to past mining activities; regional occurrences in the past 50 years are from Sierra Nevada and Coast Range foothills.

Table 3.5.3. Special-status Wildlife with Potentially Suitable Habitat on or Adjacent to the Project Site

Species	Status		Habitat Associations	Potential to Occur on or Adjacent to the Project Site
	Federal	State		
California glossy snake *Arizona elegans occidentalis*	–	SSC	Wide variety of habitats, including grassland and scrub, often with loose or sandy soils	Very low; soil conditions are poor due to past mining activities; regional occurrences in the past 50 years are from the Coast Range foothills.
western pond turtle *Emys marmorata*	–	SSC	Variety of permanent or near-permanent water bodies, typically deep water; nests in sunny upland habitats, typically within several hundred feet of aquatic habitat	High; ponds and off-river channels provide potentially suitable aquatic habitat and individuals have been observed on the south shore of Milburn Pond; most on-site upland areas provide poor nesting habitat due to past mining activities.
coast horned lizard *Phrynosoma blainvillii*	–	SSC	Woodland and grassland habitats, most commonly along sandy washes with scattered low bushes	Very low; soil conditions are poor due to past mining activities; nearest occurrences are at least 20 miles from the project site, in remnant grassland and scrub habitats to the west.
Birds				
bald eagle *Haliaeetus leucocephalus*	–	SE FP	Nests in large trees, typically in mountain and foothill forest and woodland near foraging habitat at reservoirs, lakes, and rivers	Moderate; known to nest along the San Joaquin River, approximately 10 miles upstream of the project site.
burrowing owl *Athene cunicularia*	–	SSC	Nests and forages in grasslands, agricultural lands, open shrublands, and open woodlands with natural or artificial burrows or friable soils	Low; numerous occurrences in the region over the past 20 years; onsite habitat is limited and relatively poor, but suitable burrows are present.

Table 3.5.3. Special-status Wildlife with Potentially Suitable Habitat on or Adjacent to the Project Site

Species	Status		Habitat Associations	Potential to Occur on or Adjacent to the Project Site
	Federal	State		
Swainson's hawk *Buteo swainsoni*	–	ST	Nests in woodlands and scattered trees and forages in grasslands and agricultural fields	Moderate; numerous occurrences in the region over the past 20 years; not known to nest on or adjacent to the project site, but suitable nest trees are present, and nesting has been documented nearby.
white-tailed kite *Elanus leucurus*	–	FP	Nests in woodlands and isolated trees and forages in grasslands, pasture, and agricultural fields	Moderate; not known to nest on or adjacent to the project site, but likely occurs in the area, and suitable nest trees are present onsite.
Mammals				
American badger *Taxidea taxus*	–	SSC	Arid, open grassland, shrubland, and woodland with soils suitable for burrowing.	Very low; road-killed individual along Herndon Avenue was observed more than 30 years ago, when the area was much less developed; only recent occurrence in the Fresno region is from extensive grasslands nearly 10 miles north of the project site.
San Joaquin kit fox *Vulpes macrotis mutica*	FE	ST	Primarily grasslands and sparsely vegetated shrublands with loose-textured soils; can also use open agricultural habitats	Very low; road-killed individual along State Route 99 in Fresno was observed nearly 30 years ago, no known occurrences in the region in the past 25 years.

[1] Status Definitions
– = No status
Federal Status
FE = Listed as Endangered under the Federal Endangered Species Act
State Status
CE = Candidate for Listing as Endangered under the California Endangered Species Act
FP = Fully Protected under the California Fish and Game Code
SE = Listed as Endangered under the California Endangered Species Act
SSC = California Species of Special Concern
ST = Listed as Threatened under the California Endangered Species Act
Sources: Battistoni, pers. comm. 2021, DFW 2020a, DWR data 2020, USFWS 2020

Western Pond Turtle

Western pond turtle (*Emys marmorata*) is a California species of special concern that inhabits still and slow-moving aquatic habitats. It is found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with abundant vegetation and rocky or muddy bottoms. Pond turtles also require basking sites such as logs, rocks, cattail mats, and exposed banks. Female pond turtles nest in open upland areas with loose soils near aquatic habitat. Milburn Pond and smaller ponds and off-river channels on the project site provide potentially suitable aquatic habitat. No pond turtles were observed during the October 2020 or August 2002 biological surveys on the project site, but the individuals have been observed multiple times by DFW staff on the south shore of Milburn Pond (Battistoni, pers. comm. 2021). Most upland areas on the project site provide poor nesting habitat due to past mining activities.

Bald Eagle

Bald eagle is State-listed as endangered and fully protected under FGC Section 3511. Breeding habitat most commonly includes areas close to rivers, lakes, reservoirs, or other bodies of water that provide adequate food sources. During winter, bald eagles roost at sheltered sites, typically near water, and communal roost sites are commonly used by two or more individuals. The project sit is known to have supported nesting bald eagles in the past, but no active nests have been present onsite for approximately 20 years, before scarlet wisteria became widespread (Battistoni, pers. comm. 2021). The species is only occasionally observed at Milburn Pond (eBird 2021), and the nearest known active nest is approximately 10 miles upstream.

Burrowing Owl

Burrowing owl (*Athene cunicularia*) is a California species of special concern that prefers open, dry habitats. It is primarily a grassland species but can thrive in some landscapes that are highly altered by human activity, if suitable burrows for roosting and nesting and short vegetation are present. These owls typically nest and roost in burrow systems created by medium-sized mammals such as California ground squirrel (*Otospermophilus beecheyi*) or in artificial features (e.g., drainpipes and culverts) (Gervais et al. 2008). Burrowing owls have been recently documented in the region, and ground squirrel burrows were observed onsite and in adjacent areas during the October 2020 field survey. However, potential for burrowing owls to occur onsite is low because the project site is dominated by aquatic and scrub/woodland habitats and other tall vegetation that is unsuitable for the species, and no burrowing owls have been observed during biological surveys.

Swainson's Hawk

Swainson's hawk (*Buteo swainsoni*) is state listed as threatened. This species' primary breeding distribution in California is the Central Valley, but Fresno County is in the southern portion of the Central Valley breeding range, where the population is relatively sparse (DFG 2007). Swainson's hawks require grassland or other open habitat with adequate prey, in association with suitable nest trees. Suitable foraging habitats include grasslands and lightly grazed pastures, alfalfa and other hay crops, and certain grain and row crops. Very little potential foraging habitat is available on the project site, and nearby foraging habitat is limited by the dominance of urban development and unsuitable agricultural crops. However, large trees on and adjacent to the site provide potentially suitable nest sites. Swainson's hawks are known to have nested at Sycamore

Island, approximately 3 miles upstream of the site, in 2018. However, suitable foraging habitat is much more abundant in that area. Potential for Swainson's hawk to nest on or near the project site is moderate.

White-tailed Kite

White-tailed kite (*Elanus leucurus*) is fully protected under FGC Section 3511. This species occurs in virtually all lowlands of California. White-tailed kite nests in trees in lowland grasslands, agricultural areas, wetlands, oak woodland and savanna, and riparian areas with nearby open habitats (Moore 2000). They forage in grasslands, pasture, and some agricultural crops. As with Swainson's hawk, little foraging habitat is available in the project vicinity, but trees on and adjacent to the site are suitable for nesting. Therefore, white-tailed kite also has moderate potential to nest on or near the project site.

Special-status Fish

Table 3.5.4 lists special-status fishes that may have historically occurred in the San Joaquin River and may currently occur in the river and/or Milburn Pond. Species that are currently absent from the project site are not discussed further, except for Central Valley spring-run Chinook salmon (*Oncorhynchus tshawytscha*), because it is the focus of current reintroduction efforts.

Central Valley Spring-run Chinook Salmon

Central Valley spring-run Chinook salmon was once among the largest salmon runs on the Pacific Coast (Yoshiyama et al. 1998). Dam construction on the major Central Valley rivers was a key factor in the extirpation of spring-run Chinook salmon from these watersheds, including the San Joaquin River. As a result, the Central Valley spring-run Chinook salmon evolutionarily significant unit is Federally listed as threatened.

In the San Joaquin River, spring-run Chinook salmon historically spawned as far upstream as the present site of Mammoth Pool Reservoir (river mile 322) (P. Bartholomew, pers. comm., as cited in Yoshiyama et al. 1996). Construction of Friant Dam in the 1940s blocked access to upstream habitat (U.S. Bureau of Reclamation [Reclamation] and DWR 2011). Beginning in the late 1940s, water was diverted into canals to support agriculture in increasing amounts, and flows into the mainstem San Joaquin River below Friant Dam were reduced to a point that the river ran dry near Gravelly Ford (approximately 37 miles downstream of the project site). By 1950, the entire run of spring-run Chinook salmon was extirpated from the San Joaquin River (Fry 1961).

Reintroduction of spring-run Chinook salmon is currently under way as part of the SJRRP. The Restoration Goal is to restore and maintain fish populations in "good condition" in the mainstem San Joaquin River below Friant Dam to the confluence with the Merced River. The first release of juvenile spring-run Chinook salmon occurred in 2014, and 2016 was the first year in which fish released in 2014 may have returned as adults. Returning adults have not been documented from any of the juvenile release groups. Adult spring-run Chinook salmon do not currently occur in the project vicinity, but they have potential to occur in future years. This reintroduced population is designated as a 10(j) nonessential experimental population by NMFS, meaning it has been determined not to be essential for the continued existence of the species; regulatory restrictions are considerably reduced under this designation.

Table 3.5.4. Status of Special-status Fish Species with Historic or Current Presence on the Project Site or Adjacent San Joaquin River Reach

Life Cycle	Common Name	Scientific Name	Federal/State Listing[1]	Status
Anadromous	Central Valley Spring-run Chinook Salmon	*Oncorhynchus tshawytscha*	T/T	Absent[2]
	Central Valley Fall-run Chinook Salmon	*Oncorhynchus tshawytscha*	–/ SSC	Present
	Steelhead	*Oncorhynchus mykiss*	T/SSC	Absent
	White Sturgeon	*Acipenser transmontanus*	–/SSC	Absent
	Green Sturgeon	*Acipenser medirostris*	T/–	Absent
	River Lamprey	*Lampetra ayersi*	–/SSC	Unknown
	Pacific Lamprey	*Entosphenus tridentata*	–/SSC	Unknown
Riverine	Sacramento Hitch	*Lavinia exilicauda exilicauda*	–/SSC	Present
	Sacramento Splittail	*Pogonichthys macrolepidotus*	–/SSC	Present
	Central California Roach	*Lavinia symmetricus symmetricus*	–/SSC	Present
	Hardhead	*Mylopharodon conocephalus*	–/SSC	Present
	Riffle Sculpin	*Cottus gulosus*	–/SSC	Unknown

Notes:
1 SSC = California Species of Special Concern, T = Threatened
2 Central Valley spring-run Chinook salmon are a focus of San Joaquin River Restoration Program reintroduction activities and are designated by the National Marine Fisheries Service as a 10(j) non-essential experimental population.

Adult spring-run Chinook salmon historically used the San Joaquin River as a migration corridor during upstream migration in early spring on their way to holding habitat in the upper river reaches (Clark 1943). Historic migration generally occurred between April and June, with a peak in May. Spring-run Chinook salmon enter freshwater as sexually immature adult fish, and their holding period can last for several months before individuals are ready to spawn in fall (Moyle 2002; DFG 1998). They historically spawned in the San Joaquin River upstream from the town of Friant from late August to October, peaking in September and October (Clark 1943). Juveniles emerge from gravels into the water column in November to March (Fisher 1994, Ward and McReynolds 2001).

The length of time spent rearing in freshwater varies greatly among juvenile spring-run Chinook salmon across their range (Reclamation and DWR 2011). Juveniles may disperse downstream as fry soon after emergence, early in their first summer, in fall as flows increase, or as yearlings during spring after overwintering in freshwater (Healey 1991). In contrast to more northern spring-run Chinook salmon populations, many of the current Central Valley populations exhibit fry and smolt downstream migration during winter and spring of their first year, and relatively few exhibit a yearling life history (NMFS 2014). However, some juveniles likely migrate

downstream throughout the year (Nicholas and Hankin 1989). Historically, spring-run Chinook salmon juveniles likely used the San Joaquin River as a migration corridor and also a rearing area, due to the extensive floodplain habitat that was present. Juvenile salmonids rear on seasonally inundated floodplains when available. Increased growth rate through floodplain rearing is now understood to be a key element in the success of outmigrating juvenile Chinook salmon (Jeffres et al. 2008, Sommer et al. 2001).

Central Valley Fall-run Chinook Salmon

Central Valley fall-run Chinook salmon is a California species of special concern. Although the San Joaquin River historically supported a fall run, it comprised a small portion of the river's total Chinook salmon abundance (Moyle 2002). Fall-run Chinook salmon historically spawned in the mainstem San Joaquin River upstream from the Merced River confluence and in the mainstem channels of the major tributaries (Yoshiyama et al. 1996). Currently, however, they are primarily limited to the Merced, Stanislaus, and Tuolumne Rivers, where they spawn and rear downstream from mainstem dams (Reclamation and DWR 2011).

Because of inadequate flows and passage, DFW has operated a barrier (Hills Ferry Barrier) at the confluence of the Merced River with the San Joaquin River since the early 1990s to prevent adult fall-run Chinook salmon from migrating farther up the San Joaquin River, including into the project area. However, the Hills Ferry Barrier is not completely effective and allows passage under certain flow conditions. Therefore, since 2013, adults that pass the Hills Ferry Barrier have been trapped downstream of the project site and hauled to spawning grounds upstream of the project site, where successful spawning and juvenile production has been observed (SJRRP 2018). Fall-run Chinook salmon have also been seen spawning in the river channel adjacent to the project site (DFW 2018). Juveniles are thought to use the river in the project area for rearing and during downstream migration. However, low flows and high-water temperatures make it unlikely for fall-run Chinook to be present at the project site between April and November.

Fall-run Chinook salmon exhibit similar life history strategies as spring-run, with some distinctions. They generally spawn lower in watersheds than spring-run Chinook salmon (DFG 1957). Fall-run Chinook salmon also do not have a summer holding period; instead, they migrate upstream fully mature during fall and typically spawn soon after reaching the spawning grounds from October through December, peaking in November in the San Joaquin River tributaries (Reclamation and DWR 2011). Unlike spring-run Chinook salmon, only a small percent of fall-run exhibit a yearling life history strategy, and the majority emigrate as fry or smolts during winter or spring of the year they were born. Fall-run Chinook salmon fry typically disperse downstream from early January through mid-March, whereas smolts primarily migrate between late March and mid-June in the Central Valley (Brandes and McLain 2001).

Pacific Lamprey

Pacific lamprey (*Entosphenus tridentata*) is a California species of special concern. This species has been found in the San Joaquin River (USFWS 2017), but individuals are likely blocked from the project site and upstream areas by existing fish barriers in most years. However, some individuals may migrate through the project area in years of high spring flows and have potential to spawn in the area. Individuals unable to emigrate due to lack of sufficient flows likely perish at the end of wetted sections of the river in April and May.

Pacific lamprey does not appear to return to natal streams, as little genetic variation has been observed between populations (Goodman et al. 2008). Instead, they appear to key in on pheromones released by ammocoetes (larvae) and do not return to a river that lacks ammocoetes. The result is a source-sink dynamic with large river systems containing robust source populations for smaller rivers and streams that can be sinks (Moyle et al. 2015). Pacific lamprey has a diverse life history, with some rivers containing two runs; one run returns in spring and spawns immediately after upstream migration, and the other run migrates upstream in fall and spawns the following spring (Moyle et al. 2015).

Most adult Pacific lamprey spawning migrations occur between March and late June, with upstream movement typically occurring at night (Moyle et al. 2015). Upstream migration seems to occur largely in response to high flows, and adults can move substantial distances in absence of major barriers. Pacific lamprey ammocoetes emerge and drift downstream to depositional areas where they burrow into fine substrates and filter feed on organic materials (Moore and Mallatt 1980). Throughout this life stage, individuals leave their burrows and drift to a new area at night (Moyle et al. 2015). Ammocoetes remain in freshwater for 4 to 7 years before undergoing a metamorphosis into an eyed, smolt-like form (macropthalmia) (Moore and Mallatt 1980, Moyle 2002, Moyle et al. 2015). At this point, individuals migrate to the ocean between fall and spring, typically during winter and spring high-flow events (Goodman et al. 2015). Pacific lamprey remains in the ocean for approximately 18 to 40 months before returning to freshwater as immature adults (Kan 1975, Beamish 1980). Pacific lampreys die soon after spawning, though there is some anecdotal evidence that this is not always the case (Moyle 2002).

River Lamprey

River lamprey (*Lampetra ayersi*) is a California species of special concern. Most California records are from the lower Sacramento-San Joaquin River system, including the Stanislaus and Tuolumne Rivers (Moyle 2002). River lamprey are likely blocked from the project site and upstream areas by existing fish barriers, in all but the wettest years. If adult lamprey reach the project vicinity during wet years, they have potential to spawn, and adults and juveniles could occasionally occur in the project area.

The biology of river lamprey has not been well documented in California; most available information on the species is based on studies from British Columbia, Canada. Adults migrate into freshwater in the fall and spawn in February through May in tributary streams. They dig saucer-shaped spawning depressions in gravelly riffles. Juvenile ammocoetes remain in silty backwaters and eddies to feed on algae and microorganisms. Juvenile ammocoetes may remain in freshwater for 2 to 7 years (Moyle 2002).

Sacramento Hitch

Sacramento hitch (*Lavinia exilicauda exilicauda*) is a California species of special concern. This subspecies is endemic to the Sacramento-San Joaquin River Basin (Reclamation and DWR 2011) and has potential to occur in the project vicinity. Hitch occupy warm, low-elevation lakes, sloughs, and slow-moving stretches of rivers and clear, low-gradient streams. Among native Central Valley fishes, hitch have the highest temperature tolerances; they also have moderate salinity tolerances (Moyle 2002). Hitch require clean, small gravel to spawn. Larger fish are often found in deep pools containing an abundance of aquatic and terrestrial cover (Moyle 2002).

Mass spawning migrations typically occur when flows increase in spring. Females lay eggs that sink into gravel interstices (Reclamation and DWR 2011). As juveniles grow, they move into perennial water bodies where they shoal for several months in areas with aquatic or other complex vegetation that provides refugia from predators, before moving into open water.

Sacramento Splittail

Sacramento splittail (*Pogonichthys macrolepidotus*) is a California species of special concern that is endemic to the Sacramento and San Joaquin Rivers, Delta, and San Francisco Bay (Reclamation and DWR 2011). Historically, they have been documented as far upstream in the San Joaquin River as the town of Friant (Rutter 1908). In more recent wet years, splittail have been found as far upstream as Salt Slough (Saiki 1984, Brown and Moyle 1993, Baxter 2000), where the presence of both adults and juveniles indicated successful spawning. Although they are not known to currently occur in the project vicinity, Sacramento splittail have potential to occur on the project site.

Splittail have a high tolerance for variable environmental conditions (Young and Cech 1996). Adults move upstream in late November through late January, foraging in flooded areas along the main rivers, bypasses, and tidal freshwater marsh areas before spawning (Moyle et al. 2004). Splittail appear to concentrate their reproductive effort in wet years when potential success is greatly enhanced by the availability of inundated floodplain habitat (Meng and Moyle 1995, Sommer et al. 1997). Most larval splittail initially remain in flooded riparian, most likely feeding in submerged vegetation before moving into deeper water as they become stronger swimmers (Wang 1986, Sommer et al. 1997). Most juveniles move downstream into shallow, productive bay and estuarine waters from April to August (Meng and Moyle 1995, Moyle 2002).

Central California Roach

Central California roach (*Lavinia symmetricus symmetricus*) is a California species of special concern. This subspecies is found throughout the Sacramento-San Joaquin River drainage (Moyle 2002) and has potential to occur in the project vicinity. Given their wide distribution, it is not surprising that California roach are found in a wide variety of habitats, although they appear to be excluded from many waters by predatory fishes, especially nonnative species. Despite their extensive distribution, roach are now absent from many streams and stream reaches where they once occurred, and most populations are isolated by downstream barriers such as dams, diversions, or polluted waters containing predatory introduced fishes.

California roach generally are found in small warm streams, and dense populations frequently occur in isolated pools in intermittent streams (Moyle 2002). Roach are tolerant of relatively high temperatures and low oxygen levels, a characteristic that enables them to survive in conditions too extreme for other fishes. Within a watershed, roach can be found in a diversity of habitats, from cool headwater streams to the warmwater lower reaches. Roach usually become mature at 2 or 3 years of age (Moyle 2002). Spawning occurs in large groups, from March through early July, with eggs deposited in crevices between gravel-sized rocks.

Hardhead

Hardhead (*Mylopharodon conocephalus*) is a California species of special concern. This species is endemic to larger low- and mid-elevation streams of the Sacramento-San Joaquin River

system (Reclamation and DWR 2011) and has potential to occur in the project vicinity. Hardhead is widely distributed in foothill streams and may be found in reservoirs on the San Joaquin River, upstream from Millerton Lake. Individuals are often found in clear, deep pools and runs with slow water velocities. Hardhead spawn between April and August. Females lay eggs on gravel in riffles, runs, or the heads of pools. The early life history of hardhead is not well known. Larvae and post-larvae may occupy river edges or flooded habitat before seeking deeper low-velocity habitat as they grow (Moyle 2002).

Riffle Sculpin

Riffle sculpin (*Cottus gulosus*) is a California species of special concern. This species has a scattered distribution pattern throughout California, including in the Sacramento-San Joaquin River watersheds (Moyle 2002) and has potential to occur in the project vicinity. Riffle sculpin prefer habitats that are fairly shallow, with moderately swift water velocities (Moyle and Baltz 1985). Spawning occurs between February and April, with eggs deposited on the underside of rocks in swift riffles or inside cavities of submerged logs.

Sensitive Habitats

Sensitive habitats include those that are of special concern to resource agencies or are afforded specific consideration under State and Federal regulations. Sensitive habitats may be of special concern for a variety of reasons, including their locally or regionally declining status, or because they provide important habitat for special-status species.

Waters and Wetlands

USACE has jurisdiction over features that qualify as waters of the United States, including some wetlands that support appropriate vegetation, soils, and hydrology. The San Joaquin River and ponds on the project site that are connected to the river, including Milburn Pond, qualify as waters of the United States. Areas that support wetland characteristics also may occur onsite.

All surface waters on the project site, including the river and ponds, also fall under CVRWQCB jurisdiction as waters of the State. In addition, the river and ponds and adjacent riparian and emergent vegetation are subject to DFW jurisdiction.

Critical Habitat and Essential Fish Habitat

ESA Section 3(5)A defines critical habitat as the specific areas within the geographical area occupied by Federally listed species on which are found physical or biological features essential to the conservation of the species and that may require special management considerations or protection. The project site is not within proposed or designated critical habitat for any Federally listed species, but it is within Essential Fish Habitat (EFH) for Pacific Coast salmon (Chinook salmon), as designated in the Pacific Coast Salmon Fishery Management Plan (PFMC 2016) and defined by the Magnuson-Stevens Fishery Conservation and Management Act. Chinook salmon freshwater EFH includes all habitat currently or historically occupied by Pacific Fishery Management Council-managed Chinook salmon in California, including the San Joaquin River.

Sensitive Natural Communities

DFW maintains a list of sensitive natural communities (DFW 2020b). During the 2020 field survey, species associated with several sensitive natural communities were observed. However, on the project site these species are codominant with other native species, and in some areas, nonnative species such as scarlet wisteria and arundo dominate. Therefore, the circumstances in which species such as Goodding's black willow, valley oak, and button willow occur on the project site do not constitute sensitive natural communities.

3.5.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

Federal Endangered Species Act

Under the ESA (Title 16, Section 1531 and following sections of the U.S. Code [16 USC 1531 et seq.]), USFWS and NMFS have regulatory authority over species listed or proposed for Federal listing as threatened or endangered and over projects that may result in take of Federally listed species. In general, persons subject to the ESA (including private parties) are prohibited from "take" of endangered or threatened fish and wildlife species on private property and from taking endangered or threatened plants in areas under Federal jurisdiction or in violation of State law.

The ESA defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." "Harass" is further defined as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, and sheltering. "Harm" is defined as an act which actually kills or injures wildlife. This may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Section 7 of the ESA outlines procedures for Federal interagency cooperation to protect and conserve Federally listed species and designated critical habitat. Section 7(a)(2) requires Federal agencies to consult with USFWS and NMFS to ensure that they are not undertaking, funding, permitting, or authorizing actions likely to jeopardize the continued existence of listed species, or destroying or adversely modifying designated critical habitat. For projects where Federal action is not involved and take of a listed species may occur, a project proponent may seek an incidental take permit under Section 10(a) of the ESA.

Magnuson-Stevens Fishery Conservation and Management Act

The amended Magnuson-Stevens Fishery Conservation and Management Act requires that all Federal agencies consult with NMFS on activities or proposed activities authorized, funded, or undertaken by that agency, that may adversely affect EFH of commercially managed marine and anadromous fish species. EFH is defined as "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." EFH is identified in the Fishery Management Plan developed by NMFS for commercially managed species.

Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act requires an agency to consult with USFWS if the agency plans to conduct, license, or permit an activity involving the impoundment, diversion, deepening, control, or modification of a stream or body of water. The Act also requires consultation with the head of the state agency that administers wildlife resources in the affected state. The purpose of this process is to promote conservation of wildlife resources by preventing loss of and damage to such resources and to provide for the development and improvement of wildlife resources in connection with the agency action.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 USC, §703, Supplement I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. In December 2017, the Department of the Interior Solicitor's Office Released Opinion M-37050, which determined that the legal scope of the MBTA applies to intentional take of migratory birds and concluded that take of birds resulting from an activity is not prohibited, when take of birds is not the underlying purpose of the activity. In January 2021, USFWS issued a Final Rule (86 FR 11341165) adopting the conclusion of M–37050 in a regulation defining the scope of MBTA. In this rule, USFWS determines that MBTA prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same, apply only to actions directed at migratory birds, their nests, or their eggs.

Recovery Plan for Central Valley Anadromous Salmonids

In 2014, NMFS published the *Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-Run Chinook Salmon and Central Valley Spring-Run Chinook Salmon and the Distinct Population Segment of the California Central Valley Steelhead* (NMFS 2014). This recovery plan is considered necessary to improve the viability of these species to remove them from the need for ESA protection. It provides a roadmap that includes steps, strategies, and actions that would reintroduce these species to ensure their long-term persistence and evolutionary potential.

Clean Water Act

Section 404

Section 404 of the Clean Water Act (CWA) requires a project proponent to obtain a permit from USACE before engaging in any activity that involves discharge of dredged or fill material into waters of the United States, including wetlands. Waters of the United States, as codified in 33 United States Code 1251 et. seq. and defined in the Navigable Waters Protection Rule, include: the territorial seas and waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters which are subject to the ebb and flow of the tide; tributaries; lakes, ponds, and impoundments of jurisdictional waters; and adjacent wetlands. Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. During review of a project, USACE must ensure compliance with applicable Federal

laws, including EPA's Section 404(b)(1) Guidelines. USACE regulations require that impacts on waters of the United States, including wetlands, be avoided and minimized to the maximum extent practicable, and that unavoidable impacts be compensated (33 CFR 320.4[r]).

Section 401

Under Section 401 of the CWA, an applicant for a Section 404 permit must obtain a certificate from the appropriate State agency stating that the intended dredging or filling activity is consistent with the State's water quality standards and criteria. In California, the State Water Resources Control Board (SWRCB) delegates the authority to grant water quality certification to the nine Regional Water Quality Control Boards (RWQCBs); the CVRWQCB has jurisdiction over the San Joaquin Valley.

State Plans, Policies, Regulations, Laws

California Endangered Species Act

CESA (FGC 2050 et seq.) directs State agencies not to approve projects that would jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of habitat essential to the continued existence of a species. Furthermore, CESA states that DFW, together with the project proponent and any State lead agency, must develop reasonable and prudent alternatives consistent with conserving the species, while maintaining the project purpose to the greatest extent possible. Take of State-listed species incidental to otherwise lawful activities requires a permit, pursuant to Section 2081(b) of CESA. Project-related impacts of the authorized take must be minimized and fully mitigated, and adequate funding must be in place to implement mitigation measures and monitor compliance and effectiveness. Mitigation can include land acquisition, permanent protection and management, and/or funding in perpetuity of compensatory lands.

As under Federal law, listed plants have considerably less protection than fish and wildlife under State law. The California Native Plant Protection Act (FGC Section 19000 et seq.) allows landowners to take listed plant species from, among other places, a canal, lateral ditch, building site, or road, or other right-of-way, provided that the owner first notifies DFW and gives the agency at least 10 days to retrieve (and presumably replant) the plants before they are destroyed.

California Fish and Game Code

Rivers, Lakes, and Streams

Under FGC Section 1602, it is unlawful for any entity to substantially divert or obstruct the natural flow of or substantially change or use any material from the bed, channel, or bank of, any river, stream, or lake, or to deposit or dispose of debris, waste, or other material where it may pass into any river, stream, or lake, without first notifying DFW of such activity and obtaining an agreement authorizing the activity. In practice, DFW may exert authority over any feature that holds water at least periodically or intermittently, and associated habitat (e.g., riparian vegetation), that supports fish, other aquatic life, or terrestrial wildlife.

Fully Protected Species

Sections 3511, 4700, 5050, and 5515 of the FGC provide protection from take for 37 fish and wildlife species referred to as fully protected species. Except for take related to scientific research or incidental take authorized as part of an approved Natural Communities Conservation Plan (NCCP), take of fully protected species is prohibited.

Protection of Birds

Section 3503 of the FGC states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. Section 3503.5 states that it is unlawful to take, possess, or destroy any raptors (i.e., species in the orders Falconiformes and Strigiformes), including their nests or eggs.

The Salmon, Steelhead Trout, and Anadromous Fisheries Program Act

The Salmon, Steelhead, Trout and Anadromous Fisheries Program Act was enacted in 1988. At that time, the California Department of Fish and Game (DFG, now DFW) reported that the natural production of salmon and steelhead in California had declined to approximately 1,000,000 adult Chinook salmon; 100,000 coho salmon; and 150,000 steelhead. In addition, DFG reported that the naturally spawning salmon and steelhead resources of the State had declined dramatically in the previous four decades, primarily because of lost habitat on many streams in the State. The Act declares that it is the policy of the State to increase salmon and steelhead resources and directs DFG to develop a plan and program that strives to double salmon and steelhead resources (FGC Section 6900). Restoration of the San Joaquin River and reestablishment of anadromous populations is part of the Act's doubling goals.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act (Porter-Cologne Act; California Water Code Section 13000 et seq.) requires that each of the State's nine RWQCBs prepare and periodically update basin plans for water quality control. Each basin plan sets forth water quality standards for surface water and groundwater and actions to control nonpoint and point sources of pollution to achieve and maintain these standards. Basin plans offer an opportunity to protect wetlands through the establishment of water quality objectives. RWQCB jurisdiction includes Federally protected waters and areas that meet the definition of "waters of the state." Waters of the state include all surface water and groundwater, including saline waters, within the State's boundaries. The RWQCBs have discretion to take jurisdiction over areas not Federally regulated under Section 401, provided they meet the definition of waters of the State. Mitigation requiring no net loss of wetlands functions and values of waters of the State is typically required by the RWQCB.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

San Joaquin River Restoration Program

The SJRRP is the direct result of the San Joaquin River Restoration Settlement reached in September 2006 by the U.S. Departments of the Interior and Commerce, the Natural Resources Defense Council, and the Friant Water Users Authority. The Settlement, which followed an 18-year lawsuit, received Federal court approval in October 2006. Federal legislation, the San Joaquin River Restoration Settlement Act, was passed in March 2009 and authorizes Federal agencies to implement the Settlement. The Settlement is based on two goals:

1. Restoration: To restore and maintain fish populations in "good condition" in the mainstem of the 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.

2. Water Management: To reduce or avoid adverse water supply impacts to all of the Friant Division long-term contractors that may result from the Interim Flows and Restoration Flows provided for in the Settlement.

San Joaquin River Parkway Master Plan

The Parkway Master Plan (SJRC 2018) includes a number of goals and policies related to the SJRRP and general habitat preservation and management. Those that may be relevant to the proposed project for certain responsible agencies include:

GOAL: Coordinate and cooperate with the SJR Restoration Program to ensure efficiency and develop projects that meet mutual objectives.

- **Policy SJRRP.1.** Cooperate and collaborate in the isolation of gravel pits on public Parkway lands from the San Joaquin River. Explore and collaborate with the Program on other restoration measures, such as floodplain habitat improvement and spawning bed enhancement, to generate multiple-use benefits from public Parkway lands.

GOAL: Conserve, enhance, restore, and provide for public enjoyment of the aquatic, plant, and wildlife resources of the Parkway.

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- **Policy HABITAT.2.** Conserve the San Joaquin River as aquatic habitat. Collaborate with wildlife agencies to enhance and protect fisheries in the river and in ponds in the Parkway.

- **Policy HABITAT.5.** Control and remove exotic plant species from the Parkway as feasible, including in the river channel, where they threaten to displace native plant species or disrupt natural plant community structure. Employ measures that will discourage repopulation of exotic plant species. Establish management practices to control the introduction of exotic plant species from horse feed and bedding.

- **Policy HABITAT.7.** Enhance, restore, and maintain native vegetation, riparian, wetland, woodland, and grassland habitats within natural reserves, open spaces, and wildlife corridors.

- **Policy HABITAT.10.** Minimize grading, except as necessary to improve hydrology, enhance and restore habitat, or protect public safety.

- **Policy HABITAT.12.** Create a framework conservation strategy for the entire Parkway to provide a broad, coordinated approach to conservation efforts, address project-level mitigation for potential impacts on species and habitats, streamline permitting, and to guide management plans for individual areas.

- **Policy HABITAT.16.** Use native plant species for landscaping and vegetation restoration to the greatest extent possible.

- **Policy HABITAT.17.** Generally, use locally-sourced native plant species for habitat restoration projects.

- **Policy HABITAT.18.** Site new facilities in disturbed, reclaimed, or previously developed areas to avoid intrusion into sensitive habitat areas and to avoid habitat fragmentation, to the extent feasible.

- **Policy HABITAT.20.** Work to accomplish a net benefit/no net loss of habitat collectively through conservation and restoration improvements in the Parkway.

- **Policy HABITAT.21.** To the extent feasible, conserve and re-establish the upper canopy of riparian habitat (i.e., oaks, cottonwoods, sycamores) to provide roosting and nesting habitat for raptors, herons and egrets, and other bird species.

- **Policy HABITAT.30.** Avoid removal of snags, except in public use areas and near infrastructure where they may be hazards.

- **Policy HABITAT.36.** Place a high priority on riparian habitat conservation and restoration to establish and enhance wildlife habitat and corridors and improve aquatic habitat.

Fresno County General Plan

The Fresno County General Plan Open Space and Conservation Element (County of Fresno 2000) includes several goals and numerous policies related to wetlands and riparian areas, fish and wildlife habitat, and vegetation. Many of the policies that focus on development projects do not apply to the proposed project. The following natural resources goals and policies may be relevant to the proposed project for certain responsible agencies:

GOAL OS-D: To conserve the function and values of wetland communities and related riparian areas throughout Fresno County while allowing compatible uses where appropriate. Protection of these resource functions will positively affect aesthetics, water quality, floodplain management, ecological function, and recreation/tourism.

- **Policy OS-D.1.** The County shall support the "no-net-loss" wetlands policies of the US Army Corps of Engineers, the US Fish and Wildlife Service, and the California Department of Fish and Game. Coordination with these agencies at all levels of project review shall

continue to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed.

- **Policy OS-D.2.** The County shall require new development to fully mitigate wetland loss for function and value in regulated wetlands to achieve "no-net-loss" through any combination of avoidance, minimization, or compensation. The County shall support mitigation banking programs that provide the opportunity to mitigate impacts to rare, threatened, and endangered species and/or the habitat which supports these species in wetland and riparian areas.
- **Policy OS-D.6.** The County shall require new private or public developments to preserve and enhance existing native riparian habitat unless public safety concerns require removal of habitat for flood control or other purposes. In cases where new private or public development results in modification or destruction of riparian habitat for purposes of flood control, the developers shall be responsible for creating new riparian habitats within or near the project area. Adjacency to the project area shall be defined as being within the same watershed subbasin as the project site. Compensation shall be at a ratio of 3 acres of new habitat for every 1 acre destroyed.

GOAL OS-D: To help protect, restore, and enhance habitats in Fresno County that support fish and wildlife species so that populations are maintained at viable levels.

- **Policy OS-E.1.** The County shall support efforts to avoid the "net" loss of important wildlife habitat where practicable. In cases where habitat loss cannot be avoided, the County shall impose adequate mitigation for the loss of wildlife habitat that is critical to supporting special-status species and/or other valuable or unique wildlife resources. Mitigation shall be at sufficient ratios to replace the function, and value of the habitat that was removed or degraded. Mitigation may be achieved through any combination of creation, restoration, conservation easements, and/or mitigation banking. Conservation easements should include provisions for maintenance and management in perpetuity. The County shall recommend coordination with the US Fish and Wildlife Service and the California Department of Fish and Game to ensure that appropriate mitigation measures and the concerns of these agencies are adequately addressed. Important habitat and habitat components include nesting, breeding, and foraging areas, important spawning grounds, migratory routes, migratory stopover areas, oak woodlands, vernal pools, wildlife movement corridors, and other unique wildlife habitats (e.g., alkali scrub) critical to protecting and sustaining wildlife populations.
- **Policy OS-E.2.** The County shall require adequate buffer zones between construction activities and significant wildlife resources, including both onsite habitats that are purposely avoided and significant habitats that are adjacent to the project site, in order to avoid the degradation and disruption of critical life cycle activities such as breeding and feeding. The width of the buffer zone should vary depending on the location, species, etc. A final determination shall be made based on informal consultation with the US Fish and Wildlife Service and/or the California Department of Fish and Game.
- **Policy OS-E.12.** The County shall ensure the protection of fish and wildlife habitats from environmentally degrading effluents originating from mining and construction activities that are adjacent to aquatic habitats.

GOAL OS-D: To preserve and protect the valuable vegetation resources of Fresno County.

- **Policy OS-F.5.** The County shall establish procedures for identifying and preserving rare, threatened, and endangered plant species that may be adversely affected by public or private development projects. As part of this process, the County shall require, as part of the environmental review process, a biological resources evaluation of the project site by a qualified biologist. The evaluation shall be based on field reconnaissance performed at the appropriate time of year to determine the presence or absence of significant plant resources and/or special-status plant species. Such evaluation shall consider the potential for significant impact on these resources and shall either identify feasible mitigation measures or indicate why mitigation is not feasible.

City of Fresno General Plan

The City of Fresno General Plan (City of Fresno 2014) includes several Parks, Open Space, and Schools objectives and numerous implementing policies related to open space and biological resources. The following goals and policies may be relevant to the proposed project for certain responsible agencies:

Objective POSS-5: Provide for long-term preservation, enhancement, and enjoyment of plant, wildlife, and aquatic habitat.

- **Policy POSS-5-d: Guidelines for Habitat Conservation.** Establish guidelines for habitat conservation and mitigation programs, including:
  - Protocols for the evaluation of a site's environmental setting and proposed design and operating parameters of proposed mitigation measures.
  - Methodology for the analysis depiction of land to be acquired or set aside for mitigation activities.
  - Parameters for specification of the types and sources of plant material used for any re-vegetation, irrigation requirements, and post-planting maintenance and other operational measures to ensure successful mitigation.
  - Monitoring at an appropriate frequency by qualified personnel and reporting of data collected to permitting agencies.
- **Policy POSS-5-f: Regional Mitigation and Habitat Restoration.** Coordinate habitat restoration programs with responsible agencies to take advantage of opportunities for a coordinated regional mitigation program.

Objective POSS-6: Maintain and restore, where feasible, the ecological values of the San Joaquin River corridor.

3.5.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G and Section 15065 of the State CEQA Guidelines, as amended. Implementing the project would have a significant impact on biological resources if it would:

- have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by DFW, USFWS, or NMFS;
- have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by DFW, USFWS, or NMFS;
- have a substantial adverse effect on State or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;
- interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of nursery sites by native wildlife;
- conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- conflict with the provisions of an adopted HCP, NCCP, or other approved local, regional, or state HCP; or
- substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species.

Issues Not Discussed Further

The project site is not within an area covered by an adopted Habitat Conservation Plan (HCP) or NCCP, and neither an HCP nor NCCP is known to be in development for the project area. Therefore, project implementation would have no impact related to potential conflict with any adopted conservation plan, and this issue is not discussed further.

Project implementation could affect nesting birds. The potential level of loss of active nests of species that are not considered to have special status that could result from project implementation would not substantially reduce their abundance or cause them to drop below self-sustaining levels. Therefore, potential impacts on common nesting birds would not alone constitute a significant impact under CEQA, and this issue is not discussed further in this analysis. However, DWR acknowledges that it is responsible for ensuring project implementation does not violate the MBTA or FGC.

Analysis Methodology

This analysis of impacts on biological resources that could result from project implementation focuses on evaluating the potential to adversely affect special-status species and their habitats and other habitats considered sensitive by Federal, State, or local agencies. This evaluation considers temporary and permanent habitat loss and disturbance and potential for direct or indirect injury or death of individuals. Information on activities and habitat conditions that could affect special-status species is based on scientific publications, agency documents, and other relevant sources. Impact conclusions consider the habitat quality, impact extent, impact duration, and impact intensity (e.g., level of harm, injury/loss, or degradation suffered by the resource).

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis and mitigation measure development. SLC provided comments on analysis of impacts on sensitive species and habitats, recommended information sources, resource agency coordination, and concerns regarding invasive species. DFW provided specific comments and recommendations regarding western pond turtle, Swainson's hawk, and spring- and fall-run Chinook salmon. All comments were considered during impact analysis and mitigation measure development.

Impact Analysis and Mitigation Measures

Impact 3.5.1: ***Impacts on Special-status Plants.*** *Construction activities would disturb potential habitat for special-status plants. Ewan's larkspur, Hoover's eriastrum, and Hoover's calycaldenia are unlikely to occur on the project site and be affected by project implementation. This would be a* ***less-than-significant*** *impact. Sanford's arrowhead, however, has been documented on the project site and could be impacted by construction activities. This would be a* ***potentially significant*** *impact.*

Ewan's larkspur, Hoover's eriastrum, and Hoover's calycaldenia are unlikely to occur on the project site. Onsite habitat for these upland species is poor, as a result of past mining activities and periodic flood flows. These species have not been observed during biological surveys of the project site, and no occurrences are known from the project vicinity. Therefore, potential for Ewan's larkspur, Hoover's eriastrum, or Hoover's calycaldenia to be impacted by project implementation is negligible, and this would be a **less-than-significant** impact.

Construction activities would include fill placement and other ground disturbance along the northern edge of Milburn Pond and in other areas of shoreline aquatic habitat that may be suitable for Sanford's arrowhead. Up to approximately 1 acre of potentially suitable habitat for this species would be disturbed. Although Sanford's arrowhead was not observed during the October 2020 field survey, a population was documented along the northeast edge of Milburn Pond in 2002. Berm modification and equalization saddle and modified French drain construction would occur in this and other areas of potentially suitable habitat for Sanford's arrowhead and could result in destruction of at least a portion of the population that may persist at the project site. The species may recolonize such areas after project construction is complete if suitable substrate becomes established over time. Ground disturbance associated with future O&M activities would be minimal and primarily limited to debris removal from the drain intake. Sanford's arrowhead is unlikely to become established in the drain following construction and potential for loss during maintenance activities would be minimal. However, loss of a substantial portion of the potential on-site population during project construction could have a substantial adverse effect on the regional distribution of the species. This would be a **potentially significant** impact. Mitigation Measure 3.5.1 has been identified to address this impact.

Mitigation Measure 3.5.1: Minimize Potential Loss of Sanford's Arrowhead.

DWR and its construction contractor(s) will implement the following measures to reduce potential effects on Sanford's arrowhead:

- Within 1 year before ground-disturbing project activities begin, a qualified botanist shall conduct at least two focused surveys of suitable habitat for Sanford's arrowhead in and within 50 feet of the project disturbance footprint. The surveys shall be conducted during the specific blooming period for Sanford's arrowhead (May – October). If no individuals are found, no further mitigation is required.

- If Sanford's arrowhead is detected, impacts shall be avoided wherever possible by implementing a protective buffer around occupied habitat. A 50-foot buffer shall be implemented where feasible; where not feasible, the maximum buffer feasible shall be implemented. If feasible, given the site conditions, a protective barrier shall be installed and maintained during construction activities to minimize impacts on occupied habitat that will be preserved adjacent to the construction footprint. If a barrier is not feasible, the avoidance area(s) shall be clearly marked with high-visibility flagging, stakes, and/or other means.

- If direct loss of Sanford's arrowhead plants cannot be avoided, a relocation and monitoring plan shall be developed and implemented. The plan shall outline methods for relocating unavoidable Sanford's arrowhead plants to other areas of suitable on-site habitat that will not be subject to project impacts, including potential future project phases. The plan shall include details about relocation methods, receptor site preparation, post-transplantation monitoring, and long-term protection and management.

Timing: Before, during, and after project construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measure 3.5.1 would reduce potentially significant impacts on Sanford's arrowhead to a less-than-significant level, because a pre-construction survey would be conducted, individuals would be avoided to the extent feasible during project construction, and those that cannot be avoided would be relocated to a suitable on-site location where they would receive long-term protection.

Impact 3.5.2: ***Impacts on Special-status Reptiles.*** *Construction activities would disturb potential habitat for upland and aquatic special-status reptiles. Northern California legless lizard, California glossy snake, and coast horned lizard are unlikely to occur on the project site and be affected by project implementation. This would be a* ***less-than-significant*** *impact. Western pond turtle, however, has higher potential to occur on the project site and could be impacted by construction activities, if present. This would be a* ***potentially significant*** *impact.*

Northern California legless lizard, California glossy snake, and coast horned lizard are unlikely to occur on the project site. Onsite habitat for these upland species is poor, as a result of past mining activities and current soil conditions. These species have not been observed during biological surveys of the project site, and recent occurrences are from foothill regions and relatively large areas of remnant grassland and scrub habitats at least 20 miles west of the project

site. Therefore, potential for northern California legless lizard, California glossy snake, or coast horned lizard to be impacted by project implementation is very low, and this would be a **less-than-significant** impact.

Construction activities would include fill placement and other ground disturbance along the northern edge of Milburn Pond and in other areas of aquatic habitat that may be suitable for western pond turtle. Up to approximately 2 acres of potentially suitable aquatic habitat for this species would be disturbed during construction. Pond turtles could be injured or killed, if present when work occurs in berm modification and equalization saddle and modified French drain construction areas. Upland habitat within the project's ground-disturbance footprint is likely unsuitable for nesting because of past mining activities and poor soil conditions. Therefore, pond turtle nests are unlikely to be affected. Disturbance associated with future O&M activities would be minimal and primarily limited to debris removal from the drain intake; this is unlikely to result in death or injury of pond turtles. However, loss of a large number of individuals, if present in areas disturbed by project construction, could have a substantial adverse effect on the regional distribution of the species. This would be a **potentially significant** impact. Mitigation Measure 3.5.2 has been identified to address this impact.

Mitigation Measure 3.5.2: Minimize Potential for Death and Injury of Western Pond Turtle.

DWR and its construction contractor(s) will implement the following measures to reduce potential for death or injury of western pond turtle during project construction:

- A qualified biologist shall conduct a focused survey for western pond turtle in suitable aquatic and basking habitat within the construction footprint 10 days before onsite construction activities begin. If construction activities would begin during the pond turtle nesting season (March through August), surveys shall also include suitable nesting habitat within the construction footprint.

- If a pond turtle nest is found, it shall remain undisturbed, if feasible, until the eggs have hatched.

- Before on-site project activities begin, all on-site project personnel shall attend a training program conducted by a qualified biologist. The program shall address special-status species that could occur on the project site and include a discussion of species identification, life history, general behavior, habitat, and sensitivity to human activities; State and Federal legal protections; and required avoidance and minimization measures. All on-site personnel also shall be provided contact information for the project biologist.

- If pond turtles are discovered in the construction area before or during construction activities, it shall be allowed to move out of the area on their own.

Timing: Before project construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measure 3.5.2 would reduce potentially significant impacts on western pond turtle to a less-than-significant level, because a pre-construction survey would be conducted, nests would be avoided to the extent feasible, worker training would be provided, and pond turtles discovered in the construction area would be allowed to leave on their own.

Impact 3.5.3: ***Impacts on Special-status and Colonial-nesting Waterbirds.*** *Construction activities could disturb occupied burrowing owl burrows and would remove suitable nest trees for Swainson's hawk, white-tailed kite, and colonial-nesting waterbirds. In addition, project activities adjacent to suitable burrows and nest trees could result in disturbance of nesting activities and potential abandonment. This would be a* ***potentially significant*** *impact.*

The project site and adjacent areas provide suitable habitat for burrowing owl, Swainson's hawk, and white-tailed kite. A small amount (less than 10 acres) of potential foraging habitat and areas that could support suitable burrows for burrowing owl would be affected by project activities. Much of this habitat is of relatively poor quality due to past mining activities and likely supports a limited prey base and few burrowing opportunities due to regular discing. In addition, impacts would primarily be limited to project construction, and most areas of potential foraging habitat would be returned to pre-project conditions. Habitat in the area where the high-flow side channel would be constructed would be permanently altered, but it would likely continue to provide habitat of similar quality because it would only be inundated during infrequent high flows. Because bald eagle no longer nests onsite, it is only occasionally observed at Milburn Pond, primarily in the winter (eBird 2021). Based on the timing and extent of construction activities, potential disruption of bald eagle foraging activities would be minor. Therefore, impacts on foraging and burrowing habitat for special-status birds would be **less than significant**.

The precise number, size, and species of trees that would be removed during project construction is not known at this time because trees that require removal have not been identified and marked in the field. Based on estimates made during the October 2020 field survey, approximately 50 trees at least 4 inches in diameter at breast height could be removed during project construction. However, many of these trees are too small to provide suitable nest sites for Swainson's hawk and white-tailed kite, and no nests of either species have been previously documented on the project site. Although riparian woodland and forest along this reach of the San Joaquin River has been greatly diminished over time, numerous large trees persist along both sides of the river. Large trees at adjacent golf courses also provide suitable nesting habitat for these birds. Therefore, removing a small number of potential nest trees is anticipated to have a minor impact, relative to the total number of potential nests trees that would continue to be available on the project site and in immediately adjacent areas. However, removal of a known Swainson's hawk nest tree would be a **potentially significant** impact.

The project site and adjacent areas provide potentially suitable burrows for burrowing owl and suitable nest trees for Swainson's hawk, white-tailed kite, and colonial-nesting waterbirds (herons, egrets, and cormorants). If occupied burrowing owl burrows are present in the construction area, they could be destroyed, and burrowing owls could be injured or killed. In addition, if active nests of any of these species are present in or near the construction or

maintenance areas, project activities could result nest abandonment, reduced care of eggs or young, or premature fledging. Although the colonial-nesting waterbirds that could be affected are not special-status species, permanent abandonment of a nesting area could substantially reduce the local nesting distribution of the affected species. Failure of a nesting colony or active nest of a special-status raptor would be a **potentially significant** impact. Mitigation Measures 3.5.3a and 3.5.3b have been identified to address these impacts to Swainson's hawk, white-tailed kite, and colonial-nesting waterbirds.

Mitigation Measure 3.5.3a: Conduct Focused Surveys for Burrowing Owls and Avoid Loss of Occupied Burrows and Failure of Active Nests.

To minimize potential effects of project construction and maintenance on burrowing owl, DWR will ensure that the following measures are implemented, consistent with the *Staff Report on Burrowing Owl Mitigation* (DFG 2012).

- A qualified biologist shall conduct focused surveys for burrowing owls, in accordance with Appendix D of the *Staff Report on Burrowing Owl Mitigation* (DFG 2012). At a minimum, surveys shall be conducted during the breeding season of the year in which ground-disturbing project activities begin, and one survey shall be conducted within 10 days before on-site project construction or maintenance activities begin.

- If occupied burrows are observed, protective buffers shall be established and implemented. A qualified biologist, in consultation with DFW, shall determine the appropriate buffer for each occupied burrow; the buffer will depend on type and intensity of project disturbance, presence of visual buffers, and other variables that could affect susceptibility of the owl(s) to disturbance. A qualified biologist shall monitor the occupied burrows during project activities and adjust buffers, if needed, to ensure their effectiveness.

- Before on-site project activities begin, all on-site project personnel shall attend a Worker's Environmental Awareness Program (WEAP) conducted by a qualified biologist. The program shall address special-status species that could occur on the project site and include a discussion of species identification, life history, general behavior, habitat, and sensitivity to human activities; State and Federal legal protections; and required avoidance and minimization measures. All on-site personnel also shall be provided contact information for the project biologist.

- If it is not feasible to implement a buffer of adequate size and it is determined, in consultation with CDFW, that passive exclusion of owls from the area of direct disturbance is an appropriate means of minimizing impacts, an exclusion and passive relocation plan shall be developed and implemented in coordination with CDFW. Passive exclusion will be conducted during the breeding season (February 1 – August 31), unless a qualified biologist verifies through noninvasive means that either (1) the birds have not begun egg laying or (2) juveniles from the occupied burrows are foraging independently and are capable of independent survival.

- If passive exclusion is conducted, each occupied burrow that is destroyed will be replaced with at least one artificial burrow on a suitable portion of the project site that will not be subject to project impacts, including potential future project phases.

Timing: Before and during construction activities.

Responsibility: DWR.

Mitigation Measure 3.5.3b: Conduct Focused Surveys for Swainson's Hawk, White-tailed Kite, and Colonial-nesting Waterbirds, Implement Buffers Around Active Nests, and Compensate for Removal of Known Swainson's Hawk Nest Trees.

To minimize potential effects of project construction and maintenance on nesting Swainson's hawk, white-tailed kite, and colonial-nesting waterbirds, DWR will ensure that the following measures are implemented:

- A qualified biologist shall conduct surveys of potential Swainson's hawk nesting habitat within 0.5 mile of the project site, in accordance with the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley* (Swainson's Hawk Technical Advisory Committee 2000). Surveys shall be conducted during the breeding season before construction begins to determine if an active nest is present within 0.5 mile of the project site. In addition, surveys shall be conducted during the breeding season of the year in which ground-disturbing project activities begin, including within at least the two survey periods immediately before on-site construction or maintenance activities begin. If a lapse in project-related activities of 14 days or longer occurs, another focused survey shall be conducted before project activities resume.

- A qualified biologist shall conduct surveys of suitable nesting habitat for white-tailed kite and colonial-nesting waterbirds within 500 feet of project activities. Surveys shall be conducted within 10 days before on-site construction or maintenance activities begin near suitable nesting habitat during the nesting season (March through August). If a lapse in project-related activities of 14 days or longer occurs, another focused survey shall be conducted before project activities resume.

- If active nests are found, DFW shall be consulted to determine if incidental take authorization may be required. Protective buffers shall be established and implemented during project construction until the nests are no longer active. A qualified biologist, in consultation with DFW, shall determine the appropriate buffer for each nest; the buffer will depend on type and intensity of project disturbance, presence of visual buffers, and other variables that could affect susceptibility of the nest to disturbance. A qualified biologist shall monitor the nests during project activities and adjust buffers, if needed, to ensure their effectiveness.

- Before on-site project activities begin, all on-site project personnel shall attend a WEAP conducted by a qualified biologist. The program shall address special-status species that could occur on the project site and include a discussion of species identification, life history, general behavior, habitat, and sensitivity to human

activities; State and Federal legal protections; and required avoidance and minimization measures. All on-site personnel also shall be provided contact information for the project biologist.

- If a Swainson's hawk nest is found on the project site and the nest tree must be removed during project construction, compensation shall be provided by planting three appropriate native trees for each known Swainson's hawk nest tree that is removed. Replacement trees shall be planted at or near the project site or in another area that will be protected in perpetuity.

Timing: Before and during construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measures 3.5.3a and 3.5.3b would reduce potentially significant impacts on burrowing owl, Swainson's hawk, white-tailed kite, and colonial-nesting waterbirds to a less-than-significant level because pre-construction nest surveys would be conducted, worker training would be provided, buffers would be implemented to avoid project-related failure of occupied burrows and active nests, and replacement trees would be planted and protected if removal of a known Swainson's hawk nest tree is necessary.

Impact 3.5.4: ***Impacts on Special-status Mammals.*** *Construction activities would disturb poor-quality habitat for American badger and San Joaquin kit fox. These species are unlikely to occur on the project site and be affected by project implementation. This impact would be* ***less than significant****.*

American badger and San Joaquin kit fox are unlikely to occur on the project site. Onsite habitat for these upland species is poor, as a result of past mining activities and current soil conditions. In addition, no occurrences of either species have been documented in the project vicinity for nearly 30 years, when urban development was less extensive and higher-quality habitats such as grassland and pasture were more prominent. The only recent occurrence of American badger in the Fresno region is from extensive grasslands nearly 10 miles north of the project site. San Joaquin kit fox hasn't been documented within 30 miles of the project site for more than 20 years. Therefore, potential for these species to occur onsite and be impacted by project implementation is very low, and this impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Impact 3.5.5: ***Construction-related Impacts on Special-status Fish.*** *Project construction would include activities in and adjacent to ponds and the San Joaquin River, which support special-status fish. Potential for direct impacts during in-water work is low, and riverside vegetation removal would be very limited. These impacts would be* ***less than significant****. However, construction activities in and adjacent to aquatic habitat have potential to result in sediment and hazardous materials entering surface*

waters and indirectly affecting special-status fish. This would be a ***potentially significant*** *impact.*

Project construction would occur during the dry season, when water levels are relatively low, and the extent of in-water disturbance would be minimized. Anadromous fish (excluding lamprey) are not anticipated to be present in the project area when in-water work would occur. Resident native species and lamprey could be present. Pacific and river lamprey ammoecetes could occur in the substrate and water column and potentially be impacted by in-water work. Native resident fishes (such as hitch and hardhead) can make seasonal or daily migrations that could be disrupted by project construction. Direct impacts associated with instream construction activities could include mortality and disturbance that displaces fish from the immediate surrounding areas. However, work in the San Joaquin River channel, where these species are most likely to occur, would be limited to approximately 0.3 acre associated with the upstream and downstream connections for the high-flow side channel. The remaining in-water work would primarily be limited to Milburn Pond, where habitat conditions for special-status species are poor. Based on the timing of the work and habitat conditions where most in-water work would occur, very few individual native fishes are anticipated to be impacted, and impacts would primarily be associated with temporary displacement to similar adjacent habitat. Therefore, this impact would be **less than significant**.

Nearly all vegetation removal required for project implementation would occur in upland areas that do not provide shaded riverine aquatic (SRA) habitat or seasonal floodplain habitat. The extent of SRA habitat removal along the river channel would be limited to approximately 150 linear feet at the upstream end of the high-flow side channel excavation area. This would have a very minor impact on aquatic habitat quality in a very small area and would be a **less-than-significant** impact.

Construction activities in and adjacent to Milburn Pond, smaller on-site ponds, and the San Joaquin River have the potential to introduce hazardous materials into these waters and indirectly impact a larger number of special-status and other native fish, if contamination is widespread. Common materials used at construction sites include petroleum-based fuels and lubricants. Many of these substances can kill or harm fish through exposure to lethal concentrations or exposure to nonlethal levels that cause physiological stress, impair essential behaviors, decrease reproductive success, and increase susceptibility to other sources of mortality. Work in and adjacent to open water also could result in short-term increases in suspended sediment and turbidity during and following construction. Depending on the extent of such increases, fish could be negatively impacted through reduced availability of food, reduced feeding efficiency, and exposure to potentially toxic sediment released into the water column. Fish responses to increased turbidity and suspended sediment can range from behavioral changes (alarm reactions, abandonment of cover, and avoidance) to sublethal effects (e.g., reduced feeding rate), and, at high suspended sediment concentrations for prolonged periods, lethal effects (Newcombe and Jensen 1996). These impacts would be **potentially significant**. Mitigation Measures 3.5.5a and 3.5.5b have been identified to address these impacts.

Mitigation Measure 3.5.5a: Implement Mitigation Measure 3.7.2, "Prepare and Implement a Stormwater Pollution Prevention Plan and Best Management Practices to Reduce Erosion."

Timing: Before and during construction activities.

Responsibility: DWR.

Mitigation Measure 3.5.5b: Implement Mitigation Measure 3.9.1, "Implement a Spill Prevention Control and Countermeasures Plan and Other Measures to Reduce the Potential for Environmental Contamination during Construction Activities."

Timing: During construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measures 3.5.5a and 3.5.5b would reduce potentially significant construction-related impacts on special-status fish to a **less-than-significant** level because a Storm Water Pollution Prevention Plan (SWPPP) and BMPs specifically designed to minimize turbidity and control erosion and sedimentation would be implemented and a Spill Prevention Control and Countermeasures Plan (SPCCP) and other measures specifically designed to prevent water contamination would be implemented.

Impact 3.5.6: ***Long-term Impacts on Special-status Fish.*** *The project would disconnect the typically warm water of Milburn Pond from the typically cooler water of the San Joaquin River. This disconnect would improve habitat conditions in the San Joaquin River for special-status fish species and reduce exposure to warmwater predators. This would be a* ***beneficial*** *impact.*

The San Joaquin River is managed as a cold-water fishery to promote the preservation and recovery of native fish populations. Milburn Pond is frequently warmer than in-river temperatures, which has the potential to raise temperatures in the river when flows are connected. In addition, warmwater, non-native predatory fish are able to enter the river to prey on special-status and other native fish, and special-status and other native fish are able to enter the pond where they are more susceptible to predation. Eliminating the hydraulic connection between the river and Milburn Pond, particularly during low flows in the river, would help maintain cooler river temperatures that are more suitable for special-status fish and would result in a long-term improvement of habitat quality, including EFH. Pond isolation also would prevent movement of fish between the river and ponds and minimize resulting predation on special-status fish by non-native, warmwater fish. This would have a **beneficial** impact on native fish, particularly special-status salmonids.

Mitigation Measure: No mitigation is required.

Impact 3.5.7: ***Riparian Habitat Removal.*** *Project construction would remove up to approximately 5 acres of riparian habitat. The habitat quality is relatively low due to past mining activities and presence of nonnative species. However, riparian habitat has been greatly reduced along the San Joaquin River is critical to sustaining remaining wildlife populations. Therefore, the loss of riparian habitat would be* ***potentially significant****.*

Up to approximately 1 acre of riparian woodland and 4 acres of riparian scrub would be removed during project construction. These habitats do not support sensitive natural communities, but are nonetheless considered sensitive for the purposes of this analysis. The quality of riparian habitat on the project site is relatively low, due to disturbance from past mining activities and extensive distribution of nonnative species, some of which are highly invasive. However, because riparian vegetation has been reduced to a fraction of its former extent along the San Joaquin River, the remaining patches provide important habitat for wildlife populations that persist along the river. The project has been designed to minimize riparian woodland removal to the maximum extent possible. However, riparian scrub in particular is widely distributed along the existing berm between the river and Milburn Pond and much of this habitat cannot be avoided. Therefore, loss of riparian habitat during project construction would be a **potentially significant** impact.

Mitigation Measure 3.5.7: Minimize Riparian Vegetation Removal and Compensate for Unavoidable Removal.

DWR and its construction contractor(s) will implement the following measures to minimize and compensate for riparian vegetation removal:

- Impacts on riparian vegetation outside the construction footprint shall be avoided by installing and maintaining a protective barrier, if feasible given the site conditions. If a barrier is not feasible, the avoidance area(s) shall be clearly marked with high-visibility flagging, stakes, and/or other means.

- An on-site Habitat Restoration and Enhancement Plan shall be developed and implemented in coordination with DFW land managers. The benefit of increased acreage or improved ecological function of on-site riparian habitat resulting from plan implementation will be considered before additional compensatory measures are proposed.

- If implementing the on-site Habitat Restoration and Enhancement Plan would not ensure no net loss of riparian habitat function or acreage, additional compensation shall be provided by otherwise creating, restoring, enhancing, or preserving riparian habitat elsewhere at a sufficient ratio to ensure no net loss of habitat function or acreage. The appropriate ratio shall be determined in coordination with DFW during the FGC Section 1602 permitting process.

Timing: Before and after project construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measure 3.5.7 would reduce potentially significant impacts on riparian habitat to a less-than-significant level because impacts would be minimized and habitat loss would be compensated in a manner that ensures there would be no net loss of habitat function or acreage.

Impact 3.5.8: ***Impacts on Federally and State-Protected Waters.*** *Project construction would include activities in the San Joaquin River channel and ponds and connecting channels that are waters of the United States and waters of the State. Approximately 2 acres of waters would be at least partially filled along the north edge of Milburn Pond and channels connecting the river and pond. Project implementation would result in an overall improvement of habitat quality, but temporary impacts on water quality could occur during construction. This would be a* ***potentially significant*** *impact.*

The San Joaquin River and ponds and channels on the project site qualify as waters of the United States and waters of the State. Construction activities would include fill placement and other ground disturbance along the northern edge of Milburn Pond and in other jurisdictional waters. Berm modification and equalization saddle and modified French drain construction would result in at least partial fill of approximately 2 acres of waters, primarily Milburn Pond. However, this represents an extremely small portion of the more than 200-acre pond, and project implementation would improve the pond's habitat quality and the extent of waters during drought conditions. Excavation along the San Joaquin River channel would occur at the upstream and downstream ends of the high-flow side channel, where the channel would connect to the river. Excavation may extend below the ordinary high-water mark, but there would be no permanent loss of waters at these locations. Substantial adverse effects on waters could, however, occur if construction activities in and adjacent to waters result in substantial sedimentation or release of hazardous materials into these waters. These impacts would be **potentially significant**. Mitigation Measures 3.5.8a and 3.5.8b have been identified to address these impacts.

Mitigation Measure 3.5.8a: Implement Mitigation Measure 3.7.2, "Prepare and Implement a Stormwater Pollution Prevention Plan and Best Management Practices to Reduce Erosion."

Timing: Before and during construction activities.

Responsibility: DWR.

Mitigation Measure 3.5.8b: Implement Mitigation Measure 3.9.1, "Implement a Spill Prevention Control and Countermeasures Plan and Other Measures to Reduce the Potential for Environmental Contamination during Construction Activities."

Timing: During construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measures 3.5.8a and 3.5.8b would reduce potentially significant construction-related impacts on Federally and State-

protected waters to a **less-than-significant** level because a SWPPP and BMPs specifically designed to control erosion and sedimentation would be implemented and an SPCCP and other measures specifically designed to prevent water contamination would be implemented.

Impact 3.5.9: ***Impacts on Fish and Wildlife Movement Corridors and Nursery Sites.*** *Project construction would disturb a very small portion of the San Joaquin River channel and small portion of the associated terrestrial corridor. Construction activities would not occur at night or when anadromous salmonids are likely to be present. Therefore, impacts on fish and wildlife movement and potential anadromous salmonid spawning and rearing would be minor. This impact would be* ***less than significant****.*

The project site is part of a larger contiguous San Joaquin River and terrace corridor in which fish and wildlife migration and movement occur. Project activities would not substantially interfere with the movement of native wildlife because activities would be limited to a small proportion of the overall corridor width and would not substantially impede upstream or downstream wildlife movement. In addition, construction activities would not occur at night, when most wildlife movement occurs. Similarly, a very small portion of the river channel would be disturbed, which would not substantially impede upstream or downstream fish migration or movement. In addition, construction would occur when anadromous salmonids are unlikely to be present in the project area, and impacts on potential spawning and rearing activities would be negligible. Therefore, potential impacts on fish and wildlife movement and migration and anadromous salmonid spawning and rearing would be **less than significant**.

Mitigation Measure: No mitigation is required.

Impact 3.5.10: ***Conflict with Local Ordinances and Policies.*** *Project implementation would be consistent with goals and policies of local plans and the SJRRP. Some impacts related to habitats and species addressed in these plans would occur, but the overall result would be an improvement of habitat quality and ecological values. This impact would be* ***less then significant.***

Project implementation would be consistent with goals and policies of the Fresno County and City of Fresno General Plan that are designed to conserve function and values of wetland communities and riparian areas; protect, restore, and enhance fish and wildlife habitat; preserve and protect sensitive plant and animal species; and maintain and restore, where feasible, ecological values of the San Joaquin River corridor. Although temporary and permanent impacts on species and habitats would occur, the project would improve the overall quality of wetland habitat and ecological values of the river corridor. It also would support successful implementation of the SJRRP. Some riparian vegetation would be permanently removed, but this is offset by the long-term improvement in overall habitat quality on the project site. Therefore, this impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impacts related to biological resources.

3.6 Cultural Resources and Tribal Cultural Resources

This section describes the pre-historic, ethnographic, and historic settings; summarizes applicable regulations; analyzes potential impacts of the project on cultural resources and Tribal cultural resources (TCRs); and identifies mitigation measures to reduce potentially significant impacts to a less-than-significant level.

Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historic, architectural, archaeological, cultural, or scientific importance. CEQA defines an "historical resource" as any resource listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR). TCRs are also a type of cultural resource recognized under CEQA.

3.6.1 Environmental Setting

Prehistoric Setting

The chronology used in this section, the Central California Taxonomic System, divides the prehistoric past into Early, Middle, and Late horizons, each defined more by artifact types and frequency than by chronology. The stylistic divisions of this system were further defined and incorporated with updated temporal information by Fredrickson, who proposed the Paleo-Indian, Archaic, and Emergent periods, each with associated date ranges and diagnostic artifact and burial styles (Fredrickson 1974, 1994).

The Paleo-Indian Period (11,550-8,550 cal[1] B.C.)

There is little evidence for terminal Pleistocene-early Holocene habitation in the San Joaquin Valley. Changing climate at the end of the Pleistocene brought floods, which covered much of the Central Valley with layers of alluvial soils that buried evidence of human occupation. People living in the San Joaquin Valley during this time are thought to have been hunters and foragers, living in small groups and travelling often from camp to camp in response to seasonal availability of resources. Sites are expected to have been primarily located along lakesides (Fredrickson 1994).

The Lower Archaic (8,550-5,550 cal B.C.)

The ancient shores of Tulare Lake are the nearest location for discovery of Lower Archaic period sites. In this area, approximately 50 miles south of the project site, stemmed projectile points (e.g., Borax Lake, Lake Mojave, Silver Lake, and Pinto point styles), chipped stone crescents, and bi-pointed "humpies" have been discovered (Rosenthal et al. 2007). Lower Archaic period artifacts found within the San Joaquin Valley are often found as isolates, without associated faunal bone or food processing tools, such as milling equipment.

[1] cal denotes "calibrated radiocarbon years," which is used to adjust radiocarbon dates to correspond to calendar years.

The Middle Archaic (5,550-550 cal B.C.)

Settlement patterns became more stable, especially along river corridors, towards the end of the Middle Archaic period (Rosenthal et al. 2007). During the Middle and Upper Archaic periods, the Windmiller Pattern was common throughout the San Joaquin Valley, extending south as far as Buena Vista Lake (Rosenthal et al. 2007). This archaeological pattern is identified by burial style in which individuals were interred in extended positions, oriented towards the west, and often buried with artifacts such as quartz crystals, red pigment (ochre or cinnabar), *Olivella* shell beads (particularly types A1a and L), abalone (*Haliotis*) beads (type M) and pendants, stone pipes, charmstones, large leaf-shaped projectile points associated with the atlatl, bone tools (e.g., awls, needles, strigles), baked-clay net weights, and ground stone tools (mortars, pestles, millingstones, and manos) (Moratto 1984).

The Upper Archaic (550 cal B.C. to cal A.D. 1100)

The Upper Archaic period began at roughly the same time as the Late Holocene, a period of cooler, wetter conditions. More alluvium was deposited over the earlier archaeological sites as rivers and lakes grew and flooded. Cultural diversity and complexity both developed during the Upper Archaic, and new variation is seen in burial contexts, artifact styles, bead types, and ground stone tool forms. Many sites dating to the Upper Archaic have been recorded in the Sacramento Valley and northern San Joaquin Valley, but very few have been found from the southern San Joaquin Valley (Rosenthal et al. 2007).

The Emergent Period (cal A.D. 1000 to the Historic Era)

The Emergent Period was a time of economic diversity, including the expansion of trade networks, increased social inequity, and introduction of clamshell disc beads as a kind of currency (Fredrickson 1994). The introduction of bow and arrow technology saw several new styles of small projectile points developed; in the southern San Joaquin Valley, the most common of the new types were Cottonwood style points.

Ethnographic Setting

The project area was primarily inhabited by the Southern Valley Yokuts (Kroeber 1925:482). The two closest tribes to the area that is now Fresno were the Apyachi and the Wechihit (Wallace 1978). At the beginning of the Historic period, the Apyachi and Wechihit were two of at least 15 groups of Southern Valley Yokuts living along the river basins or near the lakes of southern San Joaquin Valley (Wallace 1978). Each group spoke a distinct dialect of the Yokuts language, part of the Penutian family of languages spoken through much of California, and parts of Oregon, Washington, Idaho, and British Colombia. Stephen Powers, who traveled through California during the summers of 1871 and 1872, described the Southern Valley Yokuts as generally modest and peaceful, mentioning that they worked together against territorial threats from the Paiutes (Powers 1976[1877]:370)

The Southern Valley Yokuts had many dietary options, given the savannahs, lakes, marshes, and rivers in the region. Fish are said to have been an important part of the diet, as well as waterfowl and their eggs, shellfish, turtles, and dogs (Wallace 1978). Other birds and mammals, such as elk, antelope, and rabbits, were a lesser part of the diet. Insect foods, such as roasted grasshoppers, yellow-jacket larvae, and large grubs, were enjoyed during the historic era, and

likely in prehistoric times as well (Powers 1976[1877]). Seeds and root foods also were important staples.

Houses were round or oval-shaped, built of wooden or willow frames, and covered with tule mats (Wallace 1978). In the foothills, house floors were dug to several feet below the ground surface to take advantage of insulation from heat and cold; however, this was not possible near lakeshores, and houses there were positioned on constructed earth mounds (Osborne 1992). Villages on the plains were laid out as a single row of tule houses, with a continuous sunshade built over the front of the row.

The house of the captain was at one end of the row, and the shaman house was at the other. The captain of each village reported to the tribe's regional chief (Powers 1976[1877]:371). Both the role of captain and of chief were hereditary, but community support was also required, and exceptions were made. Other common structures within the village were sweat houses, located downstream, and granaries for storing foods such as dried fish, roots, seeds, or acorns, which would have been located within the village (Osborne 1992). Rather than a constructed dance house, gatherings were held in outdoor spaces, enclosed with a brush fence (Osborne 1992).

Basketry techniques were used to produce vessels, cooking baskets, cradles, hats, and many other items. Pottery, bows, wooden mortars, obsidian, and shell beads were acquired through trade (Powers 1976[1877], Wallace 1978). Shell beads and bone tubes were used as symbolic currency for trade and exchange.

Historic Setting

Fresno County

The County of Fresno, formed in 1856, was originally part of what are now Merced, Mariposa, and Tulare Counties. Its boundaries were altered several times with the last change taking place in 1903. Early settlers came to the area for land speculation and agricultural ventures. Prominent landowners Henry Miller and Charles Lux played a key role in irrigation improvement throughout the San Joaquin Valley. The water delivery systems created, such as the San Joaquin and Kings River Canal, helped facilitate agricultural development and further settlement in the region (Beck and Haase 1974).

In 1872, the Central Pacific Railroad laid tracks for its Southern Pacific Railroad line in the vicinity of present-day city of Fresno, encouraging the establishment of the city and surrounding area. Initially known as Fresno Station, the town of Fresno was founded in 1875 and incorporated in 1885. Soon after Fresno was incorporated, the county seat moved from Millerton to Fresno, which led to a period of prosperity. Fresno enjoyed a thriving economy and continued growth for the ensuing years and the city became the leading agricultural center of the San Joaquin Valley. Crops such as wheat and grapes, as well as orchards, were prominently grown during the late 19th and early 20th centuries. By the mid-20th century, the region became more urban as post World War II development came to the area. The fertile farmland also contributed to continued economic growth. The present-day economy remains tied to agriculture, as well as the service industry, commerce, and education (Hoover et al 1990).

Project Area

In the project area, the San Joaquin River is a gravel-bedded water way, lending itself to aggregate mining. Aggregate mining was a common activity in the San Joaquin Valley starting in the 19th century and continues into the present-day. Historically, the project area was rural and undeveloped. As early as 1937, farmers planted agricultural crops, and by the mid-20th century, aggregate mining activities were taking place. Based on historic aerials, gravel pits and a gravel-sorting plant were evident during this period. Mining activities expanded at the site over the next few decades and an additional gravel-sorting plant was constructed, as well as some new gravel pits. Agricultural development was also evident during this period. In 1968, Calaveras Materials purchased a portion of the project area. In the 1970s and 1980s, mining activities were decreasing and came to a close within 10 years. Starting in the early 1990s, land was gradually restored and efforts were underway to improve Milburn Pond to enhance habitat. Currently the site is comprised of an abandoned gravel pit and some aggregate-related structures dating to the 1980s that are no longer in use. (URS 2001.)

3.6.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

National Historic Preservation Act Section 106

Project construction is anticipated to require a CWA Section 404 permit. Issuing a Federal permit would require compliance with Section 106 of the National Historic Preservation Act of 1966, as amended. Section 106 requires that Federal agencies and entities that these agencies fund or permit, consider the effects of their actions on properties that are listed in the National Register of Historic Places (NRHP), or that may be eligible for such listing. To determine whether an undertaking could affect NRHP-eligible properties, cultural resources (including archaeological, locations of sacred importance to Native Americans, historical, and architectural properties) must be inventoried and evaluated.

The Section 106 review process consists of four steps:

1. Initiate the Section 106 process by establishing the undertaking, developing a plan for the public involvement, and identifying other consulting parties;
2. Identify historic properties (resources that are eligible for inclusion in the NRHP) by determining the scope of efforts, identifying cultural resources within the area potentially affected by the project, and evaluating properties' eligibility for NRHP inclusion;
3. Assess adverse effects by applying the Section 106 criteria of adverse effect to identified historic properties; and
4. Resolve adverse effects by consulting with the State Historic Preservation Officer (SHPO) and other consulting agencies, including the Advisory Council on Historic Preservation if necessary, to develop an agreement that addresses the treatment of historic properties.

NRHP Evaluation Criteria

The NRHP is the nation's master inventory of known historic resources. It is administered by the National Park Service, in consultation with the SHPO. The NRHP includes listings of buildings,

structures, sites, objects, and districts that possess historic, architectural, engineering, archaeological, or cultural significance at the Federal, State, or local level. The NRHP criteria and associated definitions are outlined in the *National Register Bulletin: How to Apply the National Register Criteria for Evaluation* (NPS 1997). The following is a summary of that bulletin.

Properties (structures, sites, buildings, districts, and objects) more than 50 years of age can be listed in the NRHP provided they meet one of the evaluation criteria described below; however, properties less than 50 years of age that are of exceptional significance or are contributors to a district, that also meet the evaluation criteria, can be included in the NRHP.

The NRHP uses the following four criteria under which a property can be considered significant for listing:

A. Properties associated with events that have made a significant contribution to the broad patterns of history.

B. Properties associated with the lives of persons significant in our past.

C. Properties that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

D. Properties that have yielded or may likely yield information important in prehistory or history.

Properties can be listed individually or as contributors to a historic district.

In addition to meeting one of the evaluation criteria, a property must also retain integrity to convey that significance. Although the evaluation of integrity is sometimes subject to judgement, it must always be grounded in an understanding of the property's physical features and how they relate to its significance. The NRHP recognizes the following seven aspects of integrity:

- Location: the place where the historic property was constructed or the place where the historic event occurred.
- Design: the combination of elements that create the form, plan, space, structure, and style of a property.
- Setting: the physical environment of a historic property.
- Materials: the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- Workmanship: the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- Feeling: a property's expression of the aesthetic or historic sense of a particular period of time.
- Association: the direct link between an important historic event or person and a historic property.

State Plans, Policies, Regulations, Laws

CEQA includes provisions that specifically address the consideration of cultural resources. CEQA states that if a project would have significant impacts on important cultural resources, then alternative plans or mitigation measures must be considered. However, only significant cultural resources (termed "historical resources") need to be addressed, specifically resources listed in, or determined to be eligible for listing in, the CRHR (PRC Section 21084.1).

California Register of Historical Resources

The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California Historical Landmarks and Points of Historical Interest. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be significant resources for purposes of CEQA, unless a preponderance of evidence indicates otherwise (PRC Section 5024.1, 14 CCR Section 4850). Eligibility criteria for the CRHR are similar to the NRHP but focus on importance of the resources to California history and heritage. A cultural resource may be eligible for listing in the CRHR if it:

1. is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;

2. is associated with the lives of persons important in our past;

3. embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of an important creative individual or possesses high artistic values; or

4. has yielded, or may be likely to yield, information important in prehistory or history.

State CEQA Guidelines also require consideration of unique archaeological resources (CCR Section 15064.5). As used in California PRC Section 21083.2, the term "unique archaeological resource" refers to an archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information,

- has a special and particular quality such as being the oldest of its type or the best available example of its type, or

- is directly associated with a scientifically recognized important prehistoric or historic event or person.

In addition, State CEQA Guidelines require consideration of TCRs, which are either (1) sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California

Native American Tribe that is either on or eligible for inclusion in the CRHR or a local historic register; or (2) resources the lead agency (in this case, DWR), at its discretion and supported by substantial evidence, chooses to treat as a TCR. Additionally, a cultural landscape may also qualify as a TCR if it meets the criteria to be eligible for inclusion in the CRHR and is geographically defined in terms of the size and scope of the landscape. Other historical resources, unique archaeological resources, and non-unique archaeological resources addressed in this section could also be TCRs if they conform to the criteria to be eligible for inclusion in the CRHR.

In addition to meeting one or more of the above criteria, resources eligible for listing in the CRHR must retain enough of their historic character or appearance to be recognizable as historical resources and to convey the reasons for their significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association (OHP 1999). These regulations apply to the eligibility determination of cultural resources in the project area.

Assembly Bill 52

Assembly Bill (AB) 52, effective on July 1, 2015, amended CEQA and added sections relating to Native American consultation and TCRs. California PRC Section 21084.2 provides that a project with an effect that may cause a substantial adverse change in the significance of a TCR may have a significant effect on the environment. California PRC Section 21080.3.1 (b) requires the lead agency (in this case, DWR) to begin consultation with California Native American Tribes that are traditionally and culturally affiliated with the geographic area of the project if the tribe requests the lead agency, in writing, to be informed by the lead agency through formal notification of projects that are proposed in that geographic area and the tribe subsequently requests consultation. California PRC Section 21084.3 states that "public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource."

AB 52 explicitly recognizes "that California Native American tribes may have expertise with regard to their tribal history and practices, which concern the tribal cultural resources with which they are traditionally and culturally affiliated. Because the California Environmental Quality Act calls for a sufficient degree of analysis, tribal knowledge about the land and tribal cultural resources at issue should be included in environmental assessments for projects that may have a significant impact on those resources." AB 52 and California PRC Section 21080.3.1 and Section 21080.3.2 therefore include requirements for meaningful consultation with culturally and geographically affiliated Tribes to identify TCRs and to develop avoidance or mitigation, as appropriate.

Effective March 8, 2016, DWR adopted the Tribal Engagement Policy to strengthen DWR's commitment to improving communication, collaboration, and consultation with California Native American Tribes. Consistent with Executive Order B-10-11, the California Natural Resources Agency Tribal Consultation Policy, and AB 52, the Tribal Engagement Policy includes the following principles to achieve early and meaningful tribal engagement with California Native American Tribes:

- Establish meaningful dialogue between DWR and California Tribes early in planning for CEQA projects to ensure that DWR's Tribal outreach efforts are consistent with mandated

Tribal consultation policies, and to ensure that California Tribes know how information from consultation affected DWR's decision-making process;

- Establish guidelines to share information between DWR and California Tribes, while protecting their confidential information to the fullest extent of the law;
- Consult with California Tribes to identify and protect TCRs where feasible, and to develop treatment and mitigation plans to mitigate for impacts on TCRs and cultural places;
- Develop criteria in communication plans and grant funding decisions for all applicable DWR programs that will facilitate Tribal participation;
- Provide cultural competency training for DWR executives, managers, supervisors, and staff on Tribal engagement and consultation practices to recognize that California Tribes have distinct cultural, spiritual, environmental, economic, public health interests, and traditional ecological knowledge about California's natural resources; and
- Enable California Tribes to manage and act as caretakers of TCRs.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

San Joaquin River Parkway Master Plan

The Parkway Master Plan (SJRC 2018) goal and policies related to cultural resources and TCRs that may be relevant to the proposed project for certain responsible agencies include:

GOAL: Preserve and protect cultural and historic resources on Parkway public lands.

- **Policy CULTURE.3.** Evaluate the potential for cultural resources at project sites and protect all such resources from disturbance during project construction.
- **Policy CULTURE.6.** Solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.
- **Policy CULTURE.11.** As part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of avoidance and project alternatives to preserve archaeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.
- **Policy CULTURE.18.** If the site of a proposed project is found to contain unique prehistoric (archaeological or paleontological) resources, and the project will cause damage to these resources, reasonable efforts shall be made to permit any or all of the resource to be

scientifically removed, or it shall be preserved in situ (left in in an undisturbed state). In situ preservation may include the following option, or equivalent measures: amending construction plans to avoid prehistoric resources; dedicating sites containing these resources for permanent protection and conservation; capping or covering these resources with a protective layer of soil before building on the sites; and/or leaving prehistoric sites undisturbed within parks, green space, or other open space areas.

Fresno County General Plan

The Fresno County General Plan includes goal and policies addressing cultural resources in the Open Space and Conservation (County of Fresno 2000). The following goals and policies may be relevant to the proposed project for certain responsible agencies:

GOAL OS-J: To identify, protect and enhance Fresno County's important historical, archeological, paleontological, geological and cultural sites and their contributing environments. Policies adopted to implement the goal include:

- **Policy OS-J.1.** The County shall require that discretionary development projects, as part of any required CEQA review, identify and protect important historical, archeological, paleontological, and cultural sites and their contributing environment from damage, destruction, and abuse to the maximum extent feasible. Project-level mitigation shall include accurate site surveys, consideration of project alternatives to preserve archeological and historic resources, and provision for resource recovery and preservation when displacement is unavoidable.

- **Policy OS-J.2.** The County shall, within the limits of its authority and responsibility, maintain confidentiality regarding the locations of archeological sites in order to preserve and protect these resources from vandalism and the unauthorized removal of artifacts.

- **Policy OS-J.3.** The County shall solicit the views of the local Native American community in cases where development may result in disturbance to sites containing evidence of Native American activity and/or sites of cultural importance.

- **Policy OS-J.4.** The County shall maintain an inventory of all sites and structures in the County determined to be of historical significance (Index of Historic Properties in Fresno County).

- **Policy OS-J.5.** The County shall support the registration by property owners and others of cultural resources in appropriate landmark designations (i.e., National Register of Historic Places, California Historical Landmarks, Points of Historical Interest, or Local Landmark).

- **Policy OS-J.6.** The County shall provide for the placement of historical markers or signs on adjacent County roadways and major thoroughfares to attract and inform visitors of important historic resource sites. If such sites are open to the public, the County shall ensure that access is controlled to prevent damage or vandalism.

- **Policy OS-J.7.** The County shall use the State Historic Building Code and existing legislation and ordinances to encourage preservation of cultural resources and their contributing environment.

- **Policy OS-J.8.** The County shall support efforts of other organizations and agencies to preserve and enhance historic resources for educational and cultural purposes through maintenance and development of interpretive services and facilities at County recreational areas and other sites.

City of Fresno General Plan

The City of Fresno adopted a Historic Preservation Ordinance in 1979 which established a Historic Preservation Committee and a Local Register of Historic Resources. In addition, the City of Fresno General Plan (City of Fresno 2014) includes policies to enhance and maintain a citywide program for historic and cultural preservation. The following General Plan objectives and implementing policies may be relevant to the proposed project for certain responsible agencies:

OBJECTIVE HCR2: Identify and preserve Fresno's historic and cultural resources that reflect important cultural, social, economic, and architectural features so that residents will have a foundation upon which to measure and direct physical change.

- **HCR2a.** Identification and Designation of Historic Properties. Work to identify and evaluate potential historic resources and districts and prepare nomination forms for Fresno's Local Register of Historic Resources and California and National registries, as appropriate.

- **HCR2c.** Project Development. Prior to project approval, continue to require a project site and its Area of Potential Effects, without benefit of a prior historic survey, to be evaluated and reviewed for the potential for historic and/or cultural resources by a professional who meets the Secretary of Interior's Qualifications. Survey costs shall be the responsibility of the project developer. Council may, but is not required, to adopt an ordinance to implement this policy.

- **HCR2d.** Native American Sites. Work with local Native American tribes to protect recorded and unrecorded cultural and sacred sites, as required by State law, and educate developers and the community at large about the connections between Native American history and the environmental features that characterize the local landscape.

- **HCR2e.** Alternate Public Improvement Standards. Develop and adopt Alternate Public Improvement Standards for historic landscapes to ensure that new infrastructure is compatible with the landscape; meets the needs of diverse users, including motorists, cyclists, and pedestrians; and provides for proper traffic safety and drainage.

- **HCR2f.** Archaeological Resources. Consider State Office of Historic Preservation guidelines when establishing CEQA mitigation measures for archaeological resources.

- **HCR2g.** Demolition Review. Review all demolition permits to determine if the resource scheduled for demolition is potentially eligible for listing on the Local Register of Historic Resources. Consistent with the Historic Preservation Ordinance, refer potentially eligible resources to the Historic Preservation Commission and as appropriate to the City Council.

- **HCR2h.** Minimum Maintenance Standards. Continue to support enforcement of the minimum maintenance provisions of the Historic Preservation Ordinance, as may be amended, and enforce the provisions as appropriate

3.6.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

Significance criteria are based on Appendix G of the State CEQA Guidelines. Implementing the project would result in a significant impact related to cultural resources or TCRs if it would:

- cause a substantial adverse change in the significance of a historical resource as defined in CCR Section 15064.5,

- cause a substantial adverse change in the significance of an archaeological resource pursuant to CCR Section 15064.5, or

- cause a substantial adverse change in the significance of a TCR, as defined in PRC Section 21074.

Analysis Methodology

Analysis of potential project impacts on cultural resources and TCRs is based on results of historical resources records searches and additional research, a field survey, and consultation with Native American Tribes, as described below.

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis and mitigation measure development. NAHC provided comments related to AB 52 and cultural resources assessments. Prior to receiving their letter, NAHC and other cultural resource information sources, including local Native American Tribes, had been contacted, as recommended by NAHC and described below. SLC provided comments related to submerged resources and title to resources on State lands. Subsequent correspondence with the SLC was conducted, as recommended, regarding the SLC shipwrecks database; the SLC representative indicated their database does not include any shipwrecks in the project area.

Records Search

GEI requested the Southern San Joaquin Valley Information Center (SSJVIC) of the California Historical Resources Information System to conduct a records search of the project site and a 0.25-mile buffer area surrounding the site. The SSJVIC responded on September 14, 2020. In their records search, the SSJVIC reviewed electronic versions of topographic maps indicating previously conducted investigations and reported cultural resources, Office of Historic Preservation Built Environment Directory, Archaeological Determinations of Eligibility, and the California Inventory of Historic Resources. In their summary letter report of the records search, the SSJVIC stated that no previously reported cultural resources were identified on the project

site or in the 0.25-mile buffer. The letter further stated that eight previous investigations had been conducted at least partially intersecting the project site and that one previous investigation had been conducted within the 0.25-mile buffer (Record Search File No.: 20-320).

Field Survey

GEI archaeologists Jesse Martinez and Matthew Chouest conducted a cultural resources pedestrian survey of the project site on October 7, 2020. Visibility of the ground varied greatly from extremely poor in grassy areas to good in barren areas. No prehistoric or historic-era archeological resources were identified during the survey.

Evidence of aggregate mining was observed throughout the project site. Concrete rubble piles, ponds, wood debris, pits, cobble and boulder piles, and remnants of roads were observed on most of the project site. Three abandoned structures that appear to have been associated with aggregate mining were observed in the northeast portion of the project site.

Native American Consultation

No Native American Tribes have requested that DWR inform them of projects that are proposed in the Fresno geographic area. However, in keeping with the Tribal Engagement Policy, DWR sent a letter to NAHC requesting a search of their Sacred Lands File. NAHC responded on March 12, 2020, stating that the search results were negative. The NAHC response included a list of Native American Tribes and individuals that might have information regarding cultural resources within the project boundary. On May 22, 2020, DWR sent each Tribe listed in the NAHC response a letter inviting the Tribe to consult with DWR regarding the project, under the Tribal Engagement Policy; copies of these letter are provided in **Appendix D**. **Table 3.6.1** lists each Tribe that was contacted by DWR.

Table 3.6.1. Native American Tribes Contacted Regarding the Project

Tribe	Chairperson/Contact
Big Sandy Rancheria of Western Mono Indians	Elizabeth D. Kipp
Cold Springs Rancheria	Carol Bill
Dumna Wo-Wah Tribal Government	Robert Ledger, Sr.
Dunlap Band of Mono Indians	Benjamin Charley
Dunlap Band of Mono Indians	Dirk Charley, Tribal Secretary
Kings River Choinumni Farm Tribe	Stan Alec
North Fork Mono Tribe	Ron Goode
Santa Rosa Rancheria Tachi Yokut Tribe	Leo Sisco
Table Mountain Rancheria of California	Leanne Walker-Grant
Table Mountain Rancheria of California	Bob Pennell
Traditional Choinumni Tribe	David Alvarez
Traditional Choinumni Tribe	Rick Osborne
Wuksache Indian Tribe/Eshom Valley Band	Kenneth Woodrow

On June 9, 2020, DWR received a telephone call from Dirk Charley of the Dunlap Band of Mono Indians. Mr. Charley wanted to confirm that Table Mountain Rancheria was also contacted, and indicated the Rancheria would be the most likely to have comments. Mr. Charley indicated he would defer to the Rancheria but that he supports the project. No other Tribes responded to the DWR letter. No TCRs or concerns were identified during the consultation process.

Identified Cultural Resources

The gravel pits are the only historic-era (more than 50 years old) built environment resource on the project site. The mining remnants date to circa 1955-70 and do not meet CRHR criteria because of a lack of historical significance. The pits are not known to have associations with significant events or individuals and do not display unique mining methods. They are typical of aggregate-based activities commonly found throughout the region. Aggregate-related structures are also present on the project site; however, these resources were constructed within the last 50 years. They do not meet the exceptional significance criteria established for recently constructed properties and thus do not meet CRHR criteria. In summary, no cultural resources on the project site meet CRHR criteria; therefore, they are not considered historical resources under CEQA.

Impact Analysis and Mitigation Measures

Impact 3.6.1: ***Substantial Adverse Change in the Significance of a Historical Resource or an Archaeological Resource.*** *Though unlikely, it is possible buried historical or archaeological resources are present on the project site. If encountered during project-related, ground-disturbing activities, these resources could be substantially impacted. This would be a* ***potentially significant*** *impact.*

Because most of the project area underwent aggregate mining in the past, it is unlikely that any historical or archaeological resources that may have once existed on the project site have not been destroyed. In addition, eight previous investigations in the area have also failed to identify any historical or archaeological resources. Nevertheless, the possibility remains that previously unidentified, buried historical or archaeological resources may exist on the project site. If such resources are present in areas subject to project-related ground disturbance, they could be destroyed or otherwise substantially altered by project implementation. This would be a **potentially significant** impact. Mitigation Measures 3.6.1a and 3.6.1b have been identified to address this potential impact.

Mitigation Measure 3.6.1a: Implement Procedures for Inadvertent Discovery of Cultural Material.

If an inadvertent discovery of buried or otherwise previously unidentified historical resources, including archaeological resources (e.g., unusual amounts of shell, animal bone, any human remains, bottle glass, ceramics, building remains), is made at any time during project-related construction activities or project planning, DWR, with input from other interested parties, will develop and implement appropriate protection and avoidance measures, where feasible. If such resources are discovered during project construction, all work within a 100-foot-radius of the find shall cease. DWR shall retain a professional

archaeologist meeting the Secretary of the Interior's Professional Standards for Archaeologists to assess the discovery and recommend what, if any, further treatment or investigation is necessary for the find. Culturally affiliated Native American Tribes will also be contacted concerning resources of Native American origin. Avoidance is the preferred mitigation measure for cultural resources. If avoidance is not possible, any necessary treatment/investigation shall be developed in coordination with interested Native American Tribes providing recommendations to DWR and shall be completed before project activities continue in the vicinity of the find. The final disposition of archaeological, historical, and paleontological resources recovered on state lands under SLC jurisdiction will be approved by SLC. An inadvertent discovery plan shall be developed before construction begins and shall be implemented in the event of a discovery during project construction.

Timing: Before and during project construction activities.

Responsibility: DWR.

Mitigation Measure 3.6.1b: Conduct Cultural Resource Awareness and Sensitivity Training.

DWR will conduct a pre-construction training session for all construction personnel before beginning any project-related, ground-disturbing work. Participants will sign a form acknowledging that they have received the training and agree to keep resource locations confidential and to stop work within 100 feet of any unanticipated discovery. Topics to be addressed in training sessions will include but are not limited to: regulations protecting cultural resources, including archaeological sites and TCRs; basic identification of archaeological resources and potential TCRs; and proper discovery protocols. Training will be provided by DWR and conducted by a qualified archaeologist who meets the Secretary of the Interior's Standards for Archaeology (36 CFR Part 61). If requested by a culturally affiliated Tribe, the training presentation will be developed in consultation with Tribal representatives. Topics will include the potential presence and type of Native American and non-Native American resources potentially found during construction or other activities, required procedures in the event of a discovery, proper behavior in the presence of sacred remains and human remains, and necessary reporting protocols. Written materials will be provided to trained personnel, as appropriate.

Timing: Before project construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measures 3.6.1a and 3.6.1b would reduce potentially significant impacts associated with discovery of previously unknown cultural resources to a less-than-significant level, because any previously unidentified cultural resources encountered during ground-disturbing activities would be recognized by construction personnel and appropriate discovery protocols would be implemented.

Impact 3.6.2: ***Disturbance of Human Remains, including Remains Interred Outside of Dedicated Cemeteries.*** *Though unlikely, it is possible that undiscovered, buried, human remains are present on the project site and could be encountered during project-related, ground-disturbing activities. This would be a* ***potentially significant*** *impact.*

No human remains were identified during the pedestrian survey of the project site and none were reported in the records search conducted for the project. Given the project site was used for aggregate mining in the past, any human remains that may have existed on the site have likely been destroyed. However, it is possible, though unlikely, that undiscovered, buried human remains may exist on the project site. If human remains are present in areas subject to project-related ground disturbance, they could be encountered during project implementation. This would be a **potentially significant** impact. Mitigation Measure 3.6.2 has been identified to address this potential impact.

Mitigation Measure 3.6.2: Avoid Potential Effects to Previously Unknown Human Remains.

If an inadvertent discovery of human remains is made at any time during project-related construction activities or project planning, DWR will implement the procedures listed below. If human remains are identified on the project site, the following performance standards shall be met prior to implementing or continuing actions, such as construction, that may result in damage to or destruction of human remains:

- In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, DWR will immediately halt potentially damaging excavation in the area of the burial and notify the Fresno County Coroner and a professional archaeologist to determine the nature of the remains. The Coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or State lands (California Health and Safety Code Section 7050.5[b]). If the Coroner determines that the remains are those of a Native American, he or she must contact NAHC by phone within 24 hours of making that determination (California Health and Safety Code Section 7050[c]). After the Coroner's findings have been made, the archaeologist and the NAHC-designated Most Likely Descendant (MLD), in consultation with the landowner, shall determine the ultimate treatment and disposition of the remains. The responsibilities of DWR for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.9 et seq.

- Upon the discovery of Native American human remains, DWR will require that all construction work within 100 feet of the discovery stop, until consultation with the MLD has taken place. The MLD will have 48 hours to complete a site inspection and make recommendations to the landowner after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. PRC Section 5097.98(b)(2) suggests that the concerned parties may mutually agree to extend discussions beyond the initial 48 hours to allow for the discovery of additional

remains. DWR will record the site with NAHC or SSJVIC and record a document with Fresno County.

- If agreed to by the MLD and DFW land managers, DWR or its authorized representative will rebury the Native American human remains and associated grave goods with appropriate dignity on the project site, in a location not subject to further subsurface disturbance. If NAHC is unable to identify an MLD, the MLD fails to make a recommendation within 48 hours after being granted access to the site, or recommendation of the MLD is rejected and mediation by NAHC fails to provide measures acceptable to DWR, DWR or its authorized representative may also reinter the remains at a location not subject to further disturbance. DWR will implement mitigation to protect the burial remains. Construction work in the vicinity of the burials shall not resume until the mitigation is completed.

- If the human remains are of historic age and are determined not to be of Native American origin, DWR will follow the provisions of the California Health and Safety Code Section 7000 (et seq.) regarding the disinterment and removal of non-Native American human remains.

Timing: During project construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measure 3.6.2 would reduce the potentially significant impact associated with human remains because any inadvertent discovery of human remains would be addressed as proscribed by State law and the MLD would be consulted.

Impact 3.6.3: ***Substantial Adverse Change in the Significance of an Unidentified Tribal Cultural Resource.*** *Though unlikely, it is possible that unidentified TCRs, in the form of a subsurface site, occur on the project site. If such a TCR is inadvertently discovered during project-related, ground-disturbing activities, it could be substantially impacted. This would be a* ***potentially significant*** *impact.*

No TCRs were identified during consultation efforts by DWR. Given the context of the project site, it is unlikely any TCRs that may have existed in the past have survived within the project boundary. The possibility is small, but it is possible that a TCR might be impacted by ground-disturbing, project-related activities. This would be a **potentially significant** impact. Mitigation Measures 3.6.3a, 3.6.3b, and 3.6.3c have been identified to address this potential impact.

Mitigation Measure 3.6.3a: Implement Mitigation Measure 3.6.1a, "Implement Procedures for Inadvertent Discovery of Cultural Material."

Timing: Before and during construction.

Responsibility: DWR.

Mitigation Measure 3.6.3b: Implement Mitigation Measure 3.6.1b, "Conduct Cultural Resource Awareness and Sensitivity Training."

Timing: Before construction activities.

Responsibility: DWR.

Mitigation Measure 3.6.3c: Implement Mitigation Measure 3.6.2, "Avoid Potential Effects to Previously Unknown Human Remains."

Timing: During construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measures 3.6.3a, 3.6.3b, and 3.6.3c would reduce potentially significant impacts to TCRs to a **less-than-significant** level because any impacts to TCRs would be avoided or appropriate treatment measures would be developed and implemented.

Residual Significant Impacts

The project would not result in residual significant impacts related to cultural resources or TCRs.

3.7 Geology, Soils, and Paleontological Resources

This section discusses the existing geological setting of the project vicinity; describes applicable regulations; analyzes potential project impacts related to geology, soils, and paleontological resources; and identifies mitigation measures to reduce potentially significant impacts to a less-than-significant level.

3.7.1 Environmental Setting

Regional Geology

The project is located in the Central Valley Geomorphic Province, which encompasses the Sacramento and San Joaquin Valleys. This province is an alluvial plain approximately 50 miles wide and 400 miles long, stretching from Redding to just south of Bakersfield. Alternating marine and continental deposits of Tertiary age underlie much of the Central Valley Province. The San Joaquin Valley is a structural trough into which sediments have been deposited as much as 6 miles deep and is drained by the San Joaquin River. A review of the Geologic Map of California, Fresno Sheet (Matthews and Burnett 1965) indicates the project area is underlain by Quaternary-aged stream channel deposits.

Local Soils

A review of U.S. Natural Resources Conservation Service soil survey data (NRCS 2020) indicates that the project site includes several soil types. The primary soil type is riverwash, with smaller areas of sandy loam.

3.7.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No Federal plans, policies, regulations, or laws related to geology, soils, or paleontological resources apply to the proposed project.

State Plans, Policies, Regulations, Laws

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act (PRC Sections 2621–2630) requires the State Geologist to establish regulatory zones known as Earthquake Fault Zones around the surface traces of active faults and to issue appropriate maps. The project site is not located within an Alquist-Priolo Earthquake Fault Zone.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act of 1990 (PRC Sections 2690–2699.6) addresses earthquake hazards from nonsurface fault rupture, including liquefaction and seismically induced landslides. The Act established a mapping program for areas that have the potential for liquefaction, landslide, strong ground shaking, or other earthquake and geologic hazards. The Act also specifies that the lead agency for a project may withhold development permits until geologic or soils investigations are conducted for specific sites, and mitigation measures are incorporated into plans to reduce hazards associated with seismicity and unstable soils.

National Pollutant Discharge Elimination System

The SWRCB and CVRWQCB have adopted specific National Pollution Discharge Elimination System (NPDES) permits for a variety of activities that have the potential to discharge wastes (including sediment) to waters of the State. The SWRCB's Statewide storm water general permit for construction activity (2009-0009-DWQ) applies to all land-disturbing construction activities that would disturb 1 acre or more. Compliance with the NPDES permit requires submitting a notice of intent to discharge to CVRWQCB and implementing a SWPPP that includes BMPs to minimize water quality degradation during construction activities.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

San Joaquin River Parkway Master Plan

Policy CULTURE.11 in the cultural and historic resources section of the Parkway Master Plan (SJRC 2018) relates to paleontological resources and may be relevant to the proposed project for certain responsible agencies. The text of this policy is provided in Section 3.6, "Cultural Resources and Tribal Cultural Resources."

Fresno County General Plan

The Fresno County General Plan includes a goal and policies addressing geologic and seismic risks in the Health and Safety Element (County of Fresno 2000). The following goal and policies may be relevant to the proposed project for certain responsible agencies:

GOAL: To minimize the loss of life, injury, and property damage due to seismic and geologic hazards.

- **Policy HS-D.3.** The County shall require that a soils engineering and geologic-seismic analysis be prepared by a California-registered engineer or engineering geologist prior to permitting development, including public infrastructure projects, in areas prone to geologic or seismic hazards (i.e., fault rupture, groundshaking, lateral spreading, lurchcracking, fault creep, liquefaction, subsidence, settlement, landslides, mudslides, unstable slopes, or avalanche).

- **Policy HS-D.4.** The County shall require all proposed structures, additions to structures, utilities, or public facilities situated within areas subject to geologic-seismic hazards as identified in the soils engineering and geologic-seismic analysis to be sited, designed, and constructed in accordance with applicable provisions of the Uniform Building Code (Title 24 of the California Code of Regulations) and other relevant professional standards to minimize or prevent damage or loss and to minimize the risk to public safety.

- **Policy HS-D.8.** The County shall require a soils report by a California-registered engineer or engineering geologist for any proposed development, including public infrastructure projects,

that requires a County permit and is located in an area containing soils with high "expansive" or "shrink-swell" properties. Development in such areas shall be prohibited unless suitable design and construction measures are incorporated to reduce the potential risks associated with these conditions.

- **Policy HS-D.9.** The County shall seek to minimize soil erosion by maintaining compatible land uses, suitable building designs, and appropriate construction techniques. Contour grading, where feasible, and revegetation shall be required to mitigate the appearance of engineered slopes and to control erosion.

Fresno County Code

The Fresno County Municipal Code (County of Fresno 2000) covers building and construction in Title 15. Chapter 15.28 includes requirements governing grading and excavation.

City of Fresno General Plan

The City of Fresno General Plan includes several policies related to geologic and seismic risks in Chapter 9, "Noise and Safety" (City of Fresno 2014). These policies address soil analysis requirements, seismic protection for structures, landfill design, and development within 300 feet of the San Joaquin River bluffs and are not relevant to the impact analysis for this project.

3.7.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. Implementing the project would result in a significant impact related to geology and soils if it would:

- directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure (including liquefaction), or landslides;
- result in substantial soil erosion or the loss of topsoil;
- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- be located on expansive soil, creating substantial direct or indirect risks to life or property;
- have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater; or
- directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

For the purposes of this analysis, a unique paleontologic resource or site is one that is considered significant under the following professional paleontological standards. An individual vertebrate fossil specimen may be considered unique or significant if it is identifiable and well preserved, and it is:

- a type specimen (i.e., the individual from which a species or subspecies has been described);
- a member of a rare species;
- a species that is part of a diverse assemblage (i.e., a site where more than one fossil has been discovered) wherein other species are also identifiable, and important information regarding life history of individuals can be drawn;
- a skeletal element different from, or a specimen more complete than, those now available for its species; or
- a complete specimen (i.e., all or substantially all of the entire skeleton is present).

The value or importance of different fossil groups varies depending on the age and depositional environment of the rock unit that contains the fossils, their rarity, the extent to which they have already been identified and documented, and the ability to recover similar materials under more controlled conditions (such as for a research project). Marine invertebrates are generally common; their fossil record is well developed and well documented, and they would generally not be considered a unique paleontological resource. Identifiable vertebrate marine and terrestrial fossils are generally considered scientifically important because they are relatively rare.

Issues Not Discussed Further

Surface Fault Rupture. Because the project site is not located within an Alquist-Priolo Earthquake Fault Zone and there are no known active faults on or adjacent to the project site, fault ground rupture is very unlikely, and this issue is not discussed further.

Landslides. Because the project would be implemented on a site with flat topography, there would be no impact related to landslides, and this issue is not discussed further.

Soil Suitability for Septic Systems. Because the project would not include wastewater disposal systems of any kind, there would be no impact related to the ability of project site soils to support septic systems, and this issue is not discussed further.

Unique Geologic Feature. A unique geologic feature is a major natural element that stands out in the landscape, such as a large and scenic river, gorge, waterfall, volcanic cinder cone, lava field, or glacier. The project site does not include any unique geologic features. Therefore, there would be no impact on such a feature, and this issue is not discussed further.

Analysis Methodology

The evaluation of potential impacts relied on a review of published geological and paleontological literature and maps and soil survey data for Fresno County.

In its standard guidelines for assessment and mitigation of adverse impacts on paleontological resources, the Society of Vertebrate Paleontology (1995) established three categories of sensitivity for paleontological resources: high, low, and undetermined. Areas where fossils have been previously found are considered to have a high sensitivity and a high potential to produce fossils. Areas that are not sedimentary in origin and that have not been known to produce fossils in the past typically are considered to have low sensitivity. Areas that have not had any previous paleontological resource surveys or fossil finds are considered to be of undetermined sensitivity until surveys and mapping are performed to determine their sensitivity. All vertebrate fossils are generally categorized as being of potentially significant scientific value.

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis and mitigation measure development. No comments related to geology, soils, seismicity, or paleontological resources were received.

Impact Analysis and Mitigation Measures

Impact 3.7.1: ***Impacts from Seismic or Soil Hazards.*** *The design of engineered project features is based on site-specific geotechnical evaluation that considers and minimizes potential seismic and soil hazards. Therefore, this impact would be* ***less than significant****.*

The San Joaquin Valley has historically experienced very low levels of seismic activities. The project vicinity is an area of low earthquake hazard on the California Geological Survey's map of earthquake shaking potential (Branum et al 2016). Soils on the project site are primarily riverwash and could be subject to ground failure if strong ground shaking were to occur. However, the project is being designed in accordance with engineering standards and based on site-specific geotechnical information. Design considerations include meeting or exceeding standards related to stability, ground shaking, liquefaction, and subsidence. Therefore, the project would result in a **less-than-significant** impact related to seismic and soil hazards.

Mitigation Measure: No mitigation is required.

Impact 3.7.2: ***Potential Temporary, Short-term Construction-related Erosion.*** *The project includes construction activity adjacent to the San Joaquin River and Millburn Pond. Soil materials exposed during construction would be subject to wind and water erosion hazards. Therefore, implementing the project would result in a* ***potentially significant*** *impact.*

Project construction would include substantial ground disturbance, including borrow excavation, equalization saddle constriction, berm improvements, and other grading and roadway improvements. Project-related earth-moving activities would result in temporary and short-term disturbance of soil and could expose disturbed areas to storm events. Rainfall of sufficient intensity could dislodge soil particles from the soil surface. If particles are dislodged and the storm is large enough to generate runoff, substantial localized erosion could occur. In addition, soil disturbance during summer could result in substantial loss of topsoil because of wind erosion. This impact would be **potentially significant**. Mitigation Measure 3.7.2 has been identified to address this impact.

Mitigation Measure 3.7.2: Prepare and Implement a Stormwater Pollution Prevention Plan and Best Management Practices to Reduce Erosion.

In addition to compliance with all applicable Federal, State, and local regulations, DWR will implement the following measures to further reduce construction-related erosion:

- Construction activities would likely be subject to construction-related stormwater permit requirements of the NPDES program. Any permits by the CVRWQCB will be obtained by DWR before any ground-disturbing construction activity. A SWPPP will be prepared that identifies BMPs to prevent or minimize the introduction of contaminants into surface waters. Such BMPs could include, but would not be limited to, silt fencing, straw bale barriers, fiber rolls, storm drain inlet protection, hydraulic mulch, and a stabilized construction entrance. The SWPPP will include development of site-specific structural and operational BMPs to prevent and control impacts on runoff quality, measures to be implemented before each storm event, inspection and maintenance of BMPs, and monitoring of runoff quality by visual and/or analytical means.

- Water (e.g., trucks, portable pumps with hoses) will be used to control fugitive dust during construction activities that could cause substantial wind erosion.

Timing: Before and during construction.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measure 3.7.2 would reduce the potentially significant impact associated with temporary and short-term construction-related erosion to a **less-than-significant** level because a SWPPP and BMPs specifically designed to control erosion would be implemented.

Impact 3.7.3: ***Potential Damage to or Destruction of Unique Paleontological Resources.*** *The project site is underlain by recent sedimentary deposits that do not represent fossil-bearing geologic formations. This impact would be* ***less than significant****.*

The project site lies in recent stream channel deposits (Matthews and Burnett 1965). These recent sedimentary deposits are subject to past and present erosion and periodic shifts during high-water events and therefore do not represent fossil-bearing geologic formations. This impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impacts associated with geology, soils, or paleontological resources.

3.8 Greenhouse Gas Emissions

This section assesses GHG emissions that would be generated by the project. GHG emissions have the potential to adversely affect the environment because such emissions contribute, on a cumulative basis, to global climate change. This section also provides a background discussion of climate change, a discussion of existing sources of GHG emissions, and a summary of applicable regulations.

3.8.1 Environmental Setting

When sunlight reaches the earth's surface, shortwave energy heats the surface while longer-wave energy (infrared heat) is reradiated to the atmosphere. GHGs absorb this energy and trap the heat in the lower atmosphere.

Naturally occurring GHGs include water vapor, carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Synthetic GHGs include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). All of these GHGs, with the exception of water vapor, are targeted for reduction in AB 32, the California Global Warming Solutions Act of 2006. Nitrogen trifluoride (NF_3) was not initially listed in AB 32 but was subsequently added to the list via legislation.

While CO_2 occurs naturally in the atmosphere, human activities such as burning coal, oil, gas, and wood convert carbon from fossil and biomass storage to CO_2, thereby increasing atmospheric concentrations. Sources of CH_4 are both natural (through biological processes in low-oxygen environments) and artificial (through agriculture, primarily livestock enteric fermentation and manure management). Sources of N_2O include agricultural soil management, as well as vehicle emissions. HFCs and PFCs are synthesized compounds used as refrigerants or in manufacturing. SF_6 is used in electricity transmission and distribution and in semiconductor manufacturing. NF_3 is a chemical used in semiconductor manufacture. (CARB 2020.)

Concentrations of CO_2, CH_4, and N_2O have increased greatly since 1750 (40 percent, 150 percent, and 20 percent, respectively) (IPCC 2014). The long-lived GHGs (CO_2, CH_4, N_2O, CFCs, HFCs, and SF_6) are considered to be the largest and most important human driver of climate change. Among long-lived GHGs, CO_2 is responsible for 64 percent of radiative forcing, which refers to a change in the earth's radiative balance resulting from an imbalance between incoming solar radiation energy and outgoing thermal infrared emission energy. CH_4 contributes approximately 18 percent of total radiative forcing. To analyze the warming potential of GHGs, GHG emissions are typically quantified and reported as CO_2 equivalents (CO_2e).

Climate change refers to changes in temperature, precipitation, wind patterns, and other elements of the earth's climate system over a long period of time. In California, observations of climate change include an increase in average annual air temperatures, a change in the trend toward more rain than snow, a change in runoff timing, an increase in extreme heat events, a decrease in winter chill times, a rise in sea level, and warmer conditions at higher elevations (Bedsworth et al. 2018). Changes in climatic and environmental conditions can also strongly affect terrestrial, marine, and freshwater biological systems (Bedsworth et al. 2018). Climate change impacts in the San Joaquin Valley include accelerating warming, more intense and frequent heat waves and drought, higher frequency of catastrophic floods, and more severe and frequent fires. These, in

turn, are likely to increase stress on agriculture, ecosystems, water resources, land use and community development, transportation, energy, and public health (Westerling et al. 2018).

3.8.2 Regulatory Setting

Key policies, guidance, executive orders, regulations, and legislation regarding GHGs and climate change are summarized below. For additional information on air quality regulations, refer to Section 3.4, "Air Quality."

Federal Plans, Policies, Regulations, and Laws

Federal Clean Air Act

At the Federal level, EPA administers the CAA. In 2007, the United States Supreme Court ruled GHGs are "pollutants" under CAA. In 2009, EPA found, under Section 202(a) of the CAA, that six GHGs constitute a threat to public health and welfare, and the combined emissions from motor vehicles cause and contribute to climate change. In 2014, the U.S. Supreme Court upheld EPA's ability to regulate major sources of GHG emissions.

State Plans, Policies, Regulations, Laws

Executive Order S-3-05

Executive Order (EO) S-3-05 included the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; by 2050 reduce GHG emissions to 80 percent below 1990 levels. This EO directs the California Environmental Protection Agency (CalEPA) Secretary to develop and lead a climate action team of State agency representatives and report on the progress made toward meeting the targets to the Governor and the Legislature.

Statewide GHG Emission Targets

AB 32 requires GHG emissions in California be reduced to 1990 levels by 2020. To comply with AB 32, CARB prepared the AB 32 Scoping Plan, which lays out a GHG-reduction emission framework and identifies measures to meet the GHG emissions target. In 2016, Senate Bill 32 required emissions be reduced to 40 percent below 1990 levels by 2030. California's 2017 Climate Change Scoping Plan identifies strategies to achieve the GHG emissions targets for 2030 and advance toward 2050 goals.

California Climate Adaptation Strategy

The California Natural Resources Agency updated its *2009 California Climate Adaptation Strategy* with *Safeguarding California: Reducing Climate Risk* in 2014. These policy guidance documents describe advances in climate science, climate risks, work done to date, and recommendations to manage climate risk.

Executive Order B-30-15

Per EO B-30-15, additional goals were set to reduce GHG emissions in California. By 2030, State agencies are further committed to reduce GHG emissions to 40 percent below 1990 levels and to 80 percent below 1990 levels by 2050.

Greenhouse Gas Emissions Reduction Plan

In May 2012, DWR adopted the GGERP, which details DWR's efforts to reduce its GHG emissions consistent with EO S-3-05 and AB 32. DWR also adopted the negative declaration prepared for the GGERP in accordance with the State CEQA Guidelines. The GGERP and associated negative declaration are incorporated herein by reference (DWR 2020 and 2012). The GGERP provides estimates of past (since 1990), current, and future GHG emissions related to operations, construction, maintenance, and business practices (e.g., building-related energy use). The GGERP specifies aggressive 2030 and 2045 emission reduction goals and identifies a list of GHG emissions reduction measures to achieve those goals.

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

Section 15064 further states that "[l]ater project-specific environmental documents may tier from and/or incorporate by reference" the "programmatic review" conducted for the GHG emissions reduction plan. "An environmental document that relies on a greenhouse gas reduction plan for a cumulative impacts analysis must identify those requirements specified in the plan that apply to the project, and, if those requirements are not otherwise binding and enforceable, incorporate those requirements as mitigation measures applicable to the project" (State CEQA Guidelines Section 15183.5, Subdivision [b][2]).

Section 10 of the GGERP outlines five steps that each DWR project must take to demonstrate consistency with the GGERP:

1. analysis of GHG emissions from construction of the proposed project,

2. determination that the construction emissions from the project do not exceed the levels of construction emissions analyzed in the GGERP,

3. incorporation of DWR's project-level GHG emissions-reduction strategies into the design of the project,

4. determination that the project does not conflict with DWR's ability to implement any of the "Specific-Action" GHG emissions-reduction measures identified in the GGERP, and

5. determination that the project would not add electricity demands to the State Water Project system that could alter DWR's emissions-reduction trajectory in such a way as to impede its ability to meet its emissions reduction goals.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

The Parkway Master Plan (SJRC 2018) includes goals and supporting policies related to air resources, climate change adaptation, and sequestration, but these goals and policies are not directly relevant to the analysis of this project.

San Joaquin Valley Air Pollution Control District

The project area is in Fresno County and is regulated by SJVAPCD, the local agency primarily responsible for controlling emissions from stationary sources. SJVAPCD also develops plans and implements control measures, as required by State and Federal requirements. To assist lead agencies with analyzing GHG emission and climate change impacts under CEQA, SJVAPCD recommends two resources:

- *Addressing GHG Emission Impacts for Stationary Source Projects Under CEQA When Serving as the Lead Agency* (SJVAPCD 2009a)
- *Guidance for Valley Land-use Agencies in Addressing GHG Emission Impacts for New Projects under CEQA* (SJVAPCD 2009b)

SJVAPCD has not adopted a quantitative threshold for evaluating the significance of GHG emissions; however, SJVAPCD's guidance document for San Joaquin Valley land-use agencies (2009b) would be most relevant for assessing GHG-related impacts from the proposed project. In this guidance document, SJVAPCD relies on implementing best performance standards (BPS), defined as the most effective achieved-in-practice means of reducing or limiting GHG emissions from a GHG emissions source, for evaluating a project's significance. Projects implementing BPS would be determined to have less-than-significant individual and cumulative impacts on global climate change. If a project does not implement BPS, then quantification of project-specific GHG emissions would be required. If project-related emissions would be reduced or mitigated by at least 29 percent compared to business-as-usual, the project would be determined to have a less-than-significant individual and cumulative impact for GHG.

Fresno County General Plan

The Fresno County General Plan does not include policies or implementation measures directly related to GHG emissions or climate change.

City of Fresno General Plan

The City of Fresno General Plan (City of Fresno 2014) includes the following Resource Conservation and Resilience objectives relevant to GHG analysis that may be relevant to the proposed project for certain responsible agencies:

Objective RC-5: In cooperation with other jurisdictions and agencies in the San Joaquin Valley Air Basin, take timely, necessary, and the most cost-effective actions to

achieve and maintain reductions in greenhouse gas emissions and all strategies that reduce the causes of climate change in order to limit and prevent the related potential detrimental effects upon public health and welfare of present and future residents of the Fresno community.

Objective RC-11: Strive to reduce the solid waste going to landfills to zero by 2035.

3.8.3 Environmental Impacts and Mitigation Measures

The proposed project could affect GHG emissions through construction activities, including off-road construction equipment and increased traffic from trucks and construction workers. Project O&M activities would have a negligible contribution to GHG emissions.

Construction emissions are described as temporary or "short term" in duration. These temporary and short-term emissions have the potential to represent a significant impact to GHG emissions and climate change. GHG emissions are caused by on- and off-road vehicle exhaust.

SJVAPCD published *Guidance for Assessing and Mitigating Air Quality Impacts* (SJVAPCD 2015) to assist lead agencies with uniform procedures for addressing GHG and climate change impacts in environmental documents. SJVAPCD does not establish a specific quantitative level of GHG emissions increase above which a project would have a significant impact on the environment. As a result, SJVAPCD uses a tiered approach for assessing project significance, based on the following criteria:

- Projects complying with an approved GHG emission reduction plan or GHG mitigation program that avoids or substantially reduces GHG emissions within the geographic area in which the project is located would be determined to have a less-than-significant individual and cumulative impact for GHG emissions.
- Projects implementing BPS would not require quantification of project-specific emissions. Such projects would be determined to have a less-than-significant individual and cumulative impact for GHG emissions.
- Projects not implementing BPS would require quantification of project-specific GHG emissions and demonstration that project-specific GHG emissions would be reduced or mitigated by at least 29 percent compared to business as usual.

The proposed project does not include the installation of any stationary sources that would be subject to the SJVAPCD's BPS provisions. The BPS classes are generally geared toward stationary-source fossil fuel-combustion equipment like boilers, engines, and heaters. In addition, the proposed project is not a "traditional" land use development project like residential, commercial, industrial, or governmental operations that primarily increase GHG emissions through energy consumption and vehicle miles traveled.

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. The project would result in a significant impact related to climate change if it would:

- generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- conflict substantially with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

SJVAPCD has not developed quantitative "thresholds" that might be used to determine what level of GHG emissions would constitute a significant impact. DWR has adopted thresholds for construction projects of 25,000 metric tons of CO_2e (MT CO_2e) for the entire construction phase and 12,500 MT CO_2e in any single year. Projects with emissions larger than these thresholds must evaluate project-specific emissions under CEQA. These thresholds and this emissions evaluation approach is consistent with SJVAPCD guidance for assessing air quality impacts.

Issues Not Discussed Further

Conflict with Greenhouse Gas Reduction Plan. DWR's GGERP complies with all applicable plans and policies. Appendix B, "Air Quality and Greenhouse Gas Emissions Modeling Results and Consistency Determination," demonstrates that the proposed project would meet each of the required elements and would be consistent with the GGERP. Therefore, there would be no impact related to conflict with a GHG reduction plan, and this topic is not discussed further.

Analysis Methodology

CalEEMod version 2016.3.2 was used to calculate potential emissions associated with project construction and O&M activities. Estimates of equipment and usage input were provided for the air quality analysis by DWR engineers. Results of the emissions model analysis are presented in Appendix B, "Air Quality and Greenhouse Gas Emissions Modeling Results and Consistency Determination."

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis and mitigation measure development. SLC provided comments regarding GHG emissions analysis, including a specific recommendation to identify a quantitative threshold of significance for GHG emissions, if the regional air quality management district has not done so. As described above, a quantitative threshold has been adopted by DWR and is used in this analysis.

Impact Analysis and Mitigation Measures

Impact 3.8.1: ***Direct Emission of Greenhouse Gases.*** *Project construction activities would directly emit GHGs, but these emissions would be below the threshold of significance. This impact would be* ***less than significant.*** *In addition, DWR would implement project-level BMPs to reduce GHG emissions.*

The proposed project would directly emit GHGs during construction activities. Construction-related emissions were estimated for off-road construction equipment, on-road haul trucks and delivery vehicles, and construction worker commutes. As shown in Appendix B, "Air Quality and Greenhouse Gas Emissions Modeling Results and Consistency Determination," annual construction emissions would equal 1,713 MT CO_2e/year.

Based on the analysis provided in the GGERP and the demonstration that the proposed project is consistent with the Inventory and Calculation of Greenhouse Gas Emissions (see Appendix B), DWR, as lead agency, has determined the proposed project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs would be **less than cumulatively considerable** and, therefore, **less than significant**.

DWR would further reduce the proposed project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs by implementing DWR's project-level GHG emissions-reduction BMPs. Implementing these BMPs reduces GHG emissions from construction projects by minimizing construction equipment fuel usage, reducing fuel consumption for transportation of construction materials, reducing the amount of landfill material, and reducing emissions from the production of cement.

DWR's Pre-construction and Final Design BMPs are designed to ensure individual projects are evaluated and their unique characteristics taken into consideration when determining if specific equipment, procedures, or material requirements are feasible and efficacious for reducing project-related GHG emissions. The following Pre-construction and Final Design BMPs are anticipated to be implemented for the proposed project:

- **GHG 1.** Evaluate project characteristics, including location, project workflow, site conditions, and equipment performance requirements, to determine whether specifications of the use of equipment with repowered engines, electric drive trains, or other high-efficiency technologies are appropriate and feasible for the project or specific elements of the project.
- **GHG 2.** Evaluate the feasibility and efficacy of performing on-site material hauling with trucks equipped with on-road engines.
- **GHG 3.** Ensure that all feasible avenues have been explored for providing an electrical service drop to the construction site for temporary construction power. When generators must be used, use alternative fuels, such as propane or solar, to power generators to the maximum extent feasible.
- **GHG 6.** Limit deliveries of materials and equipment to the site to off-peak traffic congestion hours.

Construction BMPs apply to all construction and maintenance projects that DWR completes or for which DWR issues contracts. All projects are expected to implement all Construction BMPs unless a variance is granted by the Division of Engineering Chief, Division of Operation and Maintenance Chief, or Division of Flood Management Chief (as applicable), and the variance is approved by the DWR CEQA Climate Change Committee. Variances are granted when specific project conditions or characteristics make implementation of a Construction BMP infeasible and where omitting the BMP will not be detrimental to the project's consistency with the GGERP. DWR Construction BMPs include the following:

- **GHG 7.** Minimize idling time by requiring that equipment be shut down after five minutes when not in use (as required by California Code of Regulations, Title 13, Section 2485, the State's airborne toxics control measure). Provide clear signage that posts this requirement for workers at the entrances to the site and provide a plan for the enforcement of this requirement.
- **GHG 8.** Maintain all construction equipment in proper working condition and perform all preventative maintenance. Required maintenance includes compliance with all manufacturer's recommendations, proper upkeep and replacement of filters and mufflers, and maintenance of all engine and emissions systems in proper operating condition. Maintenance schedules shall be detailed in an air quality control plan prior to commencement of construction.
- **GHG 9.** Implement a tire inflation program on the job site to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every two weeks for equipment that remains on-site. Check vehicles used for hauling materials off-site weekly for correct tire inflation. Procedures for the tire inflation program shall be documented in an air quality management plan prior to commencement of construction.
- **GHG 10.** Develop a project-specific ride share program to encourage carpools, shuttle vans, transit passes, and/or secure bicycle parking for construction worker commutes.
- **GHG 11.** Reduce electricity use in temporary construction offices by using high-efficiency lighting and requiring that heating and cooling units be Energy Star compliant. Require that all contractors develop and implement procedures for turning off computers, lights, air conditioners, heaters, and other equipment each day at close of business.
- **GHG 12.** For deliveries to project sites where the haul distance exceeds 100 miles and a heavy-duty class 7 or class 8 semi-truck or 53-foot or longer box-type trailer is used for hauling, a SmartWay certified truck will be used to the maximum extent feasible.
- **GHG 13.** Minimize the amount of cement in concrete by specifying higher levels of cementitious material alternatives, larger aggregate, longer final set times, or lower maximum strength, where appropriate.
- **GHG 14.** Develop a project-specific construction debris recycling and diversion program to achieve a documented 50-percent diversion of construction waste.
- **GHG 15.** Evaluate the feasibility of restricting all material hauling on public roadways to off-peak traffic congestion hours. During construction scheduling and execution, minimize, to the extent possible, uses of public roadways that would increase traffic congestion.

The proposed project would result in a **less-than-significant** impact on GHG emissions without implementing the GHG BMPs identified above. With implementation of the GHG BMPs identified above, the proposed project's less-than-significant impact with respect to GHG emissions would be further reduced.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impacts related to GHG emissions.

3.9 Hazards and Hazardous Materials

This section discusses the existing setting for hazards and hazardous materials in the project vicinity, describes applicable regulations, analyzes potential project impacts related to hazards and hazardous materials, and identifies mitigation measures to reduce potentially significant impacts to a less-than-significant level.

3.9.1 Environmental Setting

Hazardous Materials Sites

A database search was conducted of all data sources in the Cortese List (enumerated in PRC Section 65962.5), including: the GeoTracker database, a groundwater information management system maintained by SWRCB; the Hazardous Waste and Substances Site List (i.e., the EnviroStor database) maintained by the California Department of Toxic Substances Control (DTSC); and EPA's Superfund Site database (DTSC 2020; SWRCB 2020a, 2020b; CalEPA 2020; EPA 2019). One hazardous materials site was identified within 0.25 mile of the project site. The Old River Rock Site (T0601900198) located 0.22 mile west of the project site boundary is a previously identified Leaking Underground Storage Tank (diesel). Remediation of the site, as directed by SWRCB, was completed in 1991 (SWRCB 2020a).

The project site is not in an area mapped as ultramafic rock, which has been determined to be more likely than other rock types to contain naturally occurring asbestos (DOC 2000).

Schools

There are no schools within 0.25 mile of the project site. Schools nearest to the project site are Norman Liddell Elementary School and Forkner Elementary School, 0.5 and 0.9 mile from the project site, respectively.

Airports and Airstrips

Fresno Yosemite International Airport is a joint civil-military airport located 8.5 miles southeast of the project site. This airport is publicly owned by the City of Fresno and also houses a California Air National Guard Base and the Fresno Air Attack Base (owned by the U.S. Forest Service, with space leased to California Department of Forestry and Fire Protection [CAL FIRE]). The airport experienced an operation rate of approximately 249 flights per day for the 12-month period ending January 2020 (AirNav 2020a). The project site is located within one of the airport's Safety Zones (Precision Approach Zone) (Fresno Council of Governments 2018).

Sierra Sky Park Airport is privately owned by Herndon-Doolittle Association, Inc. but is available for public use. This airport is part of a residential aviation community. The north end of the runway is approximately 400 feet south of the project boundary at its nearest point. The airport experienced an operation rate of approximately 39 flights per day for the 12-month period ending April 2019 (AirNav 2020b). The project site includes portions of multiple Safety Zones for the Sierra Sky Park Airport, including: Runway Protection Zone, Inner Approach/ Departure Zone, Inner Turning Zone, Outer Approach/Departure Zone, Sideline Zone, and Traffic Pattern Zone (Fresno Council of Governments 2018).

Wildland Fire Hazards

The project site is located within the incorporated Local Responsibility Area (LRA) Unzoned Fire Hazard Zone (CAL FIRE 2007a and 2007b). Fire protection services are provided through the City of Fresno Fire Department and through response agreements with the City of Clovis Fire Department and the Fresno County Fire Protection District.

3.9.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No Federal plans, policies, regulations, or laws related to hazards or hazardous materials apply to the proposed project.

State Plans, Policies, Regulations, Laws

California Government Code Section 65962.5

The provisions of California Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the legislator who authored the legislation that enacted it). The Cortese List is a planning document used by State and local agencies to comply with CEQA requirements in providing information about the location of hazardous materials release sites. California Government Code Section 65962.5 requires CalEPA to develop an updated Cortese List annually, at minimum. DTSC and SWRCB are responsible for a portion of the information contained in the Cortese List. Other State and local government agencies are required to provide additional hazardous material release information for the Cortese List. CEQA requires an evaluation as to whether or not a project would be located on a hazardous materials site that is included on the Cortese List.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

The Parkway Master Plan (SJRC 2018) does not include goals or policies related to hazards and hazardous materials that are directly relevant to the analysis of this project.

Fresno County General Plan

The Fresno County General Plan includes goals and policies addressing hazards and hazardous materials in the Health and Safety Element (County of Fresno 2000). The following goals and policies may be relevant to the proposed project for certain responsible agencies:

GOAL HS-E: To minimize the exposure of the public to high noise levels and safety hazards through land use controls and policies for property in the vicinity of airports; and to limit urban encroachment around airports in order to preserve the safety of flight operations and the continued viability of airport facilities.

- **Policy HS-E.1.** The County shall review the Fresno County Airport Land Use Commission's Airport Land Use Policy Plans (CLUPPs) to determine the appropriate land uses around airports. The County shall limit land uses in airport safety zones to those uses listed in the applicable CLUPPs as compatible uses. Exceptions shall be made only as provided for in the CLUPPs. Such uses shall also be regulated to ensure compatibility in terms of location, height, and noise.
- **Policy HS-E.2.** The County shall ensure that new development, including public infrastructure projects, does not create safety hazards such as glare from direct or reflective sources, smoke, electrical interference, hazardous chemicals, or fuel storage in violation of adopted safety standards.

GOAL HS-F: To minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.

- **Policy HS-F.1.** The County shall require that facilities that handle hazardous materials or hazardous wastes be designed, constructed, and operated in accordance with applicable hazardous materials and waste management laws and regulations

City of Fresno General Plan

The City of Fresno General Plan (City of Fresno 2014) includes the following objectives and policies that may be relevant to the proposed project for certain responsible agencies:

Objective NS-4: Minimize the risk of loss of life, injury, serious illness, and damage to property resulting from the use, transport, treatment, and disposal of hazardous materials and hazardous wastes.

- **Policy NS-4a.** Processing and Storage. Require safe processing and storage of hazardous materials, consistent with the California Building Code and the Uniform Fire Code, as adopted by the City.

Objective NS-5: Protect the safety, health, and welfare of persons and property on the ground and in aircraft by minimizing exposure to airport-related hazards.

- **Policy NS-5a.** Land Use and Height. Incorporate and enforce all applicable Airport Land Use Compatibility Plans (ALUCPs) through land use designations, zoning, and development standards to support the continued viability and flight operations of Fresno's airports and to protect public safety, health, and general welfare.

  Limit land uses in airport safety zones to those uses listed in the applicable ALUCPs as compatible uses, and regulate compatibility in terms of location, height, and noise.

  Ensure that development, including public infrastructure projects, within the airport approach and departure zones complies with Part 77 of the Federal Aviation Administration Regulations (Objects Affecting Navigable Airspace), particularly in terms of height.

- **Policy NS-5-b.** Airport Safety Hazards. Ensure that new development, including public infrastructure projects, does not create safety hazards such as glare from direct or reflective

sources, smoke, electrical interference, hazardous chemicals, fuel storage, or from wildlife, in violation of adopted safety standards.

3.9.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. Implementing the project would result in a significant impact related to hazards and hazardous materials if it would:

- create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment;
- emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school;
- be located on a site which is included on a list of hazardous materials sites compiled pursuant to California Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment;
- result in a safety hazard or excessive noise for people residing or working in a project area that is within an airport land use plan area;
- impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- expose people or structures, either directly or indirectly to a significant risk of loss, injury, or death involving wildland fires.

Refer to Section 3.15, "Wildfire," for discussion of how project activities relate to a significant risk of loss, injury, or death involving wildland fires.

Issues Not Discussed Further

Routine Transport, Use, or Disposal of Hazardous Materials. The project would involve the incidental transport and use of common construction materials such as oils, lubricants, and gasoline. Potential impacts of accidental spills associated with this incidental use are analyzed in Impact 3.9.1. However, the project would not involve routine or long-term transport of such materials, and none of the project components would involve the transport or use of acutely hazardous materials. Therefore, no impact would occur related to routine transport, use, or disposal of hazardous materials, and this issue is not discussed further.

Handling of Hazardous Materials within 0.25 Mile of a School. There are no schools within 0.25 mile of the project site. Therefore, no impact would occur related to handling of hazardous materials near a school, and this issue is not discussed further.

Location on a Cortese-listed Site. The project site is not included on the lists of hazardous materials sites compiled pursuant to California Government Code Section 65962.5. The nearest listed site is approximately 0.22-mile west (downstream) of the project site. Therefore, no impact related to a Cortese-listed site would occur, and this issue is not discussed further.

Analysis Methodology

The assessment of impacts related to hazards and hazardous materials considered the locations, duration, and types of project-related activities in relation to known hazardous materials sites (derived from databases maintained by DTSC, SWRCB, CalEPA, and EPA); the ALUCP prepared by Fresno County; school district location maps; and CAL FIRE fire-hazard severity zone classifications.

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis and mitigation measure development. No comments related to hazards and hazardous materials were received.

Impact Analysis and Mitigation Measures

Impact 3.9.1: ***Possible Accidental Spills of Hazardous Materials used during Construction Activities.*** *Project construction activities would include use of hazardous materials, including fuels, oils, lubricants, solvents, and corrosives. Construction contractors would be required to use, store, and transport hazardous materials in compliance with Federal, State, and local regulations during project construction. However, an accidental spill of hazardous materials could occur during project construction. This impact would be* ***potentially significant****.*

The project would not entail any unusual risks associated with the transport and handling of hazardous materials. Equipment such as haul trucks, excavators, bulldozers, and scrapers would be used to construct the project components. Construction activities would use minor amounts of hazardous materials, such as fuels (gasoline and diesel), oils and lubricants, and cleaners (which could include solvents and corrosives in addition to soaps and detergents) that are commonly used in construction projects.

Regulations governing hazardous materials transport are included in CCR Title 22, the California Vehicle Code (CCR Title 13), and the State Fire Marshal Regulations (CCR Title 19). Transport of hazardous materials can only be conducted under a registration issued by DTSC. Identification numbers are issued by DTSC or EPA for tracking hazardous waste transporters and for treatment, storage, and disposal facilities that handle hazardous materials. The identification number is used to identify the hazardous waste handler and to track waste from point of origin to final disposal; all material transport takes place under manifest. Businesses that handle hazardous materials are required by law to comply with Federal, State, and local laws, regulations, and policies regarding the handling, storage, reporting, tracking, and cleanup (if any accidental spills occur) of hazardous materials, including preparing a hazardous materials business plan and disclosing hazardous materials inventories. Furthermore, the project would not entail the use or storage of large quantities of hazardous or flammable materials. Construction contractors would be required to use, store, and transport hazardous materials in compliance with Federal, State,

and local regulations during project construction. However, accidental spill of hazardous materials could occur during construction of the project and would be a **potentially significant** impact. Mitigation Measure 3.9.1 has been identified to address this impact.

Mitigation Measure 3.9.1: Implement a Spill Prevention Control and Countermeasures Plan and Other Measures to Reduce the Potential for Environmental Contamination during Construction Activities.

In addition to compliance with all applicable Federal, State, and local regulations, DWR will implement the measures described below to further reduce the risk of accidental spills and protect the environment.

- Prepare and Implement a Spill Prevention Control and Countermeasures Plan. A written SPCCP will be prepared and implemented. The SPCCP and all material necessary for its implementation will be accessible onsite prior to initiation of project construction and throughout the construction period. The SPCCP will include a plan for the emergency cleanup of any spills of fuel or other material. Construction personnel will be provided the necessary information from the SPCCP to prevent or reduce the discharge of pollutants from construction activities to waters and to use the appropriate measures should a spill occur. In the event of a spill in waters, work will stop immediately and DFW and CVRWQCB will be notified within 24 hours.

- Dispose of All Construction-related Debris and Materials at an Approved Disposal Site. All debris, litter, unused materials, sediment, rubbish, vegetation, or other material removed from the construction areas that cannot reasonably be secured will be removed daily from the project work area and deposited at an appropriate disposal or storage site.

- Use Safer Alternative Products to Protect Waters. Every reasonable precaution will be exercised to protect waters from pollution with fuels, oils, and other harmful materials. Safer alternative products (such as biodegradable hydraulic fluids) will be used where feasible.

- Prevent Any Contaminated Construction By-products from Entering Flowing Waters; Collect and Transport Such By-products to an Authorized Disposal Area. Petroleum products, chemicals, fresh cement, and construction by-products containing, or water contaminated by, any such materials will not be allowed to enter flowing waters and will be collected and transported to an authorized upland disposal area.

- Prevent Hazardous Petroleum or Other Substances Hazardous to Aquatic Life from Contaminating the Soil or Entering Waters. Gas, oil, other petroleum products, or any other substances that could be hazardous to aquatic life and resulting from project-related activities, will be prevented from contaminating the soil and/or entering waters.

- Properly Maintain All Construction Vehicles and Equipment and Inspect Daily for Leaks; Remove and Repair Equipment/Vehicles with Leaks. Construction vehicles and equipment will be properly maintained to prevent contamination of soil or water

from external grease and oil or from leaking hydraulic fluid, fuel, oil, and grease. Vehicles and equipment will be checked daily for leaks. If leaks are found, the equipment will be removed from the site and will not be used until the leaks are repaired.

- Refuel and Service Equipment at Designated Refueling and Staging Areas. Equipment will be refueled and serviced at designated refueling and staging sites. All refueling, maintenance, and staging of equipment and vehicles will be conducted in a location where a spill will not drain directly toward aquatic habitat. Appropriate containment materials will be installed to collect any discharge, and adequate materials for spill cleanup shall be maintained onsite throughout the construction period.

- Store Heavy Equipment, Vehicles, and Supplies at Designated Staging Areas. All heavy equipment, vehicles, and supplies will be stored at the designated staging areas at the end of each work period.

- Install an Impermeable Membrane between the Ground and Any Hazardous Material in Construction Storage Areas. Storage areas for construction material that contains hazardous or potentially toxic materials will have an impermeable membrane between the ground and the hazardous material and will be bermed as necessary to prevent the discharge of pollutants to groundwater and runoff water.

- Use Water Trucks to Control Fugitive Dust during Construction. Water (e.g., trucks, portable pumps with hoses) will be used to control fugitive dust during temporary access road construction.

- Use Only Nontoxic Materials and Materials with No Coatings or Treatments Deleterious to Aquatic Organisms for Placement in Any Waters. All materials placed in the river or other waters will be nontoxic and will not contain coatings or treatments or consist of substances deleterious to aquatic organisms that may leach into the surrounding environment in amounts harmful to aquatic organisms.

Timing: During construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measure 3.9.1 would reduce potentially significant construction-related impacts from any accidental spills of hazardous materials to a **less-than-significant** level by requiring preparation and implementation of an SPCCP along with other measures specifically designed to prevent contamination of the environment from hazardous materials.

Impact 3.9.2: ***Result in a Safety Hazard Related to Airport Operations.*** *A portion of the project site is within the airport influence areas for the Fresno Yosemite International Airport and the Sierra Sky Park. However, the project would not introduce people or create hazards related to airport operations at either airport. This impact would be* ***less than significant****.*

The project site includes areas within the Precision Approach Zone for the Fresno Yosemite International Airport and areas within the Sierra Sky Park Airport Runway Protection Zone, Inner Approach/ Departure Zone, Inner Turning Zone, Outer Approach/Departure Zone, Sideline Zone, and Traffic Pattern Zone. Project construction activities would occur only in the Traffic Pattern Zone for Sierra Sky Park Airport and the Precision Approach Zone for Fresno Yosemite International Airport. These zones are the least restrictive.

The project would not introduce new land uses to the project site; therefore, implementing the project would not result in incompatible uses within the ALUCP zones. Construction activities would occur during daytime hours, and no new sources of nighttime light or glare that could affect air traffic would be introduced as part of project construction activities. The project would not include housing or developed uses that might expose people to additional aircraft noise. It also does not include components that could increase wildlife strike hazards. Therefore, impacts related to airport operation safety hazards would be **less than significant**.

Impact 3.9.3: ***Interfere with an Adopted Emergency Response Plan or Emergency Evacuation Plan.*** *The project site is accessed via two dead-end roads. Although project construction would include some heavy truck traffic and a portion of North Milburn Avenue may be temporarily closed, these activities would not interfere with emergency response or evaluation. This impact would be* ***less than significant****.*

The project site is at the northern edge of the City of Fresno and immediately south of the San Joaquin River. Roadway access to the site is available via North Milburn Avenue and North Valentine Avenue. Project construction would include use of these roadways by heavy trucks accessing the site. However, the project is expected to generate an average of approximately 15 truck trips per day during construction, and this level of additional traffic would not affect access by emergency vehicles or potential emergency evacuation. A portion of North Milburn Avenue may be temporarily closed for up to approximately 3 weeks if this section of road requires raising. If the Bluff Pointe Golf Course is also closed during this potential road closure, emergency response and evacuation would likely be unaffected. In addition, an emergency access corridor or passable route through the construction area would be maintained to provide emergency vehicle access in the case of a wildfire or any other emergency. Therefore, this impact would be **less than significant**.

Residual Significant Impacts

The project would not result in residual significant impacts related to hazards or hazardous materials.

3.10 Hydrology and Water Quality

This section discusses the existing setting for hydrology and water quality in the project vicinity, describes applicable regulations, analyzes potential project impacts related to hydrology and water quality, and identifies mitigation measures to reduce potentially significant impacts to a less-than-significant level.

3.10.1 Environmental Setting

Surface Water

The project site is along the south side of the San Joaquin River and is dominated by the abandoned gravel pit known as Milburn Pond. Existing site drainage is dominated by overland flow from open space and high-ground areas surrounding the project site. The eastern (upstream) portion of the site is a high terrace along the river channel that was previously mined for gravel. Past gravel mining operations left behind an extensively modified river channel and have impacted the historical flow paths in this part of the river. Furthermore, breached ponds and portions of the river channel have slowed flows and increased water temperatures. The main portion of the Milburn Pond area remained separated from the river channel until at least 1994, but the area slowly filled with groundwater and water seeping through the river channel berm over time (DWR 2019). During the 1997 flood that affected the entire Central Valley, several berm breaches and other berm damage resulting from erosion and berm overtopping during the event permanently connected Milburn Pond to the river channel. The connected pond remains at a higher water surface elevation than pre-1997 conditions because water flows directly into the pond under all river flow conditions, maintaining a minimum elevation and replacing any water losses in the pond due to evaporation or seepage.

The San Joaquin River acts both as one of California's main water supply conduits while also providing habitat for various species, including anadromous salmonids. Flows in project area are controlled almost exclusively by operations at Friant Dam, where operational rules govern releases for irrigation and fisheries support (USGS Gage No. 11251000). Additional minor flow contributions come from Cottonwood Creek, approximately 1,200 feet downstream from Friant Dam. River flows are also affected by infiltration losses, evaporation losses from various gravel ponds, and flow loss due to diversions.

River flows in the project area fluctuate seasonally. The estimated loss curve for the reach between Friant Dam and Gravelly Ford (approximately 37 miles downstream of the project site) indicates that no flow has historically reached Gravelly Ford when the discharge at the "below Friant Dam" gage is less than approximately 100 cfs, and approximately 150 cfs is lost at flows greater than 200 cfs (Tetra Tech 2014). These dynamics, however, are changing due to SJRRP flow increases. Low-flow conditions typically occur in summer and fall, and high-flow conditions typically occur in spring. Water from the San Joaquin River inundates portions of the project site during high-flow events.

The river has been extensively studied and modeled for various efforts associated with the SJRRP, including hydraulic modeling of the river from Friant Dam to the confluence with the Merced River. The project area is included in Reach 1A, as designated by the SJRRP, which extends 24 miles downstream from Friant Dam to Highway 99 (Tetra Tech 2014).

Geomorphology in Reach 1A is characterized by relatively coarse bed material, and flow dynamics are affected by complex flow paths, channel-gravel pit interactions, and features such as woody debris, bedrock exposures, and overhanging vegetation.

The project site is located in a special flood hazard area and mapped as Zone AE (areas with a 1 percent annual chance of flooding), and a portion of the project site is within a designated floodway (FEMA 2009). According to the USACE National Levee Database, there are no levees in the project area (USACE 2020).

The project is not in a DWR-mapped dam inundation zone (DWR 2020a). Friant Dam, a Federal facility approximately 16 miles upstream of the project site, is identified in the Fresno County Multi-Hazard Mitigation Plan as a high-hazard dam (County of Fresno 2018). Uncontrolled releases from Friant Dam have caused extensive inundation of the project site in the past (DWR 2019), and the site would likely be subject to inundation in the event of a failure at Friant Dam.

The project site is in the San Joaquin Hydrologic Basin Planning Area, Valley Floor Hydrologic Unit, Berenda Creek Hydrologic Area (545.30), as designated by CVRWQCB (RWQCB 2018). In accordance with CWA Section 303, water quality standards for this basin are contained in the Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basin (RWQCB 2018). The San Joaquin River – Friant Dam to Mendota Pool is on the 303(d) list as an impaired water for pH and invasive species (SWRCB 2016).

Groundwater

The project site is in the San Joaquin Valley – Kings Groundwater Subbasin (#5-022.08), as designated by DWR Bulletin 118 (DWR 2016), and is in a high priority, critically overdrafted groundwater basin, as designated by DWR (DWR 2020b). Groundwater sustainability planning in the project area is under the governance of the North Kings Groundwater Sustainability Agency (GSA) Groundwater Sustainability Plan (GSP). The GSP was developed as required under the Sustainable Groundwater Management Act (SGMA) (NKGSA 2019). The monitoring well network administered by the North Kings GSA does not include any wells on or near the project site (NKGSA 2019), and there are no known municipal or industrial groundwater supply wells near the project site. There are several voluntary groundwater monitoring wells near the project site, but no information is publicly available regarding depth to groundwater or water quality for these wells (DWR 2020c, DWR 2020d).

Regional studies assert that the San Joaquin River is not connected to groundwater within the North Kings GSA (NKGSA 2019). However, project-specific investigations have concluded that, before the 1997 permanent breach, lower areas within the separated Milburn Pond filled with groundwater and water seeping through the river channel berms (DWR 2019). The general flow of groundwater at the project site is south (NKGSA 2019). Depth to groundwater in the project area is approximately 50 feet (DWR 2020d), but localized groundwater levels may be variable, due to proximity to the San Joaquin River.

3.10.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

Clean Water Act

Several sections of the CWA, the primary Federal law governing water quality control activities, are relevant to the project. Two of these, Sections 401 and 404, are described in Section 3.5, "Biological Resources." The other two are described below.

Section 402

Section 402 of the CWA regulates discharges through NPDES and State waste discharge requirements. SWRCB and CVRWQCB have adopted specific NPDES permits for a variety of activities that have the potential to discharge wastes (including sediment) to waters of the State. SWRCB's Statewide storm water general permit for construction activity (2009-0009-DWQ) is applicable to all land-disturbing construction activities that would disturb 1 acre or more. Compliance with the NPDES permit requires submitting a notice of intent to discharge to CVRWQCB and implementing a SWPPP that includes BMPs to minimize water quality degradation during construction activities.

Section 303(d)

Under Section 303(d), states are required to adopt water quality standards for all surface waters of the United States. In California, EPA has delegated responsibility to the SWRCB and its nine RWQCBs for identifying beneficial uses and adopting applicable water quality objectives. CWA Section 303(d) requires the identification of water bodies that do not meet, or are not expected to meet, water quality standards (i.e., impaired water bodies). The affected water body, and associated pollutant or stressor, is prioritized in the 303(d) List, and a Total Maximum Daily Load must be identified.

San Joaquin River Restoration Program

The SJRRP is a long-term collaborative program to restore flows in the San Joaquin River, from Friant Dam to the confluence of the Merced River (Reclamation and DWR 2011) Several Federal and State agencies are responsible for implementing the San Joaquin River Settlement enacted in 2009 (Public Law 111-11), through the SJRRP. Implementing Agencies include DWR, DFW, Reclamation, USFWS, and NMFS. The SJRRP is an important planning program for the project area, and one of the Settlement's primary objectives is to improve channel capacity, fish habitat, related flood protection, fish passage, and fish screening.

State Plans, Policies, Regulations, Laws

Several State regulations related to water quality control activities are relevant to the project. The Porter-Cologne Act is described in Section 3.5, "Biological Resources." Additional relevant water quality and groundwater regulations are described below.

California Toxics Rule and State Implementation Policy

The California Toxics Rule (CTR) was promulgated in 2000 in response to requirements of the EPA National Toxics Rule (NTR). The NTR and CTR address inland surface waters, enclosed bays, and estuaries in California that are subject to regulation pursuant to Section 303(c) of the

CWA. The NTR and CTR include criteria for the protection of aquatic life and human health. Human health criteria (water and organisms) apply to all waters with a "Municipal and Domestic Water Supply" beneficial use designation, as indicated in the RWQCBs' basin plans. The *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SWRCB 2005), also known as the State Implementation Policy, establishes a standardized approach for permitting discharges of toxic pollutants to non-ocean surface waters in a manner that promotes statewide consistency.

California State Nondegradation Policy

In 1968, as required under the Federal antidegradation policy, SWRCB adopted a nondegradation policy aimed at maintaining high quality of waters in California. The nondegradation policy states that the disposal of wastes into State waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the State and to promote the peace, health, safety, and welfare of the people of the State.

Water Quality Control Plan for the San Joaquin River and Sacramento River Basins

Pursuant to the Porter-Cologne Act, the CVRWQCB prepares and updates the *Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San Joaquin River Basin Basin* every 3 years; the most recent update was completed in 2018 (RWQCB 2018). The Basin Plan describes officially designated beneficial uses for specific surface water and groundwater resources and enforceable objectives for physical and chemical water quality constituents to protect those beneficial uses. The Basin Plan includes water quality objectives. The primary method of ensuring Basin Plan conformance is to issue waste discharge requirements that specify terms and conditions for implementation and operation for projects that may discharge wastes to land or water.

General Order for Dewatering and Other Low Threat Discharges to Surface Waters

The CVRWQCB has adopted a General Dewatering Permit that applies to various categories of dewatering activities. Permit conditions for discharge of these types of wastewaters to surface water are specified in the *General Order for Dewatering and Other Low Threat Discharges to Surface Waters* (Order No. R5-2013-0074).

Sustainable Groundwater Management Act

In 2014, the State adopted SGMA to help manage its groundwater. According to the act, local GSAs must be formed for all high and medium priority basins in the state. These GSAs must develop and implement GSPs for managing and using groundwater without causing undesirable results, including significant groundwater-level declines, groundwater-storage reductions, seawater intrusion, water-quality degradation, land subsidence, and surface-water depletions. These are also referred to as sustainability indicators. DWR and the SWRCB are the two lead State agencies that implement SGMA.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

San Joaquin River Parkway Master Plan

Parkway Master Plan (SJRC 2018) goals and policies related to water resources that may be relevant to the proposed project for certain responsible agencies include:

GOAL: Develop the Parkway in a manner that will not interfere with the river's floodwater conveyance capacity.

GOAL: Protect the river's water quality through appropriate management of stormwater runoff in the Parkway.

- **WATER.2.** Do not construct levees (elevated flood protection structures) in the Parkway.
- **WATER.3.** Ensure Parkway facilities do not increase riverbank erosion. Design and manage Parkway facilities and improvements in recognition of natural fluvial processes including erosion and meanders. Remediate riverbank erosion as necessary to protect buildings and infrastructure.
- **WATER.4.** Design and site Parkway structures and amenities to ensure that such features do not obstruct flood flows, do not create a public safety hazard, or result in a substantial increase in off-site flows or water surface elevations. For permanent above-grade structures, the minimum level of design flood protection shall be the adopted 100-year event, or as regulated by state and federal agencies.
- **WATER.9.** Minimize impervious surfaces to allow natural percolation and limit runoff.
- **WATER.13.** Facilitate projects that demonstrate multiple benefits to water quality, water supply, and/or ecosystem and watershed protection and restoration, including, but are not limited to: protecting healthy watersheds, fisheries, and stream flows; implementing projects within watersheds that facilitate climate change adaptation; conserving and restoring ecosystems; collaborating and coordinating with the San Joaquin River Restoration Program and collaborating with federal agencies to protect fish and wetlands; reducing wildfire risks; improving watershed health; reducing contamination of rivers, lakes and streams; and assisting in the recovery of sensitive species by improving watersheds and associated habitat.

Fresno County General Plan

Fresno County's General Plan includes policies addressing hydrology and water quality in the Health and Safety Element (County of Fresno 2000). The following policies may be relevant to the proposed project for certain responsible agencies:

- **Policy HS-C.4.** The County shall encourage the performance of appropriate investigations to determine the 100-year water surface elevations for the San Joaquin River, taking into account recent storm events and existing channel conditions, to identify the potential extent and risk of flooding. New development, including public infrastructure projects, shall not be allowed along the river until the risk of flooding at the site has been determined and appropriate flood risk reduction measures identified.

- **Policy HS-C.11.** The County shall encourage open space uses in all flood hazard areas.

Fresno County Municipal Code

The Fresno County Municipal Code Floodplain Ordinance (Ordinance 13-013, Title 15, Chapter 15.48) regulates flood hazards. The purpose of the Ordinance is to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately-owned land within flood-prone, mudslide or flood related erosion areas. The Ordinance includes methods and provisions to:

A. Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or flood heights or velocities;

B. Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction;

C. Control the alteration of natural floodplains, stream channels, and natural protective barriers, which help accommodate or channel floodwaters;

D. Control filling, grading, dredging, and other development which may increase flood damage; and

E. Prevent or regulate the construction of flood barriers which will unnaturally divert floodwaters or which may increase flood hazards in other areas;

F. These regulations take precedence over any less restrictive conflicting local laws, ordinances and codes.

City of Fresno General Plan

The City of Fresno's General Plan (City of Fresno 2014) includes provisions for addressing water resources. The following policy and objective may be relevant to the proposed project for certain responsible agencies:

- **Policy POSS-6-b.** Support efforts to identify and mitigate cumulative adverse effects on aquatic life from stormwater discharge to the San Joaquin River - Approve development on sites having drainage (directly or indirectly) to the San Joaquin River or other riparian areas only upon a finding that adequate measures for preventing pollution of natural bodies of water from their runoff will be implemented.

- **Objective NS-3.** Minimize the risks to property, life, and the environment due to flooding and stormwater runoff hazards.

City of Fresno Municipal Code

The City of Fresno Municipal Code includes an ordinance for designated floodways (Ordinance 2013-15, Chapter 11, Article 6, Sec. 11-635 – Floodways). Because the floodway is an extremely hazardous area due to the velocity of flood water that carries debris, potential projectiles, and erosion potential, the following provisions may be relevant to the proposed project for certain responsible agencies:

a) Prohibit encroachments including fill, new construction, substantial improvements, and all other development unless certification by a registered professional civil engineer or architect is provided demonstrating that the encroachments shall not result in any increase in the base flood elevation during the occurrence of the base flood discharge, and further certifying that there is no risk of diversion of such flood flows.

b) If subdivision (a), above, is satisfied, all new construction, substantial improvement, and other proposed new development shall comply with all other applicable flood hazard reduction provisions.

North Kings Groundwater Sustainability Plan

The North Kings GSP was developed pursuant to SGMA (NKGSA 2019). Pursuant to Water Code Section 10733.2, the regulations describe the components of groundwater sustainability plans, intra-basin coordination agreements, and the methods and criteria to be used by DWR to evaluate those plans and coordination agreements.

3.10.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. Implementing the project would result in a significant impact related to hydrology and water quality if it would:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
  - i) result in substantial erosion or siltation on- or offsite;
  - ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;

iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or

iv) impede or redirect flood flows;

- in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; or
- conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

Issues Not Discussed Further

Impacts of Tsunami or Seiche. The project site is not in a coastal area and is outside the tsunami hazard zone. Additionally, there are no water bodies on or near the project site large enough to be subjected to a seiche, as a result of an earthquake. Therefore, there would be no impact related to tsunami or seiche, and this issue is not discussed further.

Construction Dewatering. Project elements would not require dewatering during construction. Therefore, no dewatering effluent would need to be managed during construction or discharged to surface waters, and the project would not require a NPDES "Groundwater from Construction and Project Dewatering" permit. Therefore, there would be no impact to groundwater associated with dewatering, and this issue is not discussed further.

Analysis Methodology

This evaluation of potential project impacts on hydrology and water quality conditions is based on professional standards and information cited throughout the section. Potential impacts were identified and evaluated based on the environmental characteristics of the project site and activities related to project construction and O&M.

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis and mitigation measure development. No comments related to hydrology and water quality were received.

Impact Analysis and Mitigation Measures

Impact 3.10.1: ***Impacts on Water Quality or Implementation of a Water Quality Control Plan.*** *Project implementation would not contribute to increased water temperatures in Milburn Pond; this would be a* ***less-than-significant*** *impact. The project includes components within portions of the San Joaquin River and on-site ponds that have potential to impact water quality during project construction and O&M; this would be a* ***potentially significant*** *impact.*

Under existing conditions, water can flow freely into Milburn Pond. Although the project may slightly affect the flow rate of water into Milburn Pond, the modified French drain and equalization saddle would allow higher volumes of river water to pass through to Milburn Pond, than would occur if a solid berm and saddle structure were constructed. Thus, the project would

not increase water temperatures in Milburn Pond above existing conditions. This impact would be **less than significant**.

Construction would primarily occur during the dry season when San Joaquin River flows are at their lowest. Construction may begin early or extend into the flood season (November 1 – July 15), but only if flows are low. Despite this timing, some work associated with berm improvements, modified French drain and equalization saddle construction, high-flow side channel excavation, and erosion protection would likely require in-water activities along the edge of the San Joaquin River, Milburn Pond, and smaller on-site ponds. Disturbance and placement of materials during in-water construction are likely to increase turbidity and could substantially degrade water quality if measures are not implemented to minimize turbidity levels and extent.

Most of the project components would result in the temporary and short-term disturbance of soil and could expose disturbed areas to storm events. Rainfall of sufficient intensity could dislodge soil particles from the ground surface. If particles are dislodged and the storm is large enough to generate runoff, substantial localized erosion and sedimentation of nearby waters could occur. In addition, soil disturbance could result in substantial loss of topsoil from wind erosion.

Project construction could involve storage and use of toxic and other harmful substances required for equipment operation during construction and maintenance on the project site. The presence of these substances could accidentally result in their discharge to the San Joaquin River and on-site ponds. Construction activities would involve heavy equipment that uses potentially harmful products such as fuels, lubricants, hydraulic fluids, and coolants, all of which can be toxic to fish and other aquatic organisms. Use of this equipment could be a direct source of contamination if equipment and construction practices are not properly followed. An accidental spill or inadvertent discharge from such equipment could directly affect the water quality in the San Joaquin River and on-site ponds or adjacent to the project site and indirectly affect regional water quality of the San Joaquin River.

Water quality impacts associated with in-water construction, exposure of disturbed areas to storm events, and accidental spill of hazardous materials would be **potentially significant**. Mitigation Measures 3.10.1a and 3.10.1b have been identified to address these impacts.

> **Mitigation Measure 3.10.1a: Implement Mitigation Measure 3.7.2, "Prepare and Implement a Stormwater Pollution Prevention Plan and Best Management Practices to Reduce Erosion."**
>
> **Timing:** Before and during construction activities.
>
> **Responsibility:** DWR.
>
> **Mitigation Measure 3.10.1b: Implement Mitigation Measure 3.9.1, "Implement a Spill Prevention Control and Countermeasures Plan and Other Measures to Reduce the Potential for Environmental Contamination during Construction Activities."**

Timing: During construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measures 3.10.1a and 3.10.1b would reduce potentially significant construction-related impacts to water quality from in-water construction, exposure of disturbed areas to storm events, and accidental spills of hazardous materials to a **less-than-significant** level, because a SWPPP and BMPs specifically designed to minimize turbidity and control erosion and sedimentation would be implemented and an SPCCP and other measures specifically designed to prevent water contamination would be implemented.

Impact 3.10.2: ***Impacts on Groundwater Supplies, Recharge, and Management.*** *The project includes construction within a high priority, critically over-drafted groundwater basin. However, construction activities are unlikely to affect groundwater supplies, recharge, or sustainability in the project vicinity. This impact would be* ***less than significant****.*

The project would not require the use of groundwater for construction or O&M activities. Although project implementation would serve to isolate the surface of Milburn Pond from the San Joaquin River, it would not affect the existing connectivity of the pond or river with the local water table. Additionally, the modified French drain and equalization saddle have been designed to enhance water passage between the river and pond. The project does not include placement of impervious surfaces, aside from replacement of existing pavement, as necessary for potential raising of North Milburn Avenue. Surface runoff from the project site would continue to flow overland in the same manner as under current conditions and infiltrate into the soil or run off into existing ponds or the river. Therefore, the project would not substantially decrease groundwater supplies, interfere substantially with groundwater recharge, or impede sustainable management of the groundwater basin in the region. This impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Impact 3.10.3: ***Impacts on Drainage Patterns, Stormwater Facilities, and Flood Flows.*** *The project includes construction within and near to the San Joaquin River. However, project components would improve the existing on-site drainage patterns and reduce long-term potential for erosion and siltation, improve on-site stormwater drainage, and reduce likelihood of berm failure during a flood event. These impacts would be* ***beneficial****.*

The project includes components that would reduce long-term potential for erosion and siltation, including placing erosion protection along the existing berm and the river channel immediately upstream of the berm. In addition, improvements to approximately 8,000 feet of existing dirt access road would include filling ruts and gullies, improving slopes to reduce erosion potential, and installing up to four culverts to improve drainage and reduce erosion along Milburn Pond.

In areas where berm seepage occurs very slowly, there is potential for berm failure during flow changes in the San Joaquin River, including flood events. The development of a large head, or

water height, difference between the river and the pond can lead to berm failure or damage in two ways: (1) saturation and increased pore pressures resulting from seepage may cause slope failure on the side that has a much lower water level, and (2) overtopping of the berm when one side has much lower water levels leads to more erosion on the lower side. Berm improvements have been specifically designed to address this issue and would maximize long-term durability, despite exposure to periodic flood releases in the river, and reduce the risk of future failure. The modified French drain and equalization saddle would allow higher volumes of river water to pass through to Milburn Pond and compensate for pond evaporation and seepage, thereby maintaining a minimum water surface elevation in the pond during warmer months. As flow in the river channel increases, water would flow through the drain and saddle and equalize water levels in the river and pond, without creating high pressure differences between the two sides. The saddle is also designed to overtop and remain stable when flow exceeds 9,000 cfs, facilitating rapid water level equalization and reducing the risk of damage when flows overtop the berm.

Project design is based on target flows that accommodate the hydrology of this reach of the San Joaquin River, as well as goals for potential future habitat benefits. The design bankfull flow of 1,750 cfs is based on the bankfull flow used for the Sycamore Island Pond Isolation Project design (DWR 2015). The design maximum flow of 9,000 cfs is based on the San Joaquin River's maximum flow release from Friant Dam that is considered non-damaging to downstream properties. Flows greater than 8,000 cfs are unusual in this reach, occurring only a handful of times since the dam's completion in 1942. Berm improvements would allow the water surface elevation to rise in Milburn Pond as river flows increase. Additionally, although erosion protection would be placed and the berm would be improved with more durable materials (cobble/boulder rather than sand/silt), the project would not redirect flood flows offsite and would not affect channel capacity on the San Joaquin River or the ability of the channel to accommodate design maximum flows. The possibility of an excessive head differential that could lead to berm failure would be greatly reduced, and the more durable materials would improve the berm's ability to withstand large flood events without failing.

Currently, in the northeast portion of the project site, a large bar exists south of a turn in the river channel. By creating a high-flow side channel through this bar, the project would increase capacity and likely slightly reduce water surface elevations within the reach, during high flows. Currently, this bar is only inundated during the largest floods; the new channel would begin to inundate when river flows exceed 4,000 cfs. Constructing the high-flow side channel would not alter flow patterns in a way that would cause erosion or siltation, constrain river capacity, increase flooding, or impede or redirect flood flows. By accommodating moderate flows, this additional channel would also likely reduce scour and erosion along the sandy right (north) bank of the river.

Although the project site is mapped within a 100-year flood hazard zone and lies partially within a designated floodway, the project would not increase the possibility of flooding or impede or redirect flood flows in a manner that would adversely affect flood risk at the project site or offsite. Further, the project would maintain the design channel capacity in the San Joaquin River and would improve the ability of this reach to accommodate rising flows.

For these reasons, project impacts regarding stormwater drainage, erosion and siltation potential, and flooding and flood flows would be **beneficial**.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impact associated with hydrology or water quality.

3.11 Land Use and Planning

This section provides an overview of the land use and planning framework in the project area and analyzes the potential project impacts to land use and planning.

3.11.1 Environmental Setting

The project site is within the DFW-owned and -managed Milburn and Hansen Units of the San Joaquin River Ecological Reserve, immediately south of the San Joaquin River. Most of the project site is located within the City of Fresno and is zoned as Parks and Recreation (City of Fresno 2014a). The eastern portion of the site is in Fresno County and is designated as Limited Agriculture (AL-20) (County of Fresno 2000). The majority of the project site also is located within the SJRC San Joaquin River Parkway Master Plan area.

3.11.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No Federal plans, policies, regulations, or laws related to land use and planning are relevant to the analysis of land use and planning impacts for the project.

State Plans, Policies, Regulations, Laws

State Lands Commission

The State of California has sovereign ownership of all tidelands and submerged lands and the beds of navigable lakes and waterways. SLC has jurisdiction and management authority over these sovereign lands and has residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions. The protections of the common law Public Trust Doctrine apply to all these lands, which the State holds in trust for the benefit of all people of the State, including waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space, among others. On navigable non-tidal waterways, including the San Joaquin River, the State holds fee ownership of the bed of the waterway landward to the ordinary low-water mark and a Public Trust easement landward to the ordinary low-water mark, except where the boundary has been fixed by agreement or a court decision.

The San Joaquin River and small adjacent portions of the project site, such as the equalization saddle connection to Pond 1 and the high-flow side channel connections to the San Joaquin River, are within the ordinary low-water mark and therefore land where the State holds fee ownership. Most of the remainder of the area where project construction would occur is between the ordinary low- and high-water marks and therefore within a Public Trust easement. However, the majority of the overall project site, including most of Milburn Pond is above the ordinary high-water mark (California State Geoportal 2020).

California Fish and Game Code Sections 1580 – 1586

Sections 1580 – 1586 of the FGC address ecological reserves. It is the policy of the State to protect threatened or endangered native plants, wildlife, or aquatic organisms or specialized habitat types, both terrestrial and nonmarine aquatic, or large heterogeneous natural gene pools for the future use of mankind through the establishment of ecological reserves. Ecological

reserves are designated by the Fish and Game Commission pursuant to Section 1580 and are to be preserved in a natural condition for the benefit of the general public to observe native flora and fauna and for scientific study or research. DFW manages the State's ecological reserves.

Section 630 of Title 14 of the California Code of Regulations

Section 630 provides a list of areas that have been designated by the Fish and Game Commission as ecological reserves, including the San Joaquin River Ecological Reserve. All ecological reserves are maintained for the primary purpose of developing a statewide program for protection of rare, threatened, or endangered native plants, wildlife, aquatic organisms, and specialized terrestrial or aquatic habitat types. Visitor uses are dependent upon the provisions of applicable laws and upon a determination by the commission that opening an area to such visitor use is compatible with the purposes of the property.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

San Joaquin River Parkway Master Plan

The following Parkway Master Plan (SJRC 2018) policies related to land use and planning may be relevant to the proposed project for certain responsible agencies:

- **SJRRP.2.** Engage the SJRRP in Parkway planning and project design to avoid conflicting infrastructure plans or habitat restoration.
- **HABITAT.1.** Recommend to local land use agencies requirements, conditions, and mitigation measures consistent with the Parkway Master Plan for proposed projects that are in or adjacent to the Parkway plan area or may affect or be affected by the Parkway.
- **HABITAT.2.** Conserve the San Joaquin River as aquatic habitat. Collaborate with wildlife agencies to enhance and protect fisheries in the river and in ponds in the Parkway.
- **HABITAT.8.** Coordinate Parkway habitat restoration programs with agencies responsible for flood protection to ensure revegetation does not displace or obstruct floodwaters.
- **ACCESS.5.** Coordinate with local land use agencies to provide public access points where public roads and the Parkway meet.
- **ACCESS.27.** Utilize the Design Guidelines for San Joaquin River Parkway Public Access and Recreation Improvements (as adopted and refined over time), California State Parks design guidelines and trail classification system, and the project operator's design guidelines, as applicable.
- **BUFFER.15.** Encourage local land use agencies to require where feasible buffer zones for the protection of wildlife habitat in natural reserves and wildlife/riparian corridors. From the river wildlife corridor encourage 100-foot buffers from agriculture/pasture; 150-foot buffers from rural residences (less than 0.05 unit per acre); 300-foot buffers from medium density

rural residences (0.05 units per acre to less than 1 unit per acre); 600-foot buffers from business/industry or urban density development (more than 1 unit per acre); and 700-foot buffers for any development from sensitive habitat. (Sensitive habitat includes areas of special biological significance that provide habitat for locally unique biotic species/ communities; that are adjacent to essential habitats of rare, endangered, or threatened species; most wetland and riparian areas; or any natural community vulnerable to environmental effects of projects.)

Fresno County General Plan

The following goals and policies from the Agriculture and Land Use Element of the Fresno County General Plan (County of Fresno 2000) relate to land use and may be relevant to the proposed project for certain responsible agencies:

GOAL LU-C: To preserve and enhance the value of the river environment as a multiple use, open space resource; maintain the environmental and aesthetic qualities of the area; protect the quality and quantity of the surface and groundwater resources; provide for long term preservation of productive agricultural land; conserve and enhance natural wildlife habitat; and maintain the flood-carrying capacity of the channel at a level equal to the one (1) percent flood event (100-year flood).

- **Policy LU-C.2.** Within the San Joaquin River Corridor Overlay, the County shall accommodate agricultural activities with incidental homesites, recreational uses, sand and gravel extraction, and wildlife habitat and open space areas
- **Policy LU-C.3.** The County may allow by discretionary permit commercial activities needed to serve San Joaquin River Parkway visitors, such as sales of food and beverages, camper's grocery items, books, guides, and educational materials, consistent with the objectives and policies of the San Joaquin River Parkway Master Plan.
- **Policy LU-C.6.** The County may allow the extraction of rock, sand, and gravel resources along the San Joaquin River consistent with the Minerals Resources section policies of the Open Space and Conservation Element.

GOAL OS-A: To protect and enhance the water quality and quantity in Fresno County’s streams, creeks, and groundwater basins.

- **Policy OS-A.19.** The County shall require the protection of floodplain lands and, where appropriate, acquire public easements for purposes of flood protection, public safety, wildlife preservation, groundwater recharge, access, and recreation.
- **Policy OS-A.20.** The County shall support the policies of the San Joaquin River Parkway Master Plan to protect the San Joaquin River as an aquatic habitat, recreational amenity, aesthetic resource, and water source.

City of Fresno General Plan

The following goal and policies from the Land Use Element of the City of Fresno General Plan (City of Fresno 2014b) relate to land use and planning and may be relevant to the proposed project for certain responsible agencies:

GOAL LU-1: Establish a comprehensive citywide land use planning strategy to meet economic development objectives, achieve efficient and equitable use of resources and infrastructure, and create an attractive living environment.

- **Policy LU-1-b. Land Use Definitions and Compatibility.** Include zoning districts and standards in the Development Code that provide for the General Plan land use designations and create appropriate transitions or buffers between new development with existing uses, taking into consideration the health and safety of the community.
- **Policy LU-1-g. SOI Expansion.** Maintain the City's current SOI boundaries without additional expansion, except to allow for the siting of a maintenance yard for the California High Speed Train project and related industrial and employment priority areas proximate to and south of the SOI boundary between State Route 41 and State Route 99. Prohibit residential uses in the expansion area.

Fresno County Airport Land Use Compatibility Plan

The north end of the Sierra Sky Park Airport is within several hundred feet of the project site. The Caltrans Division of Aeronautics requires an ALUCP to be developed for each airport. The Fresno County ALUCP (Fresno Council of Governments 2018) addresses all airports in the Fresno region, including Sierra Sky Park Airport. ALUCPs and the Federal Aviation Administration provide guidance to local jurisdictions on determining appropriate and compatible adjacent land uses through the detailed findings and policies. Among other objectives, ALUCPs strive to minimize the effects of aircraft noise on communities adjacent to airports and prevent uses incompatible with airport operations from locating near the airport.

3.11.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. Implementing the project would have a significant impact on land use and planning if it would:

- physically divide an established community; or
- conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

Issues Not Discussed Further

Physically Divide a Community. The project is located outside the Fresno urban development area. No established communities are present north of the site, and the river precludes access to this area. Because project components would be limited to the project site, and the proposed use

is consistent with the existing character of the San Joaquin River Parkway, the project would not divide an established community. Therefore, there would be no impact, and this issue is not be discussed further.

Analysis Methodology

Evaluation of potential land use impacts is based on a review of documents pertaining to the project site, including the City of Fresno and Fresno County General Plans and associated EIRs. In addition, SLC submitted a comment letter in response to the NOP. This letter was reviewed for information relevant to impact analysis.

Impact Analysis and Mitigation Measures

Impact 3.11.1: ***Conflict with Relevant Plans, Policies, and Zoning.*** *The project would be consistent with the City of Fresno General Plan, the Fresno County General Plan, and the Parkway Master Plan. This impact would be* ***less than significant****.*

DWR and DFW are not subject to local land use authority, but consistency with local plans and zoning are discussed here for informational purposes. The City of Fresno General Plan and the Fresno County General Plan provide comprehensive guidance for growth and development within the city and county. The proposed project falls within both General Plans but would not require any re-zoning. Consistent with city and county General Plan goals and policies, post-project land use would be compatible with adjacent land uses, including the Bluff Pointe Golf Course and San Joaquin County Club recreational uses. Up to approximately 0.5 acre of orchard trees on land zoned as Limited Agriculture would be removed by the project, but this land is within the boundaries of the State-owned ecological reserve and as such is not subject to local land use regulations. Additionally, DWR would acquire permission from Hansen Farm for temporary access to the project site during construction-related activities.

Small portions of the project site are within the ordinary low-water mark, where the State holds fee ownership and requires a SLC lease for construction activities. Most of the remainder of the area where project construction would occur is within a Public Trust easement, but the majority of Milburn Pond is above the ordinary high-water mark. Although eliminating direct boat access would reduce recreation opportunities on Milburn Pond, most of the pond is outside SLC jurisdiction, and the project would not affect other existing recreation activities associated with lands under SLC jurisdiction. Public Trust habitat preservation and open space purposes would be maintained, and project implementation would enhance native fisheries in the San Joaquin River, thereby further protecting Public Trust fisheries resources restored through the SJRRP.

The project would be implemented within the Parkway Master Plan area. SJRC monitors, reviews, and comments on proposed developments within the Parkway Planning Area but does not have land use regulatory authority. The Parkway Master Plan guides development on SJRC lands, which include Bluff Point Golf Course immediately west of the project site. The proposed project would be compatible with land use allowed within the Parkway Planning Area and consistent with Parkway Master Plan policies.

Compatibility with the Sierra Sky Park Land Use Policy Plan is addressed in the resource sections related to the applicable policies and objectives (see Section 3.9, "Hazards and Hazardous Materials," and Section 3.12, "Noise").

Because the project would not conflict with any relevant plans, policies, or zoning adopted for the purpose of avoiding or mitigating an environmental effect, this impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impacts related to land use or planning.

3.12 Noise

This section describes the ambient noise environment in the project vicinity, summarizes applicable noise- and vibration-related standards, and analyzes the potential noise and vibration impacts of the proposed project.

3.12.1 Environmental Setting

Environmental Acoustics and Vibration Fundamentals

Sound, Noise, and Acoustics

Sound is the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium, such as air. Noise is defined as unwanted (loud, unexpected, or annoying) sound. Acoustics is the physics of sound. Excessive exposure to noise can result in adverse physical and psychological responses (e.g., hearing loss and other health effects, anger, and frustration); interfere with sleep, speech, and concentration; or diminish quality of life.

The amplitude of pressure waves generated by a sound source determines the perceived loudness of that source. A logarithmic scale is used to describe sound pressure level in terms of decibels (dB). The threshold of human hearing (near-total silence) is approximately 0 dB. A doubling of sound energy corresponds to an increase of 3 dB. In other words, when two sources at a given location are each producing sound of the same loudness, the resulting sound level at a given distance from that location is approximately 3 dB higher than the sound level produced by only one of the sources. For example, if one automobile produces a sound pressure level of 70 dB when it passes an observer, two cars passing simultaneously combine to produce 73 dB.

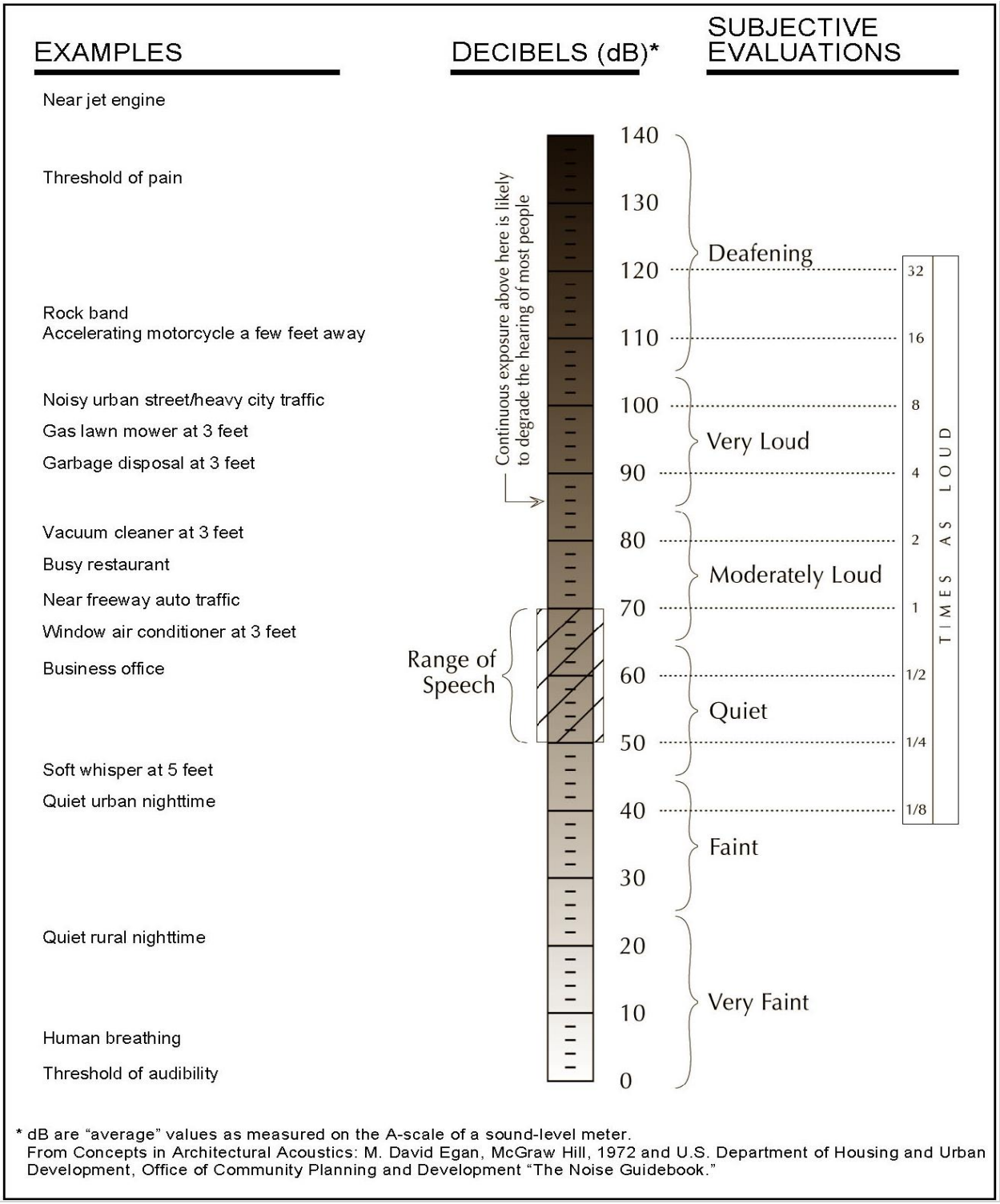
The perceived loudness of sounds depends on many factors, including sound pressure level and frequency content. However, within the usual range of environmental sound levels, perception of loudness is relatively predictable and can be approximated through frequency filtering using the standardized A-weighting network. There is a strong correlation between A-weighted sound levels (expressed as dBA) and community response to noise. For this reason, the A-weighted sound level has become the standard descriptor for environmental noise assessment. All noise levels reported in this section are in terms of A-weighting. **Figure 3.12.1** illustrates sound levels associated with common sound sources.

As discussed above, a doubling of the sound energy results in a 3-dB increase in sound. In typical noisy environments, the healthy human ear generally does not perceive noise-level changes of 1–2 dB. However, people can begin to detect 3-dB increases in noise levels. An increase of 5 dB is generally perceived as distinctly noticeable and a 10-dB increase is generally perceived as a doubling of loudness.

The following sound level descriptors are commonly used in environmental noise analyses:

- **Equivalent sound level (L_{eq})** – An average of the sound energy occurring over a specified time period. In effect, the L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound that actually occurs during the same period. The 1-hour, A-weighted equivalent sound level ($L_{eq[h]}$) is the energy average of A-weighted sound levels occurring during a 1-hour period.

Figure 3.12.1. Decibel Scale and Common Noise Sources



Source: Egan 1988

- **Maximum sound level (L_{max})** – The highest instantaneous sound level measured during a specified period.
- **Percentile-exceeded sound level (L_n)** – The sound level exceeded "n" percentage of a specified period. For example, L_{10} is the sound level exceeded 10 percent of the time and L_{90} is the sound level exceeded 90 percent of the time.
- **Day-night average level (L_{dn})** – The energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to A-weighted sound levels occurring during nighttime hours (10 p.m.–7 a.m.).
- **Community noise equivalent level (CNEL)** – The energy-average of the A-weighted sound levels occurring over a 24-hour period, with penalties of 10 dB and 5 dB, respectively, applied to A-weighted sound levels occurring during the nighttime hours (10 p.m.–7 a.m.) and the evening hours (7 p.m.–10 p.m.). The CNEL is similar to L_{dn}—it is usually within 1 dB of the L_{dn}—and for all intents and purposes, the two measurements are interchangeable.

Sound from a localized source (i.e., point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (decreases) at a rate of 6 dB (hard ground)[2] to 7.5 dB (soft ground)[3] for each doubling of distance from a point/stationary source. Roadways, highways, and to some extent moving trains, consist of several localized noise sources on a defined path; these are treated as "line" sources, which approximate the effect of several point sources. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source. Therefore, noise from a line source attenuates less with distance than noise from a point source.

Groundborne Vibration

Vibration is an oscillatory motion that can be described in terms of displacement, velocity, or acceleration. Vibration is typically described by its peak and root-mean-square amplitudes. The root-mean-square value can be considered an average value over a given time interval. The peak vibration velocity is the same as the "peak particle velocity" (PPV), generally presented in units of inches per second. PPV is the maximum instantaneous positive or negative peak of the vibration signal and is generally used to assess the potential for damage to buildings and structures. The root-mean-square amplitude is typically used to assess human annoyance caused by vibration.

Existing Noise Conditions

Land uses as defined by Federal, State, and local regulations as noise-sensitive vary slightly but typically include schools, hospitals, rest homes, places of worship, long-term care facilities, mental care facilities, residences, convalescent (nursing) homes, hotels, certain parks, and other similar land uses. Land uses at and adjacent to the project site are residential, agricultural, and recreational (Bluff Pointe Golf Course and San Joaquin Country Club). Sierra Sky Park Airport is also immediately adjacent to the site.

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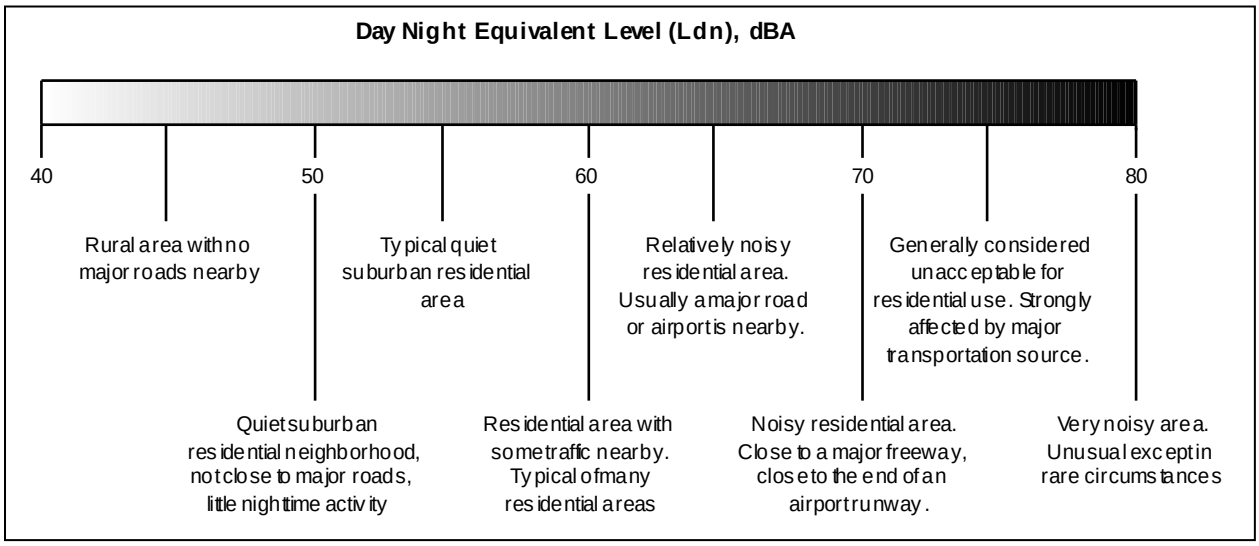
[2] Any highly reflective surface in which the phase of the sound energy is essentially preserved upon reflection; examples include water, asphalt, and concrete (FHWA 2011).

[3] Any highly absorptive surface in which the phase of the sound energy is changed upon reflection (FHWA 2011).

The primary existing noise sources in the project area are on-road mobile sources (automobile and truck traffic), small aircraft take off/landings, and agricultural activities. The nearest railroad is 1 mile southwest of the project site (BNSF line) and is not expected to contribute substantially to existing sound levels. Agricultural activities can generate sound levels similar to construction equipment but are typically dispersed and intermittent in nature. Typical noise levels from tractors, measured at a distance of 50 feet, range from approximately 78 dBA to 106 dBA L_{max}, with an average of 84 dBA L_{max} (County of Fresno 2000).

Figure 3.12.2 shows L_{dn} sound levels typical of different types of communities. Though the community south of the project site is residential in nature, Sierra Sky Park Airport aircraft operations likely periodically affect sound levels sufficiently to have levels more typical of an urban neighborhood in this area.

Figure 3.12.2. Typical Community Noise Levels in Terms of Day-Night Average Level



Source: Federal Transit Authority 1995

Roadway Traffic Noise

The primary roads that would be used by project-related traffic to enter the regional roadway network (i.e., haul truck routes) include:

- SR 99
- Herndon Avenue
- North Millburn Avenue
- North Valentine Avenue

Existing noise levels for nine long-term 24-hour noise monitoring sites in the City of Fresno are provided in **Table 3.12.1**. None of the sampled roads are in the vicinity of the project site; however, the existing noise levels range from 65 dB L_{dn} to 72 dB L_{dn} in areas of residential and commercial lands uses similar the project site (City of Fresno 2014).

Table 3.12.1. Representative Existing Noise Levels in the City of Fresno

Location	Noise Level dBA L_{dn}[1]
Railroad crossing at Shields Avenue	84
Along Railroad near West Barstow Avenue	74
SR 41 between West Barstow and West Shaw Avenues	76
SR 180 near North Peach Avenue	76
East Shaw Avenue near North Cedar Avenue	72
North Blackstone Avenue near East Ashlan Avenue	70
South Elm Avenue near East Jensen Avenue	68
North Valentine Avenue between West Ashlan Avenue and West Holland Avenue	67
South Fruit Avenue north of Church Avenue	65

[1] Values provided have been normalized to the reference distance of 100 feet.
Notes: dBA = A-weighted decibels; L_{dn} = day-night average sound level
Source: City of Fresno 2014

Airport Noise

As described in Section 3.9, "Hazards and Hazardous Materials," the project site is located within Safety Zones for two airports. Fresno Yosemite International Airport is located 8.5 miles southeast of the project site and has an operation rate of approximately 249 flights per day (AirNav 2020a). The project site is within one of the airport's Safety Zones (Precision Approach Zone) (Fresno Council of Governments 2018). However, this safety zone applies to instrument flight needs, and the project site is well outside of the effective noise contours established for this airport. Therefore, this airport is not discussed further.

Sierra Sky Park Airport is located immediately south of the project site and has an operation rate of approximately 39 flights per day (AirNav 2020b). The project site is within multiple Safety Zones for this airport, including the Runway Protection Zone, Inner Approach/ Departure Zone, Inner Turning Zone, Outer Approach/Departure Zone, Sideline Zone, and Traffic Pattern Zone (Fresno Council of Governments 2018). The 60 dB and 65 dB CNEL noise contours intersect slightly with the south and southeast portions of the project site (Fresno Council of Governments 2018), where the existing access road would be improved; these are likely to be one of the dominant existing sound sources in this area.

Existing Vibration Environment

The existing vibration environment on the project site is dominated by local agricultural operations, transportation-related vibration from roads, and, to a much lesser extent, Sierra Sky Park Airport. The existing vibration environment is expected to be low, with infrequent noticeable vibration sources.

3.12.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

U.S. Environmental Protection Agency

The EPA Office of Noise Abatement and Control was established to coordinate Federal noise control activities. In response to the Federal Noise Control Act of 1972, this office established guidelines to identify and address the effects of noise on public health and welfare, and the environment. **Table 3.12.2** summarizes EPA's recommended guidelines for noise levels considered safe for community exposure (EPA 1974). The yearly average L_{eq} for a person seeking to avoid hearing loss over his or her lifetime should not exceed 70 dB. To minimize interference and annoyance, noise levels should not exceed 55 dB L_{dn} in outdoor activity areas and 45 dB L_{dn} in residential structures.

Table 3.12.2. Summary of U.S. Environmental Protection Agency Recommended Noise Level Standards

Effect	Sound Level	Area
Hearing loss	$L_{eq(24)} \leq 70$ dB	All areas
Interference with and annoyance during outdoor activities	$L_{dn} \leq 55$ dB	Outdoor areas of residences and farms, and other areas where people spend widely varying amounts of time or where quiet is a basis for use
	$L_{eq(24)} \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards and playgrounds
Interference with and annoyance during indoor activities	$L_{dn} \leq 45$ dB	Indoor residential areas
	$L_{eq(24)} \leq 45$ dB	Other indoor areas with human activities, such as schools

Notes: dB = decibels; L_{dn} = day-night average level; $L_{eq(24)}$ = equivalent noise level (the sound energy averaged over a 24-hour period)
Source: U.S. Environmental Protection Agency 1974:3

Groundborne Vibration

The Federal Transit Administration (FTA) has developed guidelines for assessing the significance of vibration produced by transportation sources and construction activity (FTA 2006). To address human response (annoyance) to groundborne vibration, FTA has established maximum-acceptable vibration thresholds for different land uses. These guidelines recommend 72 vibration dB for residential uses and buildings where people normally sleep, when the source of vibrations is frequent in nature. FTA guidelines also provide criteria for groundborne vibration effects with respect to building damage during construction activities (FTA 2006). According to FTA guidelines, a vibration-damage criterion of 0.2 inches per second PPV should be considered for non-engineered timber and masonry buildings, such as those in the project area.

State Plans, Policies, Regulations, Laws

The only State plans, policies, regulations, or laws related to noise and vibration that apply to the project area are California Department of Transportation (Caltrans) guidelines (2013) developed for assessing the significance of vibration from transportation and construction sources. Caltrans guidelines are similar to the FTA guidelines for transient sources such as construction activities.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

The Parkway Master Plan (SJRC 2018) includes a policy related to designing and siting new Parkway public access features to reduce disturbance at noise-sensitive land uses, but it does not include policies relevant to the analysis of this project.

Fresno County General Plan

The Fresno County General Plan Health and Safety Element (County of Fresno 2000) includes the following policy addressing noise:

Policy HS-G.6. The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.

Fresno County Code

The Fresno County Code of Ordinances, Title 8 – Health and Safety, Chapter 8.40 – Noise Control (County of Fresno 2000) indicates it is unlawful to create any noise that causes the exterior noise level at a residence, school, hospital, church, or public library to exceed the noise-level standards presented in **Table 3.12.3**. If the measured ambient noise level exceeds the applicable noise-level standard, the applicable standard shall be adjusted to the ambient noise level. However, noise sources associated with construction are exempted, provided such activities do not occur before 6:00 a.m. or after 9:00 p.m. on any day except Saturday or Sunday, or before 7:00 a.m. or after 5:00 p.m. on Saturday or Sunday.

Table 3.12.3. County of Fresno Exterior Noise Level Standards

Category	Cumulative Number of Minutes in any 1-hour Time Period	Noise Level Standards, dBA	
		Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

Notes: dBA = A-weighted sound levels
Source: County of Fresno 2000

Fresno County Airport Land Use Compatibility Plan

The Fresno County ALUCP (Fresno Council of Governments 2018) addresses all airports in the Fresno region. Among other objectives, ALUCPs strive to minimize the effects of aircraft noise on communities adjacent to airports and prevent uses incompatible with airport operations from locating near the airport.

City of Fresno Municipal Code

The City of Fresno Code of Ordinances, Chapter 10, Article 1 – Noise Regulations (City of Fresno 2020a) defines the ambient noise levels presented in **Table 3.12.4** for residential, commercial, and industrial areas at various times of day.

Table 3.12.4. City of Fresno Ambient Noise Levels

District	Time	Sound Level (decibels)
Residential	10 pm to 7 am	50
Residential	7 pm to 10 pm	55
Residential	7 am to 7 pm	60
Commercial	10 pm to 7 am	60
Commercial	7 am to 10 pm	65
Industrial	Anytime	70

Source: City of Fresno 2020a

The Code of Ordinances indicates a noise or sound exceeding the relevant ambient noise level by more than 5 dB shall be deemed a violation. However, the code also specifies exceptions for work such as site preparation, grading, and construction, provided such work occurs between the hours of 7:00 a.m. and 10:00 p.m. on any day except Sunday.

The City of Fresno Code of Ordinances, Chapter 15, Article 25 – Performance Standards (City of Fresno 2020b) indicates no vibration shall be produced that is transmitted through the ground and is discernible without the aid of instruments by a reasonable person at a parcel lot line. However, similar to the noise ordinance exceptions, vibrations associated with temporary construction and associated transport are exempt from the stated standard.

City of Fresno General Plan

The City of Fresno General Plan Noise Element (City of Fresno 2014) refers to the above City of Fresno Code of Ordinances, Chapter 10, Article 1 – Noise Regulations and proposes noise threshold updates to the Code of Ordinances. However, these updates have not been adopted. **Table 3.12.5** lists proposed updated thresholds for transportation-related noise levels, other than airports, for indoor and outdoor noise-sensitive land uses. **Table 3.12.6** lists proposed updated noise level thresholds for stationary sources during daytime and nighttime hours.

Table 3.12.5. City of Fresno Noise Thresholds for Transportation Noise Sources[1]

Noise-Sensitive Land Use	Outdoor Activity Areas	Interior Spaces	
	L_{dn}/CNEL, dB	L_{dn}/CNEL, dB	L_{eq} dB[2]
Residential	65	45	-
Transient Lodging	65	45	-
Hospitals, Nursing Homes	65	45	-
Theaters, Auditoriums, Music Halls	-	-	35
Churches, Meeting Halls	65	-	45
Office Buildings	-	-	45
Schools, Libraries, Museums	-	-	45

[1] Excluding airports
[2] As determined for a typical worst-case hour during periods of use.
Notes: CNEL = Community noise equivalent level, dB = decibels; L_{dn} = day-night average level; L_{eq} = equivalent noise level
Source: City of Fresno 2014

Table 3.12.6. City of Fresno Noise Thresholds for Stationary Noise Sources

	Daytime (7:00 a.m. – 10:00 p.m.)	Nighttime (10:00 p.m. – 7:00 a.m.)
Hourly Equivalent Sound Level (Leq), dBA	50	45
Maximum Sound Level (Lmax), dBA	70	60

Source: City of Fresno 2014

The City of Fresno General Plan Noise Element also includes noise contours developed to fulfill the mandates of the Federal Aviation Regulation Part 150 Airport Noise Compatibility Planning Program, which is designed to lessen the effect of airport noise on the surrounding community as development is proposed around an airport or the airport is modified or expanded.

3.12.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of noise impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. A significant impact related to noise issues would occur if the project would:

- generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, State, or Federal standards;
- generate excessive groundborne vibration or groundborne noise levels; or
- for a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, expose people residing or working in the project area to excessive noise levels.

Issues Not Discussed Further

Noise and Vibration Resulting from Operations and Maintenance. Long-term project-related O&M activities would include patrols via pickup truck after high- or long-duration flows. Periodic maintenance to remove accumulated debris at the modified French drain intake would be conducted, as needed, and may require an excavator or similar equipment. Inspections and debris removal would occur infrequently and would have very minor impact, if any, on sensitive receptors. No permanent sources of noise or vibration would be generated by the project. Therefore, long-term impacts associated with noise and vibration resulting from project O&M are not discussed further.

Analysis Methodology

Construction-related impacts depend on the distance between the construction activities and sensitive receptors, and on the type of equipment used during construction. Noise associated with project construction was assessed for the nearest existing sensitive receptors using the Federal Highway Administration Roadway Construction Noise Model and heavy equipment/equipment usage factors. Groundborne vibration associated with construction activities was assessed for the nearest sensitive receptors using FTA guidelines.

Residential is the only noise-sensitive land use close enough to the project site to experience substantial ambient noise level increases during project construction. Therefore, the impact analysis focuses on residential areas. Residences closest to project construction areas are on the bluff south of Milburn Pond, approximately 100 to 500 feet from the existing access road that would be improved for project construction purposes. Additional residences are along local haul route/site access routes; those along the North Milburn Avenue haul route are approximately 75 feet from the road centerline, and those along the North Valentine Avenue access route (including Hansen Farm) are approximately 50 feet from the road centerline. However, other than hauling and minor grading to improve the existing access road, construction areas are approximately 0.25 to 0.5 mile from the closest residences.

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis. No comments related to noise were received.

Impact Analysis and Mitigation Measures

Impact 3.12.1: ***Substantial Increase in Ambient Noise Levels.*** *Project construction would temporarily increase noise levels in the project area and, in some cases, would exceed local noise level standards. However, construction projects are exempt from these standards during most hours when construction would occur. Therefore, this impact would be* ***less than significant****.*

Project construction activities would temporarily increase ambient noise levels in areas of noise-sensitive residential land uses. Noise levels calculated for residences closest to construction activities are summarized in **Table 3.12.7**; construction noise calculations are provided in **Appendix E**. The results represent worst-case, conservative noise exposure because they do not consider noise attenuation associated with shielding from intervening topography or barriers, such as solid fences and walls. Therefore, actual construction noise levels could be less.

Table 3.12.7. Summary of Calculated Construction Noise Levels

Location of Residences	Construction Activity	Minimum Source-to-Receiver Distance (feet)	Estimated Construction Noise Level ($dBA_{Leq[h]}$)
North Milburn Avenue/ North Valentine Avenue	Material Hauling/ Site Access	50	73
South of Milburn Pond	Material Hauling	100	67
	Access Road Improvement	100	78
	Berm Improvements and Saddle/Drain Construction	2,500	52
Hansen Farm	Site Access	50	73
	High-flow Side Channel Construction and Berm Improvements	1,100	62

Notes: dBA = A-weighted sound levels; Leq[h] = 1-hour equivalent sound level (the sound energy averaged over a continuous 1-hour period)
See Appendix E for construction noise calculations.
Source: Data compiled by GEI Consultants, Inc. in 2020

Construction activity closest to residences would be material hauling. Noise from haul trucks operating on local access roads, including North Milburn Avenue would increase noise levels along the haul route, but these increases would be brief and infrequent. In addition, project-related traffic on North Valentine Avenue and through San Joaquin Country Club and Hansen Farm would be occasional and unlikely to include material hauling. Approximately 1,500 truck trips over 5 months are anticipated to be required. Therefore, an average of approximately 15 project-related haul truck would travel past a given home each day.

Residences on the bluff immediately south of the project site would be temporarily exposed to noise during improvement of the existing maintenance road. However, road improvements would be completed in approximately 5 days and is unlikely to occur concurrently with material hauling. In addition, many of these residences are within the 60 dB or 65 dB contour for Sierra Sky Park Airport and experience periodic noise from aircraft take-offs.

The primary project construction activities, including equalization saddle and modified French drain construction, berm improvements, borrow excavation, and high-flow side channel construction, would occur much farther from residential areas. High-flow side channel excavation would occur approximately 1,100 feet from homes at Hansen Farm, over an estimated period of 90 days. However, due to surrounding land uses, which include the operation of heavy-duty agricultural equipment, ambient noise levels within this area can typically reach approximately 75 dBA L_{eq} at 50 feet (EPA 1974). This is much higher than noise levels estimated to occur at the homes during high-flow side channel construction and berm improvements.

The proximity of sensitive residential receptors to the project site and haul routes would result in temporary, short-term increases in ambient noise levels during construction that would exceed City of Fresno and Fresno County noise standards in some cases. However, construction activity

that occurs pursuant to an applicable construction permit and between 7:00 a.m. and 9:00 p.m. on weekdays and 7:00 a.m. and 5:00 p.m. on Saturdays (the most stringent combination of current City and County noise regulations) would be exempt from noise regulations. Quiet activities, such as equipment maintenance and construction sufficiently far from residences, could occur after 5:00 p.m. on Saturdays and on Sundays. Therefore, short-term construction impacts associated with the exposure of persons to or the generation of noise levels in excess of standards established in local, State, or Federal standards would be **less than significant.**

Mitigation Measure: No mitigation is required.

Impact 3.12.2: ***Excessive Groundborne Vibration.*** *Project construction would cause temporary groundborne vibration on the project site and in the immediate surroundings. Vibrations may in rare cases exceed local standards. However, construction projects are exempt from these standards. Therefore, this impact would be* ***less than significant****.*

The project would generate temporary groundborne vibrations during construction activities. However, the only project activities that would produce vibrations that may be discernible at nearby sensitive receptors (residences) are material hauling and access road improvements. As discussed above under Impact 3.12.1, an average of approximately 15 project-related haul trucks would travel past a given home each day, and access road improvements would be completed in approximately 5 days. Vibrations generated by these activities are anticipated to be barely discernable at nearby residences, and potential exposure would be periodic and very short-term. In addition, the City of Fresno Code of Ordinances states that vibrations from temporary construction, demolition, and vehicles that enter and leave the subject parcel (e.g., construction equipment, trains, trucks, etc.) are exempt from this standard. For these reasons, impacts associated with project-related groundborne vibration would be **less than significant**.

Mitigation Measure: No mitigation is required.

Impact 3.12.3: ***Exposure of People Working in the Project Area to Excessive Airport Noise.*** *The project site is within the ALUCP area for a local airport. However, aircraft noise levels would be relatively low, and workers at the site would not be exposed to excessive noise due to the project's location within an ALUCP. Therefore, this impact would be* ***less than significant****.*

The project site is within multiple Sierra Sky Park Airport Safety Zones, including the Runway Protection Zone, Inner Approach/ Departure Zone, Inner Turning Zone, Outer Approach/ Departure Zone, Sideline Zone, and Traffic Pattern Zone (Fresno Council of Governments 2018). The airport's 60 dB and 65 dB CNEL noise contours intersect slightly with the south and southeast portions of the project site, where access road improvements would occur. Although the 60 and 65 dB CNEL contours extend into a portion of the project site and are likely to be one of the dominant existing sound sources, this noise level occurs only periodically during takeoff of small aircraft and is equivalent to the noise generated by a busy office or restaurant, typical urban residential area, or nearby highway traffic. In addition, airport noise levels on the project site would be less than those generated by construction activities. Therefore, workers at the site

would not be exposed to excessive noise due to the project's location within an ALUCP area. This impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impacts related to noise.

3.13 Recreation

This section describes water- and land-based recreational resources on and adjacent to the project site, summarizes applicable regulations, and analyzes potential project impacts related to recreation.

3.13.1 Environmental Setting

San Joaquin River Parkway

The Parkway includes public lands and improvements owned by SJRC, City of Fresno, Fresno County, SLC, and DFW, as well as private lands owned by the San Joaquin River Parkway and Conservation Trust (River Parkway Trust). The entire project site lies within Area 6 of the Parkway planning area. Parkway facilities in and adjacent to the project site include:

- **Milburn Unit** – administered by DFW as an ecological reserve with limited access and designated as a Habitat Focus Area. An overlook is located at the southwest corner of the Milburn Unit. Local residents use Milburn Avenue for walking, as allowed by SJRC. The Milburn Unit encompasses a large, central portion of the project site.
- **Hansen Unit** – administered by DFW as an ecological reserve. The Hansen Unit encompasses a small, north eastern portion of the project site.
- **Liddell/Bluff Pointe Golf Course Area –** administered by SJRC. This area includes an existing golf course, parking, and restrooms. The Bluff Point Golf Course and Learning Center includes 9- and 18-hole courses, a driving range, and a putting green. The golf course is operated on a lease arrangement with a private operator. This long-term lease was assumed by SJRC at the time the land was acquired. North Milburn Avenue is the only access road to the golf course. The road follows an existing mining berm separating Milburn Pond from Liddell Pond. The Liddell/Bluff Pointe Gold Course Area slightly overlaps the northwest corner of the project site, where a small portion of North Milburn Avenue may be raised by up to 1 foot during project construction.

San Joaquin Country Club

The San Joaquin Country Club includes an 18-hole, championship-level private golf course adjacent to Hansen Farm and the Hansen Unit. North Valentine Avenue passes through the golf course, but the primary country club and golf course access is via West Bluff Avenue.

San Joaquin River

Recreation opportunities along the San Joaquin River include a range of boating opportunities. The river, side channels, and old mining ponds, including Milburn Pond, provide flat-water boating opportunities. Anglers use the existing berm breaches to access the ponds to fish, but gas-powered motors are prohibited. The Parkway Master Plan describes the river as a public "canoe trail" for nonmotorized boating. The river is generally slow enough to require constant paddling (Reclamation and DWR 2011).

3.13.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No Federal plans, policies, regulations, or laws related to recreation apply to the proposed project.

State Plans, Policies, Regulations, Laws

No State plans, policies, regulations, or laws related to recreation apply to the proposed project.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

San Joaquin River Parkway Master Plan

The Parkway Master Plan (SJRC 2018) aims to protect and restore the natural resource values of the river corridor and provide public use of the river without harming these values. The recreation element describes the concept of Parkway recreation as meeting the Fresno-Madera region recreation demand, while preserving the river's natural resources and respecting private property rights. The recreation element also describes Parkway management and lists proposed recreation components. Parkway Master Plan goals and policies related to recreation that may be relevant to the proposed project for certain responsible agencies include:

GOAL: Provide river access and high-quality recreation areas and facilities to meet recreational and environmental educational needs while conserving natural and cultural resources.

- **FG.3.** Provide education and recreation facilities and programs, including a continuous multi-use trail the length of the Parkway.
- **ACCESS.24.** Maintain Parkway areas, access, and facilities in good condition and repair.

GOAL: Coordinate and cooperate with the SJRRP to ensure efficiency and develop projects that meet mutual objectives.

- **SJRRP.1.** Cooperate and collaborate in the isolation of gravel pits on public Parkway lands from the San Joaquin River. Explore and collaborate with the Program on other restoration measures, such as floodplain habitat improvement and spawning bed enhancement, to generate multiple-use benefits from public Parkway lands.
- **SJRRP.2.** Engage the SJRRP in Parkway planning and project design to avoid conflicting infrastructure plans or habitat restoration.
- **SJRRP.3.** Cooperate and collaborate in providing off-stream recreational fishing.

- **SJRRP.6.** Maximize recreation and public access, while still taking into account the goals and objectives of the SJRRP.

Fresno County General Plan

The Fresno County General Plan includes policies addressing recreation in the Open Space and Conservation Element (County of Fresno 2000). The following policies may be relevant to the proposed project for certain responsible agencies:

- **Policy OS-H.5.** The County shall encourage Federal, State, and local agencies currently providing recreation facilities to maintain, at a minimum, and improve, if possible, their current levels of service.
- **Policy OS-H.11.** The County shall support the policies of the San Joaquin River Parkway Master Plan to protect the San Joaquin River as an aquatic habitat recreational amenity, aesthetic resource, and water source.

City of Fresno General Plan

The City of Fresno General Plan (City of Fresno 2014) Parks, Open Space and Schools section includes the following objective related to recreation that may be relevant to the proposed project for certain responsible agencies:

Objective POSS-7-i. Public Access to San Joaquin River Parkway Trail Networks. Strive to provide public access to the Parkway from public streets, roads, and rights-of-way immediately adjacent to Parkway properties, facilities, and trails, including Milburn Avenue (existing golf course access and future multi-modal access with parking) and Valentine Avenue (pedestrian and bicycle access).

3.13.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. Implementing the project would have a significant impact on recreation if it would:

- increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated or
- include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment.

In addition, implementing the project would result in a significant impact on recreational resources if it would:

- substantially degrade recreational experiences.

Issues Not Discussed Further

Increase in Use of Recreational Facilities. The project site does not support existing recreational facilities or provide formal recreation access to the San Joaquin River, and project components would not increase use of adjacent recreational facilities, such as Bluff Pointe Golf Course, San Joaquin Country Club, or the Milburn Pond overlook. Existing uses allowed by DFW and SJRC would continue at the present level of service, and the limit on land-based public access to the Milburn Unit would remain in effect. Therefore, there would be no impact on use of recreational facilities, and this issue is not discussed further.

Construction or Expansion of Recreational Facilities. The project would not facilitate or require the construction or expansion of recreational facilities. Therefore, there would be no impact, and this issue is not discussed further.

Recreation Impacts Resulting from Operations and Maintenance. Long-term project-related O&M activities would include patrols via pickup truck after high- or long-duration flows. Periodic maintenance to remove accumulated debris at the modified French drain intake would be conducted, as needed. Inspections and debris removal would occur infrequently and would have very minor impact, if any, on recreational users. No permanent sources of noise or vibration would be generated by the project. Therefore, there would be no potential for a significant impact, and this issue is not discussed further.

Analysis Methodology

The evaluation of potential impacts relied on a review of existing recreational uses in the project vicinity and possible effects to these uses during project construction or operation. Comments submitted in response to the NOP were reviewed for relevance to the impact analysis. No comments related to recreation were received.

Impact Analysis and Mitigation Measures

Impact 3.13.1: ***Impacts on Existing Land-based Recreation.*** *The project includes construction activity within the Parkway, but it would not limit access to or substantially degrade existing, land-based recreational use of the area. This impact would be* ***less than significant****.*

If raising of the northern portion of North Milburn Avenue is necessary, public access to this area could be temporarily closed for up to approximately 3 weeks. Closure of this portion of North Milburn Avenue would prevent public access to Bluff Pointe Golf Course, but closure would be short-term and temporary, and other public golf courses are available in the project vicinity. The City of Fresno operates two municipal golf courses within the city limits: Riverside Municipal Golf Course (4 miles west of the project site) and Airways Municipal Golf Course (14 miles southeast of the project site). Three additional public golf courses are within relatively close proximity to the project site: Fig Garden Golf Course (4 miles east of the project site), Riverbend Golf Course (14 miles northeast of the project site), and Eagle Springs Golf and Country Club (21 miles northeast of the project site). Similarly, potential disruption of pedestrian use of this portion of North Milburn Avenue would be relatively brief, and other opportunities to walk near the river are available in the vicinity.

North Valentine Avenue passes through but is not considered an access route for the San Joaquin Country Club golf course. Golfers using this course during project construction may encounter occasional project-related traffic on North Valentine Avenue, but this route is unlikely to be used for material hauling and the presence of relatively infrequent and temporary project-related traffic would not affect access for golf course users. In addition, noise from high-flow side channel construction would impact a small portion of the golf course and result in relatively minor disturbance.

Because potential closure of public access to the north end of North Milburn Avenue would be short-term and temporary, there are several other publicly accessible golf courses and walking areas available for use in the project vicinity, and golfer disruption at San Joaquin Country Club would be relatively minor, land-based recreation would not be substantially degraded and this impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Impact 3.13.2: ***Impacts on Existing Water-based Recreation.*** *The project would permanently remove direct access to Milburn Pond from the San Joaquin River by anglers. Although similar recreational activities exist nearby, this impact would be* ***potentially significant****.*

Although motorized boat use is not allowed on the Milburn Unit, the ponds are currently accessible from the San Joaquin River, and anglers use the existing connection to enter the ponds to fish. The project vicinity provides multiple opportunities for recreationists to use facilities similar to Milburn Pond. The Sycamore Island area, approximately 3 miles upstream of Milburn Pond, allows fishing and includes boat launches and several off-river ponds accessible from the river channel by boat. Multiple additional ponds and pond complexes in the project vicinity are connected to and accessible by small boat from the San Joaquin River. For example, the Proctor-Broadwell-Cobb area, approximately 5 miles upstream of Milburn Pond, has several ponds and approximately 0.75 mile of river frontage. There are also backwater areas of the river and connected ponds at the Fort Washington Beach area, and the public can access the river for kayak/canoe use at Lost Lake, Friant Cove, and Wildwood Native Park. Pedestrian access to the river is also available at Jensen River Ranch. All of these areas are upstream and within approximately 8 to 10 miles of the Milburn Unit.

However, because Milburn Pond is by far the largest pond accessible by boat from the San Joaquin River in the Fresno area, it provides a unique recreational opportunity. Therefore, eliminating direct boat access from the river to Milburn Pond would substantially degrade the recreational experience for users of this resource, and the resulting impact would be **significant**.

Mitigation Measure: No feasible mitigation measures are available, as described in the following section, “Residual Significant Impacts.”

Residual Significant Impacts

Impacts on water-based recreation opportunities associated with Milburn Pond would be **significant and unavoidable**.

Pond isolation is the critical component of the overall project purpose to isolate Milburn Pond, and it was determined during project and alternative development that Milburn Pond isolation cannot feasibly be accomplished in a way that does not preclude direct boat access between the river and the pond. DWR's consideration of potential alternatives with the purpose of keeping fish from passing between the water bodies while maintaining a connection for boats concluded that none were feasibly reliable under the site conditions, which include wide flow ranges, lack of available operational oversight and maintenance capacity, and lack of demonstrable success in similar applications. Therefore, there is no other feasible construction alternative. The no-project alternative does not meet the overall project purpose whatsoever, as salmon mortality would continue under existing and future conditions. Consequently, there are no alternatives available or feasible to meet the overall project purpose and reduce the significant impact on water-based recreation opportunities associated with Milburn Pond.

Likewise, there are no feasible mitigation measures available to reduce this impact to a less-than-significant level. After Milburn Pond has been isolated, anglers in boats would not be able to directly access it from the river. Milburn Pond access by foot would be difficult because it is located on DFW's Milburn Unit and public entry from adjacent lands is not currently allowed. Creating a similar pond elsewhere in the area would not be desirable as it would create the same issues the proposed project remedies and would not be feasible from a land access, cost, or permitting standpoint. Even if foot access to Milburn Pond was made available in the future, it would not be the same type of recreational experience as boating in from the river to the pond, and the impact would remain significant and unavoidable.

In summary, there are no feasible alternatives or mitigation measures to reduce this significant and unavoidable impact on water-based recreation at Milburn Pond.

3.14 Transportation

This section discusses existing transportation and circulation in the project vicinity, describes applicable regulations, and analyzes potential project impacts related to short- and long-term impacts of the project on transportation and circulation.

3.14.1 Environmental Setting

The project site is located in the City of Fresno and an unincorporated portion of Fresno County. SR 41, SR 99, local roads, and transportation facilities for all other available modes of travel in the project vicinity are described below.

State Highways

Regional access to the project area is provided by two state highways. SR 99 is a north-south highway that runs through the Central Valley. Through the Fresno area, SR 99 is a six-lane freeway. Caltrans reports that average daily traffic volumes on SR 99 are approximately 81,000 vehicles at the Madera/Fresno County line, approximately 3 miles west of the project site (Caltrans 2020a). SR 41 extends from Cabrillo Highway in Morro Bay to SR 140 in Yosemite National Park. Through the Fresno area, SR 41 is a four-lane freeway. Caltrans reports that average daily traffic volumes on SR 41 are approximately 50,000 vehicles at the Madera/Fresno County line, approximately 5 miles northeast of the project site (Caltrans 2020b).

Local Roadways

Local roads provide access to the project site and adjacent properties and connect with other local roads, collectors, arterials, super arterials, and expressways. Local roads are typically developed as two-lane undivided roadways (County of Fresno 2000).

Access to the project site is provided by North Milburn Avenue and North Valentine Avenue. North Milburn Avenue extends along the west side of the project site and provides access to the downstream staging and work areas. North Valentine Avenue is located on the eastern side of the existing Hansen Farm and provides access to the upstream borrow/spoils/staging and work areas. An existing unimproved maintenance road along the southern and eastern boundaries of Milburn Pond connects the upstream and downstream portions of the project site.

Bicycle Facilities

The *City of Fresno Active Transportation Plan* (City of Fresno 2016) indicates the closest bicycle facility to the project site is a Class II bicycle lane (a bike lane within a paved street, identified with striping, stencils, and signs) along portions of North Milburn Avenue; this bicycle lane ends at the overlook near the southwest corner of the project site.

Airports

Fresno Yosemite International Airport is a joint civil-military airport owned by the City of Fresno and located 8.5 miles southeast of the project site. The airport experienced an operation rate of approximately 249 flights per day for the 12-month period ending January 2020 (AirNav 2020a).

Sierra Sky Park Airport is privately owned but is available for public use. The north end of the runway is approximately 400 feet south of the project boundary at its closest point. The airport experienced an operation rate of approximately 39 flights per day for the 12-month period ending April 2019 (AirNav 2020b).

Transit

The Fresno Area Express provides fixed route conventional bus transport to the Fresno-Clovis Metropolitan Area (City of Fresno 2014a). The system currently includes 15 standard fixed routes. The closest route to the project site is route 45, which can be accessed at the intersection of North Milburn Avenue and Herndon Avenue, approximately 0.5 mile south of the project site. Handy Ride provides on-demand service to the disabled and elderly within the Fresno-Clovis Metropolitan Area.

Railroads

The Union Pacific Railroad operates parallel to SR 99 in Fresno County, and is approximately 2 miles west of the project site. Additionally, the Burlington Northern Santa Fe Railroad Company operates throughout Fresno County, and is approximately 1.5 miles east of the Union Pacific Railroad and 1 mile west of the project site.

3.14.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No Federal plans, policies, regulations, or laws related to transportation apply to the proposed project.

State Plans, Policies, Regulations, Laws

Senate Bill 743, passed in 2013, requires the Office of Planning and Research to establish new CEQA guidelines that address traffic metrics under CEQA. As of July 1, 2020, this legislation replaced the Level of Service or similar measures of vehicular capacity or traffic congestion with vehicle miles traveled (VMT) as the primary metric used to measure transportation impacts. The legislation established a new way of measuring transportation impacts for development projects in California, focusing on building projects in a way that allows more options for driving less.

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

The Parkway Master Plan (SJRC 2018) includes policies to facilitate and encourage alternative transportation, but it does not include policies relevant to the analysis of this project.

City of Fresno General Plan

The following goals and policies from the Mobility and Transportation Element of the City of Fresno General Plan (City of Fresno 2014b) relate to transportation and may be relevant to the proposed project for certain responsible agencies:

GOAL MT-1: Create and maintain a transportation system that is safe, efficient, provides access in an equitable manner, and optimizes travel by all modes.

GOAL MT-2: Make efficient use of the City's existing and proposed transportation system and strive to ensure the planning and provision of adequate resources to operate and maintain it.

- **Policy MT-2-b.** Reduce Vehicle Miles Traveled and Trips. Partner with major employers and other responsible agencies, such the San Joaquin Valley Air Pollution Control District and the Fresno Council of Governments, to implement trip reduction strategies, such as eTRIP, to reduce total vehicle miles traveled and the total number of daily and peak hour vehicle trips, thereby making better use of the existing transportation system.
- **Policy MT-2-b.** Reduce Vehicle Miles Traveled and Trips. Partner with major employers and other responsible agencies, such the San Joaquin Valley Air Pollution Control District and the Fresno Council of Governments, to implement trip reduction strategies, such as eTRIP, to reduce total vehicle miles traveled and the total number of daily and peak hour vehicle trips, thereby making better use of the existing transportation system.

City of Fresno Active Transportation Plan

The City of Fresno prepared the Active Transportation Plan in 2016 to serve as a comprehensive guide for the vision of transportation in the City of Fresno, and a roadmap for achieving that vision (City of Fresno 2016).

3.14.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

The thresholds for determining the significance of impacts for this analysis are based on the environmental checklist in Appendix G of the State CEQA Guidelines, as amended. A significant impact related to transportation and circulation issues would occur if the project would:

- conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities;
- conflict or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision (b);
- substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment); or
- result in inadequate emergency access.

Issues Not Discussed Further

Conflict with State CEQA Guidelines Section 15064.3(b). The project would slightly increase temporary vehicle travel and VMT associated with construction activities, including worker commutes and transport of construction materials, within the immediate project area. An average increase of approximately 15 daily round trips by heavy trucks and 20 light truck trips on roadways accessing the construction site is minor and would have little effect on temporary vehicle travel and VMT. After project construction is complete, vehicle travel would revert to pre-project conditions, and the project would have no long-term impact on VMT. Therefore, this impact is not discussed further.

Increase Hazards Due to Geometric Design Features. The project could include raising an approximately 500-foot portion of North Milburn Avenue by up to approximately 1 foot. This modification would not impact the overall geometric design of the roadway. Therefore, this impact is not be discussed further.

Analysis Methodology

The project would not introduce any new land uses or activities to the area that would generate long-term increases in traffic volumes; therefore, the following analysis focuses on construction impacts and O&M activities.

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis. No comments related to transportation were received.

Impact Analysis and Mitigation Measures

Impact 3.14.1: ***Increase in Traffic Volumes along Designated Roadways in the Project Area.*** *Construction activities would slightly increase traffic on North Milburn Avenue and North Valentine Avenue but would not lead to substantial delays. Construction traffic impacts would be temporary, and traffic would return to pre-project conditions following completion of construction activities. Traffic associated with O&M activities would be minimal. Therefore, this impact would be* ***less than significant****.*

Construction staging would occur along existing on-site roads, at the borrow areas, and at a staging area between the San Joaquin River and Milburn Pond. Haul truck trips for on-site material movement are not anticipated to travel on public roads.

Approximately 35,000 cy of off-site material would be imported for the equalization saddle and modified French drain construction and bank protection. Approximately 1,500 truck trips over a 5-month period (an average of 15 truckloads per day) are anticipated to transport material for construction of the equalization saddle and modified French drain. An additional 300 truck trips are anticipated to be required to transport material for erosion protection. These materials would be imported from a commercial quarry within the San Joaquin Valley and/or adjacent foothills within 100 miles of the project site. Up to approximately 10 truck trips may be required to remove deleterious materials and debris from the project site to an appropriate disposal facility in Fresno County, within 20 miles of the project site. Construction personnel would most likely come from the local workforce in the Fresno area and outlying communities. Workers

commuting to and from the site would are estimated to generate approximately 2,700 vehicle trips. In total, the project would generate approximately 20 daily trips by heavy trucks and 40 light truck trips.

Construction-related vehicles and equipment traveling from North Valentine Avenue to the upstream portion of the project site would travel through the San Joaquin Country Club and Hansen Farm. Similarly, construction-related vehicles travelling to the downstream portion of the project site would travel along North Milburn Avenue. The amount of traffic on these designated roadways would increase during project construction. However, this increase would be relatively minor and temporary, and traffic would return to pre-project conditions following completion of project activities. In addition, project-related traffic on North Valentine Avenue and through San Joaquin Country Club and Hansen Farm would be occasional and unlikely to include material hauling. Therefore, the level of increased traffic activity anticipated from the project is unlikely to degrade traffic operations on the surrounding transportation network.

Depending on results of detailed surveys, the northern end of North Milburn Avenue, adjacent to the Bluff Pointe Golf Course, may need to be raised by up to approximately 1 foot. This potential work could require temporary closure of North Milburn Avenue adjacent to the Milburn Unit for up to approximately 3 weeks. North Milburn Avenue provides the only access to the Bluff Pointe golf course, but it is a dead end and is not typically accessed by the public for other uses. Closure of Milburn Avenue would not increase traffic volumes in the project area.

After construction, existing maintenance roads would be used for O&M activities, which would be infrequent, similar to existing operations, and would not increase traffic volumes in the project area.

For these reasons. impacts related to increased traffic volumes along designated roadways in the project area would be **less than significant**.

Mitigation Measure: No mitigation is required.

Impact 3.14.2: ***Increased Emergency Response Times or Inadequate Emergency Access.*** *Construction-related vehicle trips would slightly increase traffic on local roadways, but this temporary increase would not affect emergency access and response times. O&M activities would be minimal and have no effect on emergency response or access. During potential temporary closure of North Milburn Avenue, a route passable for emergency vehicles would be maintained to provide access to areas beyond the closure. These impacts would be* ***less than significant****.*

If temporary closure of North Milburn Avenue is necessary to raise the north end of the road, an emergency access corridor or passable route through the construction area would be maintained to provide emergency vehicle access in the case of an emergency. Because there would be no public access to the closure area and beyond, potential for an emergency situation is minimal, but access could be necessary in case of a wildfire or other localized emergency situation.

Project-related traffic increase would be limited to the construction period and is anticipated to include fewer than 100 additional vehicle trips daily that would be spread between two access

routes. O&M activities would be infrequent and similar to those conducted under existing conditions. The temporary and minor construction-related traffic increase would not degrade traffic operations on the surrounding transportation network to an extent that would affect emergency vehicle response times or access. Therefore, the proposed project would not increase emergency response times or result in inadequate emergency access. This impact would be **less than significant.**

Mitigation Measure: No mitigation is required.

Impact 3.14.3: ***Impacts on Alternative Transportation Modes.*** *The project would not conflict with any adopted policies, plans, or programs related to transit, bicycle, or pedestrian facilities, nor would the project decrease the performance or safety or any existing facilities. Therefore, this impact would be* ***less than significant****.*

A class II bicycle lane is present along portions of North Milburn Avenue, terminating at the overlook near the southwest corner of the project site. There are no alternative modes of transportation in the vicinity of North Valentine Avenue. The project would temporarily increase traffic on North Milburn Avenue and North Valentine Avenue during construction. However, this is unlikely to decrease performance or safety of alternative modes of transportation. The project also would not place any additional demand on transit and would not conflict with transit policies for the area. Therefore, this impact would be **less than significant**.

Mitigation Measure: No mitigation is required.

Residual Significant Impacts

The project would not result in residual significant impacts related to transportation.

3.15 Wildfire

This section discusses the existing wildfire risk levels in the project vicinity, describes applicable regulations, analyzes potential project impacts related to wildfire risk, and identifies a mitigation measure to reduce the potentially significant impact to a less-than-significant level.

3.15.1 Environmental Setting

The project site is not located in an area designated as a high severity fire zone; it is in an LRA Unzoned Fire Hazard Zone (CAL FIRE 2007a, 2007b). The City of Fresno is largely unzoned or categorized as low or moderate wildland fire hazard severity. However, the City considers small areas along the San Joaquin River Bluff area in northern Fresno as being prone to wildfire due to relatively steep terrain and associated vegetation and classifies these areas as high fire hazard (City of Fresno 2014). In addition, Fresno is near areas mapped by CAL FIRE as high and very high fire hazard severity zones.

Fire protection services in the project area are provided through the City of Fresno Fire Department and through response agreements with the City of Clovis Fire Department and the Fresno County Fire Protection District.

3.15.2 Regulatory Setting

Federal Plans, Policies, Regulations, and Laws

No Federal plans, policies, regulations, or laws related to wildfire apply to the proposed project.

State Plans, Policies, Regulations, Laws

California Public Resources Code Sections 4201 - 4204 – Fire Hazard Severity Zones

PRC Sections 4201 – 4202 and Government Code Sections 51175-89 direct CAL FIRE to map areas of significant fire hazard, known as fire hazard severity zones, based on fuels, terrain, weather, and other relevant factors. Fire hazard severity zones were defined to identify measures to be taken to retard the rate of spreading and to reduce the potential intensity of uncontrolled fires that threaten to destroy resources, life, or property. The project site is located within the LRA and is unzoned with respect to fire hazard severity (CAL FIRE 2007a, 2007b).

Regional and Local Plans, Policies, Regulations, and Ordinances

DWR is not subject to local regulations unless expressly authorized by the Legislature. Local plans, policies, regulations, and ordinances potentially relevant to the proposed project are addressed in this section for informational purposes because they may be relevant to certain responsible agencies.

The Parkway Master Plan (SJRC 2018) includes a policy to facilitate projects that demonstrate multiple benefits, including reducing wildfire risks, but it does not include policies relevant to the analysis of this project.

Fresno County General Plan

The following goal and policy from the Health and Safety Element of the Fresno County General Plan (County of Fresno 2000) related to wildfire may be relevant to the proposed project for certain responsible agencies:

GOAL HS-B: To minimize the risk of loss of life, injury, and damage to property and natural resources resulting from fire hazards.

- **Policy HS-B-1.** The County shall review project proposals to identify potential fire hazards and to evaluate the effectiveness of preventive measures to reduce the risk to life and property.

3.15.3 Environmental Impacts and Mitigation Measures

Thresholds of Significance

Significance criteria are based on Appendix G of the State CEQA Guidelines. Implementing the project would have a significant impact on wildfire if it would:

- substantially impair an adopted emergency response plan or emergency evacuation plan;
- due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire, or the uncontrolled spread of a wildfire;
- require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment; or
- expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes.

Refer to Section 3.9, "Hazards and Hazardous Materials," for discussion of potential impairment of an emergency response or evacuation plan.

Issues Not Discussed Further

Require Installation or Maintenance of Associated Infrastructure. The project is limited to modifying existing landscape features and infrastructure. It would not require installation or additional maintenance of infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that could potentially exacerbate fire risk. Therefore, there would be no impact, and this issue is not discussed further.

Expose People or Structures to Significant Risks. The project would alter the hydraulic connection between the San Joaquin River and Milburn Pond, but this would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Therefore, these issues are not discussed further.

Analysis Methodology

Evaluation of the potential impacts of the project on wildfire was based on a review of planning documents pertaining to the project area, particularly the City of Fresno and Fresno County general plans and associated EIRs, as well as CAL FIRE fire severity zone maps (CAL FIRE 2007a, 2007b) and field and aerial photographic review.

Comments submitted in response to the NOP were reviewed for relevance to the impact analysis. No comments related to wildfire were received.

Impact Analysis and Mitigation Measures

Impact 3.15.1: ***Increase in Wildfire Risk.*** *The project does not include any components that would increase wildfire risks, due to slopes, prevailing winds, or other factors. However, construction activities could temporarily increase fire risk. Therefore, implementing the project would result in a* ***potentially significant*** *impact.*

The project site is not located in an area designated by CAL FIRE as a high or very-high fire hazard severity zone. The City of Fresno is primarily comprised of large, urbanized areas and agricultural lands. Due to the city's developed character, the risk of wildfire within the city is considered low to moderate (City of Fresno 2014). However, steep areas along the slope of the San Joaquin River Bluffs, including areas along the southern boundary of the project can be prone to wildfires due to the relatively steep terrain and associated vegetation. The project site is primarily occupied by Milburn Pond and other, smaller water bodies, which significantly reduce the risk of the spread of wildfires. The portion of the project site in which construction would occur is relatively flat and likely of lower wildfire hazard, although scrub and woodland vegetation occur along the San Joaquin River and pond edges. Areas of grassland vegetation are scattered throughout and adjacent to the project site, primarily in the eastern portion and along the southwestern boundary, including on the slope of the bluff between the site and adjacent residential development. Such grassland areas can be a fire hazard if not maintained. The project does not include any components that would permanently increase wildfire risk. In addition, improved fencing and signage may reduce fire potential, and improvement of the existing maintenance access road would improve access in a wildfire emergency situation. However, operation of heavy equipment and presence of construction personnel could temporarily increase fire risk during construction. Therefore, impacts related to risk of wildfire during project construction would be ***potentially significant***. Mitigation Measure 3.15.1 has been identified to address this impact.

Mitigation Measure 3.15.1: Prepare and Implement an Emergency Fire Plan.

DWR will prepare and implement an emergency fire plan complying with all sections of California Fire Code Chapter 33 during project construction. The plan shall include preventative measures and emergency procedures specific to the project and site, current emergency telephone numbers, and an area map.

Timing: Before and during construction activities.

Responsibility: DWR.

Significance after Mitigation: Implementing Mitigation Measure 3.15.1 would reduce potentially significant construction-related wildfire risks to a **less-than-significant** level, because an emergency fire plan including wildfire preventative measures and emergency procedures would be developed and implemented.

Residual Significant Impacts

The project would not result in residual significant impacts related to wildfire.

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Chapter 4. Other CEQA-required Sections

4.1 Growth-inducing Impacts

CEQA (State CEQA Guidelines Section 15126.2[d]) requires an examination of the direct and indirect impacts of a proposed project, including the potential of the project to induce growth leading to changes in land use patterns, population densities, and related impacts on environmental resources. Specifically, CEQA states that the EIR shall:

> Discuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.

Direct growth inducement would result if a project involves construction of new housing. Indirect growth inducement would result, for instance, if implementing a project would result in:

- substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises);
- substantial short-term employment opportunities (e.g., construction employment) that indirectly would stimulate the need for additional housing and services to support the new temporary employment demand; and/or
- removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area).

Local land use decisions are within the jurisdiction of the City of Fresno and Fresno County, which have adopted general plans consistent with State law. The Fresno General Plan (City of Fresno 2014) and Fresno County General Plan (County of Fresno 2000) provide the overall framework for growth and development in the City and County, respectively. The project site does not include any developed uses, and the land on which construction would occur is not designated for developed use by either the City or the County.

Because the project would not involve housing construction, it would not directly induce growth. Project construction would generate temporary and short-term employment; however, these construction jobs are anticipated to be filled from the existing local employment pool, and they

would not indirectly result in a population increase or induce growth by creating permanent new jobs. Furthermore, the project would not involve constructing businesses or extending roadways or other infrastructure and would not indirectly induce population growth. Consequently, the project would not induce growth leading to changes in land use patterns and population densities and related impacts on environmental resources.

4.2 Significant and Unavoidable Environmental Impacts

Section 15216.2(b) of the State CEQA Guidelines requires an EIR to include a discussion of any significant environmental impacts that cannot be avoided if the project is implemented. Chapter 3, "Environmental Setting, Impacts, and Mitigation Measures," of this EIR provides a detailed analysis of all significant and potentially significant environmental impacts related to implementing the proposed project; identifies feasible mitigation measures, where available and practicable, that could avoid or reduce these significant and potentially significant impacts; and presents a determination whether these mitigation measures would fully reduce these impacts to less-than-significant levels. In addition, significant cumulative impacts resulting from the combined effects of the project and past, present, and reasonably foreseeable related projects are discussed in Chapter 5, "Cumulative Impacts." If a specific impact cannot be fully reduced to a less-than-significant level with implementation of all feasible mitigation, it is considered a significant and unavoidable adverse impact.

The only significant and unavoidable environmental impact is Impact 3.13.2, "Limit Access to Existing Water-based Recreation Facilities or Opportunities." The rationale for this conclusion and the lack of feasible mitigation measures is described in Section 3.13, "Recreation."

4.3 Significant Irreversible Environmental Changes

The State CEQA Guidelines (Section 15126.2[c]) require a discussion of the significant irreversible environmental changes that a project would cause. The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled, or those that are consumed or reduced to unrecoverable forms. Implementing the project would result in the irreversible and irretrievable commitment of energy and material resources during project construction and O&M, including:

- construction materials, including such resources as soil and rocks;
- land area committed to new/expanded project facilities; and
- energy expended in the form of electricity, gasoline, diesel fuel, and oil for construction equipment and transportation vehicles that would be needed for project construction and O&M.

The use of these nonrenewable resources is expected to account for only a small portion of the region's resources and would not affect the availability of these resources for other needs in the region. Project construction activities would not result in inefficient use of energy or natural

resources and would follow BMPs from DWR's GERP (DWR 2020), which include energy-reduction guidelines.

4.4 Impacts of Mitigation Measures

Section 15126.4(a)(1)(D) of the State CEQA Guidelines requires a discussion of any significant effects that may be caused by mitigation measures, although the discussion shall be in less detail than the discussion of significant effects of the project as proposed.

Mitigation measures proposed in this EIR are intended to mitigate significant and potentially significant impacts that could occur as a result of implementing the proposed project. Some mitigation measures could result in additional environmental impacts. However, the mitigation measures proposed in this EIR are typically standard mitigation measures that have been implemented for similar projects throughout California with success and without any known or identified related significant impacts. None include any substantial, adverse impacts on the physical environment. Therefore, implementing the mitigation measures proposed in this EIR would have minimal environmental impacts and would not result in significant or potentially significant impacts.

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Chapter 5. Cumulative Impacts

5.1 Approach to the Cumulative Impact Analysis

As defined in State CEQA Guidelines Section 15355, a cumulative impact is an environmental impact that is created as a result of the combination of implementing the project together with other projects causing related impacts. CEQA requires that an EIR discuss cumulative impacts of a project when the project's incremental effect is cumulatively considerable (State CEQA Guidelines Section 15130[a]). "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past, current, and probable future projects (State CEQA Guidelines Section 15065[a][3]). If an incremental effect is not cumulatively considerable, then the lead agency does not need to consider that effect significant and must briefly describe the reason why (State CEQA Guidelines Section 15130[a]).

State CEQA Guidelines Section 15130(b) states that the discussion of cumulative impacts need not provide as much detail as the discussion of the effects attributable to the project. The level of detail should be guided by what is practical and reasonable. The following elements are necessary for an adequate discussion of significant cumulative impacts (State CEQA Guidelines Section 15130[b]):

- a list of past, present, and probable future projects producing related or cumulative impacts, including, if necessary, those projects outside the control of the lead agency; or a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact;
- a defined geographic scope of the area affected by the cumulative effect and a reasonable explanation for the geographic limits identified;
- a summary of expected environmental effects that might be produced by those projects with specific reference to additional information stating where that information is available; and
- a reasonable analysis of the cumulative impacts of the relevant projects. An EIR shall examine reasonable, feasible options for mitigating or avoiding the project's contribution to any significant or potentially significant cumulative effects.

This cumulative impact analysis includes the following four components:

1. Description of the geographic scope of potential cumulative impacts (Subsection 5.1.1, "Geographic Scope of Cumulative Impacts").
2. Context for the cumulative impact analysis, including a broad overview of the San Joaquin River and surrounding habitat and recreational facilities; this establishes the cumulative context upon which the project would interact with past, present, and probable future projects (Subsection 5.1.2, "Cumulative Context").

3. Summary of past, present, and probable future (reasonably foreseeable) projects included in the cumulative analysis (Subsection 5.1.3, "Projects Considered in Cumulative Impact Analysis").
4. Cumulative impact analyses (Section 5.2, "Cumulative Impact Analysis by Topic Area").

5.1.1 Geographic Scope of Cumulative Impact Analysis

State CEQA Guidelines indicate that lead agencies "should define the geographic scope of the area affected by the cumulative effect" (CCR Section 15130[b][3]). Although the geographic scope of the area affected by cumulative impact varies by topic, it consists of the following two geographic areas:

- Project Site—Milburn Pond and Hansen Farm Units of the San Joaquin River Ecological Reserve (see Figure 2.1, "Project Location"), where all project features would be constructed and maintained.
- Project Vicinity and Region—generally the project vicinity and region shown in Figure 2.1, "Project Location," which some topics would affect when considered in a cumulative context, such as air quality and climate change (see topic-specific geographic areas below).

5.1.2 Cumulative Context

The project includes isolating Milburn Pond from the San Joaquin River. Project impacts generally include temporary, short-term construction impacts, with longer-term or permanent impacts on biological resources and recreation. Based on the types of long-term impacts that would result from implementing the project, the cumulative analysis focuses on other projects and programs that would affect habitat conditions and recreational opportunities along the San Joaquin River in the project vicinity.

The geographic scope of the area affected by the project for each of the topics addressed in the EIR would include the following:

- Aesthetics—local (project site) and immediate vicinity.
- Agricultural and Forestry Resources—local (project site) and regional (Fresno County).
- Air Quality—regional (SJVAB).
- Biological Resources—local (project site) and regional.
- Cultural Resources (archaeological and historical) and Tribal Cultural Resources—local (project site) and regional.
- Geology, Soils, and Paleontological Resources—local (project site) and regional.
- Greenhouse Gas Emissions—regional and global.
- Hazards and Hazardous Materials—local (project site) and nearby construction projects.
- Hydrology and Water Quality—local (drainage systems affected on and downstream of the project site) and regional (San Joaquin River).

- Land Use and Planning—local (project site) and regional.
- Noise—local (immediate vicinity of the project site and along access routes during construction activities) and regional (transport network for truck haul routes during construction).
- Recreation—local (project site) and regional.
- Transportation—local (roadways in immediate vicinity of the project site and along access routes during construction activities) and regional (transportation network for truck haul routes during construction).
- Wildfire—local (project site) and regional.

The Fresno Council of Governments' Regional Transportation Plan (Fresno Council of Governments 2018) estimated that Fresno County's 2020 population would be 1,047,440, with 398,050 jobs. In 2035, the estimated population would be 1,258,860, with 450,100 jobs.

The City of Fresno's Master EIR identified a 2020 population of 649,200 people within the City's planning area (city limits and sphere of influence). The estimate for 2025 was 693,000 people in the City's planning area, and 1,155,000 in the county as a whole (City of Fresno 2014).

The Fresno County General Plan (County of Fresno 2000) projected population and jobs for the unincorporated area of Fresno County outside of city spheres of influence in 2020. The projection for the East Valley area, located east of Interstate 5, was 101,542 people and 57,737 jobs. The primary new foreseeable urban development in unincorporated Fresno County is the Friant Ranch project, which would contain approximately 2,500 residential units along with supporting land uses (County of Fresno 2000).

5.1.3 Projects Considered in Cumulative Impact Analysis

Milburn Habitat Restoration and Improvements Project Phases 2 and 3

As indicated in Section 1.1, "Project Overview," the proposed project is the first phase of a potentially three-phase Milburn Habitat Restoration and Improvements Project (Milburn Restoration Project). Phases 2 and 3 would be to create and enhance fisheries habitat along the river corridor and explore potential improvements for public access to the Milburn and Hansen Units, respectively, if later deemed feasible. These projects, if funded and deemed feasible, would not be implemented until after the proposed project is fully constructed. Therefore, there would be no overlap in construction activities with the proposed project (Phase 1).

The potential Phase 2 would involve creating and/or enhancing fish habitat on the Milburn Unit. Enhancements would include filling a portion of Pond 1 to create additional river channel and new floodplain habitat while eliminating non-native warm-water predatory fish habitat. The pond would be partially filled with material excavated from upstream and downstream terraces along the river. Excavation sites and other areas along the channel would be reconfigured to create additional floodplain and side channel habitat and widen the floodway. The enhanced floodplain would include multiple benches to allow inundation at various flows and durations, and the small pond on the Hansen Unit would be filled to create a backwater floodplain. Sandy banks currently prone to erosion would be stabilized by the widened floodplain and coarser fill and installation of

woody vegetation plantings. Fill along the central portion of the project site would help protect the berm modified by the proposed project in Phase 1, by moving the channel away from the berm and redirecting flows. Woody vegetation planting would provide additional long-term protection to the terrace and berm. The reconfigured channel would be designed to maintain the channel, while ensuring water reaches the new equalization saddle during low flows. It would include riffles and pools constructed with gravel materials to improve fish habitat. Existing trees would need to be removed, but tree removal would be avoided to the maximum extent feasible, and tree planting would be a key component of this phase. A boat ramp providing access to the river from the end of North Milburn Avenue may also be included.

Public access improvements would be implemented under a potential Phase 3. These could include the boat ramp at the end of North Milburn Avenue (if not implemented in Phase 2), a trail, a parking lot, a boat ramp to Milburn Pond, a floating fishing pier, and a restroom facility. Implementation of Phase 3 would require modification of existing DFW regulations for the Milburn Unit, identification of O&M responsibilities, and long-term funding assurances.

San Joaquin River Restoration Program

The SJRRP includes numerous projects intended to restore flows and a self-sustaining Chinook salmon population in the San Joaquin River, while reducing or avoiding adverse water supply impacts. SJRRP projects include water management and restoration projects. The SJRRP restoration activities are anticipated to include pit isolation projects in Reach 1, which extends from Friant Dam to Gravelly Ford and includes the project. The first of the pit isolation projects was the Sycamore Island/Pit 46e project. This gravel pit isolation project was completed in 2018, approximately 3 miles upstream of the project site. Weed management activities on the project site and elsewhere along the San Joaquin river occur routinely to remove invasive species as outlined in the SJRRP. Numerous other SJRRP projects have been implemented or proposed for implementation with the objective of re-establishing a Chinook salmon population in the San Joaquin River; these projects include flow management, fish passage improvements, fish screens, pond isolation, bypass channels. The SJRRP also includes water management projects, such as to canal capacity restoration, recapture and recirculation, and groundwater banking.

San Joaquin River Parkway Master Plan

The Parkway Master Plan envisions a 22-mile corridor providing regional greenspace, recreational features, and wildlife habitat along the San Joaquin River bottom, extending from Friant Dam to SR 99. The Parkway Master Plan (SJRC 2018) includes acquisition of approximately 5,900 acres of land to be operated for public enjoyment, consistent with protection of natural resources. Major components of the plan include:

- developing a paved multi-use trail;
- rehabilitating bridges and crossings;
- developing a river boating trail;
- developing designated campgrounds;
- developing ancillary facilities to support public access, recreational, and educational uses;

- developing vista points, fishing piers, and docks; and
- developing community-supported small-scale farming and agricultural uses compatible with multiple-benefit land management.

Areas identified for the greatest intensity of potential recreation improvements include Lost Lake Park, The River West-Madera area (including Sycamore Island and Van Buren Unit improvements), and River Vista.

Restoration projects in the region that area associated with the Parkway Master Plan include a 167-acre habitat restoration project completed at Jensen Ranch in 2002, improvements at Riverbottom Park and habitat restoration at the Schneider Property in 2013 and 2017, and revegetation around the H pond at Spano River Ranch. Two other restoration projects have begun within the Parkway, a restoration planning process at Ball Ranch and restoration implementation at the E Pond at Spano River Ranch. Public access improvements associated with the Parkway Master Plan include increased vehicle access to the Sycamore Island Recreation Area at Pit 46e in 2018, trail improvements in 2016 at the DFW fish hatchery, and recreation improvements at Jensen Ranch between 2006 and 2011.

San Joaquin River Parkway Western Reaches Access Activation Plan

Fresno Building Healthy Communities, using grant funding from the SJRC, proposes to develop a specific plan for a 4-mile recreational trail along the San Joaquin River, between SR 99 and North Milburn Avenue. The plan also will include ecological enhancements along the river. This project is expected to begin the planning process in June 2021.

CEMEX Rockfield Expansion

CEMEX is seeking to extend its operations at an existing plant and quarry at 13475 and 14765 North Friant Road, respectively. The proposed changes within 30 years would include an updated asphalt plant, asphalt and concrete debris recycling at the plant site, hard-rock mining of granite at the quarry site, to a depth of 600 feet below ground, and aggregate processing at the quarry site. (County of Fresno 2019.)

5.2 Cumulative Impact Analysis by Topic Area

5.2.1 Aesthetics

The proposed project would temporarily impact visual character of Milburn Pond and the San Joaquin River and its immediate vicinity during construction activities. The project's permanent visual impacts would be less than significant because the project components would not substantially alter the visual character of the area.

Related projects that are located within view of the project site are not expected to be constructed concurrently with the proposed project; therefore, short-term cumulative impacts would be less than significant. Long-term cumulative impacts would also be less than significant because none of the related projects are anticipated to substantially degrade the visual character of the nearby reaches of the San Joaquin River.

The aesthetics of the area would not be substantially degraded from the proposed project in combination with impacts from other similar projects in the area. Therefore, the proposed project would not make a cumulatively considerable incremental contribution to a significant cumulative impact on aesthetics.

5.2.2 Agriculture and Forestry Resources

The proposed project would remove up to approximately 0.5 acre of orchard trees designated as Important Farmland and up to approximately 1.5 acre of forestland. These impacts would be less than significant because of the very small amount of resource that would be affected, compared to the overall amount of agricultural and forestland in the vicinity and region.

Buildout of the City of Fresno's General Plan would result in the conversion of up to 15,903 acres of Farmland to non-agricultural use (City of Fresno 2014). Buildout of the City of Clovis General Plan would convert 5,590 acres of Farmland to non-agricultural use (City of Clovis 2014). Other foreseeable projects in Fresno County with the potential to convert agricultural land include solar energy generation projects and the Friant Ranch master-planned community.

The related projects have substantially reduced agricultural use in Fresno County; 45,393 acres of Important Farmland in Fresno County have been converted to non-agricultural uses since 2000 (DOC 2020). This is considered a significant cumulative impact. The proposed project would remove up to approximately 0.5 acre of orchard trees designated as Important Farmland. This minimal and incidental reduction in agricultural land use would not be a cumulatively considerable incremental contribution to the overall significant cumulative impact on agricultural resources.

The related projects would generally include habitat restoration and enhancement activities. Additional forestland would be removed under Phase 2 of the Milburn Restoration Project, but cumulative impacts on forestland would be less than significant, or beneficial, because tree planting also would occur and this and other cumulative projects would improve overall habitat conditions along the San Joaquin River. The minor reduction in forestry resources from the proposed project would not be cumulatively considerable and a significant cumulative impact on forestry resources in the area is unlikely to occur. Therefore, the proposed project would not have a cumulatively considerable incremental contribution to a significant cumulative impact on forestry resources.

5.2.3 Air Quality

The SJVAB is in nonattainment for ozone, PM_{10}, and $PM_{2.5}$ under State standards and for ozone and $PM_{2.5}$ under Federal standards. Project emissions would be less than significant after implementing Mitigation Measures 3.4.2a and 3.4.2b, which require reduction in NO_x and PM_{10} emissions compared to Statewide fleet averages and dust control measures in compliance with SJVAPCD Regulation VIII.

By their very nature, air quality impacts are cumulative. The region's nonattainment status is a result of past and present development, and the SJVAPCD has developed its significance thresholds to ensure that future air emissions support successful implementation of the SJVAPCD's attainment plans. Consequently, because the project's emissions would not exceed

the SJVAPCD's thresholds of significance for criteria pollutants, the project would not make a cumulatively considerable incremental contribution to a significant cumulative impact on air quality.

5.2.4 Biological Resources

The project's impacts related to special-status mammals, migratory and movement corridors and nursery sites, and local ordinances and policies would be less than significant. Because most of the related projects focus on habitat restoration and enhancement activities, cumulative impacts on these resources would likely be less than significant. In addition, the proposed project's minor incremental contribution related to a potential significant cumulative impact on these resources would not be cumulatively considerable.

The proposed project would have potentially significant impacts related to Sanford's arrowhead, western pond turtle, special-status birds, special-status fish, riparian habitat, and Federally and State-protected waters. These potentially significant impacts would be reduced to less-than-significant levels by implementing Mitigation Measures 3.5.1, 3.5.2, 3.5.3a, 3.5.3b, 3.5.5a, 3.5.5b, 3.5.7, 3.5.8a, and 3.5.8b. Implementing these mitigation measures would reduce the project's potential contribution to cumulative impacts on special-status species and sensitive habitats. In addition, the proposed project would have long-term beneficial impacts on some of these resources. Most of the related projects, particularly Phase 2 of the Milburn Restoration Project, likewise would include habitat restoration and enhancement activities that would improve habitat conditions along the San Joaquin River. Increased human activity associated with Phase 3 of the Milburn Restoration Project and with the Parkway Master Plan would have some adverse impacts on biological resources but is not anticipated to create a significant cumulative impact.

For these reasons, cumulative impacts on biological resources are likely to be less than significant or beneficial, and the proposed project would not have a cumulatively considerable incremental contribution to a significant cumulative impact on biological resources.

5.2.5 Cultural Resources and Tribal Cultural Resources

No known cultural resources or TCRs would be impacted by the project; therefore, the project would not add to a cumulative impact to known cultural resources or TCRs in the region. Nevertheless, it is possible, though unlikely, that the project could directly impact previously unidentified cultural resources, TCRs, or human remains during construction. These potentially significant impacts would be reduced to a less-than-significant level by implementing Mitigation Measures 3.6.1a, 3.6.1b, and 3.6.2. These mitigation measures would reduce the project's potential contribution to cumulative impacts on unidentified cultural resources, TCRs, or human remains. The project would therefore not make a cumulatively considerable incremental contribution to any significant cumulative impacts related to cultural resources, TCRs, or human remains.

5.2.6 Geology, Soils, and Paleontological Resources

The project's impacts related to seismic and soil hazards would be less than significant. Other related projects would similarly include engineered improvements to avoid seismic and soil

hazards, and Phase 2 of the Milburn Restoration Project would further stabilize on-site features and reduce erosion potential. Therefore, the cumulative impact related to these hazards would be less than significant. The project's impact to paleontological resources would be less than significant due to the underlying geologic material at the project site; other related projects would have paleontological effects related to site-specific conditions at their project sites, but overall cumulative impacts would be less than significant.

Project-related construction activities would involve grading, excavation, and other earth-moving activities, thereby exposing soil to wind or water erosion. If uncontrolled, suspended sediment could enter adjacent water bodies and result in increased turbidity. However, Mitigation Measure 3.7.2 would reduce the project's potentially significant construction-related erosion impacts to a less-than-significant level. Most of the related projects and other construction projects in the Fresno region would also include earth-moving activities that would expose soil to erosion from wind and water; therefore, these projects could also have significant impacts. However, each related project that would disturb 1 acre of land or more would be required to comply with NPDES discharge permits from the CVRWQCB, which require preparation of a SWPPP and implementation of erosion control BMPs. Because the project and related projects all will be required to implement permit requirements to reduce erosion impacts, the project would not generate a cumulatively considerable incremental contribution to a significant cumulative impact from construction-related erosion on geology, soils, and paleontological resources.

5.2.7 Greenhouse Gas Emissions

Climate change is a global phenomenon and any increase in GHG emissions has the potential to contribute to the greenhouse effect and climate change. However, planning for responsible GHG emissions and reductions to achieve even very aggressive goals for GHG emissions reductions allows for responsible allocation of GHG emissions to projects.

DWR has prepared its GGERP to address the potential contributions of projects to cumulative GHG impacts. The thresholds of significance used to analyze the project's GHG impacts were adopted by DWR to further its goals of reducing GHG emissions to 60 percent below 1990 levels by 2030 and to achieve carbon neutrality by 2045. DWR's GGERP and goals were adopted to ensure that DWR achieves sufficient reductions in GHG emissions to enable the State to reach its broader GHG reduction goals. Because the project's GHG emissions would not exceed DWR's adopted thresholds, the project would not make a cumulatively considerable incremental contribution to this significant cumulative impact on GHG emissions.

5.2.8 Hazards and Hazardous Materials

Health and safety impacts associated with the past or current uses of a project site usually occur on a project-by-project basis, and are generally limited to the specific project site. Project construction would require handling of small quantities of hazardous materials used in construction equipment (e.g., fuels, oils, lubricants) and could result in accidental spills of these materials. However, permits are required for the use, handling, and storage of these materials, and the project and all related projects would be required to comply with Federal, State, regional, and local regulatory standards to avoid inadvertent releases of hazardous waste from storage, use, disposal, or transport of hazardous materials. Mitigation Measure 3.9.1 includes requirements and BMPs to reduce the project's potentially significant short-term construction

impacts to a less-than-significant level. The related projects could also result in accidental spills of hazardous materials used during construction activities. However, these and other construction projects implemented in the project vicinity would be subject to standard handling regulations. In addition, any impact that might occur would likely be localized to the area where the materials are being used and would not be additive to similar potential impacts from other projects. Therefore, a significant cumulative impact related to this issue would not occur.

Neither the project nor related projects would introduce new developed uses; therefore, these projects would not affect airport operations. This cumulative impact would be less than significant. Similarly, none of the related projects would likely include substantial construction activity near the project site concurrent with the proposed project, so there would be no significant cumulative impact related to emergency response or evacuation plans. Therefore, the project would not make a cumulatively considerable incremental contribution to a significant cumulative impact related to hazards and hazardous materials.

5.2.9 Hydrology and Water Quality

The project has been designed based on site-specific hydrologic conditions, including anticipated high and maximum flows in the San Joaquin River from Friant Dam. The project was designed based on these anticipated flows to ensure that there would be no cumulatively considerable incremental contribution to long-term erosion, siltation, or flooding. Mitigation Measures 3.10.1a and 3.10.1b include BMPs regarding stormwater, potentially hazardous fluids/materials, and equipment management during construction to reduce the project's potentially significant short-term impacts on erosion and water quality to a less-than-significant level.

Related projects also could result in short-term erosion and water quality impacts during construction. However, these and other construction projects implemented in the project vicinity would be required to implement standard BMPs for stormwater and site management, and all projects would be subject to the same design considerations to ensure channel capacity is maintained in the San Joaquin River, which acts as a designated floodway; provides water supply for urban, agricultural, and industrial uses; and provides critical fish habitat, fish migration corridors, and riparian habitats. In addition, Phase 2 of the Milburn Restoration project would further improve long-term water quality conditions in Milburn Pond, improve flood flow conveyance, and minimize erosion potential. Therefore, the proposed project would not make a cumulatively considerable incremental contribution to a significant cumulative impact with respect to erosion, water quality, or flood flows. The proposed project would provide a project-level benefit by reducing on-site flood risk and would contribute to reducing flood risk along the San Joaquin River, consistent with DWR's Central Valley Flood Protection Plan.

The project site is in the San Joaquin Valley – Kings Groundwater Subbasin, a priority, critically overdrafted basin, and cumulative impacts related to groundwater in this basin are significant. Groundwater levels in the project vicinity are estimated to be approximately 50 feet below the ground surface. The proposed project would not use groundwater during construction or O&M. The lowest areas of Milburn Pond likely filled with groundwater before the 1997 breach that completely filled the pond, but changes in hydrology that would result from the project would neither cut off flows to the pond nor reduce water levels such that potential groundwater recharge on the project site would be affected. Because the project would neither use groundwater nor reduce the available groundwater recharge, the project would not make a

cumulatively considerable incremental contribution to a significant cumulative impact on groundwater levels or groundwater basin management in the region.

5.2.10 Land Use and Planning

The project's impacts related to consistency with existing adopted land use and zoning designations would be less than significant. Some of the related projects may result in a variety of effects related to consistency with adopted land use plans and zoning. In particular, Phase 3 of the Milburn Restoration Project would require modification of existing DFW regulations for the Milburn Unit. However, effects involving adopted land use plans or policies and zoning are project-specific and generally would not combine to result in significant cumulative impacts. The proposed project would not cause any or only extremely minor changes to land use and planning. These impacts would not make a cumulatively considerable incremental contribution to any significant cumulative impact related to land use and planning.

5.2.11 Noise

Ambient noise levels on the project site and in the vicinity are generated by local and distant traffic, aircraft operations, agricultural activities, and natural sources (e.g., wind and birds). Project-generated construction traffic and equipment use near residences would exceed City of Fresno and Fresno County noise and vibration standards for short periods of time. However, construction projects are exempt from these standards, and temporary, short-term construction-related noise and vibration impacts on occupants of affected residences would be less than significant. None of the cumulative projects is anticipated to cause construction noise or vibration during the same timeframe as the proposed project, and noise and vibration effects of other unrelated construction projects are unlikely to be cumulatively significant in the project vicinity.

Noise effects adjacent to local haul routes could be cumulative to other development projects if those projects generate substantial traffic volumes during the proposed project's peak construction period. However, residential areas along the haul routes are fully developed. There is a high degree of uncertainty regarding the construction schedule of any future projects in the project vicinity and insufficient information is available to describe potential cumulative noise effects along haul routes at this time. However, DWR would prepare and implement a traffic management plan in coordination with local jurisdictions. This plan would be prepared closer to construction and would consider other construction-generated traffic as understood by Fresno County and the City of Fresno at the time of the plan's development. It is reasonable to assume that the jurisdictions would require traffic to be managed to avoid significant cumulative noise impacts. Therefore, the project would not result in a cumulatively considerable incremental contribution to a significant cumulative impact related to traffic noise and vibration.

5.2.12 Recreation

Recreational facilities in the cumulative study area include the San Joaquin River Parkway, Bluff Pointe Golf Course, and the San Joaquin Country Club. Project-related construction activities could result in temporary and short-term changes in the availability of recreational activities. Recreational access to Bluff Pointe Golf Course may be temporarily closed for up to approximately 3 weeks if raising and full closure of North Milburn Avenue are required. Other

golf courses are available in the area and the potential temporary closure of Bluff Pointe Golf Course is not considered to be cumulatively considerable, and there would be no overall significant cumulative impact on golfing opportunities in the area.

Pedestrian access to the portion of North Milburn Avenue adjacent to Milburn Pond may also be temporarily closed during construction. Most importantly, project implementation would result in a permanent loss of use of the Milburn Pond area by boaters entering from the San Joaquin River. However, potential later phases of the Milburn Restoration Project would enhance recreation opportunities on the Milburn Unit and adjacent San Joaquin River, and the Parkway Master Plan includes several projects to increase or improve recreational access or opportunities in the project vicinity. The implementation schedule for these projects is unknown at this time. Because the related projects would generally increase recreational opportunities and the area available for recreation in the project area, overall cumulative impacts related to recreation would be less than significant. Therefore, the proposed project would not have a cumulatively considerable incremental contribution to a significant cumulative impact on recreation because there is not a significant cumulative impact on recreation in this area and numerous other angling opportunities are available to anglers in the area.

5.2.13 Transportation

The proposed project would have temporary, less-than-significant impacts related to increased traffic volumes, emergency access, and alternative transportation modes. These impacts would occur during project construction, and none of the related projects are expected to be under construction concurrently and in close proximity to the proposed project. Therefore, the project would not have a cumulatively considerable incremental contribution to significant cumulative impacts related to transportation, and there would not be an overall significant cumulative impact on transportation in the area affected by the proposed project.

5.2.14 Wildfire

The proposed project would not include changes that would permanently increase fire risk, but the project would temporarily increase the risk of fire during construction to a potentially significant level. Mitigation Measure 3.15.1 would reduce this impact to less than significant by requiring preparation and implementation of an Emergency Fire Plan. Other related projects would not likely be constructed concurrently with and in close proximity to the proposed project. Public access improvements associated with Phase 3 of the Milburn Restoration Project and potential Parkway Master Plan projects would increase human activity in the project area and could increase wildfire risk. This is not anticipated to result in a significant cumulative impact, but the potential projects are conceptual at this stage and the extent to which they could increase wildfire risk is not known. However, the proposed project would not have a cumulatively considerable incremental contribution to a significant cumulative impact related to wildfire.

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Chapter 6. Alternatives to the Proposed Project

This chapter describes alternatives to the proposed project and compares the environmental impacts of those alternatives. Alternatives that were considered but rejected are also presented. Project alternatives were developed to reduce or eliminate the significant or potentially significant adverse environmental impacts identified as a result of the proposed project, while still meeting most if not all of the basic project objectives. This chapter presents information to meet CEQA requirements regarding project objectives, the alternatives development and analysis process, alternatives considered but dismissed from further evaluation, alternatives selected for further evaluation, and the comparative effects of the selected alternatives relative to the proposed project. The alternatives evaluated further are:

- No-Project Alternative
- Alternative 1: No High-flow Side Channel Alternative with On-site Borrow
- Alternative 2: No High-flow Side Channel Alternative with Off-site Borrow

As required under CCR Section 15126.6(e) of the State CEQA Guidelines, an environmentally superior alternative is identified and addressed at the end of this chapter.

6.1 California Environmental Quality Act Requirements

CCR Section 15126.6[a] of the State CEQA Guidelines requires that an EIR (1) describe a range of reasonable alternatives to a proposed project, or to the location of the project, that would feasibly attain most of the basic project objectives but would avoid or substantially lessen any of the significant effects of the project; and (2) evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a proposed project but must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation.

The range of alternatives required to be evaluated in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The EIR need examine in detail only those alternatives that the lead agency determines could feasibly attain most of the basic project objectives, taking into account factors that include site suitability; economic viability; availability of infrastructure; general plan consistency; other plans or regulatory limitations; jurisdictional boundaries; and whether the project proponent can reasonably acquire, control, or otherwise have access to the alternative site (State CEQA Guidelines CCR Section 15126.6[f]). CEQA does not require the alternatives to be evaluated at the same level of detail as the proposed project.

The State CEQA Guidelines recommend that an EIR briefly describe the rationale for selecting the alternatives to be discussed, identify any alternatives that were considered by the lead agency but were rejected as infeasible, and briefly explain the reasons underlying the lead agency's determination (State CEQA Guidelines CCR Section 15126.6[c]).

An EIR must also evaluate a "no-project" alternative, which represents "what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services" (State CEQA Guidelines CCR Section 15126.6[e][2]).

6.2 Alternatives Considered but Rejected from Further Analysis

During the conceptual design of the project, several alternatives were considered but rejected from further analysis. These alternatives included:

- **Isolate Pond without Equalization.** This alternative would include French drains at several locations to supply enough water to Milburn Pond to maintain a minimum surface elevation during warmer months. This alternative would minimize water exchange between Milburn Pond and the San Joaquin River and would have a higher probability for berm failure due to relative differences in water surface elevation between the pond and river. Because of the limited water exchange, this alternative would minimize existing, on-going impacts related to river temperature changes and peak flows downstream, allowing fish management peak flows to be more effective. This alternative was rejected due to the higher probability of berm failure, which would cause flooding, substantial erosion, and water quality and other impacts in the localized area, and the limited freshwater flow into Milburn Pond, which would cause existing increased water temperatures and other water quality issues in the pond to persist.
- **Isolate Pond with Culverts and Fish Screens.** This alternative would include large culverts to allow for a boat passage gate, with fish screens to prevent fish from passing between the San Joaquin River and Milburn Pond. Other than the No-Project Alternative, this is the only alternative that would minimize significant impacts to recreation at Milburn Pond from the proposed project. Installing large culverts and fish screens would require substantial reconfiguring of the San Joaquin River channel. This alternative would permit continued boat access to the pond, but the gate would most likely be useable only during low-flow conditions. This alternative was rejected due to the high construction costs that exceed project budget amounts; the high costs of ongoing maintenance and repair requirements of the fish screens, large culverts, and reconfigured San Joaquin River channel; potential high predation rates on salmon in the San Joaquin River due to the presence of the new fish screens and culvert that would attract predatory fish; and adverse impacts to the San Joaquin River channel from installing the fish screens that could increase unstable channel conditions and erosion.
- **Limited Footprint Alternative.** This alternative would eliminate or reduce berm improvements in the downstream portion of the project site by limiting work to minor improvements to the existing berm to ensure adequate berm height. The berm integrity would continue to be compromised by the existing berm materials and dimensions. This alternative

was rejected because portions of the berm would remain narrow and more likely to breach during high-flow releases from Friant Dam down the San Joaquin River, which would cause flooding, substantial erosion, and water quality and other impacts in the localized area. In addition, the areas where additional berm improvements would be constructed under the proposed project are required if the remaining phases of the program are approved, funded, and implemented.

Because the purpose of the project is to increase native fish survival in the San Joaquin River by isolating Milburn Pond from the San Joaquin River channel to prevent fish from passing between the river and the pond, no alternative locations for the project would be possible or were considered.

6.3 Alternatives Evaluated Further and Impact Assessment

6.3.1 No-Project Alternative

The No-Project Alternative is the existing conditions at the time the NOP is published (October 8, 2020), as modified by what would be reasonably expected to occur in the foreseeable future if the project is not approved. Under the No-Project Alternative, DWR would not conduct any work to address existing issues related to passage of fish between Milburn Pond and the San Joaquin River. Milburn Pond is the largest gravel pit connected to the San Joaquin River, and fisheries scientists have determined that connected gravel pits lead to higher salmonid predation by non-native warmwater fish. Studies conducted in the area show a high likelihood that the current connection of Milburn Pond to the river leads to a higher incidence of predator species in the river channel, as well as higher incidence of Chinook salmon entering Milburn Pond where predation is likely much higher than in the river. Under the No-Project Alternative, native salmonids would continue to pass from the river to the pond, and non-native warmwater fish would continue to pass from the pond to the river, as would warmer water. Consequently, native fish survival would continue to be adversely affected and the SJRRP's goal of restoring a self-sustaining salmon population would be more difficult to achieve. This alternative also would lack the improved access for DFW to manage invasive plants in Milburn Pond. Without the proposed project under the No-Project Alternative, it is reasonable to expect that there would be no other changes to existing conditions at the project site in the foreseeable future.

Aesthetics

Under the No-Project Alternative, the visual character of the project site would remain the same as under existing conditions. There would be no short-term, temporary impact from heavy equipment operation during project construction or maintenance activities and no long-term impact of vegetation removal, as described for the proposed project in Section 3.2. There would be **no impact**. No mitigation is required.

Agriculture and Forestry

Under the No-Project Alternative, agricultural and forestry resources on the project site would remain the same as under existing conditions. This alternative would avoid removing up to approximately 0.5 acre of orchard trees designated as Important Farmland and removing up to

approximately 1.5 acres of forestland, as described for the proposed project in Section 3.3. There would be **no impact**. No mitigation is required.

Air Quality

Under the No-Project Alternative, there would be no short-term, temporary use of heavy equipment during project construction or maintenance activities and no associated pollutant emissions, as described for the proposed project in Section 3.4. There would be **no impact**. No mitigation is required.

Biological Resources

The No-Project Alternative would avoid all impacts of the proposed project described in Section 3.5, including potentially significant impacts, because no construction or O&M activities would occur. Therefore, there would be no potential for significant construction-related impacts on Sanford's arrowhead, western pond turtle, special-status and colonial-nesting birds, special-status fish, or Federally and State-protected waters. There also would be no permanent removal of riparian vegetation. However, there would be no beneficial impacts on Chinook salmon and other native special-status fish of isolating Milburn Pond from the San Joaquin River.

The No-Action Alternative would result in a continuing significant adverse impact to Chinook salmon because Milburn Pond and the San Joaquin River would remain connected, and non-native warmwater fish would continue to enter the river to prey upon native salmonids, and native salmonids would continue to enter Milburn Pond and be preyed upon by non-native warmwater fish. As more salmon are produced from the overall implementation of SJRRP projects over time, the impact of maintaining the existing connection between Milburn Pond and the river would increase. The ongoing impact to Chinook salmon from predatory fish in Milburn Pond would remain significant and increase over time, and the key SJRRP objective to restore Chinook salmon populations in the San Joaquin River would be more difficult to achieve. Therefore, the ongoing impact of Milburn Pond on Chinook salmon would continue to be a **significant** adverse impact. Although a significant adverse impact has been identified, CEQA does not require mitigation for impacts of the No-Project Alternative; therefore, no mitigation is provided. This impact would be **significant and unavoidable**.

Cultural Resources and Tribal Cultural Resources

The No-Project Alternative would avoid all potential impacts on cultural resources and TCRs described in Section 3.6 for the proposed project, because no construction or associated maintenance activities would occur. Therefore, there would be no potential for significant impacts on previously unidentified historical resources, archaeological resources, human remains, or TCRs. There would be **no impact**. No mitigation is required.

Geology, Soils, and Paleontological Resources

The No-Project Alternative would avoid all construction and O&M impacts of the proposed project related to geology, soils, and paleontological resources, as described in Section 3.7, including potentially significant impacts. Potential for substantial local erosion would persist under the No-Project Alternative because berm modification and erosion protection would not be implemented to address existing risk of future berm failure. These on-going impacts would

continue to be **potentially significant**. Although a potentially significant adverse impact has been identified, CEQA does not require mitigation for impacts of the No-Project Alternative; therefore, no mitigation is provided. This impact would be **potentially significant and unavoidable**.

Greenhouse Gas Emissions

Under the No-Project Alternative, there would be no short-term, temporary use of heavy equipment during project construction and maintenance activities and no associated GHG emissions, as described for the proposed project in Section 3.8. There would be **no impact**. No mitigation is required.

Hazards and Hazardous Materials

Under the No-Project Alternative, there would be no short-term, temporary use of heavy equipment during project construction and maintenance activities and no associated potential accidental spills of hazardous materials, as described for the proposed project in Section 3.9. There would be **no impact**. No mitigation is required.

Hydrology and Water Quality

Under the No-Project Alternative, there would be no short-term, temporary use of heavy equipment during project construction and maintenance activities and no associated potential water quality impacts from sedimentation or accidental spills of hazardous materials, as described for the proposed project in Section 3.10. However, there also would be no long-term beneficial impacts on water quality and the ability of this reach to accommodate rising river flows from improving water passage from the San Joaquin River into Milburn Pond. In addition, existing risk of future berm failure that could cause local flooding, erosion, and water quality impacts would persist. These on-going impacts would continue to be **potentially significant**. Although a potentially significant adverse impact has been identified, CEQA does not require mitigation for impacts of the No-Project Alternative; therefore, no mitigation is provided. This impact would be **potentially significant and unavoidable**.

Land Use and Planning

Under the No-Project Alternative, up to approximately 0.5 acre of orchard trees designated as Important Farmland would not be removed, as described for the proposed project in Section 3.11. However, there also would be no beneficial impact of implementing habitat improvements supportive of the Parkway Master Plan objectives for enhancing and restoring aquatic habitat along the river. There would be **no impact**. No mitigation is required.

Noise

Under the No-Project Alternative, there would be no short-term, temporary use of heavy equipment during project construction and maintenance activities and no associated increase in ambient noise levels and groundborne vibration, as described for the proposed project in Section 3.12. There would be **no impact**. No mitigation is required.

Recreation

Under the No-Project Alternative, there would be no temporary or permanent impacts on recreation use, including potential short-term closure of access to Bluff Pointe Golf Course and permanent elimination of direct boat access to Milburn Pond, as described for the proposed project in Section 3.13. There would be **no impact**. No mitigation is required.

Transportation

Under the No-Project Alternative, there would be no increase in traffic volumes associated with transport of personnel, equipment, and materials to the project site during project construction and O&M activities, as described for the proposed project in Section 3.14. There also would be no potential closure of North Milburn Avenue. There would be **no impact**. No mitigation is required.

Wildfire

Under the No-Project Alternative, there would be no increase in wildfire risk associated with operation of heavy equipment and presence of construction personnel during project construction and maintenance activities, as described for the proposed project in Section 3.15. There would be **no impact**. No mitigation is required.

6.3.2 Alternative 1: No High-flow Side Channel Alternative with On-site Borrow

Under this alternative, the high-flow side channel would not be constructed. This would reduce the size of the project footprint by approximately 5 acres. Because the side channel would not be excavated and materials for project construction would be obtained onsite, the on-site borrow area would not be returned to existing grade. After project construction is complete, the borrow area would be lower than the elevation of surrounding ground; however, it would remain higher than the bank of the San Joaquin River. In addition, an additional approximately 8,000 cy of berm fill would need to be imported, because material from the borrow area likely would not be suitable for capping the berms. Under the proposed project, this material would be obtained from the high-flow side channel excavation.

Aesthetics

Aesthetic impacts under this alternative would be essentially the same as described for the proposed project in Section 3.2. There would be no short-term, temporary impact from heavy equipment excavating the high-flow side channel. However, this portion of the project site is approximately 0.5 mile from the nearest residences and 1 mile from the scenic overlook and is a minor component of the view from these locations. From the San Joaquin River, this area is only visible from where each end would connect to the river channel. Aesthetic impacts would remain **less than significant.** No mitigation is required.

Agriculture and Forestry

Impacts on agriculture under this alternative would be the same as described for the proposed project in Section 3.3. Up to approximately 0.5 acre of orchard trees would be removed to

provide construction access from the borrow/staging area to the berm modification area; the removed trees would not be replaced, because they encroach on the Hansen Unit of the DFW reserve. Impacts on forestland would be less under this alternative compared to the proposed project because not constructing the high-flow side channel would lessen riparian vegetation removal by approximately 0.15 acre. Agriculture and forestry impacts would remain **less than significant.** No mitigation is required.

Air Quality

Air quality impacts would be slightly less under this alternative, compared to those described for the proposed project in Section 3.4, because the borrow area would not be restored to pre-project conditions. Heavy equipment would not be used to move material excavated from the high-flow side channel to the borrow area, and pollutant emissions associated with this equipment use would not occur. However, if material from the high-flow side channel is not available, some additional material would need to be imported from offsite. In addition, if the borrow area is not restored to existing grade, borrow excavation would need to be shallower than under the proposed project, resulting in a larger borrow area and more overburden removal, or the resulting low area would need to be connected to the river channel to avoid potential for fish stranding. These activities would require additional material movement, and resulting equipment use and emissions would likely offset most of the reductions. Emissions associated with other construction and O&M activities would be as described for the proposed project. All impact conclusions would remain the same as the proposed project under this alternative and would include the **potentially significant** impact associated with exceeding SJVAPCD's recommended daily maximum NO_x screening level for an ambient air quality analysis. Mitigation for this potentially significant impact would be the same as identified in Section 3.4 for the proposed project, and significance after mitigation would be **less than significant**.

Biological Resources

Impacts on Sanford's arrowhead and Federally and State-protected waters under this alternative would be the same as described for the proposed project in Section 3.5. Construction-related impacts on other biological resources would be less under this alternative because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. This would lessen potential for impacts on pond turtle nests, occupied burrowing owl burrows, and other nesting birds. It also would lessen riparian vegetation removal by approximately 0.15 acre and would eliminate removal of approximately 100 linear feet of SRA habitat. However, no benefit associated with creating additional aquatic habitat during high flows would occur. All impact conclusions would remain the same as the proposed project under this alternative and would include **potentially significant** impacts. Mitigation measures for potentially significant impacts would be the same as identified in Section 3.5 for the proposed project, and significance after mitigation would be **less than significant**.

Cultural Resources and Tribal Cultural Resources

Potential impacts on cultural resources and TCRs would be less under this alternative than described in Section 3.6 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. This would lessen potential to encounter an unidentified historic or archaeological resource, human remains, or TCRs. All

impact conclusions would remain the same as the proposed project under this alternative and would include **potentially significant** impacts. Mitigation measures for potentially significant impacts would be the same as identified in Section 3.6 for the proposed project, and significance after mitigation would be **less than significant**.

Geology, Soils, and Paleontological Resources

Impacts on geology, soils, and paleontological resources would be less under this alternative than described in Section 3.7 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. This would lessen potential for construction-related erosion. All impact conclusions would remain the same as the proposed project under this alternative and would include a **potentially significant** impact related to erosion. Mitigation for this potentially significant impact would be the same as identified in Section 3.7 for the proposed project, and significance after mitigation would be **less than significant**.

Greenhouse Gas Emissions

GHG emissions would be less under this alternative, compared to those described for the proposed project in Section 3.8, because the borrow site would not be restored to pre-project conditions. Heavy equipment would not be used to move material excavated from the high-flow side channel to the borrow site, and GHG emissions associated with this equipment use would not occur. However, if material from the high-flow side channel is not available, some additional material would need to be imported from offsite. In addition, if the borrow area is not restored to existing grade, borrow excavation would need to be shallower than under the proposed project, resulting in a larger borrow area and more overburden removal, or the resulting low area would need to be connected to the river channel to avoid potential for fish stranding. These activities would require additional material movement, and resulting equipment use and GHG emissions would likely offset most of the reductions. Emissions associated with other construction and O&M activities would be as described for the proposed project. Impacts related to GHG emissions under this alternative would be **less than significant.** No mitigation is required.

Hazards and Hazardous Materials

Impacts related to hazards and hazardous materials would be less under this alternative than described in Section 3.9 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. This would lessen potential for construction-related accidental spills. All impact conclusions would remain the same as the proposed project under this alternative and would include a **potentially significant** impact related to accidental spill of hazardous materials. Mitigation for this potentially significant impact would be the same as identified in Section 3.9 for the proposed project, and significance after mitigation would be **less than significant**.

Hydrology and Water Quality

Impacts on hydrology and water quality would be less under this alternative than described in Section 3.10 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow channel. This would lessen potential for construction-related erosion and sedimentation and accidental spills. However, no hydraulic benefit associated

with creating the high-flow side channel would occur. All impact conclusions would remain the same as the proposed project under this alternative and would include a **potentially significant** impact related to erosion and sedimentation and accidental spills of hazardous materials. Mitigation for this potentially significant impact would be the same as identified in Section 3.10 for the proposed project, and significance after mitigation would be **less than significant**.

Land Use and Planning

Land use and planning impacts under this alternative would be the same as described for the proposed project in Section 3.11. These impacts would remain **less than significant.** No mitigation is required.

Noise

Noise impacts under this alternative would be essentially the same as described for the proposed project in Section 3.12. There would be no short-term, temporary impact from heavy equipment excavating the high-flow side channel. However, this portion of the project site is approximately 0.5 mile from the nearest residences, and noise from equipment operating in this area would have a minor impact on ambient noise levels at the residences. Therefore, impacts would be **less than significant.** No mitigation is required.

Recreation

Impacts on recreation under this alternative would be the same as described for the proposed project in Section 3.13. All impact conclusions would remain the same as the proposed project under this alternative and would include the **significant** impact related to permanent elimination of direct access from the San Joaquin River to Milburn Pond. As with the proposed project, no feasible mitigation measures are available to reduce this impact, and significance after mitigation would remain **significant and unavoidable**.

Transportation

Transportation impacts under this alternative would be the same as described for the proposed project in Section 3.14. These impacts would be **less than significant.** No mitigation is required.

Wildfire

Impacts associated with increased wildfire risk would be slightly less under this alternative than described in Section 3.15 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. This would reduce potential for a construction-related wildfire. All impact conclusions would remain the same as the proposed project under this alternative and would include a **potentially significant** impact related to wildfire risk. Mitigation for this potentially significant impact would be the same as identified in Section 3.15 for the proposed project, and significance after mitigation would be **less than significant**.

6.3.3 Alternative 2: No High-flow Side Channel Alternative with Off-site Borrow

Similar to Alternative 1, under this alternative, the high-flow side channel would not be constructed, reducing the size of the project footprint by approximately 5 acres. In addition, material would not be excavated from the approximately 4.25-acre borrow, spoils, and staging area. This would reduce the extent of ground disturbance, but at least a portion of this area would be used for staging. Because the high-flow side channel and borrow area would not be excavated and materials for project construction would be obtained from offsite, approximately 30,000 cy of additional material would be imported under this alternative. This material would be obtained from commercial sources within 40 miles of the project site.

Aesthetics

Aesthetic impacts under this alternative would be essentially the same as described in Section 3.2. There would be no short-term, temporary impact from heavy equipment excavating the high-flow side channel or the borrow area. However, these portions of the project site are approximately 0.5 mile from the nearest residences and nearly 1 mile from the scenic overlook and are a minor component of the view from these locations. Most of the borrow area is not visible from the San Joaquin River, and the high-flow channel area is only visible from where each end would connect to the river channel. Aesthetic impacts would be **less than significant**. No mitigation is required.

Agriculture and Forestry

Impacts on agriculture under this alternative would be the same as described for the proposed project in Section 3.3. Up to approximately 0.5 acre of orchard trees would be removed to provide construction access from the staging area to the berm modification area; the removed trees would not be replaced, because they encroach on the Hansen Unit of the DFW reserve. Impacts on forestland would be less under this alternative compared to the proposed project because not constructing the high-flow side channel would lessen riparian vegetation removal by approximately 0.15 acre. Agriculture and forestry impacts would be **less than significant.** No mitigation is required.

Air Quality

Air quality impacts would be greater under this alternative, compared to those described for the proposed project in Section 3.4 because an additional 30,000 cy of material would be imported to the project site from offsite sources in the Fresno region. Although this alternative would reduce on-site emissions from excavating and handling material associated with the high-flow side channel and borrow area, emissions associated with material import would increase because up to approximately 2,000 additional truck trips would be required. At a minimum, impact conclusions would remain the same as the proposed project under this alternative and would include the **potentially significant** impact related to daily NO_x emissions. Emissions may increase enough to also exceed the daily CO screening threshold and the annual NO_x emissions threshold. Mitigation measures for potentially significant impacts would be the same as identified in Section 3.4 for the proposed project, and significance after mitigation is anticipated to be **less than significant**.

Biological Resources

Impacts on Sanford's arrowhead and Federally and State-protected waters under this alternative would be the same as described in Section 3.5. Impacts on other biological resources would be less under this alternative, compared to the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. Borrow also would not be excavated from the approximately 4.25-acre borrow, spoils, and staging area, but at least a portion of it would be used for project staging. These reductions in the project footprint would lessen potential for impacts on pond turtle nests, occupied burrowing owl burrows, and other nesting birds. Eliminating the high-flow side channel would lessen riparian vegetation removal by approximately 0.15 acre and would eliminate removal of approximately 100 linear feet of SRA habitat. However, no benefit associated with creating additional aquatic habitat during high flows would occur. All impact conclusions would remain the same as the proposed project under this alternative and would include **potentially significant** impacts. Mitigation measures for potentially significant impacts would be the same as identified in Section 3.5 for the proposed project, and significance after mitigation would be **less than significant**.

Cultural Resources and Tribal Cultural Resources

Potential impacts on cultural resources and TCRs would be less under this alternative than described in Section 3.6 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow channel. Under this alternative, borrow would not be excavated from the approximately 4.25-acre borrow, spoils, and staging area, but at least a portion of it would be used for project staging and would therefore be subject to some degree of ground disturbance. These reductions in the project footprint would lessen potential to encounter an unidentified historic or archaeological resource, human remains, or TCRs. All impact conclusions would remain the same as the proposed project under this alternative and would include **potentially significant** impacts. Mitigation measures for potentially significant impacts would be the same as identified in Section 3.6 for the proposed project, and significance after mitigation would be **less than significant**.

Geology, Soils, and Paleontological Resources

Impacts on geology, soils, and paleontological resources would be less under this alternative than described in Section 3.7 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. Borrow also would not be excavated from the approximately 4.25-acre borrow, spoils, and staging area, but at least a portion of it would be used for project staging and would therefore be subject to ground disturbance. These reductions in the project footprint would lessen potential for construction-related erosion. All impact conclusions would remain the same as the proposed project under this alternative and would include a **potentially significant** impact related to erosion. Mitigation for this potentially significant impact would be the same as identified in Section 3.7 for the proposed project, and significance after mitigation would be **less than significant**.

Greenhouse Gas Emissions

GHG emissions would be greater under this alternative, compared to those described for the proposed project in Section 3.8, because an additional 30,000 cy of material would be imported to the project site from offsite sources in the Fresno region. Although this alternative would

reduce on-site emissions from excavating and handling material associated with the high-flow side channel and borrow area, GHG emissions associated with material import would increase because up to approximately 2,000 additional truck trips would be required. However, this increase is not expected to cause this alternative to exceed DWR GHG thresholds or to result in a cumulatively considerable incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs. In addition, DWR would reduce the proposed project's incremental contribution to the cumulative impact of increasing atmospheric levels of GHGs by implementing DWR's project-level GHG emissions-reduction BMPs. Therefore, all impact conclusions would be **less than significant**. No mitigation would be required.

Hazards and Hazardous Materials

Impacts related to hazards and hazardous materials would be less under this alternative than described in Section 3.9 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. Under this alternative, borrow would not be excavated from the approximately 4.25-acre borrow, spoils, and staging area, but at least a portion of it would be used for project staging and would therefore be subject to some degree of project activity. These reductions in the project footprint would lessen potential for construction-related spills. All impact conclusions would remain the same as the proposed project under this alternative and would include a **potentially significant** impact related to accidental spill of hazardous materials. Mitigation for this potentially significant impact would be the same as identified in Section 3.9 for the proposed project, and significance after mitigation would be **less than significant**.

Hydrology and Water Quality

Impacts on hydrology and water quality would be less under this alternative than described in Section 3.10 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. Under this alternative, borrow would not be excavated from the approximately 4.25-acre borrow, spoils, and staging area, but at least a portion of it would be used for project staging and would therefore be subject to some degree of ground disturbance. These reductions in the project footprint would lessen potential for construction-related erosion and sedimentation and accidental spills. All impact conclusions would remain the same as the proposed project under this alternative and would include a **potentially significant** impact related to erosion and sedimentation and accidental spills of hazardous materials. Mitigation for this potentially significant impact would be the same as identified in Section 3.10 for the proposed project, and significance after mitigation would be **less than significant**.

Land Use and Planning

Land use and planning impacts under this alternative would be the same as described for the proposed project in Section 3.11. These impacts would be **less than significant.** No mitigation is required.

Noise

Noise impacts would be greater under this alternative, compared to those described for the proposed project in Section 3.12. There would be no short-term, temporary impact from heavy

equipment excavating the high-flow side channel or the borrow area. However, these portions of the project site are approximately 0.5 mile from the nearest residences and noise from equipment operating in these area would have a minor impact on ambient noise levels at the residences. Import of an additional 30,000 cy of material to the project site from offsite sources in the Fresno region would require approximately 2,000 more truck trips than under the proposed project. The additional haul truck trips would represent an average of up to 33 additional trips per day over a 3-month period, compared to an average of approximately 15 per day under the proposed project. Although these additional truck trips would increase noise levels along haul routes, they would result in a modest increase on an hourly and daily basis. All impact conclusions would be **less than significant**. No mitigation would be required.

Recreation

Impacts on recreation under this alternative would be the same as described for the proposed project in Section 3.13. All impact conclusions would remain the same as the proposed project under this alternative and would include the **significant** impact related to permanent elimination of direct access from the San Joaquin River to Milburn Pond. As with the proposed project, no feasible mitigation measures are available to reduce this impact, and significance after mitigation would remain **significant and unavoidable**.

Transportation

Transportation impacts would be greater under this alternative, compared to those described for the proposed project in Section 3.14, because an additional 30,000 cy of material would be imported to the project site from offsite sources in the Fresno region, requiring up to approximately 2,000 more truck trips than the proposed project. The additional haul truck trips would represent an average of up to 33 additional trips per day over a 3-month period, compared to an average of approximately 15 per day under the proposed project. Although these additional truck trips would increase the roadway impacts, they would result in a modest increase on an hourly and daily basis. All impact conclusions would be **less than significant**. No mitigation would be required.

Wildfire

Impacts associated with increased wildfire risk would be slightly less under this alternative than described in Section 3.15 for the proposed project because the construction footprint would be approximately 5 acres smaller without the high-flow side channel. Under this alternative, borrow would not be excavated from the approximately 4.25-acre borrow, spoils, and staging area, but at least a portion of it would be used for project staging and would therefore be subject to some degree of project activity. These reductions in the project footprint would lessen potential for a construction-related wildfire. The impact conclusion would remain **potentially significant**, as under the proposed project. Mitigation for this potentially significant impact would be the same as identified in Section 3.15 for the proposed project, and significance after mitigation would be **less than significant**.

6.4 Comparison of Impacts of the Alternatives

Table 6.1 summarizes the comparison of the relevant impacts of the alternatives, as described in the text that follows.

Table 6.1. Impact Conclusions for Alternatives Compared to the Proposed Project

Environmental Topic	Proposed Project	No-Project Alternative	Alternative 1	Alternative 2
Aesthetics	LTS	*NI*	LTS	LTS
Agriculture and Forestry Resources	LTS	*NI*	*LTS*	*LTS*
Air Quality	LTS with Mitigation	*NI*	*LTS with Mitigation*	**LTS with Mitigation**
Biological Resources	LTS with Mitigation	**SU**	**LTS with Mitigation**	**LTS with Mitigation**
Cultural and Tribal Resources	LTS with Mitigation	*NI*	*LTS with Mitigation*	*LTS with Mitigation*
Geology, Soils, and Paleontological Resources	LTS with Mitigation	**PSU**	*LTS with Mitigation*	*LTS with Mitigation*
Greenhouse Gas Emissions	LTS	*NI*	*LTS*	**LTS**
Hazards and Hazardous Materials	LTS with Mitigation	*NI*	*LTS with Mitigation*	*LTS with Mitigation*
Hydrology and Water Quality	LTS with Mitigation	**PSU**	**LTS with Mitigation**	**LTS with Mitigation**
Land Use and Planning	LTS	*NI*	LTS	LTS
Noise	LTS	*NI*	LTS	**LTS**
Recreation	SU	*NI*	SU	SU
Transportation	LTS	*NI*	LTS	**LTS**
Wildfire	LTS with Mitigation	*NI*	*LTS with Mitigation*	*LTS with Mitigation*
Overall Summary Comparison		**Greater**	**Similar**	**Greater**

Notes: NI = no impact, LTS = less than significant, PSU = potentially significant and unavoidable, SU = significant and unavoidable.

Impacts in *italics* would be less than those of the proposed project. Impacts in **bold** would be greater. Impacts with gray shading would be unavoidable.

6.4.1 No-Project Alternative

The No-Project Alternative would avoid all of the construction-related adverse impacts of the proposed project because no construction would occur, and the landscape of the project site would be unchanged. The significant and unavoidable impacts on boating-related recreation at Milburn Pond would also be avoided by the No-Project Alternative. However, the benefits of the proposed project would not be realized. Therefore, the No-Project Alternative would have greater impacts than the proposed project on aquatic biological resources, including continuing the significant impact to the restored Chinook salmon population. The ongoing impact to Chinook salmon from predatory fish in Milburn Pond would remain significant and increase over time, and the key SJRRP objective to restore Chinook salmon populations in the San Joaquin River would be more difficult to achieve. Therefore, the ongoing impact of Milburn Pond on Chinook salmon would continue to be a significant adverse impact.

In addition, not implementing components of the proposed project that are designed to reduce potential for berm failure and associated local flooding, erosion, and water quality impacts would result in ongoing potentially significant impacts on soils, hydrology, and water quality.

Although the No-Project Alternative would have none of the impacts of the proposed project, and existing conditions would remain unchanged, the substantial beneficial effects of the proposed project would not occur, and SJRRP restoration efforts would be more limited over time.

6.4.2 Alternative 1: No High-flow Side Channel Alternative with On-site Borrow

This alternative would reduce the construction footprint and construction equipment use because the high-flow side channel would not be excavated and the on-site borrow area would not be restored to pre-project conditions. This would lessen impacts on forestry resources and terrestrial biological resources because riparian habitat removal would be reduced by approximately 0.15 acre. Impacts on air quality and GHG emissions also would be reduced because less on-site equipment operation would be required to move material from the low-flow side channel area to the borrow site, as under the proposed project. However, much of this reduction would be offset by a small increase in off-site material import and necessary adjustments to borrow area excavation.

Potential for impacts on cultural resources and TCRs; geology, soils, and paleontological resources; hazards and hazardous materials; and wildfire would be somewhat lessened by the general reduction in project footprint and associated equipment operation and ground disturbance. Impacts on aesthetics, land use and planning, noise, recreation, and transportation would be the same as under the proposed project.

Although several impacts would generally be less under this alternative, all impact conclusions identified in Chapter 3 for the proposed project would remain the same, and no significant or potentially significant impacts would be reduced to less than significant. Most importantly, biological benefits of creating additional aquatic habitat during high flows and hydraulic benefits of increasing channel capacity in this reach would not occur.

6.4.3 Alternative 2: No High-flow Side Channel Alternative with Off-site Borrow

This alternative also would reduce the construction footprint and construction equipment use because the high-flow side channel and on-site borrow area would not be excavated. As with Alternative 1, this would lessen impacts on forestry resources and terrestrial biological resources because riparian habitat removal would be reduced by approximately 0.15 acre.

Potential for impacts on cultural resources and TCRs; geology, soils, and paleontological resources; hazards and hazardous materials; and wildfire would be somewhat lessened by the general reduction in project footprint and associated equipment operation and ground disturbance. Impacts on aesthetics, land use and planning, and recreation would be the same as under the proposed project.

This alternative would result in greater impacts than the proposed project related to air quality, GHG emissions, noise, and transportation, due to the need to transport an additional 30,000 cy of material to the project site from offsite sources in the Fresno region. Although this alternative would reduce on-site emissions from excavating and handling material, overall air pollutant emissions would increase. Noise and transportation impacts associated with additional haul truck trips also would increase, but these increases would not result in new significant impacts, due to the relatively low number of additional trips on an hourly and daily basis for this alternative. Most importantly, biological benefits of creating additional aquatic habitat during high flows and hydraulic benefits of increasing channel capacity in this reach would not occur.

6.5 Environmentally Superior Alternative

Based on the comparison of relevant impacts of the alternatives, as described in Section 6.3 and summarized in Table 6.1, the proposed project is considered to be the environmentally superior alternative among all alternatives.

The No-Project Alternative would not result in the significant and unavoidable impact on water-based recreation at Milburn Pond and would not have any construction-related effects (although all are temporary and less than significant with mitigation). More importantly, the No-Project Alternative would continue the ongoing significant impact of Milburn Pond on Chinook salmon and the potential for berm failure and associated local flooding, erosion, and water quality impacts that would be potentially significant impacts. These long-term potentially significant and significant impacts of the No-Project Alternative are considered greater than the long-term significant and unavoidable impact of the loss of boat-related recreation in Milburn Pond and temporary construction-related impacts.

Alternative 1 (No High-flow Side Channel Alternative with On-site Borrow) would have less impact than the proposed project, but it would also lack the substantial beneficial effects constructing the high-flow side channel would have on channel habitat complexity (increased fish production in the San Joaquin River) and hydrology/hydraulics (reduced flood risk).

Alternative 2 (No High-flow Side Channel Alternative with Off-site Borrow) would have additional adverse impacts compared to Alternative 1 (and the proposed project), with greater impacts to air quality, GHG emissions, noise, and transportation due to the import of off-site

borrow materials. Like Alternative 1, Alternative 2 would also lack the substantial beneficial effects constructing the high-flow side channel would have on channel habitat complexity (increased fish production in the San Joaquin River) and hydrology/hydraulics (reduced flood risk).

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Chapter 6. Alternatives to the Proposed Project

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Chapter 7. Report Preparers

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