Meeting Date: 04/07/23
Application Number: A3897
Staff: J. Toy

Staff Report 53

APPLICANT:

Merced Irrigation District

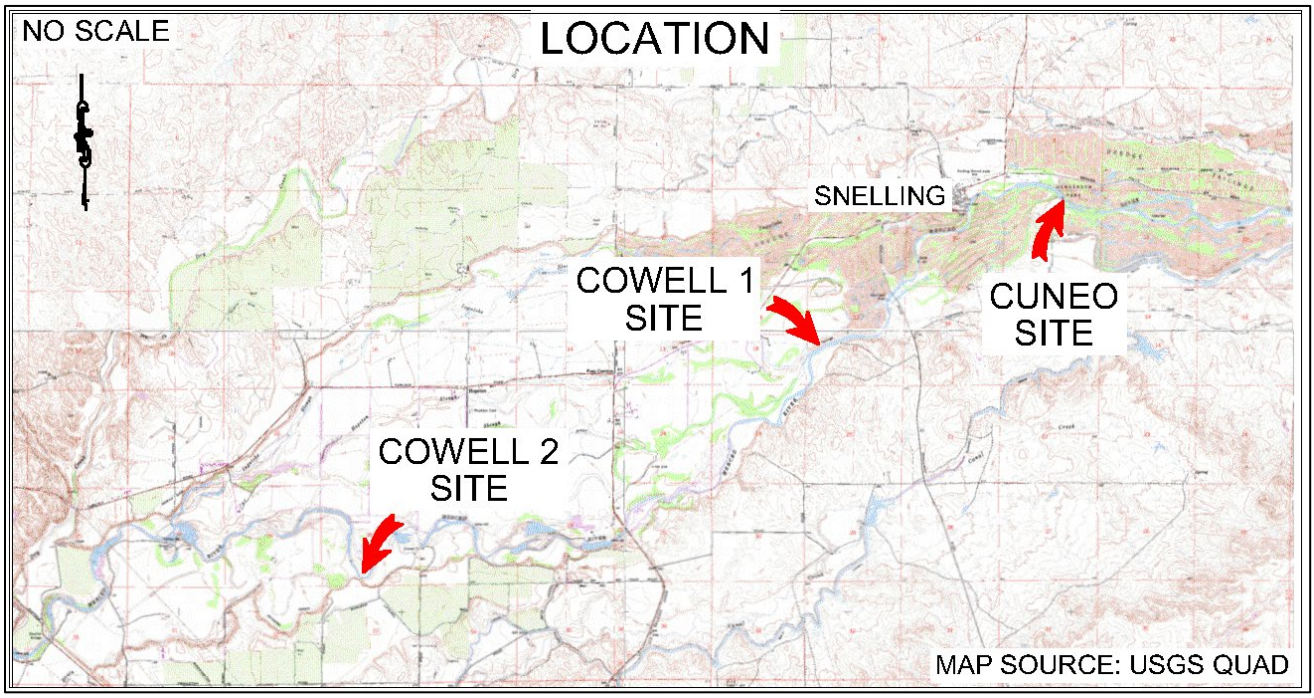
PROPOSED ACTION:

Issuance of a General Lease – Public Agency Use

AREA, LAND TYPE, AND LOCATION:

Sovereign land in the Merced River, adjacent to Assessor's Parcel Numbers 043-080-007, -008 (Cowell 1 Site); 042-240-021, -012 (Cowell 2 Site); and 043-20-023, 043-050-015 (Cuneo Site), near Snelling, Merced County (as shown in Figure 1).

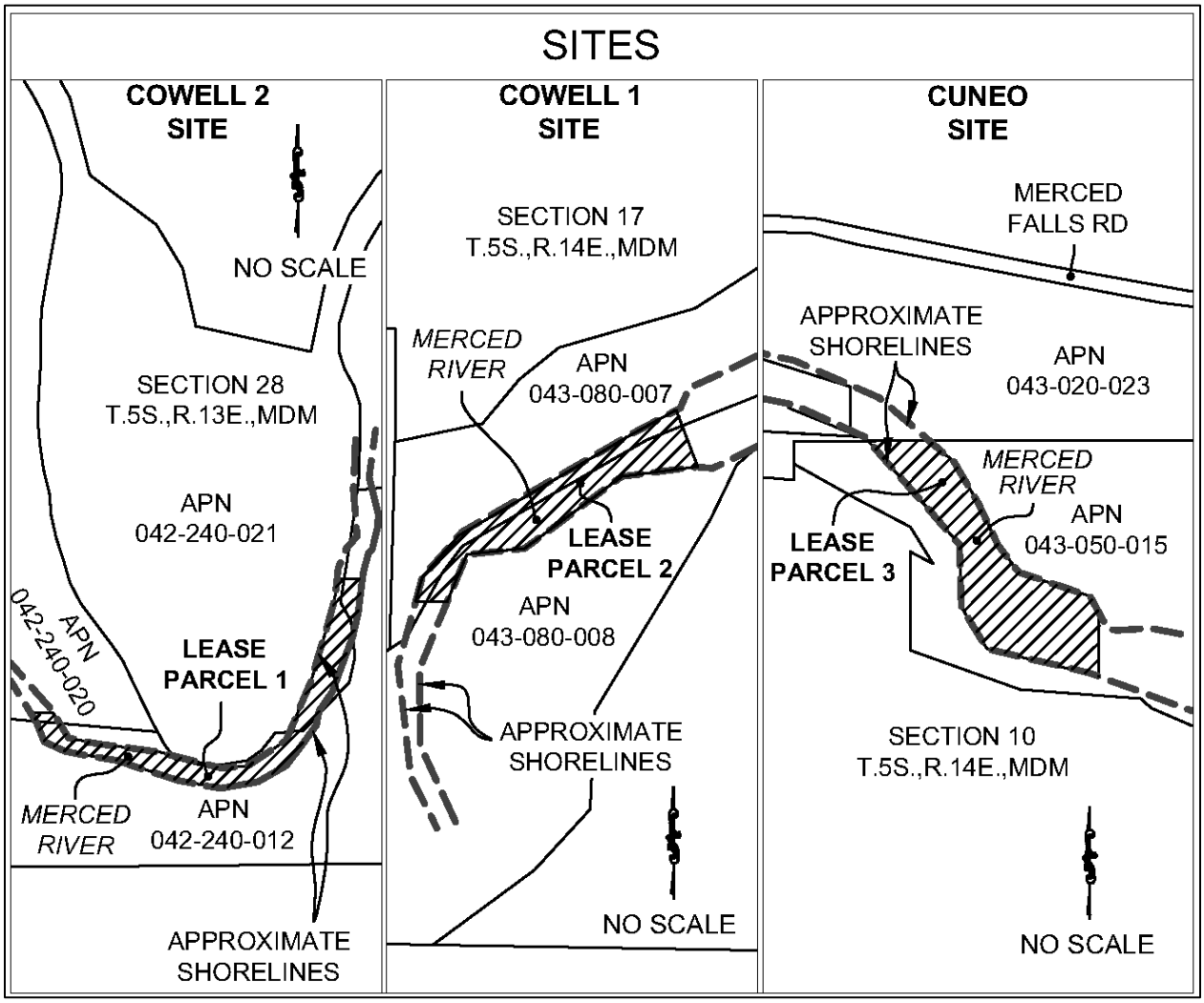
Figure 1. Location



AUTHORIZED USE:

The construction, use, and maintenance of the Merced River Agricultural Diversion and Fish Habitat Enhancement Project includes grading and placement of gravel, cobble, and fish screens. (as shown in Figure 2).

Figure 2. Site Map



NOTE: This depiction of the lease premises is based on unverified information provided by the Applicant or other parties and is not a waiver or limitation of any State interest in the subject or any other property.

TERM:

5 years, beginning July 15, 2023.

CONSIDERATION:

The public use and benefit, with the State reserving the right at any time to set a monetary rent if the Commission finds such action to be in the State's best interests.

SPECIFIC LEASE PROVISIONS:

- While performing the project activities, the Lessee will abide by mitigation measures and Best Management Practices to control turbidity and protect aquatic resources and habitats from excessive siltation in the general vicinity of the Lease Premises.
- Lessee shall place warning signage clearly visible from the shore upstream of the construction site to provide notice of the construction and to advise the public to exercise caution.
- Within 60 days of completing the restoration and rehabilitation project, Lessee will provide Lessor with photographs, a set of "as built" plans, and written confirmation which evidence completion of the project and identify the fish screens and contours of the enhancement activities on and adjacent to state land. Once approved by the Lessor's Executive Officer or designee, the revised Exhibits shall replace the Exhibits incorporated in the Lease as necessary to accurately reflect the final location of the authorized restoration and rehabilitation.

STAFF ANALYSIS AND RECOMMENDATION:

AUTHORITY:

Public Resources Code sections 6005, 6216, 6301, 6501.1, and 6503; California Code of Regulations, title 2, sections 2000 and 2003.

PUBLIC TRUST AND STATE'S BEST INTERESTS:

Merced Irrigation District (District) applied for a General Lease – Public Agency Use to conduct the Merced River Agricultural Diversion and Fish Habitat Enhancement Project (Project). The Project goals are to increase the quantity and quality of salmonid spawning, incubation, and rearing habitats, enhance salmonid survival, reduce or eliminate salmonid entrainment, impingement, and predation associated with diversions, and improve water diversion efficiency and reliability within the Lower Merced River (River). The project is funded by the District with a grant from the California Department of Water Resources (DWR).

Historically, the River below Merced Falls had diverse wetland and off channel features. But due to adjacent land uses like gold and aggregate mining, local

water withdrawals, and agricultural water returns, many features within the River's historic corridor are now cut off from the main channel during more frequent flood flows.

The Merced River is listed as a priority watershed in the Anadromous Fish Restoration Program (AFRP) Final Restoration Plan. One of the AFRP's priority actions calls for collaboration among water diverters, California Department of Fish and Wildlife, DWR, United States Fish and Wildlife Service, the National Marine Fisheries Service, and the Bureau of Reclamation to screen all diversions in order to protect all life history stages of anadromous fish. The Project is intended to achieve the AFRP's following goals 1) improve habitat for all anadromous life stages through improved physical habitat; and 2) collect fish population, health, and habitat data to facilitate evaluation of restoration actions.

The proposed enhanced diversions are located on private lands along the River. The District and local water diverters are in regular communication and agree that the diversion facilities can be modified and improved to protect and enhance the fishery at the River. The District and adjacent upland owners at the Cowell 1, Cowell 2, and Cuneo Sites collaborated on diversion-specific enhancement designs and are in the process of finalizing the agreements. The District will conduct the Project activities after the agreements are in place. The adjacent upland owners at the Ferrell, Cook and Dale, Ruddle, and Canevaro Sites granted the District access to their properties to conduct fish surveys. These Sites will be used as control sites to evaluate the effectiveness of the enhanced Sites. Only the Cowell 1, Cowell 2, and Cuneo sites are part of this Commission action.

The Project activities include excavating and sorting tailings piles to create spawning riffles, fill-in predator habitat, and for in-channel gravel augmentation. The excavation of tailings piles would remove approximately 65,000 cubic yards with approximately 38,500 cubic yards of material returned to the channel to create habitat features. Berms will be constructed by placing gravel at the edge of the active, wetted channel and pushing it into the river using heavy equipment such as tractors or dozers. Gravel will be added and built up allowing the equipment to be driven and operated from on top of the berm without being in contact with the river flow. In-channel grading and gravel and cobble berms would be constructed above the level of the River, between one- and five-feet high. Diversion enhancements will require limited in-channel work, most construction will occur outside the main channel. It is anticipated the Sites will be able to be isolated using piles or gravel berms to create a coffer dam to temporarily dewater a limited work area adjacent to the channel. Construction at each site includes:

- Cowell 1 – moving the diversion structure approximately 1,000-feet upstream to gain about 2-feet in head elevation and placing one or two cone screens directly on the main channel. Approximately 1,400-linear-feet of pipe or open ditch would be constructed to connect the new diversion to the existing canal. The riverbed would be rebuilt between the proposed and current diversion structure and two riffles would be constructed to provide elevation head. This would create approximately 0.45-acres of spawning habitat and 7.6 acres of off-channel rearing habitat and reduce suitable predator habitat by 2.9-acres.
- Cowell 2 – two existing pumps and their infrastructure would be removed and a pipe or open ditch will be constructed to connect the existing canal to meet the needs currently served by the pumps. The proposed diversion structure would be connected to the existing irrigation canal by a pipe. Both ponds associated with the pumps would be partially filled with nested side channels, creating approximately 14.5 acres of salmonid rearing habitat. Grading, placement of gravel and cobble, and an engineered riffle would be constructed upstream to eliminate predator habitat, enhance rearing habitat and stabilize the upstream flow split.
- Cuneo – moving the diversion structure upstream to gain about 2-feet in head elevation and placing a cone screen directly on the south channel. Approximately 250-feet of pipe would be laid to connect the new diversion to the existing canal without impacts to the location of the current pump infrastructure. The habitat enhancement concepts for the design include resizing overly wide and deep sections of the River with a rescaled alluvial river morphology consisting of bars, riffles, and pools. These actions would address limitations in spawning and rearing habitat as well as stressors to juvenile salmonids such as predation. This design would create an estimated 0.5 acres of spawning habitat and approximately 2.2 acres of off-channel habitat, while eliminating 1.5 acres of suitable predator habitat.

Construction is expected to be complete in 2 to 3 years with in-stream work occurring between July 15 to October 15 when flows are lower and active salmonid spawning is not occurring. Instream activities are expected to take up to 20 days each construction year.

The public does not generally raft in canals and other off-channel areas but do raft down the main channel of the River, which will remain passable by boaters during construction activities. The Cuneo Site is across the River from Henderson Park, a popular public access location for kayaks, inflatable rafts, and inner tubes. The Cowell 1 and 2 Sites are in an area with less frequent public recreation since access is restrained due to private upland ownership. The Project may enhance the

floating experience within the Project areas by increasing the number of riffles, reducing the area of slow, deep pools, and eliminating the need for temporary in-channel berms to direct water into diversions. The view would also be improved as river users would be able to see a more natural channel configuration.

Signs would be placed at the closest public river access to diversions being enhanced during construction season. A sign would be placed on the bank approximately 100 feet upstream of instream construction activity within easy view of public floaters warning them of upcoming instream activity and directing them to one side of the channel. During all instream construction activity, a construction monitor with a radio would be positioned upstream of the instream construction activity and next to the channel in order to communicate with public floaters as well as over the radio with heavy equipment operators to warn them that a group of floaters is coming down and to temporarily halt instream activity.

The proposed Project will provide local, regional, and statewide benefits, through salmonid habitat restoration and rehabilitation, more reliable service to water diversion recipients in this agricultural community, and an enhanced experience by recreational boaters which are consistent with the Public Trust Doctrine. The lease includes certain provisions protecting the public's use of the proposed lease area. The proposed lease does not grant the lessee exclusive rights to the lease premises and is limited to a 5-year term that allows the Commission flexibility to determine if the Public Trust needs of the area have changed over time. Furthermore, post-project monitoring will take place after project completion to evaluate project outcomes, implementation, and influences on habitat conditions.

CLIMATE CHANGE:

The project area is not tidally influenced and therefore, would not be subject to sea level rise. However, as stated in the *Safeguarding California Plan: 2018 Update* (California Natural Resources Agency 2018), climate change is projected to increase the frequency and severity of natural disasters related to flooding, drought, and storms. In rivers, more frequent and powerful storms can result in increased flooding conditions and damage from storm-created debris. Conversely, prolonged droughts could dramatically reduce river flow and water levels, leading to loss of public access and navigability. Climate change will further influence riverine areas by changing erosion and sedimentation rates, and flooding and storm flow, as well as runoff, will likely increase scour, decreasing bank stability at a faster rate.

The habitat restoration will include grading and placement of gravel, cobble, and fish screens that can be damaged by climate change influenced conditions. Regular maintenance, as referenced in the lease, may reduce the likelihood of

severe structural degradation or dislodgement during use. Pursuant to the proposed lease, the District acknowledges that the lease premises are located in an area that may be subject to effects of climate change.

TRIBAL COORDINATION AND CONSULTATION:
The District contacted the California Native American Heritage Commission (NAHC) to request a search of the Sacred Lands file and an updated list of Native American contacts for the project area. The NAHC response letter indicated that the Sacred Lands record search was negative and provided the contact for three tribes associated with the project area: Amah Mutsun Tribal Band, North Valley Yokuts Tribe, and Southern Sierra Miwuk Nation. Outreach letters were sent to each of these Tribes on November 25, 2020, containing the project description, project location, lead agency contact info, and a notification that the tribe has 30 days to request consultation, but no response was received. In the Mitigated Negative Declaration (MND) prepared by the District for the project, the District evaluated impacts to Tribal cultural resources and imposed a mitigation measure that provides inadvertent discovery measures for the protection of archeological and Tribal cultural resources.

CONCLUSION:
For all the reasons above, staff believes the issuance of this lease will not substantially interfere with Public Trust needs at this location, at this time, and for the foreseeable term of the proposed lease; is consistent with common law Public Trust Doctrine; and is in the best interests of the State.

OTHER PERTINENT INFORMATION:

1. Approval or denial of the application is a discretionary action by the Commission. Each time the Commission approves or rejects a use of sovereign land, it exercises legislatively delegated authority and responsibility as trustee of the State's Public Trust lands as authorized by law. If the Commission denies the application, the Applicant may not conduct the proposed Project activities within lands under the Commission's jurisdiction. The lessee has no right to a new lease or to renewal of any previous lease.

2. This action is consistent with the "Leading Climate Activism", "Meeting Evolving Public Trust Needs", and "Committing to Collaborative Leadership" Strategic Focus Areas of the Commission's 2021-2025 Strategic Plan.

3. An MND, State Clearinghouse No. 2022010622, and a Mitigation Monitoring and Reporting Program (MMRP) were prepared by the Merced Irrigation District and adopted on December 13, 2022, for this project. Staff reviewed these documents and prepared an independent Mitigation Monitoring Program (attached, Exhibit A) incorporating the District's document and recommends adoption by the Commission.
4. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code section 6370 et seq., but the activity will not negatively affect those significant lands. Based upon staff's consultation with the persons nominating such lands and through the California Environmental Quality Act (CEQA) review process, it is staff's opinion that the project, as proposed, is consistent with its use classification.

APPROVAL OBTAINED:

U.S. Fish and Wildlife Service

APPROVALS REQUIRED:

National Marine Fisheries Service
U.S. Army Corps of Engineers
California Department of Fish and Wildlife
State Historic Preservation Office
Central Valley Flood Protection Board
Regional Water Quality Control Board

EXHIBIT:

A. Mitigation Monitoring Program

RECOMMENDED ACTION:

It is recommended that the Commission:

CEQA FINDING:

Find that a MND, State Clearinghouse No. 2022010622, and a MMRP were prepared by Merced Irrigation District and adopted on December 13, 2022, for this project and that the Commission has reviewed and considered the information contained therein; that in the Commission's independent judgment, the scope of activities to

be carried out under the lease to be issued by this authorization have been adequately analyzed; that none of the events specified in Public Resources Code section 21166 or the State CEQA Guidelines section 15162 resulting in any new or substantially more severe significant impact has occurred; and, therefore no additional CEQA analysis is required.

Adopt the Mitigation Monitoring Program, as contained in the attached Exhibit A.

PUBLIC TRUST AND STATE'S BEST INTERESTS:

Find that the proposed lease will not substantially impair the public rights to navigation and fishing or substantially interfere with Public Trust needs and values at this location, at this time, and for the foreseeable term of the lease; is consistent with the common law Public Trust Doctrine; and is in the best interests of the State.

AUTHORIZATION:

1. Authorize issuance of a General Lease – Public Agency Use to the Applicant beginning July 15, 2023, for a term of 5 years, to authorize the grading and placement of gravel, cobble, and fish screens, as part of the Merced River Agricultural Diversion and Fish Habitat Enhancement Project, in the Merced River; consideration being the public use and benefit, with the State reserving the right, at any time, to set a monetary rent as specified in the lease if the Commission finds such action to be in the State's best interest; such permitted activity is contingent upon obtaining the signed agreements of the adjacent upland owners at the Project sites.

2. Authorize the Executive Officer or designee to replace exhibits in the lease upon submission, review, and approval of as-built plans detailing the final location of the new improvements following construction.

EXHIBIT A
CALIFORNIA STATE LANDS COMMISSION
MITIGATION MONITORING PROGRAM
MERCED RIVER AGRICULTURAL DIVERSION AND FISH HABITAT ENHANCEMENT PROJECT

(A3897, State Clearinghouse No. 2022010622)

The California State Lands Commission (Commission or CSLC) is a responsible agency under the California Environmental Quality Act (CEQA) for the Merced River Agricultural Diversion and Fish Habitat Enhancement Project (Project). The CEQA lead agency for the Project is the Merced Irrigation District.

In conjunction with approval of this Project, the Commission adopts this Mitigation Monitoring Program (MMP) for the implementation of mitigation measures for the portion(s) of the Project located on State lands. The purpose of an MMP is to impose feasible measures to avoid or substantially reduce the significant environmental impacts from a project identified in an Environmental Impact Report (EIR) or a Mitigated Negative Declaration (MND). State CEQA Guidelines[1] section 15097, subdivision (a), states in part:

> *In order to ensure that the mitigation measures and project revisions identified in the EIR or negative declaration are implemented, the public agency shall adopt a program for monitoring or reporting on the revisions which it has required in the project and the measures it has imposed to mitigate or avoid significant environmental effects. A public agency may delegate reporting or monitoring responsibilities to another public agency or to a private entity which accepts the delegation; however, until mitigation measures have been completed the lead agency remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with the program.*

The lead agency adopted an MND, State Clearinghouse No. 2022010622, and adopted a Mitigation Monitoring and Reporting Program (MMRP) for the whole of the Project (see Exhibit A, Attachment A-1), and remains responsible for ensuring that implementation of the mitigation measures occurs in accordance with its program. The Commission's action and authority as a responsible agency apply only to the mitigation measures listed in Table A-1 below. The full text of each mitigation measure, as set forth in the MMRP prepared by the CEQA lead agency and provided in Attachment A-1, is incorporated by

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[1] The State CEQA Guidelines are found at California Code of Regulations, title 14, section 15000 et seq.

reference in this Exhibit A. Any mitigation measures adopted by the Commission that differ substantially from those adopted by the lead agency are shown as follows:

- Additions to the text of the mitigation measure are <u>underlined.</u>

Table A-1. Project Impacts and Applicable Mitigation Measures

Potential Impact	**Mitigation Measure (MM)[2]**	**Difference Between CSLC MMP and Lead Agency MMRP**
Dust and Air Quality Impacts	AQ-1. Reduce Dust and Air Quality Impacts	None
Impacts to special-status species	BIO-1. Worker Environmental Awareness Training	None
Impacts to Native Trees	BIO-4. Protect and Compensate for Native Trees	None
Impacts to Foothill Yellow-legged Frog	BIO-12. Avoid and Minimize Potential Impacts to Foothill Yellow-legged Frog	None
Impacts to Western Pond Turtle	BIO-13. Surveys and Avoidance for Western Pond Turtle	None
Impacts to special-status fish species	BIO-14. Conduct In-water Work Outside of Critical Periods for Special Status Fish Species and Report Observations	None
Impacts from aquatic invasive species	BIO-17. Prevent Spread of New Zealand Mudsnail and other Aquatic Invasive Species	None
Impacts to objects of Cultural Significance	CR-1. Inadvertent Discoveries of Objects of Cultural Significance	See below for addition to CR-1
Impacts from noise	NOISE-1. Reduce Impacts	None

[2] See Attachment C-1 for the full text of each MM taken from the MMRP prepared by the CEQA lead agency.

	from Noise	
Impacts to public safety	REC-1. Public Safety	None
Impacts to water quality	WQ-1. Monitor Water Quality and Prevent Impacts WQ-2. Use Clean Equipment and Biodegradable Lubricants	None

Addition to MM CR-1: If any objects of cultural significance are unearthed during the construction process, work shall be halted immediately until a qualified archeologist can assess the significance of the new find. If human remains are unearthed during the construction process, the Propose Project team shall comply with the California Health and Safety Code Section 7050.5, which states that no further disturbance shall occur until the County Coroner has investigated the situation following the Public Code Section 5097.98. The final disposition of archaeological, historical, and paleontological resources recovered on State land under the jurisdiction of the California State Lands Commission must be approved by the Commission.

ATTACHMENT A-1

MITIGATION MONITORING AND REPORTING PROGRAM ADOPTED BY THE MERCED IRRIGATION DISTRICT

MITIGATION MONITORING AND REPORTING PROGRAM:

Merced River Agricultural Diversion and Fish Habitat Enhancement Project

MITIGATED NEGATIVE DECLARATION

This Mitigation Monitoring and Reporting Program (MMRP) was prepared in accordance with Section 15097 of the California Environmental Quality Act (CEQA) Guidelines. Section 15097 requires that a lead agency establish a program to report on or monitor measures adopted as part of the environmental review process to mitigate or avoid significant effects on the environment. The MMRP for the Merced River Agricultural Diversion and Fish Habitat Enhancement Project is presented here as **Table 1**.

This MMRP is designed to ensure that the mitigation measures necessary to reduce significant impacts identified in the Project Initial Study and Proposed Mitigated Negative Declaration (IS/MND) are implemented. The components of the MMRP **Table 1** are listed below:

Mitigation Measures: The mitigation measures are taken verbatim from the Project IS/MND.

Timing/Milestone: Identifies a schedule for conducting each mitigation action.

Responsible Entity: Identifies the entity responsible for implementing specific mitigation measures.

Mitigation Action: Identifies the specific action or actions that must be completed to implement the mitigation measure.

Monitoring and Enforcement Responsibility: Identifies the department/agency, consultant, or other entity responsible for overseeing that mitigation occurs.

Check off Date/Initials: To be filled out when individual mitigation is complete.

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
Air Quality **AQ-1. Reduce Dust and Air Quality Impacts** The following dust reduction measures shall be implemented during movement of materials from the construction staging areas to sites where gravel augmentation occurs to reduce construction-related emissions: • wet materials to limit visible dust emissions using water; • provide at least 6 in (15.2 cm) of freeboard space from the top of the container; or, • cover the container. The following dust reduction measure shall be implemented during cobble and gravel placement to reduce construction-related emissions: • limit or promptly remove any of mud or dirt on construction equipment and vehicles at the end of each workday, or once every 24 hours. The following measure shall be implemented to ensure that emissions meet current air quality standards: • the off-road work fleet average at a minimum must meet the current California Air Resources Control Board standards, including the use of Tier 4 emission standards of at least 0.3 g/hp-hr Nitrogen Oxides (NOx).	During construction	Project Applicant/ Contractor	Use qualified QSP and implement measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
Biological Resources **BIO-1. Worker Environmental Awareness Training** Prior to construction, all Project personnel shall receive a worker environmental awareness training conducted by a qualified biologist approved by CDFW, USFWS, and NMFS. The training will inform Project personnel about special-status fish and wildlife species, and their preferred habitat and other sensitive resources that may be present in the Project site. All Project personnel will be instructed on a) species description and status; b) violation of the laws and regulations regarding each species; and c) a list of measures to reduce impacts on these species and actions to take if a species is observed during construction activities. The training will include a handout that highlights the information stated above for all Project personnel.	Prior to construction	Project Applicant/ Contractor	Training	Project Applicant/ Contractor	
BIO-2. Adaptive Construction Approach to Protect Elderberry Plants and Mitigate for Loss To avoid direct mortality to VELB from crushing by heavy equipment or through destruction of their elderberry shrub habitat during construction, a qualified biologist shall clearly mark elderberry plants prior to construction and intrusion into the prescribed 20-foot buffer zone shall be avoided, as possible. The 20-foot buffer shall be inspected weekly during ground disturbing activities and monthly after ground-disturbing activities until the project is complete or until the fences are removed. The qualified biologist will be responsible for	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
ensuring that the contractor maintains construction stanchion and flagging around elderberry shrubs in the Project footprint. Biological inspection reports shall be provided to the lead agency and USFWS.					
BIO-3. Transplant Unavoidable Elderberry Plants to Suitable Locations and Monitor Survival Elderberries that cannot be avoided using a 20-foot buffer will be transplanted to a suitable location during project construction, following consultation with U.S. Fish and Wildlife Service, and will be monitored in years 1, 2, and 3 with a target minimum survival rate of at least 60%. If necessary, replacement plants will be added to the restoration area to maintain survival above 60%. If any mortality of elderberry shrubs occurs, USFWS shall be consulted immediately, and appropriate mitigation will be implemented.	During and after restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	
BIO-4. Protect and Compensate for Native Trees Native trees, such as Fremont Cottonwood, willows, and alder, with a dbh of 6 in (15.2 cm) or greater shall be protected with 30-ft (9.1-m), 10-ft (3-m), and 10-ft (3-m) buffers, respectively, as possible. Native trees shall be marked with flagging if close to the work area to prevent disturbance. To compensate for the removal of riparian shrubs and trees during Project implementation, the plans shall identify tree and shrub species to be planted, how, where, and when they would be planted, and measures to be taken to ensure a minimum performance criteria of 70%	During and after restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
survival of planted trees. The tree plantings shall be based on native tree species compensated for in the following manner: • Oaks having a dbh of 3 – 5 in (7.6 – 12.7 cm) shall be replaced in-kind, at a ratio of 3:1, and planted during the winter dormancy period in the nearest suitable location to the area where they were removed. Oaks with a dbh of greater than 5 in shall be replaced in-kind at a ratio of 5:1. • Riparian trees (i.e., willow, cottonwood, poplar, alder, ash, etc.) and shrubs shall be replaced in-kind within the Project boundary, at a ratio of 3:1, and planted in the nearest suitable location to the area where they were removed.					
BIO 5: Pre-construction Habitat Assessment No more than 10 days prior to the start of construction, a habitat assessment will be conducted by a qualified biologist to determine the potential for special-status wildlife species (e.g., American Badger, Burrowing Owl, California Tiger Salamander, Least Bell's Vireo, roosting bats, San Joaquin Kit Fox), Merced Kangaroo Rat, San Joaquin Pocket Mouse, and Western Spadefoot to occur or become established within the Action Area and a 500-foot buffer. If special status wildlife species and/or suitable habitat (e.g., small mammal burrows) are found within the Action Area, a qualified biologist will conduct focused surveys for	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
applicable species and their associated habitat features and buffers will be established, as appropriate for each species.					
BIO-6. Avoid and Minimize Potential Impacts to Nesting Birds For Proposed Project activities expected to occur during the nesting bird season (1 February to 31 August), the following measures will be implemented to ensure that Proposed Project activities would not have a significant impact on nesting birds and comply with the MBTA and California Fish and Game Code: • Pre-construction surveys will be conducted by a qualified biologist no more than 10 days prior to the start of construction to determine if active nests are present. The Action Area and a 0.5-mile buffer will be surveyed for nesting raptors (Swainson's Hawk and White-tailed Kite), a 2-mile buffer for nesting eagles (Bald Eagle and Golden Eagle), and a 1,000-foot buffer will be surveyed for all other bird species. If no active nests are identified during the pre-construction survey, no further mitigation is necessary. If active nests are found within or adjacent to the survey area, the following no-disturbance buffers shall be established until breeding season is over or young have fledged to ensure that Proposed Project activities do not have a significant impact on nesting birds:	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
• A minimum no-disturbance buffer of 300 feet around active nests of birds protected under the MBTA (including Tricolored Blackbird); • A ½-mile no-disturbance buffer around active nests of raptors protected under the MBTA (including Swainson's Hawk and White-tailed Kite); and • A ½-mile no-disturbance buffer around active nests of Bald Eagles and Golden Eagles. Through coordination with CDFW and the USFWS, the no-disturbance buffer may be reduced to avoid impacts to nesting birds. Prior to any ground disturbing activities, the Project will acquire a Restoration Management Permit to cover potential take of any special status nesting bird species, including Tricolored Blackbird and Swainson's Hawk.					
BIO-7. Avoid and Minimize Potential Impacts to Least Bell's Vireo Pursuant to Mitigation Measure 5, Proposed Project activities expected to occur during the breeding season (1 February to 15 September), the following measures will be implemented to ensure that Proposed Project activities would not have a significant impact on Least Bell's Vireo: • Pre-construction surveys will be conducted by a qualified biologist no more than 10 days prior to the start of Proposed Project activities associated with ground-disturbing or vegetation removal in suitable	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
habitat for Least Bell's Vireo within the Action Area and a 500-foot buffer. • If an active nest is identified during the pre-construction survey, a 500-foot no-disturbance buffer will be established until the breeding season is over or young have fledged. Prior to any ground disturbing activities, the Project will acquire a Restoration Management Permit to cover potential take of Least Bell's Vireo.					
BIO-8. Avoid and Minimize Potential Impacts to Burrowing Owl If required pursuant to Mitigation Measure 5, pre-construction surveys shall be conducted for Burrowing Owl prior to the start of Proposed Project activities. These surveys shall conform to the survey protocol established by the California Department of Fish and Wildlife's Staff Report on Burrowing Owl Mitigation (CDFG 2012): • Pre-construction surveys will be conducted by a qualified biologist no more than 10 days prior to the start of construction within the Action Area and 250-foot buffer. A survey to determine presence or absence may be performed at any time to facilitate passive relocation efforts (which can only occur outside of the nesting season of February 1 to August 31).	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
• If an active burrow is found within and/or adjacent to the survey area and work cannot be conducted outside of the breeding season (1 February to 31 August), a minimum 250-foot no-disturbance buffer will be established by a qualified biologist to avoid nest abandonment. • If Burrowing Owl are present at the site during the non-breeding season (1 September to 31 January), a qualified biologist will establish a minimum 150-foot no-disturbance buffer. If such a buffer is not practicable, then a buffer adequate to avoid injury or mortality of Burrowing Owl (based on the determination of a qualified biologist) shall be maintained. If an adequate buffer cannot be maintained, the birds shall be passively relocated. If passive relocation is unavoidable, the following measures will be implemented: • No Burrowing Owl may be evicted from burrows during the nesting season (February 1 through August 31) unless evidence indicates that nesting is not actively occurring (e.g., because they have not yet begun nesting early in the season, or because young have already fledged late in the season). If Proposed Project activities will directly impact occupied burrows, eviction of Burrowing Owl should occur outside the nesting season to prevent injury or mortality of individuals.					

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
• Relocation of Burrowing Owl during the nonbreeding season shall be performed by a qualified biologist using one-way doors, which should be installed in all burrows within the impact area and left in place for at least two nights. These one-way doors shall then be removed, and the burrows backfilled immediately prior to the initiation of grading.					
BIO-9. Monitor for Bats to Prevent Impacts Before any ground disturbing activities, a qualified biologist shall survey for the presence of associated habitat types for the bat species of concern. If bats are present, the biologist shall apply a minimum 300-ft no-disturbance buffer around roosting bats, maternity roosts or winter hibernacula until all young bats have fledged. If suitable habitat is present, evening emergence surveys shall be conducted during the appropriate seasonal period of bat activity to determine the presence of bats.	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	
BIO-10. Avoid and Minimize Potential Impacts to San Joaquin Kit Fox and American Badger Where suitable habitat is present for San Joaquin Kit Fox and American Badger in and adjacent to proposed work areas, the following measures will be implemented to ensure that the Proposed Project does not have a significant impact on these species: • A qualified biologist will conduct pre-construction surveys no less than 14 days and no more than 30	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
days prior to ground disturbing activities to identify potential dens more than 5 inches in diameter. Pre-construction surveys for American Badger will be conducted in conjunction with San Joaquin Kit Fox pre-construction surveys. • If American Badger occupied or potentially occupied dens are located within or adjacent to the survey area, a 50-foot no-disturbance buffer will be established from the den entrance. CDFW will be notified of the observation within 48 hours and appropriate measures will be proposed to avoid direct impacts to American Badger. If San Joaquin Kit Fox dens are located within 200 feet of proposed construction area adjacent to the survey area and cannot be avoided during construction activities, the following no-disturbance buffers will be established prior to construction by a qualified biologist (USFWS 2011): • 50-foot no-disturbance buffer for a potential den and/or atypical den; and • 100-foot no-disturbance buffer for a known den • USFWS and CDFW will be contacted immediately if a natal or pupping den is discovered at or within 200 feet from the Proposed Project activities. Prior to any ground disturbing activities, the Project will acquire a Restoration Management Permit to cover potential take of San Joaquin Kit Fox.					

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
BIO-11. Avoid and Minimize Potential Impacts to California Tiger Salamander If the Action Area contains suitable wetland or upland habitat for California Tiger Salamander (see Mitigation Measure 5), the following measures will be implemented to ensure that the proposed project does not have a significant impact on California Tiger Salamander: • Pre-construction surveys will be conducted by a qualified biologist no more than 10 days prior to the start of Proposed Project activities in all areas that contain suitable wetland and upland habitat within the Action Area and a 100-foot buffer. If burrows and potential breeding pools considered suitable for California tiger salamander, determined by the qualified biologist, are found within or adjacent to the survey area, the following no-disturbance buffers shall be established to ensure that Proposed Project activities do not have a significant impact: • a minimum 50-foot no-disturbance buffer around burrows that provide suitable upland habitat; and • a minimum 250-foot no disturbance buffer around potential breeding pools. • If California Tiger Salamander are observed during the survey, CDFW shall be consulted prior to initiation of construction for further instruction on methods to avoid take.	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
Prior to ground-disturbing activities that would occur within 50-feet of small mammal burrows and/or 250-feet of potential breeding pools, the Project will acquire a Restoration Management Permit to cover potential take of California Tiger Salamander.					
BIO-12. Avoid and Minimize Potential Impacts to Foothill Yellow-legged Frog If the Action Area contains suitable wetland or upland habitat for Foothill Yellow-legged Frog (see Mitigation Measure 5), the following measures will be implemented to ensure that the proposed project does not have a significant impact on Foothill Yellow-legged Frog: • Pre-construction surveys will be conducted by a qualified biologist no more than 48 hours prior to the start of Proposed Project activities in all areas that contain suitable wetland and upland habitat within the Action Area and a 100-foot buffer. • If Foothill Yellow-legged Frog are observed during the survey, CDFW will be notified of the observation within 48 hours and appropriate measures will be proposed to avoid take. • If Proposed Project ground-disturbing activities take place during the migration period (1 November to 31 March), a qualified biologist will be onsite and inspect the area daily before the start of work and will be present during maintenance activities in suitable habitat for Foothill Yellow-legged Frog. If	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
appropriate, Merced Irrigation District will install exclusionary fencing. Prior to any ground disturbing activities, the Project will acquire a Restoration Management Permit to cover potential take of Foothill Yellow-legged Frog.					
BIO-13. Surveys and Avoidance for Western Pond Turtle Where suitable aquatic or upland habitat for Western Pond Turtle is present within proposed work areas, the following measures will be implemented to ensure that the proposed project does not have a significant impact on Western Pond Turtle: • A qualified biologist will conduct pre-construction surveys within 10 days prior to ground disturbing activities, in and adjacent to suitable aquatic habitat, to identify Western Pond Turtle individuals or nests within proposed work areas during the egg-laying season (March-August). • If any Western Pond Turtle individuals are observed, a biological monitor will be present during construction activities in the aquatic habitat where the turtle was observed. If one or more Western Pond Turtle individuals are found in the work area during construction, the activities in the vicinity shall cease until Western Pond Turtle individuals have moved outside of the Project area of their own volition.	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
• If a Western Pond Turtle nest is found, the biologist shall flag the site, maintain an appropriate no-disturbance buffer, and determine if project activities can avoid affecting the nest.					
BIO-14. Conduct In-water Work Outside of Critical Periods for Special Status Fish Species and Report Observations No in-stream work would be conducted after 15 October to avoid impacts to spawning Chinook Salmon. During September and October when Chinook Salmon may be present, fish surveys shall be conducted by a qualified biologist and if spawning salmon are observed within the construction footprint, construction shall cease and CDFW and USFWS contacted immediately to determine the appropriate course of action. Project-related sightings of special-status fish species, including lamprey, will be reported to CDFW fisheries staff in LaGrange.	Ongoing during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	
BIO-15. Avoid and Minimize Potential Impacts to Special-Status Plant Species The following measures will be implemented to ensure that the proposed project does not have a significant impact on special-status plants: • A pre-construction survey shall be conducted for special-status plants prior to the commencement of construction activities. These surveys shall conform to the survey protocol established in Protocols for	Before and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFG 2018). • If special-status plant species are identified within the Project footprint, a minimum no-disturbance buffer of 50-ft from the outer edge of the plant population(s) or specific habitat type(s) required by special-status plant species. If such a buffer cannot be reasonably accomplished, CDFW shall be consulted. Prior to any ground disturbing activities, the Project will acquire a Restoration Management Permit to cover potential take of state listed plants.					
BIO-16. Surveys and Avoidance for Crotch Bumble Bee The following measures will be implemented to ensure that the proposed project does not have a significant impact on Crotch Bumble Bee: • A pre-construction survey shall be conducted for Crotch Bumble Bee of small mammal burrows and thatched/bunch grasses prior to the commencement of construction activities. Surveys will be conducted during the optimal flight period (1 April 1 to 31 July) within the Action Area. • If any queens or workers are found within the Action Area, the activities in the vicinity shall cease until they have moved outside of the Action Area of their	Prior to and during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
own volition. A minimum no-disturbance buffer of 50-ft shall be delineated around any detected nests. Prior to any ground disturbing activities, the Project will acquire a Restoration Management Permit to cover potential take of Crotch Bumble Bee.					
BIO-17. Prevent Spread of New Zealand Mudsnail and other Aquatic Invasive Species New Zealand mudsnails are an introduced species that has been identified in numerous rivers of the Central Valley, including in the Merced River. To minimize the chance that the snails may be transported and spread to other water bodies on equipment, construction specifications shall require hat equipment be steam cleaned immediately after the work is completed and before being used in other water bodies. An Invasive Species Risk Assessment and Planning (ISRAP) protocol shall be developed, and all appropriate staff shall be trained as to its purpose and implementation before construction begins. The ISRAP shall be used to prevent the spread of invasive species during Proposed Project construction.	Ongoing during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	
Cultural Resources **CR-1. Inadvertent Discoveries of Objects of Cultural Significance** If any objects of cultural significance are unearthed during the construction process, work shall be halted immediately until a qualified archeologist can assess the significance of	Ongoing during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
the new find. If human remains are unearthed during the construction process, the Proposed Project team shall comply with the California Health and Safety Code Section 7050.5, which states that no further disturbance shall occur until the County Coroner has investigated the situation following the Public Resource Code Section 5097.98.					
Noise **NOISE-1. Reduce Impacts from Noise** To mitigate noise related impacts, the Project shall require all contractors to comply with the following operational parameters: • Restrict construction activities to time periods between 7:00 am and 5:00 pm when there is the least potential for disturbance; • Locate the sorting station away from the edge of property and adjacent homes; and • install and maintain sound-reducing equipment and muffled exhaust on all construction equipment.	Ongoing during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	
Recreation **REC-1. Public Safety** During Proposed Project construction, signs will be posted along the perimeter of the Action Area to inform the public about the potential hazards created by heavy equipment and how to safely avoid the work zone. A highly visible	Ongoing prior to, during and after restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
warning sign shall be placed on the bank approximately 100 feet upstream of instream construction activity, informing any individuals floating down the river about the construction activity and directing them to a safe path to avoid construction activity. In addition, during all instream construction activity, a construction monitor with a radio shall be positioned upstream of the instream construction activity and next to the channel to communicate with the public and with heavy equipment operators to ensure safe passage through the construction area.					
Water Quality **WQ-1. Monitor Water Quality and Prevent Impacts** During in river work, turbidity and total suspended solids shall be monitored with intermittent grab samples from the river, and construction curtailed if turbidity exceeds criteria established by the Regional Water Quality Control Board in its CWA §401 Water Quality Certification for the Proposed Project. Specifically, sampling shall be performed immediately upstream from the Action Area and approximately 300 feet downstream of the active work area during construction. Activities shall not cause in surface waters: a) turbidity to exceed 2 NTU's where natural turbidity is less than 2 NTU; b) where natural turbidity is between 1 and 5 NTUs, increases exceeding 1 NTU;	Ongoing prior to, during and after restoration activities	Project Applicant/ Contractor	Use qualified QSP and implement measures	Project Applicant/ Contractor	

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
c) where natural turbidity is between 5 and 50 NTUs, increase exceeding 20 percent; d) where natural turbidity is between 50 and 100 NTUs, increases exceeding 10 NTUs; e) where natural turbidity is greater than 100 NTUs, increase exceeding 10 percent. Activities shall not cause settleable material to exceed 0.1 ml/L in surface waters as measured in surface waters downstream from the Action Area. Activities shall not cause pH to be depressed below 6.5 nor raised above 8.5 as measured in surface waters downstream from the Action Area. The Proposed Project shall not discharge petroleum products into surface water. The Central Valley Water Board shall be notified immediately of any spill of petroleum products. During gravel processing, gravel shall be cleaned prior to placement within the riverbed in a manner that removes any fine-grained sediment (< 6mm size fraction) (fines) that could potentially contain concentrations of mercury. Daily fines samples shall be collected from processed material and analyzed for total mercury. Borrow areas shall be re-graded to ensure the areas do not become potential mercury methylation spots. Fines separated from gravel shall not re-enter the Merced River. Stream bank impacts shall be isolated and minimized to reduce bank sloughing. Banks shall be stabilized with revegetation following Proposed Project activities, as appropriate. Sediment fencing shall be used along the river corridor to					

Mitigation Measure(s)	Timing/ Milestone	Responsible Entity	Mitigation Action	Monitoring/ Enforcement Responsibility	Check off Date/Initials
capture floating materials or sediments mobilized during construction activities and prevent water quality impacts. A SWPPP shall be developed as part of the BMPs. All pertinent staff shall be trained on and familiarized with these plans. Copies of the plans and appropriate spill prevention equipment referenced in them shall be made available onsite and staff shall be trained in its use. Spill prevention kits shall be in close proximity to construction areas, and workers trained in their proper use.					
WQ-2. Use Clean Equipment and Biodegradable Lubricants All equipment shall be clean and use biodegradable lubricants and hydraulic fluids. All equipment working within the stream channel shall be inspected daily for fuel, lubrication, and coolant leaks; and, for leak potentials (e.g. cracked hoses, loose filling caps, stripped drain plugs). Vehicles shall be fueled and lubricated in a designated staging area located outside the stream channel and banks. Construction specifications shall require that any equipment used in or near the river is properly cleaned to prevent any hazardous materials from entering the river, and containment material shall be available onsite in case of an accident. Spill prevention kits shall be located close to construction areas, with workers trained in its use. Contracted construction managers shall regularly monitor construction personnel to ensure environmental compliance.	Ongoing during restoration activities	Project Applicant/ Contractor	Implement specified mitigation measures	Project Applicant/ Contractor	