

**STAFF REPORT
C34**

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08/17/17

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G. Asimakopoulos

GENERAL LEASE – PUBLIC AGENCY USE

APPLICANT:

County of San Joaquin
Department of Public Works

PROPOSED LEASE:

AREA, LAND TYPE, AND LOCATION:

Sovereign land in Middle River, adjacent to Assessor's Parcel Numbers 129-200-35 and 129-180-36, near Stockton, San Joaquin County.

AUTHORIZED USE:

Construction, use, and maintenance of a new bridge known as the Woodward Island Bridge, use of a temporary construction easement, and the removal of the existing Woodward Island Ferry system.

LEASE TERM:

25 years, beginning August 17, 2017.

CONSIDERATION:

The public 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:

1. Lessee shall not place, attach, or authorize placement or attachment of any utilities or other improvements on the Bridge or within the Lease Premise without the Commission's prior review and approval. Separate leases or subleases are required and shall be obtained for all utilities not operated by Lessee.
2. Lessee shall place warning signage or buoys, or both, clearly visible from the shore and in the water, both upstream and downstream of the construction site, to provide notice of the ferry/bridge replacement project and to advise the public to exercise caution. Lessee shall place and maintain such signage at all times during ferry system removal and bridge construction

STAFF REPORT NO. **C34** (CONT'D)

activities and shall notify the California Department of Parks and Recreation's Division of Boating and Waterways of the location, description, and purpose of such signage upon its installation and removal.

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 Analysis:

The County of San Joaquin (County) has applied for a General Lease – Public Agency Use for the removal of the existing Woodward Island Ferry over Middle River, and the construction, use and maintenance of the Woodward Island Bridge. The existing ferry has existed for many years, but was not previously authorized by the Commission.

Constructed in 1936, the ferry is located in the Delta area of western San Joaquin County on Middle River, approximately 12 miles west of the city of Stockton, between Woodward Island on the west and Upper Jones Tract on the east. It connects with West Bacon Island Road on Upper Jones Tract on the eastern banks of Middle River and the Woodward Island levee road on the western banks. The ferry is a cable-drawn ferry that provides the only access for farming, emergency, and service vehicles to Woodward Island. The ferry system includes the cable-drawn ferry, ferry approach ramps (piers) located on the west and east levees of Middle River, and a submerged ferry cable that extends across the channel and is anchored near each pier. The County owns the ferry and the ramps, and Reclamation District 2072 operates the ferry.

The ferry has a maximum capacity of 30 tons and operates between the two levees via a cable guidance system. While the ferry is operating, its cable, extending from levee to levee, is pulled taut. The cable poses a hazard to boats and large vessels on Middle River as it is submerged just below the surface of the water. In addition, during the winter when the water level is high and the current is strong, debris is carried down river and sometimes becomes lodged on the cable.

In January 2012, the California Department of Transportation (Caltrans) conducted an inspection of the ferry approach ramps and determined that the east approach was structurally deficient and in need of replacement. Caltrans also determined the western approach ramp to be structurally deficient and functionally obsolete.

STAFF REPORT NO. **C34** (CONT'D)

The parameters for the proposed bridge are based upon the need for a bridge permit from the U.S. Coast Guard (USCG) under the provisions of the General Bridge Act of 1946, because Middle River is considered to be a navigable waterway. The USCG determined that the largest vessels potentially operating on Middle River beneath and through the proposed bridge are dredges and tugs with barges. The USCG has indicated that with a "removable span structure" a minimum 30 feet of vertical clearance (from the ordinary high water mark (OHWM)) and 80 feet of horizontal clearance within the navigational channel would be required to convey routine recreational boat traffic while the removable span is in place.

The proposed project involves removing the existing ferry system and replacing it with a new 675-foot-long bridge to be known as the Woodward Island Bridge. The bridge is proposed to be located north of the existing ferry, and its alignment would allow the existing ferry to remain operational during construction of the bridge. The proposed bridge would be a two-lane, seven-span bridge with a removable span to allow unlimited vertical clearance when the span is removed, in conformance with USCG requirements. The removable span would be constructed with a steel plate girder structure (horizontal beam supporting the vertical loads) and concrete deck to minimize its weight. The removable span would be removed, when needed, by cranes that would lift the span and place it temporarily on the concrete support structure extending north from the adjacent center span or on an adjacent barge. The crane would not be located onsite but would be transported to the bridge when necessary.

Precast concrete girders are proposed for the bridge's fixed spans to eliminate the need to construct falsework for the superstructure in the river. A total of 18 piles are proposed for the new bridge, with each pile being up to 72 inches in diameter. Of the 18 piles, four would be located within the levee embankment (outside of the river) at the two abutments, and 14 would be located within the river, including two piles at each of four piers and three piles at the two piers that would support the removable span. The bridge would be 24 feet, 8 inches wide total with metal tubular bridge railing on both sides and have one travel lane in each direction.

Barges would be used to provide the contractor with access to the river portion of the project area. The barges would be used to stage construction materials, provide a working platform for cranes, and be used for general construction support. Two to six barges would be anchored in the river at one time. The barges would be anchored to the river bottom or shore with spud piles that would be pushed or vibrated into place. Barges would be placed and anchored prior to placing and vibrating the cast-in-

STAFF REPORT NO. **C34** (CONT'D)

steel-shell (CISS) piles. The barges would be repositioned in the channel throughout construction only as needed to complete the work. The barges would be removed after bridge construction and ferry ramp removal is completed.

Construction of the proposed bridge is planned to be completed over two construction seasons. In-water construction activities would be limited to the period of July 21 to October 31 during the first construction season and August 1 to October 31 during the following construction season. The first work window allows sufficient time for all in-water work associated with bridge construction (particularly pile driving) to be completed, thus limiting the potential impacts on fish and other species to one construction season. Other construction activities above the mean high water line (e.g., work on the pier caps and installation of the removable and fixed spans) would not be limited to the in-water window of July 21 to October 31.

CISS piles, consisting of hollow steel shells, would be driven into the channel bottom, which consists primarily of mud and silt, using a combination of vibratory and impact pile drivers and cranes mounted on barges. The piles would be 120 to 150 feet in length and would be embedded 60 to 100 feet into the substrate, based on preliminary engineering and site analyses. Placing the CISS piles and vibrating them into place would begin July 21, and impact hammering would begin no sooner than August 1 and would be completed by October 31.

After construction of the new bridge is completed and is operational, the ferry ramps would be removed with a crane and placed on a barge for disposal. The ferry ramp timber piles would be pulled out in their entirety or removed down to an elevation 3 feet below the bottom of the existing mud line. The cable would be detached from the ferry, disconnected from the anchors on shore near each ferry ramp, and pulled out of the river. This work would take place during the second construction season beginning on or after August 1. The work is anticipated to take approximately 2 weeks but would commence after the swallow nesting season ends and would be complete by September 30.

Promotion of public access to and use of California's navigable waters is a mandate of the California Constitution (article 10, section 4), a condition of statehood in the Act of Admission (Vol.9, Statutes at Large, page 452), and a responsibility of all involved public agencies pursuant to the common law Public Trust Doctrine. Oftentimes, the most logical location for access to a waterway is where a bridge crosses it. Kayakers, rafters, and others may legally utilize the public access easements around bridges to enter and exit navigable waterways. With those factors in mind, the

STAFF REPORT NO. **C34** (CONT'D)

legislature adopted three code sections in 1974 to facilitate increased public access around bridges (Streets and Highway Code §§ 84.5, 991, 1809). All state or county highway projects and all city street projects that propose construction of a new bridge over a navigable waterway must consider, and report on, the feasibility of providing public access for recreational purposes to the waterway before the bridge is constructed. These code provisions apply to state agencies and city and county governments that approve bridge construction projects.

As part of the project action, on July 25, 2017, the Board of Supervisors of the County of San Joaquin: 1) approved and accepted a Public Access Feasibility Study prepared by Quincy Engineering pursuant to California Streets and Highways Code section 991, on the feasibility of providing public access to Middle River for recreational purposes as part of the Woodward Island Ferry Ramp Replacement Project and; 2) determined that based upon the additional cost and potential delays, the construction of a public access facility to Middle River as part of the project is not feasible.

Although the existing ferry system has existed for many years at this location, there are several hazards associated with it. The ferry operates between the two levees via a cable guidance system. When the ferry is operating, its cable is pulled taut and poses a hazard to water skiers, sailboats, fishing boats, houseboats, and large vessels on Middle River, as it is submerged just below the surface of the water. In addition, during the winter when the water level is high and the current is strong, debris is carried down river and sometimes becomes lodged on the cable. Once complete, the proposed project would improve safety because the ferry cable, which now poses a hazard, would be removed. Furthermore, the elimination of the hazard posed by the ferry cable could result in increased use of Middle River for recreational activities.

The proposed lease includes certain provisions protecting the public use of the proposed lease area by requiring the County to obtain necessary permits for the project, and the County has also adopted a Mitigation and Monitoring Program (MMP) to substantially reduce or eliminate potentially significant impacts resulting from the project. The lease does not alienate the State's fee simple interest, and neither permanently impairs public rights. The lease requires the County to conduct all repair and maintenance work safely and indemnify the Commission in the event of any liability resulting from the proposed action. The lease does not grant the Lessee exclusive rights to the lease premises, and is also limited to a term of 25 years, which allows the Commission flexibility to determine if

STAFF REPORT NO. C34 (CONT'D)

the Public Trust needs of the area have changed over time. As such, Commission staff believes this use of public land, by a public agency, for a public benefit will not substantially impair the public rights to navigation and fishing or substantially interfere with the Public Trust needs and values at this location, at this time, or for the foreseeable term of the lease.

Climate Change Analysis:

Climate change impacts, including sea-level rise, more frequent and intense storm events, and increased flooding and erosion, affect both open coastal areas and inland waterways in California. The lease area is located on the Middle River, which is a tidally influenced site vulnerable to flooding at current sea levels. The facilities in or near the lease area include an existing ferry tender's residence, ferry ramps, and ferry cable (all to be demolished and removed), and a proposed two-lane removable span bridge that would cross the Middle River.

This area will also be at a higher risk of flood exposure given future projection scenarios of sea-level rise: the region could see up to 1 foot of sea-level rise (from year 2000 levels) by 2030, 2 feet by 2050, and possibly more than 5 feet by 2100 (National Research Council 2012). Rising sea levels can lead to more frequent flood inundation in low lying areas and larger tidal events. In addition, as stated in *Safeguarding California* (California Natural Resources Agency 2014), climate change is projected to increase the frequency and severity of natural disasters related to flooding and storms (especially when coupled with sea-level rise). In tidally influenced waterways, 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 and sea-level rise will further influence coastal and riverine areas by changing erosion and sedimentation rates. In rivers and tidally influenced waterways, flooding and storm flow, as well as runoff, will likely increase scour and decrease bank stability at a faster rate.

The combination of these projected conditions could increase the likelihood of damage to the bridge structures during the term of the lease. The fixed pilings located both in the river and the levees may need reinforcement or repairs in response to an increased frequency or severity of storms and higher levels of flood exposure. However, in response to the possibility that the levees in the vicinity of the project could be raised at some point in the future, the new bridge profile has been designed to

STAFF REPORT NO. **C34** (CONT'D)

assume a future top of levee elevation of 14.1 feet, which is approximately 2.3 feet above the existing top of levee elevation. According to the Applicant, this would prevent the need to make any adjustments to the bridge grade if and when the levees are raised.

Regular maintenance, as required by the terms of the lease, will reduce the likelihood of severe structural degradation. Pursuant to the proposed lease, the Applicant acknowledges that the lease premises are located in an area that may be subject to effects of climate change, including sea-level rise.

Conclusion:

For the reasons stated above, Commission staff believes the issuance of the proposed lease will not substantially impair the public rights to navigation, fishing, or other Public Trust needs and values at this location, at this time, or for the foreseeable term of the proposed lease, and is in the best interests of the State.

OTHER PERTINENT INFORMATION:

1. This action is consistent with Strategy 1.1 of the Commission's Strategic Plan to deliver the highest levels of public health and safety in the protection, preservation and responsible economic use of the lands and resources under the Commission's jurisdiction.
2. A Mitigated Negative Declaration, State Clearinghouse No. 2016012065, was prepared for this project by the County of San Joaquin and adopted on October 26, 2016. Commission staff has reviewed such document.
3. A Mitigation Monitoring Program was adopted by the County of San Joaquin.
4. This activity involves lands identified as possessing significant environmental values pursuant to Public Resources Code section 6370 et seq., but such activity will not affect those significant lands. Based upon staff's consultation with the persons nominating such lands and through the CEQA review process, it is staff's opinion that the project, as proposed, is consistent with its use classification.

APPROVALS REQUIRED:

U.S. Army Corps of Engineers
U.S. Coast Guard
U.S. Fish and Wildlife Service
National Marine Fisheries Service

STAFF REPORT NO. **C34** (CONT'D)

California Department of Fish and Wildlife
Central Valley Regional Water Quality Control Board

EXHIBITS:

- A. Land Description
- A-1 Land Description – Temporary Construction Area
- B. Site and Location Map
- C. Mitigation Monitoring Program

RECOMMENDED ACTION:

It is recommended that the Commission:

CEQA FINDING:

Find that a Mitigated Negative Declaration, State Clearinghouse No. 2016012065, and a Mitigation Monitoring Program were prepared for this project by the County of San Joaquin and adopted on October 26, 2016, and that the Commission has reviewed and considered the information contained therein; that in the Commission's independent judgement, 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 Exhibit C, attached hereto.

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 the Public Trust needs and values at this location, at this time, or 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.

SIGNIFICANT LANDS INVENTORY FINDING:

Find that this activity is consistent with the use classification designated by the Commission for the land pursuant to Public Resources Code section 6370 et seq.

AUTHORIZATION:

Authorize issuance of a General Lease – Public Agency Use to County of San Joaquin beginning August 17, 2017, for a term of 25 years, for the

STAFF REPORT NO. **C34** (CONT'D)

construction, use, and maintenance of a new bridge known as the Woodward Island Bridge, use of a temporary construction easement, and the removal of the existing Woodward Island Ferry system as described in Exhibit A and A-1, and shown on Exhibit B (for reference purposes only), attached and by this reference made a part hereof; consideration being the public 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 interests.

EXHIBIT A

W 27087

LAND DESCRIPTION

A one-hundred (100) foot wide strip of tide and submerged land situate in the bed of the Middle River, lying adjacent to, on the left bank, S&O Survey 1140 patented March 26, 1873, and on the right bank, S&O Survey 1267 patented November 24, 1876 County of San Joaquin, State of California and lying 100 feet southeasterly of the following described line:

BEGINNING at Station 85 being a point on the traverse line run along the center of the levee adjacent to the left bank of the Middle River as shown on the "Map of Woodward Island" filed in Book 2 of Surveys, Page 72, San Joaquin County Records from which Station 84 bears North $76^{\circ}17'00''$ West 170.90 feet; thence North $40^{\circ}29'40''$ East 700 feet to a point on the east bank of said river and the terminus of said line.

The sidelines of said strip are to be lengthened or shortened so as to begin and terminate on the right and left banks of the Middle River.

END OF DESCRIPTION

PREPARED 7/07/17 BY THE CALIFORNIA STATE LANDS COMMISSION BOUNDARY UNIT



EXHIBIT A-1 (TEMPORARY CONSTRUCTION AREA)

W 27087

LAND DESCRIPTION

A four-hundred and forty (440) foot wide strip of tide and submerged land situate in the bed of the Middle River, lying adjacent to, on the left bank, S&O Survey 1140 patented March 26, 1873, and on the right bank, S&O Survey 1267 patented November 24, 1876 County of San Joaquin, State of California and lying 220 feet on each side of the following described centerline:

BEGINNING at Station 85 being a point on the traverse line run along the center of the levee adjacent to the left bank of the Middle River as shown on the "Map of Woodward Island" filed in Book 2 of Surveys, Page 72, San Joaquin County Records from which Station 84 bears North $76^{\circ}17'00''$ West 170.90 feet; thence North $45^{\circ}53'17''$ East 700 feet to a point on the east bank of said river and the terminus of said centerline.

The sidelines of said strip are to be lengthened or shortened so as to begin and terminate on the right and left banks of the Middle River.

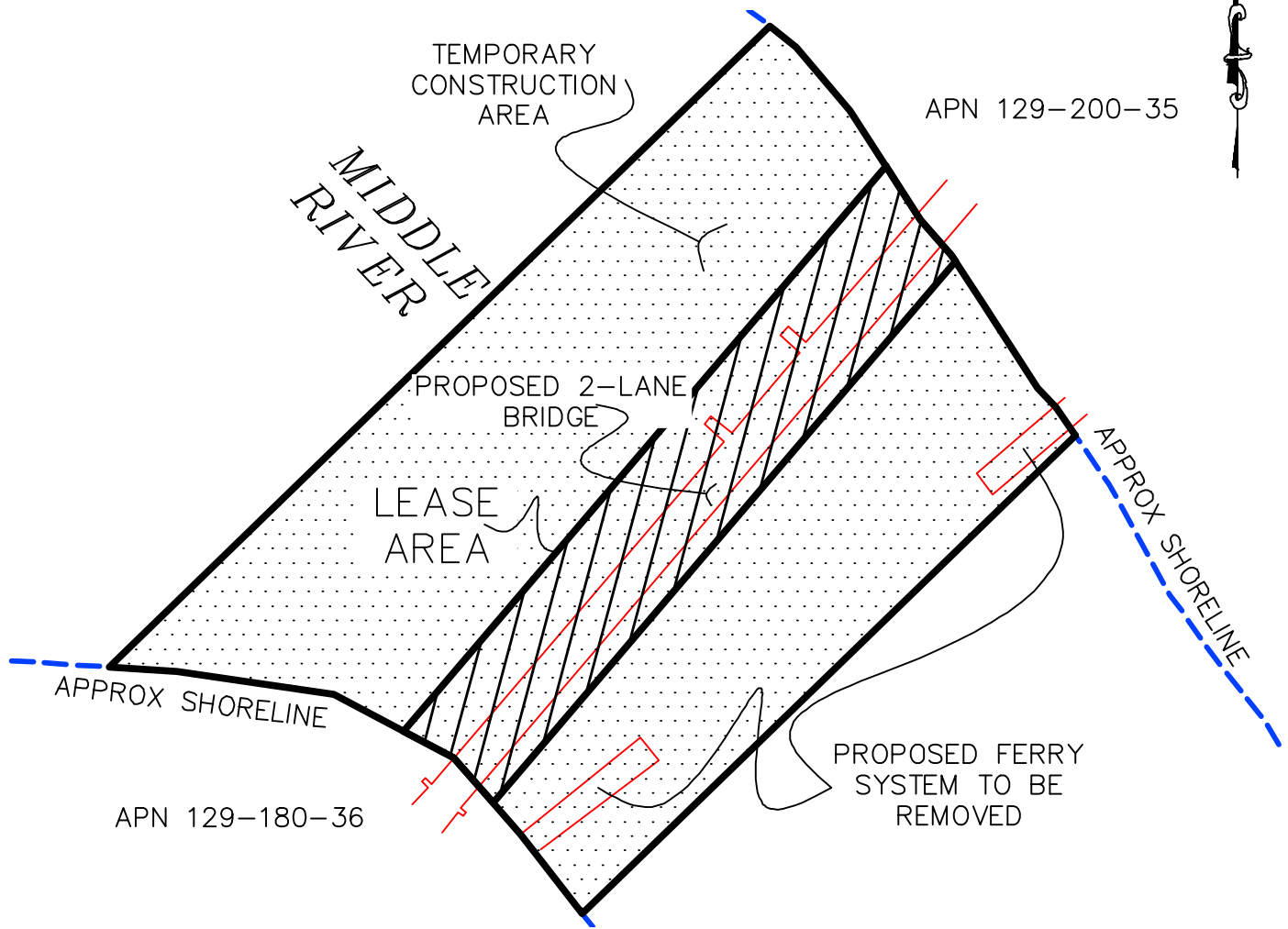
END OF DESCRIPTION

PREPARED 7/07/17 BY THE CALIFORNIA STATE LANDS COMMISSION BOUNDARY UNIT



NO SCALE

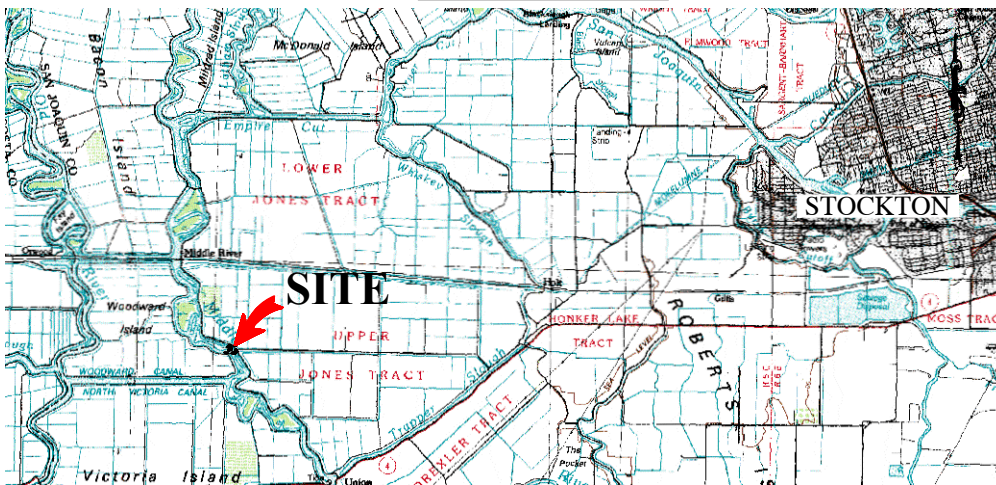
SITE



PROPOSED BRIDGE & WOODWARD ISLAND FERRY REMOVAL - MIDDLE RIVER

NO SCALE

LOCATION



MAP SOURCE: USGS QUAD

Exhibit B

W 27087

COUNTY OF SAN JOAQUIN
APN 129-200-35 & 129-180-36

GENERAL LEASE -
PUBLIC AGENCY USE
SAN JOAQUIN COUNTY



MJF 7/06/17

This Exhibit is solely for purposes of generally defining the lease premises, is based on unverified information provided by the Lessee or other parties and is not intended to be, nor shall it be construed as, a waiver or limitation of any State interest in the subject or any other property.

EXHIBIT C
CALIFORNIA STATE LANDS COMMISSION
MITIGATION MONITORING PROGRAM

**WOODWARD ISLAND BRIDGE NO. 00F001 (FERRY RAMP REPLACEMENT) OVER
MIDDLE RIVER**

(W27087, State Clearinghouse No. 2016012065)

The California State Lands Commission (Commission) is a responsible agency under the California Environmental Quality Act (CEQA) for the Woodward Island Bridge No. 00F001 (Ferry Ramp Replacement) Over Middle River Project (Project). The CEQA lead agency for the Project is the County of San Joaquin.

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 Commission lands. The purpose of a 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 section 15097, subdivision (a), states in part:¹

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 has adopted an MND, State Clearinghouse No. 2016012065, has adopted a MMP for the whole of the Project (see Exhibit C, Attachment C-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 C-1 below. The full text of each mitigation measure, as set forth in the MMP prepared by the CEQA lead agency and listed in Table C-1, is incorporated by reference in this Exhibit C. 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 underlined; and
- Deletions of the text of the mitigation measure are shown as ~~strikeout~~ or as otherwise noted.

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

Table C-1. Project Impacts and Applicable Mitigation Measures

Potential Impact	Mitigation Measure (MM) ²	Difference Between CSLC MMP and Lead Agency MMP
Impacts from Fugitive Dust Emissions (PM ₁₀)	MM AQ-1: Prepare and implement a Dust Control Plan to comply with SJVAPCD Regulation VIII Requirements to control construction emissions of PM ₁₀	None
Impacts from Valley Fever (<i>C. immitis</i>) exposure	MM AQ-1	None
Impacts to Special-Status Plant Species and Habitat	MM BIO-1: Install Construction Barrier Fencing around the Construction Area to Protect Sensitive Biological Resources to Be Avoided MM BIO-2: Conduct Environmental Awareness Training for Construction Employees and Provide Biological Monitoring MM BIO-3: Protect Water Quality and Prevent Erosion and Sedimentation in Drainages and Wetlands MM BIO-4: Avoid the Introduction and Spread of Invasive Plants	None
Impacts to Western Pond Turtle	MM BIO-1, MM BIO-2, MM BIO-3 MM BIO-5: Conduct Preconstruction Surveys for Western Pond Turtle and Monitor Initial In-Water Work	None
Impacts to Giant Garter Snake	MM BIO-1, MM BIO-2, MM BIO-3	None
Impacts to Northern Harrier, White-Tailed Kite, and Tricolored Blackbird	MM BIO-1, MM BIO-2, MM BIO-3 MM BIO-9: Conduct Vegetation Removal during the Non-Breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds	None
Impacts to California Black Rail	MM BIO-1, MM BIO-2, MM BIO-3 MM BIO-12: Conduct Focused Surveys for Nesting California Black Rail Prior to Construction and Avoid Work within 700 Feet of an Identified Calling Center	None
Impacts to Other Migratory Birds	MM BIO-1, MM BIO-2, MM BIO-3, MM BIO-9 MM BIO-14: Remove the Southeast Ferry Terminal after the Swallow Breeding Season has Concluded or Implement Measures to Deter Nesting Prior to the Nesting Season	None
Impacts to Special-Status Fish Species	MM BIO-3 MM BIO-15: Conduct All In-Water Construction Activities between July 21 and October 31 and during Daylight Hours Only	None

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

Potential Impact	Mitigation Measure (MM) ²	Difference Between CSLC MMP and Lead Agency MMP
	MM BIO-16: Implement Measures to Minimize Exceedance of Interim Threshold Sound Levels during Pile Driving MM BIO-17: Develop and Implement a Hydroacoustic Monitoring Plan MM BIO-18: Monitor Turbidity in Middle River	
Impacts to Freshwater Marsh	MM BIO-1, MM BIO-2, MM BIO-3	None
Impacts to Tidal Riparian Drainage	MM BIO-22: Compensate for the Permanent Loss and Temporary Fill of Tidal Perennial Drainage	None
Impacts to Previously Unidentified Cultural Resources	MM CUL-1: Implement Measures to Protect Previously Unidentified Cultural Resources	See below.
Impacts to Human Remains	MM CUL-2: Implement Measures if Construction Activities Inadvertently Discover or Disturb Human Remains	See below.
Impacts to Fossils	MM GEO-1: Educate Construction Personnel in Recognizing Fossil Material MM GEO-2: Stop Work if Substantial Fossil Remains Are Encountered during Construction	None
Impacts from Lead and Asbestos	MM HAZ-1: Assess Structures for Lead-Based Paint and Asbestos-Containing Materials and Include Provisions in Standard Best Management Practices MM HAZ-2: Conduct a Preliminary Investigation and Screening for Aerially-Deposited Lead	None
Impacts from Contaminated Sediments	MM BIO-3	None

Mitigation Measure CUL-1:

- The County shall ensure that construction specifications include the following information in the grading notes.

Construction shall stop if potential cultural resources are encountered. It is possible that previous activities have obscured surface evidence of cultural resources. If signs of an archaeological site, such as any unusual amounts of stone, bone, or shell, are uncovered during grading or other construction activities, work will be halted within 100 feet of the find and the San Joaquin County Department of Public Works will be notified. A qualified archaeologist will be consulted for an onsite evaluation. If the site is or appears to be eligible for listing in state or federal registers, additional mitigation, such as further testing for evaluation or data recovery, may be necessary.

- In the event resources are discovered, the County will retain a qualified archaeologist to assess the find, and to determine whether the resource requires further study. Any previously undiscovered resources found during construction will be recorded on appropriate California Department of Parks and Recreation 523 forms and evaluated for significance under all applicable regulatory criteria.
- All work will stop in the immediate vicinity of the find, and if the find is determined to be an important cultural resource, the County will make available contingency funding and a time allotment sufficient to allow recovering an archaeological sample or to implement an avoidance measure. Construction work can continue on other parts of the project while archaeological mitigation takes place.
- California State Lands Commission staff shall be notified of any significant cultural resources, tribal cultural resources, or paleontological specimens discovered on lands under the jurisdiction of the Commission. The final disposition of archaeological and historical resources and paleontological specimens from such lands must be approved by the Commission.

Mitigation Measure CUL-2:

The County shall ensure construction specifications include the following in the grading notes.

If human remains are discovered during any phase of construction, including disarticulated or cremated remains, the construction contractor will immediately cease all ground-disturbing activities within 100 feet of the remains and notify the County of San Joaquin Department of Public Works.

In accordance with California State Health and Safety Code Section 7505.5, no further disturbance will occur until the following steps have been completed.

The County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code (PRC) § 5097.98.

If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission (NAHC) will be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains. If the human remains are Native American and are found on lands under the jurisdiction of the California State Lands Commission, Commission staff shall also be notified to address any landowner responsibilities.

It is further recommended that a professional archaeologist with Native American burial experience conduct a field investigation of the specific site and consult with the Most Likely Descendant (MLD), if any, identified by the NAHC. As necessary an appropriate, a professional archaeologist may provide technical assistance to the MLD, including but not limited to, the excavation and removal of the human remains.

ATTACHMENT C-1

**Mitigation Monitoring Program Adopted by the
County of San Joaquin**

Title	Mitigation Measure	Timing	Responsibility
Air Quality			
Mitigation Measure AQ-1: Prepare and implement a Dust Control Plan to comply with SJVAPCD Regulation VIII Requirements to control construction emissions of PM10	<p>Construction contractors will prepare and submit a dust control plan for approval by the SJVAPCD at least 30 days prior to any earthmoving or construction activities. Potential measures that might be included in the dust control plan to control the generation of construction-related PM10 emissions could include the following.</p> <ul style="list-style-type: none"> • Pre-activity. <ul style="list-style-type: none"> ◦ Pre-water the work site and plan work in phases to reduce the amount of surface area disturbed at any one time. • Active operations. <ul style="list-style-type: none"> ◦ Apply water to dry areas during leveling, grading, trenching, and earthmoving activities. ◦ Construct and maintain wind barriers and apply water or dust suppressants to the disturbed surface areas. • Inactive operations, including after work hours, weekends, and holidays. <ul style="list-style-type: none"> ◦ Apply water or dust suppressants on disturbed surface areas to form a visible crust, and restrict vehicle access to maintain the visible crust. • Temporary stabilization of areas that remain unused for 7 or more days. <ul style="list-style-type: none"> ◦ Restrict vehicular access and apply and maintain water or dust suppressants on all unvegetated areas. ◦ Establish vegetation on all previously disturbed areas. ◦ Apply and maintain gravel at all previously disturbed areas. ◦ Pave previously disturbed areas. • Unpaved access and haul roads, traffic, and equipment storage areas. <ul style="list-style-type: none"> ◦ Apply water or dust suppressants to unpaved haul and access roads. ◦ Post a speed limit of not more than 15 miles per hour; place signs at each entrance and again every 500 feet. ◦ Apply water or dust suppressants to vehicle traffic and equipment storage areas. • Wind events. <ul style="list-style-type: none"> ◦ Apply water to control fugitive dust during wind events, unless unsafe to do so, using water-application equipment. ◦ Cease outdoor construction activities that disturb the soil whenever visible dust emissions cannot be effectively controlled. 	Prior to and during construction	Construction Contractor

Title	Mitigation Measure	Timing	Responsibility
	<ul style="list-style-type: none"> • Outdoor handling of bulk materials. <ul style="list-style-type: none"> ◦ Apply water or dust suppressants when handling bulk materials. ◦ Install and maintain wind barriers with less than 50% porosity, and apply water or dust suppressants. • Outdoor storage of bulk materials. <ul style="list-style-type: none"> ◦ Apply water or dust suppressants to storage piles. ◦ Cover storage piles with tarps, plastic, or other suitable material and anchor the piles in a manner that prevents the cover from being removed by wind action. ◦ Install and maintain wind barriers with less than 50% porosity around the storage piles, and apply water or dust suppressants. ◦ Use a three-sided structure with less than 50% porosity that is at least as high as the storage piles. • Onsite transport of bulk materials. <ul style="list-style-type: none"> ◦ Limit vehicle speed on the work site to 15 miles per hour. ◦ Load all haul trucks such that the freeboard is not less than 6 inches when transported across any paved public access road. ◦ Apply a sufficient amount of water to the top of the load to limit visible dust emissions. ◦ Cover haul trucks with a tarp or other suitable cover. • Offsite transport of bulk materials. <ul style="list-style-type: none"> ◦ The following practices will be followed. <ul style="list-style-type: none"> • Clean or cover the interior of emptied truck cargo compartments before leaving the site. • Prevent spillage or loss of bulk materials from holes or other openings in the cargo compartment's floor, sides, and tailgates. • Outdoor transport using a chute or conveyor. <ul style="list-style-type: none"> ◦ No open chutes or conveyors. ◦ Fully enclose all chutes or conveyors. ◦ Use water spray equipment to sufficiently wet the materials. ◦ Wash or screen transported materials to remove fines (PM10 or smaller). 		

Title	Mitigation Measure	Timing	Responsibility
Biological Resources			
Mitigation Measure BIO-1: Install Construction Barrier Fencing around the Construction Area to Protect Sensitive Biological Resources to Be Avoided	<p>The County and/or its contractor will install orange construction fencing to identify environmentally sensitive areas. To prevent snakes and other ground-dwelling animals from being caught in the orange construction fencing, it will be placed such that there is a 1-foot gap between the ground and the bottom of the orange construction fencing. A qualified biologist will identify sensitive biological resources adjacent to the construction area before the final design plans are prepared so that the areas to be fenced can be included in the plans. The area that would generally be required for construction, including staging areas, is shown in Figure 1-3. Access to the construction area would be from existing roads. Portions of this area that are to be avoided during construction will be fenced off to avoid disturbance. In addition, the small island within the construction area and the large island northwest of the proposed bridge site (labeled "Foley" in Figure 1-3) should be avoided because of the potential for these islands to provide suitable habitat for special-status plant and wildlife species. These islands will be labeled as sensitive biological resources on the construction plans. Sensitive biological resources that occur adjacent to the construction area that could be directly affected by the project include natural communities of special concern; special-status wildlife habitats for western pond turtle, giant garter snake, California black rail, and tricolored blackbird; and nest sites of northern harrier, Swainson's hawk, white-tailed kite, western burrowing owl, loggerhead shrike, or other migratory birds.</p> <p>Temporary fences around the environmentally sensitive areas will be installed as one of the first orders of work following Caltrans specifications. Before construction begins, the construction contractor will work with the project engineer and the project biologist to identify the locations for the barrier fencing and will place stakes around the sensitive resource sites to indicate these locations. The protected areas will be designated as environmentally sensitive areas and clearly identified on the construction plans. The fencing will be installed before construction activities are initiated, maintained throughout the construction period, and removed after completion of construction.</p>	Prior to and during construction	Construction contractor with qualified biologist
Mitigation Measure BIO-2: Conduct Environmental Awareness Training for Construction Employees and Provide Biological Monitoring	<p>The County will retain a qualified biologist to conduct environmental awareness training for construction crews before project implementation. The awareness training will be provided to all construction personnel to brief them on the need to avoid effects on sensitive biological resources (e.g., natural communities of special concern and special-status species habitats in and adjacent to the construction area, including the islands in Middle River). The education program will include a brief review of the special-status species that could potentially occur in the study area (including their life history, habitat requirements, and photographs of the species). The training will identify the portions of the study area in which the species may occur, as well as their legal status and protection under ESA, CESA and CFGC. The program will also cover the restrictions and guidelines that must be followed by all construction personnel to reduce or avoid effects on these species during project implementation. This will include the steps to be taken if a sensitive species is found within the construction area (i.e., notifying the crew foreman who will call a designated biological monitor). In addition, construction employees will be educated about invasive plant identification and the importance of controlling and preventing the spread of invasive plant infestations. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all</p>	Prior to and during construction	County and construction contractor

Title	Mitigation Measure	Timing	Responsibility
	<p>relevant permit conditions will be provided to each crew member. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period.</p> <p>A USFWS-, NMFS-, and CDFW-approved biological monitor will be designated for the project and will visit the site periodically to ensure that fencing around environmentally sensitive areas is intact and that activities are being conducted in accordance with the agreed upon project schedule. The monitor will provide the County with a monitoring log for each site visit, and the County will submit it to USFWS, NMFS, and CDFW.</p>		
Mitigation Measure BIO-3: Protect Water Quality and Prevent Erosion and Sedimentation in Drainages and Wetlands	<p>The County and/or its construction contractor will comply with all construction site BMPs specified in the SWPPP and any other permit conditions to minimize introduction of construction-related contaminants and mobilization of sediment in freshwater marshes, seasonal wetlands, Middle River, Broadway Canal, ponds, and agricultural ditches in and adjacent to the project area. Broadly, these BMPs will address soil stabilization, sediment control, wind erosion control, vehicle tracking control, non-stormwater management, and waste management practices. The BMPs will be based on the best conventional and best available technology.</p> <p>The proposed project is subject to stormwater quality regulations established under the NPDES, described in CWA Section 402. In California, the NPDES program requires that any construction activity disturbing 1 or more acres comply with the statewide general permit, as authorized by the State Water Board. The general permit requires elimination or minimization of non-stormwater discharges from construction sites and the development and implementation of a SWPPP for the site. The primary elements of the SWPPP are listed below.</p> <ul style="list-style-type: none"> • Description of site characteristics—including runoff and streamflow characteristics and soil erosion hazard—and construction procedures. • Guidelines for proper application of erosion and sediment control BMPs. • Description of measures to prevent and control toxic materials spills. • Description of construction site housekeeping practices. <p>In addition to these primary elements, the SWPPP also specifies that the extent of soil and vegetative disturbance will be minimized by control fencing or other means and that the extent of soil disturbed at any given time will be minimized. The SWPPP must be retained at the construction site.</p> <p>The BMPs will be selected to achieve maximum sediment removal and represent the best available technology that is economically achievable and are subject to review and approval by the County. The County will perform routine inspections of the construction area to verify the BMPs are properly implemented and maintained. The County will notify contractors immediately if there is a noncompliance issue and will require compliance.</p>	Prior to, during , and after construction	County and construction contractor

Title	Mitigation Measure	Timing	Responsibility
	<p>The BMPs will include, but are not limited to, those listed below.</p> <ul style="list-style-type: none"> • Conduct all earthwork or foundation activities involving wetlands in the dry season (generally between June 1 and October 15, but may vary based on weather). Conduct all in-water work within Middle River between July 21 and October 31. • Use only equipment in good working order and free of dripping or leaking engine fluids when working in and around drainages and wetlands. Perform all vehicle maintenance at least 300 feet from all drainages and wetlands. Conduct any necessary equipment washing where the water cannot flow into drainages or wetlands. • Develop a hazardous material spill prevention control and countermeasure plan before construction begins. The plan will include strict onsite handling rules to keep construction and maintenance materials from entering the river, including procedures related to refueling, operating, storing, and staging construction equipment, and preventing and responding to spills. The plan will also identify the parties responsible for monitoring the spill response. During construction, any spills will be cleaned up immediately according to the spill prevention and countermeasure plan. The County will review and approve the contractors' toxic materials spill prevention control and countermeasure plan before allowing construction to begin. • Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete, solvents and adhesives, thinners, paints, fuels, including gasoline, sawdust, dirt, asphalt and concrete saw slurry, and heavily chlorinated water. • Measure baseline turbidity, pH, specific conductance, and temperatures in Middle River. As required by the Regional Water Board, avoid exceeding water quality standards specified in the <i>Water Quality Control Plan for the Sacramento and San Joaquin River Basins</i> over the natural background conditions. • Prevent discharge of turbid water to Middle River during any dewatering activities by filtering the discharge first using a filter bag, diverting the water to a settling tank or infiltration areas, and/or treating the water in a manner that will ensure compliance with water quality requirements prior to discharging water back to Middle River or any canal, ditch, wetland, or other aquatic habitat. • Prevent discharge of concrete to Middle River by diverting and properly disposing of water displaced from within CISS piles as concrete is being poured, as required by the NPDES permit. • Dispose of any surplus concrete rubble, asphalt, or other rubble from construction at a local landfill. • Prepare and implement an erosion and sediment control plan for the proposed project. The plan will include the provisions and protocols listed below. The SWPPP for the project will detail the applications and type of measures and the allowable exposure of unprotected soils. <ul style="list-style-type: none"> ◦ Discharge from dewatering operations, if needed, and runoff from disturbed areas will be made to conform to the water quality requirements of the waste discharge permit issued by the Regional Water Board. ◦ Temporary erosion control measures, such as sandbagged silt fences, will be applied throughout construction of the proposed project and will be removed after the working area is stabilized or as directed by the engineer. Soil exposure will be minimized through use of temporary BMPs, 		

Title	Mitigation Measure	Timing	Responsibility
	<p>groundcover, and stabilization measures. Exposed dust-producing surfaces will be sprinkled daily, if necessary, until wet; sprinkling will be controlled to avoid producing runoff. Paved roads will be swept daily following construction activities.</p> <ul style="list-style-type: none"> ○ The contractor will conduct periodic maintenance of erosion and sediment control measures. ○ An appropriate seed mix of native species will be planted on disturbed areas upon completion of construction. ○ Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways. ○ Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways. Material stockpiles will be located in non-traffic areas only. Side slope rations will not be steeper than 2:1. All stockpile areas will be surrounded by a filter fabric fence and interceptor dike. ○ Contain soil and filter runoff from disturbed areas by berms, vegetated filters, silt fencing, straw wattle, plastic sheeting, catch basins, or other means necessary to prevent the escape of sediment from the disturbed area. ○ Use other temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary re-vegetation or other ground cover) to control erosion from disturbed areas as necessary. ○ Avoid earth or organic material from being deposited or placed where it may be directly carried into the channel. ● The County will also obtain a 401 water quality certification from the Central Valley Water Quality Control Water Board, which may contain additional BMPs and water quality measures to ensure the protection of water quality. 		
Mitigation Measure BIO-4: Avoid the Introduction and Spread of Invasive Plants	<p>The County and/or its contractor will be responsible for avoiding the introduction of new invasive plants and the spread of invasive plants previously documented in the study area. Accordingly, the following measures will be implemented during construction.</p> <ul style="list-style-type: none"> ● Educate construction supervisors and managers on weed identification and the importance of controlling and preventing the spread of invasive weeds. ● Minimize surface disturbance to the greatest extent feasible to complete the work. ● Treat all giant reed plants to be removed from the project area with approved eradication methods at an appropriate time to prevent and/or destroy viable plant parts or seed. ● Use weed-free imported erosion-control materials (or rice straw in upland areas). 	During construction	Construction contractor

Title	Mitigation Measure	Timing	Responsibility
Mitigation Measure BIO-5: Conduct Preconstruction Surveys for Western Pond Turtle and Monitor Initial In-Water Work	To avoid potential injury or mortality of western pond turtles, the County will retain a qualified biologist who is CDFW-certified to capture and relocate turtles, to conduct a preconstruction survey for western pond turtles within 24 hours of the start of construction. The biologist will survey the aquatic habitat and adjacent marsh and grassland habitat within the construction area. If in-water work does not start immediately, the biologist will return to the construction site immediately prior to the start of in-water work to conduct another preconstruction survey. The biologist does not need to be present when barges are moved into the project area but will remain onsite during the first 3 days of other initial in-water work. If a turtle becomes trapped during initial in-water work, the biologist will relocate the individual to suitable aquatic habitat upstream or downstream of the construction area. For the remainder of construction, the biologist will remain on-call in case a turtle is discovered. The construction crew will be instructed to notify the crew foreman who will contact the biologist if a turtle is found trapped within the construction area. Work in the area where the turtle is trapped will stop until the biologist arrives and removes and relocates the turtle. The biologist will report his/her activities to the County and CDFW within 1 day of relocating any turtle.	24 hours prior to construction in area and during construction	County
Mitigation Measure BIO-6: Avoid and Minimize Construction Effects on Giant Garter Snake	<p>The County and/or its construction contractor will implement the following measures to avoid, minimize, and compensate for effects on giant garter snake and its habitat.</p> <ul style="list-style-type: none"> • All construction activity in giant garter snake aquatic and upland habitat within 200 feet of aquatic habitat will be conducted during the snake's active period (between May 1 and October 1). During this timeframe, potential for injury and mortality are lessened because snakes are actively moving and avoiding danger. Giant garter snakes are more vulnerable to danger during their inactive period because they are occupying underground burrows or crevices and are more susceptible to direct effects, especially during excavation. In the event that all construction activities in giant garter snake habitat cannot be conducted between May 1 and October 1, Mitigation Measure BIO-9 will be implemented. • Portions of any irrigation ditches that will be filled will be completely dried and then filled during the May 1 to October 1 timeframe. Any dewatered habitat will remain dry for at least 15 consecutive days after April 15 and prior to excavating or filling of the dewatered habitat. • To reduce the likelihood of snakes entering the construction area, the County will install exclusion fencing (silt fence) along the edge of the construction area that is within 200 feet of suitable habitat. The exclusion fencing will be installed during the active period for giant garter snakes (May 1 to October 1) to reduce the potential for injury and mortality during this activity. The exclusion fencing will consist of 3-foot-tall silt fencing buried 4 to 6 inches below ground level. The fencing will extend 200 feet (or other practicable distance determined by the USFWS-approved biologist) beyond the end of the suitable habitat in the construction area with the ends of the fence turned back towards the fencing. If the entire construction area is fenced with silt fence, one-way escape routes will be installed in the silt fence or gaps will be left in the fencing during initial clearing and grubbing to allow snakes to escape from the project area. Sandbags will be placed along the gaps to protect water quality, and the gaps will be replaced with fencing once initial ground clearing is completed. The fencing requirements will be included in the construction specifications, and a USFWS-approved 	Prior to, during, and after construction	Construction contractor

Title	Mitigation Measure	Timing	Responsibility
	<p>biological monitor will be onsite to direct and monitor exclusion fence installation. The exclusion fencing will ensure that giant garter snakes are excluded from the construction area and that suitable upland and aquatic habitat is protected throughout construction.</p> <ul style="list-style-type: none"> • A USFWS-approved biologist will conduct a preconstruction survey in suitable habitat no more than 24 hours before construction. Prior to construction activities each morning, construction personnel will inspect exclusion and orange barrier fencing to ensure they are both in good working order. If any snakes are observed in the construction area during this inspection or at any other time during construction, the USFWS-approved biologist will be contacted to survey the site for snakes. If construction stops for a period of 2 weeks or longer, a new survey will be completed no more than 24 hours prior to the reinitiation of construction work. If a snake that is believed to be a giant garter snake is encountered during construction, activities will cease until appropriate corrective measures have been completed or it has been determined that the snake will not be harmed. • Vegetation clearing within 200 feet of the banks of suitable giant garter snake aquatic habitat will be limited to the minimum area necessary. Avoided giant garter snake habitat within or adjacent to the project area will be flagged and designated as an environmentally sensitive area, to be avoided by all construction personnel. • The movement of heavy equipment within 200 feet of the banks of potential giant garter snake aquatic habitat will be confined to designated haul routes to minimize habitat disturbance. • To avoid entrapment of giant garter snakes, thereby preventing injury or mortality resulting from falling into trenches, all excavated areas more than 1-foot deep will be provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each workday. If escape ramps cannot be provided, then holes or trenches will be covered with plywood or other hard material. • If water is pumped out of any suitable aquatic habitat for giant garter snake, the pump will have a screen with a ¼-inch mesh. This will be included in the construction specifications. • No plastic, monofilament, jute, or similar erosion control matting in which giant garter snakes could become entangled will be placed in the project area. Possible substitutions include coconut coir matting, tactified hydro-seeding compounds, or other materials approved by USFWS and CDFW. <p>After completion of construction activities, temporary fill and construction debris will be removed and, wherever feasible, disturbed areas will be restored to preproject conditions</p>		

Title	Mitigation Measure	Timing	Responsibility
Mitigation Measure BIO-7: Implement Additional Protective Measures during Work in Suitable Habitat during the Giant Garter Snake Dormancy Period	<p>The County will ensure that the following additional protective measures are implemented if work must occur in suitable giant garter snake habitat during the dormancy period (October 2 to April 30), when snakes are more vulnerable to injury and mortality.</p> <ul style="list-style-type: none"> Between May 1 and October 1, construction areas with suitable habitat will be surveyed by a USFWS-approved biologist for suitable burrows and other potential refugia for giant garter snake. Following inspection, all burrows and other refugia that are expected to be disturbed or destroyed as a result of construction activities will be excavated by hand and then carefully collapsed by or under the supervision of the USFWS-approved biologist. Between May 1 and October 1, and following the excavation and collapse of burrows and other refugia, exclusion fencing will be installed around the perimeter of the work area containing suitable habitat. The exclusion fencing will consist of 3-foot-tall silt fencing buried 4 to 6 inches below ground level. This will minimize the potential for new burrows to be excavated by small mammals within the construction area that could be used by giant garter snakes during the inactive season when work is to begin. The fencing also will ensure that equipment and personnel do not go beyond the boundaries of the construction footprint. The fencing should enclose the work area to the maximum extent possible to prevent giant garter snakes from entering the work area. The USFWS-approved biological monitor will work with the contractor to determine where fencing should be placed and will monitor fence installation. A full-time USFWS-approved biological monitor will be onsite for the duration of construction activities and will conduct a preconstruction survey for giant garter snakes in the work area each morning before work begins. All emergent vegetation within aquatic habitat to be disturbed will be cleared prior to the giant garter snake hibernation period (i.e., vegetation clearing must be completed by October 1 for following winter work). <p>Areas where emergent vegetation was temporarily disturbed/cleared will be revegetated with emergent vegetation, and adjacent disturbed upland habitat will be revegetated with native grasses and forbs after construction is completed.</p>	During Construction	Construction contractor and County
Mitigation Measure BIO-8: Compensate for Permanent and Temporary Loss of Giant Garter Snake Habitat	<p>The County proposes to compensate for the permanent loss of 0.565 acre and temporary loss of 0.129 acre of suitable habitat for giant garter snake by preserving 1.76 acres of habitat for giant garter snake through purchase of mitigation credits at Westervelt Ecological Service's Sutter Basin Conservation Bank in Sutter County, the proposed Grasslands Mitigation Bank in San Joaquin County, or through the SJMSCP. Purchase of giant garter snake habitat mitigation credits at Sutter Basin Conservation Bank was approved by USFWS. CDFW has approved providing compensation through the SJMSCP or by purchasing credits from the Sutter Basin Conservation Bank or the Grasslands Mitigation Bank if it is approved by CDFW and open for business when credits need to be purchased.</p> <p>The 1.76 acres of habitat at the conservation bank will be protected in perpetuity for giant garter snake. Prior to the start of construction, the County will provide funding to the selected conservation bank for preservation credits equivalent to 1.76 acres of giant garter snake habitat. The transaction will take</p>	Prior to construction	County

Title	Mitigation Measure	Timing	Responsibility
	place through a purchase and sale agreement, and funds must be transferred within 30 days and before any construction activities are initiated. The County will provide USFWS with copies of the credit sale agreement and fund transfer.		
Mitigation Measure BIO-9: Conduct Vegetation Removal during the Non-Breeding Season and Conduct Preconstruction Surveys for Nesting Migratory Birds	<p>The County and/or its construction contractor will remove vegetation during the non-breeding season for most migratory birds (generally between October 1 and January 31) to the extent feasible.</p> <p>If construction activities (including vegetation removal) would occur during the breeding season, the County will retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys before the start of construction. A minimum of three separate surveys will be conducted for migratory birds, including raptors. Surveys will include a search of all trees and shrubs, marsh, wetland, and grassland vegetation that provide suitable nesting habitat in the project area. In addition, a 500-foot area around the project area will be surveyed for nesting raptors. Surveys should occur during the height of the breeding season (March 1 to June 1) with one survey occurring in each of 2 consecutive months within this peak period and the final survey occurring within one week of the start of construction. If no active nests are detected during these surveys, no additional measures are required.</p> <p>If an active nest is found in the survey area, a no-disturbance buffer will be established around the site to avoid disturbance or destruction of the nest site until the end of the breeding season (September 30) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project area (this date varies by species). The extent of these buffers will be determined by the biologist in coordination with USFWS and CDFW and will depend on the level of noise or construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species.</p>	Prior to and during construction	Construction contractor
Mitigation Measure BIO-10: Conduct Focused Surveys for Nesting Swainson's Hawk Prior to Construction and Implement Protective Measures during Construction	<p>Because construction is anticipated to begin in the middle of the Swainson's hawk nesting period, the County will conduct surveys for nesting Swainson's hawks in the spring 1 year before construction to provide information in preparation for construction (i.e., locations of nests, hawks responses to disturbance, sizes of buffer areas, anticipated impacts on project schedule). Surveys will also be conducted in the spring of the year of construction to determine if there are active nests in the current year. Information collected during the year prior to construction surveys will help to focus the construction year surveys. Focused surveys for Swainson's hawk will be conducted in the project area and in a buffer area up to 0.5 mile around the project area. The size of the buffer area surveyed will be based on the type of habitat present and line of sight from the construction area to surrounding suitable breeding habitat. Buffer areas containing unsuitable nesting habitat and/or with an obstructed line of sight to the project area will not be surveyed. Survey methodology will follow the Swainson's Hawk Technical Advisory Committee's methodology (Swainson's Hawk Technical Advisory Committee 2000). A minimum of six surveys will be conducted during the appropriate timeframes discussed in the methodology. If needed, biologists will coordinate with CDFW regarding the extent and number of surveys. Surveys will generally be conducted from February to July. Survey methods and results will be reported to CDFW.</p>	Prior to construction	County

Title	Mitigation Measure	Timing	Responsibility
Mitigation Measure BIO-11: Compensate for the Permanent Loss of Foraging Habitat for Swainson's Hawk	The County will mitigate for the permanent removal of suitable foraging habitat for Swainson's hawks by providing offsite habitat management lands as described in CDFW's <i>Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California</i> (California Department of Fish and Game 1994). The final acreage of offsite management lands to be provided will depend on the distance between the project area and the nearest active nest site. The mitigation ratio varies from 0.5:1 to 1:1 of habitat preserved for each acre lost. If acceptable to CDFW, the County also may be able to purchase mitigation credits for Swainson's hawk foraging habitat from a CDFW-approved mitigation or conservation bank. CDFW has also approved providing compensation through the SJMSCP. Information on the nearest nest will be collected during Swainson's hawk surveys conducted under Mitigation Measure BIO-10, discussed above, to determine the appropriate mitigation ratio. If no active nests are found during this survey, a search of the CNDDDB will be conducted, and CDFW will be contacted to determine the nearest active nest.	Prior to construction	County
Mitigation Measure BIO-12: Conduct Focused Surveys for Nesting California Black Rail Prior to Construction and Avoid Work within 700 Feet of an Identified Calling Center	<p>The County will conduct surveys for nesting black rails in the spring of each year of construction to determine if there are active nests in the current year. The majority of surveys will be conducted while construction is ongoing; however, because these surveys will occur early in the morning (2 hours before to 2 hours after sunrise), the majority of each survey will be conducted before construction activities start for the day. Four surveys will be conducted from March 15 to May 31, with at least 10 days between surveys. Survey methodology will generally follow the call-playback/response protocol for black rail developed by Evens et al. (1991) or other methodology as determined in coordination with CDFW. The surveyor(s) will submit the survey protocol for CDFW review and approval prior to conducting the surveys. Survey methods and results will be provided to the County and CDFW after each year of surveys is completed.</p> <p>If the results from all California black rail surveys are negative, construction can proceed without restrictions. If California black rail is detected during surveys, construction activities within 700 feet of an identified calling center will not be conducted until the end of the California black rail breeding season (approximately July 31). The biologists that conducted the surveys will provide the County and contractor with a map clearly delineating the boundary of the 700-foot buffer where no work activities involving heavy equipment or other loud activities (such as jackhammering) will occur. The edges of this buffer will be clearly marked with orange barrier fencing or stakes and flagging. Workers on foot and street vehicles would be allowed within the 700-foot buffer area. A full time biological monitor will remain on site for the duration of construction activities throughout the breeding season. The monitor will be responsible for ensuring that the buffer distance between the activity center and construction activities is maintained. The biological monitor will keep a daily monitoring log and record relevant observations/actions related to maintaining the buffer area. The biological monitor or the County will provide weekly California black rail monitoring reports/updates to CDFW.</p>	Prior to and during construction	County

Title	Mitigation Measure	Timing	Responsibility
Mitigation Measure BIO-13: Conduct Surveys for Western Burrowing Owl and Implement Protective Measures if Found	<p>CDFW recommends conducting western burrowing owl surveys whenever burrowing owl habitat is present on or within 500 feet of a project site. The County will conduct breeding season and non-breeding season surveys in accordance with CDFW's <i>2012 Staff Report on Burrowing Owl Mitigation</i> (2012 Staff Report) (California Department of Fish and Game 2012b). Breeding season surveys will consist of four surveys including one survey between February 15 and April 15 and a minimum of three surveys at least three weeks apart between April 15 and July 15, with at least one survey after June 15. Non-breeding season surveys will consist of four surveys spread evenly throughout the non-breeding season (September 1 to January 31).</p> <p>A survey report will be prepared at the conclusion of surveys for submission to CDFW. The report will include a description of the proposed project and proposed activity, proposed project start and end dates, and a description of disturbances or other activities occurring onsite or nearby (see Appendix D of the 2012 Staff Report).</p> <p>If burrowing owls are found during any of the surveys, best practices as described below will be used. Because ample lead time is necessary for putting compensation in place, these efforts will begin as soon as possible after presence of burrowing owls is determined.</p> <p>Regardless of results from the surveys described above, take avoidance (preconstruction) surveys will be conducted no less than 14 days prior to and 24 hours before initiating ground disturbing activities. The County will retain a qualified biologist to conduct preconstruction surveys for active burrows according to methodology in the 2012 Staff Report.</p> <p>Burrowing owls may recolonize a site after only a few days. As such, subsequent take avoidance surveys will be conducted if a few days pass between project activities. If no burrowing owls are found, no further mitigation is required. If burrowing owls are found, the County will use avoidance and minimization measures, monitoring, and reporting as described in <i>Mitigation Methods</i> section of the 2012 Staff Report and summarized below.</p> <ul style="list-style-type: none"> • Do not disturb occupied burrows during the breeding season (February 1 to August 31). • Establish a 250-foot-wide buffer where no construction will occur around occupied burrows unless a qualified biologist determines through non-invasive methods that egg laying and incubation have not begun or that juveniles are foraging independently and are capable of independent survival. • Avoid affecting burrows occupied during the non-breeding season by migratory or non-migratory resident burrowing owls. • Avoid destruction of unoccupied burrows and place visible markers near burrows to ensure they are not collapsed. • Develop and use a worker awareness program to increase the onsite worker recognition of and commitment to burrowing owl protection. • Conduct additional take avoidance surveys as described above. • Conduct ongoing surveillance of the project site for burrowing owls during project activities. 	Prior to and during construction	County

Title	Mitigation Measure	Timing	Responsibility
	<ul style="list-style-type: none"> Minimize effects on burrowing owls and their habitat by using buffer zones, visual screens, and other measures during project activities. Recommended buffer distances in the 2012 Staff Report will be used or site-specific buffers and visual screens will be determined through information collected during site-specific monitoring and consultation with CDFW. 		
Mitigation Measure BIO-14: Remove the Southeast Ferry Terminal after the Swallow Breeding Season has Concluded or Implement Measures to Deter Nesting Prior to the Nesting Season	<p>To avoid impacts on nesting swallows and other bridge-nesting migratory birds that are protected under the MBTA and CFGC, removal of the southeast ferry terminal bridge will be conducted after the conclusion of the swallow nesting period. A qualified biologist will monitor the swallow nests near the end of the breeding season to determine when nesting has concluded. Removal of the structure after the breeding season has concluded is strongly preferred; however, if this is not possible, the County will implement the following measures prior to the start of the swallow nesting period.</p> <ul style="list-style-type: none"> The County will hire a qualified wildlife biologist to inspect the southeast ferry terminal bridge during the swallows' non-breeding season (September 1 through February 28). If nests are found and are abandoned, they may be removed. To avoid damaging active nests on the southeast ferry terminal, nests must be removed before the breeding season begins (March 1). After nests are removed, the undersides of the southeast ferry terminal bridge will be covered with 0.5- to 0.75-inch mesh net (or other suitable material to prevent nesting) by a qualified contractor. All net installation will occur before March 1 and will be monitored by a qualified biologist throughout the breeding season (typically several times a week). The netting will be anchored so that swallows cannot attach their nests to the bridge through gaps in the net. As an alternative to netting the underside of a bridge, the County may hire a qualified biologist to remove nests as the birds construct them and before any eggs are laid. Visits to the site would to occur daily throughout the breeding season (March 1 through August 31) as swallows can complete a nest in a 24-hour period. If netting of the bridges does not occur by March 1 and swallows colonize the southeast ferry terminal bridge, removal of the structure will not occur before August 31 or until a qualified biologist has determined that the young have fledged and all nest use has been completed. <p>If appropriate steps are taken to prevent swallows from constructing new nests as described above, work can proceed at any time of the year.</p>	During construction	County

Title	Mitigation Measure	Timing	Responsibility
Mitigation Measure BIO-15: Conduct All In-Water Construction Activities between July 21 and October 31 and during Daylight Hours Only	<p>The County will conduct all pile driving (in-water installation and removal of permanent piles and temporary sheet piles and/or steel casings) and demolition activities (removal of ferry approach ramps and piers) between July 21 and October 31 to avoid or minimize incidental take of vulnerable life stages of listed and proposed fish species in the study area. In addition, in-water work will be conducted during daylight hours only to provide fish in the study area with an extended quiet period during nighttime hours for feeding and unobstructed passage.</p> <p>Limiting in-water construction during the July 21 to October 31 period would achieve several goals.</p> <ul style="list-style-type: none"> • In-water construction having the potential to generate harmful levels of underwater noise (e.g., driving piles with an impact hammer) would not be concurrent with the spawning period of any special-status species, including listed species, that spawn in the Delta. • The timing of in-water construction would be concurrent with the period special-status fish species, including listed species, are less abundant in, or absent from, the study area. • The length of the in-water construction period would be maximized, thereby limiting the number of construction seasons that in-water construction would be needed and, therefore, limiting the number of year classes of species that occur year-round in the south Delta (e.g., green sturgeon, Sacramento splittail) that potentially would be exposed to in-water construction effects. 	During construction	Construction contractor and County
Mitigation Measure BIO-16: Implement Measures to Minimize Exceedance of Interim Threshold Sound Levels during Pile Driving	<p>The County will require the contractor to implement the following measures, developed in coordination with project design engineers, to minimize the exposure of listed fish species to potentially harmful underwater sounds.</p> <ul style="list-style-type: none"> • If feasible, the contractor will vibrate all piles to the maximum depth possible before using an impact hammer. • No more than 2 piles will be driven per day, and pile driving with an impact hammer will occur on no more than 24 days total during construction. • During impact driving, the contractor will limit the number of strikes per day to the minimum necessary to complete the work, and will limit the total number of hammer strikes to 2,000 strikes per day (i.e., 1,000 hammer strikes per pile, per day). • The smallest pile driver and minimum force necessary will be used to complete the work. • During impact driving, the County will require the contractor to use a bubble curtain or similar device to minimize the extent to which the interim peak and cumulative SEL thresholds are exceeded. • No pile driving activity will occur at night. 	During construction	Construction contractor and County

Title	Mitigation Measure	Timing	Responsibility
Mitigation Measure BIO-17: Develop and Implement a Hydroacoustic Monitoring Plan	<p>The County and/or its construction contractor will develop and implement a hydroacoustic monitoring plan. The monitoring plan will be submitted to the resource agencies (CDFW, NMFS, and USFWS) for approval at least 60 days before the start of project activities. The plan will include the following requirements.</p> <ul style="list-style-type: none"> • The County and/or its construction contractor will monitor underwater noise levels during all impact pile driving activities on land and in water to ensure that that peak and cumulative SELs do not exceed estimated values (Table F-1 in Appendix F). • The monitoring plan will describe the methods and equipment that will be used to document the extent of underwater sounds produced by pile driving, including the number, location, distances, and depths of the hydrophones and associated monitoring equipment. • The monitoring plan will include a reporting schedule that includes provision of daily summaries of the hydroacoustic monitoring results to the resource agencies and more comprehensive reports on a monthly basis during the pile driving season. • The reports will include the number of piles installed per day, the number of strikes per pile, the interval between strikes, the peak SPL, SEL, and root mean square (RMS) per strike, and accumulated SEL per day at each monitoring station. • The County or its contractors will ensure that a qualified fish biologist is on site during impact pile driving to document any occurrences of stressed, injured, or dead fish. 	Prior to and during construction	County and construction contractor
Mitigation Measure BIO-18: Monitor Turbidity in Middle River	The County will require the contractor to monitor turbidity levels in Middle River during in-water construction activities (e.g., pile driving, extraction of temporary steel casings and/or sheet piles used for cofferdams, demolition of ferry approach ramps and removal of existing piers). Turbidity will be measured using standard techniques upstream and downstream ¹ of the construction area to determine whether changes in ambient turbidity levels exceed 20%, the threshold derived from the <i>Sacramento and San Joaquin Rivers Basins Plan</i> (Central Valley Regional Water Quality Control Board 2011). If it is determined that turbidity levels exceed the 20% threshold, then the County and/or its contractors will adjust work to ensure that turbidity levels do not exceed the 20% threshold.	During construction	County and construction contractor
Mitigation Measure BIO-19: Purchase Channel Enhancement Credits for Impacts on Critical Habitat for Green Sturgeon and Delta Smelt	Permanent impacts on critical habitat, including the permanent loss of substrate and shading of up to 9,539 square feet (0.22 acre) of aquatic habitat will be mitigated at a 3:1 ratio. The County proposes to mitigate for the permanent loss of critical habitat for green sturgeon and delta smelt through purchase of 0.66 acre of mitigation credits at the Liberty Island Conservation Bank and Preserve in the southern Yolo Bypass, located in Yolo County.	Prior to construction	County

¹ Monitoring both upstream and downstream of the construction area is necessary because Middle River has a relatively strong tidal signal, which causes the flow in Middle River to reverse itself twice a day and, thus, move any turbidity plume upstream and downstream of the point of disturbance on each tidal cycle.

Title	Mitigation Measure	Timing	Responsibility
Mitigation Measure BIO-20: Compensate for Temporary and Permanent Loss of Willow Riparian Wetland	<p>The County will comply with any regulatory requirements determined as part of the state (Section 401 water quality certification or WDRs, Section 1602 SAA) and federal (Section 404 permit) processes for the work that would occur within willow riparian wetland.</p> <p>Temporarily affected areas of willow riparian wetland will be returned to original grade following construction. Due to the small size of the area (no more than 0.011 acre), it is expected that the area will naturally revegetate from adjacent willow riparian vegetation in WR-1.</p> <p>The County will compensate for the permanent fill of approximately 0.165 acre of willow riparian wetland at a minimum ratio of 1:1 (1 acre restored or created for every 1 acre permanently affected). The actual compensation ratios will be determined through coordination with the Regional Water Board and USACE as part of the permitting process. The County will compensate for permanent loss of willow riparian wetland habitat by purchasing credits for riparian habitat at a USACE-approved mitigation bank.</p>	Prior to and after construction	County
Mitigation Measure BIO-21: Compensate for Temporary and Permanent Loss of Seasonal Wetland	<p>The County will comply with any regulatory requirements determined as part of the state (Section 401 water quality certification or WDRs) and federal (Section 404 permit) processes for the work that would occur within seasonal wetland.</p> <p>Temporarily affected areas of seasonal wetland will be returned to original grade following construction. Topsoil from the seasonal wetland will be removed and stored during construction for restoration of the area after construction. Alternatively, mitigation credits will be purchased at a minimum ratio of 1:1. The County will compensate for the permanent fill of approximately 0.100 acre of seasonal wetland at a minimum ratio of 1:1 (1 acre restored or created for every 1 acre permanently affected). The actual compensation ratios will be determined through coordination with the Regional Water Board and USACE as part of the permitting process. The County will compensate for permanent loss of seasonal wetland habitat by purchasing credits for seasonal wetland habitat at a USACE-approved mitigation bank or through the SJMSCP if acceptable to USACE.</p>	Prior to and after construction	County
Mitigation Measure BIO-22: Compensate for the Permanent Loss and Temporary Fill of Tidal Perennial Drainage	<p>The County and/or its contractor will comply with any regulatory requirements determined as part of the state (Section 401 water quality certification or WDRs, Section 1602 SAA) and federal (Section 404 and Section 10 permits) processes for the work that would occur within Middle River, including compensation for the permanent fill of approximately 0.006 acre (60-inch piles) or 0.008 acre (72-inch piles) of perennial drainage habitat at a minimum ratio of 1:1 (1 acre restored or created for every 1 acre permanently affected) by purchasing credits. The County will also compensate for the temporary fill of 0.026 acre (60-inch piles) or 0.023 acre (72-inch piles) through the purchase of credits. The actual compensation ratios will be determined through coordination with the Regional Water Board and USACE as part of the permitting process.</p>	Prior to construction	County

Title	Mitigation Measure	Timing	Responsibility
Cultural Resources			
Mitigation Measure CUL-1: Implement Measures to Protect Previously Unidentified Cultural Resources	<ul style="list-style-type: none"> The County shall ensure that construction specifications include the following information in the grading notes. Construction shall stop if potential cultural resources are encountered. It is possible that previous activities have obscured surface evidence of cultural resources. If signs of an archaeological site, such as any unusual amounts of stone, bone, or shell, are uncovered during grading or other construction activities, work will be halted within 100 feet of the find and the San Joaquin County Department of Public Works will be notified. A qualified archeologist will be consulted for an onsite evaluation. If the site is or appears to be eligible for listing in state or federal registers, additional mitigation, such as further testing for evaluation or data recovery, may be necessary. In the event resources are discovered, the County will retain a qualified archaeologist to assess the find, and to determine whether the resource requires further study. Any previously undiscovered resources found during construction will be recorded on appropriate California Department of Parks and Recreation 523 forms and evaluated for significance under all applicable regulatory criteria. All work will stop in the immediate vicinity of the find, and if the find is determined to be an important cultural resource, the County will make available contingency funding and a time allotment sufficient to allow recovering an archaeological sample or to implement an avoidance measure. Construction work can continue on other parts of the project while archaeological mitigation takes place. 	Prior to award (construction specs) and during Construction	Construction Contractor
Mitigation Measure CUL-2: Implement Measures if Construction Activities Inadvertently Discover or Disturb Human Remains	<p>The County shall ensure construction specifications include the following in the grading notes.</p> <p>If human remains are discovered during any phase of construction, including disarticulated or cremated remains, the construction contractor will immediately cease all ground-disturbing activities within 100 feet of the remains and notify the County of San Joaquin Department of Public Works.</p> <p>In accordance with California State Health and Safety Code Section 7050.5, no further disturbance will occur until the following steps have been completed.</p> <p>The County Coroner has made the necessary findings as to origin and disposition pursuant to Public Resources Code (PRC) § 5097.98.</p> <p>If the remains are determined by the County Coroner to be Native American, the Native American Heritage Commission (NAHC) will be notified within 24 hours, and the guidelines of the NAHC shall be adhered to in the treatment and disposition of the remains.</p> <p>It is further recommended that a professional archaeologist with Native American burial experience conduct a field investigation of the specific site and consult with the Most Likely Descendant (MLD), if any, identified by the NAHC. As necessary and appropriate, a professional archaeologist may provide technical assistance to the MLD, including but not limited to, the excavation and removal of the human remains.</p>	Prior to award (construction specs) and during Construction	Construction Contractor

Title	Mitigation Measure	Timing	Responsibility
Geology, Soils, Minerals, and Paleontological Resources			
Mitigation Measure GEO-1: Educate Construction Personnel in Recognizing Fossil Material	The County will ensure that all construction personnel receive training provided by a qualified professional paleontologist experienced in teaching non-specialists to ensure that they can recognize fossil materials in the event any are discovered during construction.	Immediately prior to construction	Construction Contractor/County
Mitigation Measure GEO-2: Stop Work if Substantial Fossil Remains Are Encountered during Construction	If substantial fossil remains (particularly vertebrate remains) are discovered during earth disturbing activities, activities will stop immediately until a State-registered professional geologist or qualified professional paleontologist can assess the nature and importance of the find and a qualified professional paleontologist can recommend appropriate treatment. Treatment may include preparation and recovery of fossil materials so that they can be housed in an appropriate museum or university collection and may also include preparation of a report for publication describing the finds. The applicant will be responsible for ensuring that recommendations regarding treatment and reporting are implemented.	During construction	Construction Contractor
Hazards and Hazardous Materials			
Mitigation Measure HAZ-1: Assess Structures for Lead-Based Paint and Asbestos-Containing Materials and Include Provisions in Standard Best Management Practices	Construction contract specifications will provide that the County or its contractors arrange for sampling and testing of yellow and white ferry paint in areas scheduled for removal to determine the presence of lead chromate, other metals, or chemicals. If the lead or chemical content of the paint is above regulatory thresholds, BMPs in compliance with state and federal OSHA standards will be drafted to address worker safety when working with potentially lead- or chemical-bearing paint and added to standard BMPs including in the construction specifications. The ferry tender's residence will be sampled and tested for asbestos containing materials. Hazardous materials found within the project area will be removed and disposed of by a licensed and certified abatement contractor prior to demolition or other activities that will disturb hazardous materials.	Prior to award (construction specs) and during construction	County
Mitigation Measure HAZ-2: Conduct a Preliminary Investigation and Screening for Aerially-Deposited Lead	Construction contract specifications will provide that if soils adjacent to the roadway are to be disturbed, the County or its contractors will conduct a preliminary investigation and screening for ADL to assess ADL levels in the surface and near-surface soils along the project alignment. If soils contain ADL in excess of established thresholds, soils will be handled in a manner compliant with the San Joaquin County CUPA regulatory requirements, and disposed of properly.	Prior to award (construction specs) and during construction	County

Title	Mitigation Measure	Timing	Responsibility
Noise and Vibration			
Mitigation Measure NOI-1: Employ Noise-Reducing Construction Practices	<p>The project applicant shall employ noise-reducing construction practices to reduce noise at the ferry tender's residence. Measures that can be used to limit noise include but are not limited to the following.</p> <ul style="list-style-type: none">• Locating equipment as far a practical from the ferry tender's residence.• Requiring that all construction equipment powered by gasoline or diesel engines have sound-control devices that are at least as effective as those originally provided by the manufacturer and that all equipment be operated and maintained to minimize noise generation.• Prohibiting gasoline or diesel engines from having unmuffled exhaust.• Providing personal hearing protection devices to the ferry tender.• Providing temporary relocation for the ferry tender during hours when the ferry is closed.	During construction	County