EXECUTIVE SUMMARY

OVERVIEW OF THE PROGRAM AND DRAFT EIR

This Program Environmental Impact Report (PEIR) addresses the potential environmental impacts of the Lower Putah Creek Restoration Project, Upper Reach Project, a component of the *Lower Putah Creek Restoration Project, California Department of Fish and Wildlife Ecosystem Restoration Program (ERP Grant No E1183015)*. The Lower Putah Creek Restoration Project Upper Reach Project (hereafter referred to as "the Program") proposes to restore and enhance geomorphic and ecological function on approximately 24.2 miles of Putah Creek between the Putah Diversion Dam (PDD) and the western boundary of the Yolo Bypass Wildlife Area (YBWA) (see Figure 1). This reach of Putah Creek crosses a combination of privately (primarily) and publically owned lands in Solano and Yolo counties. The restoration efforts analyzed in this PEIR are planned by the Solano County Water Agency (SCWA) and the Lower Putah Creek Coordinating Committee (LPCCC) for implementation over the next 15 years. The SCWA is the CEQA lead agency for the Project.

This PEIR is intended to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Program, which is the CEQA "Project." SCWA has prepared this PEIR in compliance with the California Environmental Quality Act (CEQA) of 1970 (as amended) and the State CEQA Guidelines (14 California Code of Regulations [CCR]) Section 15000 et seq.).

This PEIR is intended to meet CEQA requirements and to integrate CEQA review with related consultations and anticipated programmatic and project-level permit requirements. SCWA, in its role as the lead agency, will use the PEIR to comply with CEQA review requirements for its approval of each of the restoration activities described herein. Program-level documentation may provide sufficient CEQA analysis to meet site-specific, project-level analysis for future projects, or additional documentation may be needed to fulfill CEQA compliance. This determination will be made by the lead agency on a case-by-case basis, typically with preparation of an Initial Study.

PROGRAM PURPOSE AND NEED

The Lower Putah Creek corridor is one of the largest remaining tracts of high quality wildlife habitat in Yolo and Solano counties, and provides habitat for a unique

assemblage of fish and wildlife species native to the Central Valley. However, the creek suffers from substantially reduced flows from flow diversions, altered channels and eroding banks, habitat loss and degradation, invasive weed infestations, and other problems. In many locations in the Program area, the Putah Creek channel is oversized for current flows and has been deepened by mining, which have resulted in degraded habitat. The Program proposes to develop restoration projects on up to 17 separate creek reaches to optimize benefits to fish, wildlife, and other resources.

The overall Program purpose is to restore and rehabilitate the creek channel, banks, and associated habitats to more natural, self-sustaining form and function, consistent with the current (post-Monticello Dam) hydrologic regime. The Program would be implemented to stop further degradation of the creek corridor and to "jump-start" natural geomorphic and ecological processes in site-specific locations. The primary goals for the Program include:

- Improve passage, rearing, and emigration of adult and juvenile salmonids in Putah Creek
- Preserve and enhance, where possible, existing beneficial uses including public access, wildlife viewing, hunting and fishing, balanced with existing, enhanced, and restored ecological functions
- Enhance habitats for Delta native fishes and wildlife within the Putah Creek Upper Reach

PROGRAM ACTIVITIES

The proposed Program activities are designed to work together in a comprehensive manner to achieve the Program goals and objectives. The activities would be implemented (singly or in combination) in a series of individual actions (projects), applied to specific locations within the Program area, as determined by site-specific conditions. For purposes of description of site conditions and of proposed locations for the various activities, the Program area has been divided into 17 stream segments (Project reaches) (see Figure 2-1).

Program activities fall into three general categories: (1) Channel Reconfiguration, (2) Vegetation Management, and (3) Maintenance. These activities are listed by category in Table ES-1. As stated above, site-specific Project implementation may entail application of one or a combination of these activities. All in-stream activities would be implemented adaptively, based upon understanding of the ecosystem and its changes over time. A site-specific Adaptive Management Plan would be developed for each

individual project, based on the desired environmental outcomes and the potential for environmental impacts.

Table ES-1 Program Activities by Category

Channel Reconfiguration	Vegetation Management	Maintenance of Enhancement Sites
• Modify Channel Geometry • Construct Grade/Flow Control Structures • Stabilize Channel Banks • Improve Fish Spawning Gravels • Fill Abandoned Gravel Pits	• Remove Invasive Plants • Plant Native Vegetation	• Irrigate Native Revegetation Sites • Manage Non-Native Vegetation at Restored Sites • Maintain Long-Term Access Points

PUBLIC INVOLVEMENT IN THE CEQA PROCESS

In accordance with State CEQA Guidelines (14 CCR Section 15082[a], Section 15103, Section 15375), SCWA circulated a Notice of Preparation (NOP) for the proposed Program on January 30, 2015 (**Appendix A**). The NOP, in which SCWA was identified as the lead agency for the proposed Program, was circulated to the public; to local, state, and federal agencies; and to other interested parties. The purpose of the NOP was to inform responsible agencies and the public that the proposed Program could have significant effects on the environment, and to solicit their comments so that any concerns raised could be considered during the preparation of the PEIR. In addition, SCWA held a public scoping meeting on February 12, 2015, to provide the public with another opportunity to comment. Comments received in response to the NOP and at the public scoping meeting are included in **Appendix B.**

After the Draft PEIR (DPEIR) is completed, SCWA will issue a notice of availability, providing agencies and the public with formal notification that the DPEIR document is available for review. SCWA will host a public hearing approximately 30 days after release of the DPEIR. The purpose of public circulation and the public hearings are to provide agencies and interested individuals with opportunities to comment on or express concerns regarding the contents of the DPEIR.

CEQA requires the lead agency to prepare a Final PEIR (FPEIR), addressing all substantive comments received on the Draft PEIR before approving a project. Written and oral comments received in response to the Draft PEIR will be addressed in the FPEIR. The FPEIR must include a list of all individuals, organizations, and agencies that provided

comments on the Draft PEIR, and must contain copies of all comments received during the public review period along with the lead agency's responses to those comments.

ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

The environmental impacts of the proposed Program and applicable mitigation measures are summarized in Table ES-3 (at the end of this section) and briefly described by topic below.

Hydrology

The Program would not result in any significant, long-term impacts to hydrology. Construction of the various Program elements could potentially cause adverse, short-term impacts due to erosion and siltation. These short-term impacts would be mitigated to a less-than-significant level by the implementation of erosion and sediment control best management practices (BMPs) during and following construction. Within the Project reaches occasional small roadway or agricultural storm drains may need to be modified or replaced due to channel realignment. If modifications or replacement of these drainage systems were not performed according to current standards, they could be damaged, or perform in a substandard manner. Such impacts would be avoided by designing any modifications of storm drainage systems according to current standards appropriate for the setting.

Water Quality

The Program would not result in any significant, long-term impacts to water quality. As discussed above for hydrology, construction of the various Program elements could potentially cause adverse, short-term impacts to water quality due to erosion and sediment release, which would be mitigated to a less-than-significant level by implementing erosion and sediment control BMPs. Construction of the program elements could also cause short-term impacts to water quality through the introduction of fuels and lubricants from construction equipment into Putah Creek. Implementing restrictions on construction vehicle storage and maintenance would reduce these impacts to a less-than-significant level. The use of herbicides for invasive weed control in the various reaches could cause adverse impacts to water quality if such application is not performed according to the appropriate standards. Application of all herbicides by a licensed applicator, in accordance with label directions and U.S. Environmental Protection Agency (US EPA) recommendations to avoid overspray and accidental water introduction (during non-aquatic uses) would reduce these impacts to a less-than-significant level.

Geology, Soils, and Mineral Resources

The Program would not result in any significant, long-term impacts to geology and soils. As described above for hydrology, construction of the Program elements could potentially result in substantial soil erosion. These short-term impacts would be mitigated to a less-than-significant level by implementing erosion and sediment control BMPs during construction. The Program would not have an impact on the availability of important mineral resources.

Biological Resources

The Program would not result in any significant, long-term impacts to biological resources. Construction of the various Program elements could potentially cause adverse, short-term impacts to a number of special status species and their habitats. All of these short-term impacts would be mitigated to a less-than-significant level by the implementation of mitigation measures prior to, during and following construction.

Air Quality and Greenhouse Gas Emissions

The Program would not have any long-term impacts on air quality or greenhouse gas emissions. Construction of the Program elements could result in short-term impacts to air quality from emissions of criteria pollutants, but these impacts would be mitigated to a less-than-significant level by implementing standard construction best management practices aimed at reducing such emissions.

Noise

The Program would have no long-term impacts to noise levels. However, construction of Program elements would exceed the Solano County daytime non-transportation noise standards at residences closest to some project sites in Solano County, resulting in a potentially significant impact. Implementation of noise reducing construction practices would reduce this impact to a less-than-significant level at some project sites, but the impacts would be significant and unavoidable in three of the Project reaches (Duncan-Giovannoni, Warren, and MacQuiddy Lester).

Hazards and Hazardous Materials

There are no known contaminated sites within the Program footprint that could cause the release of hazardous materials, if disturbed. The nearby LEHR Superfund site does not pose an immediate risk to people or the environment and Program activities would have no effect on this area. If evidence of hazardous materials are discovered during

Project activities, these materials would be tested and analyzed following proper protocols to determine the presence of hazardous substances prior to making arrangements for off-site reuse/recycling or disposal. Implementing restrictions on construction vehicle storage and maintenance would prevent the accidental release of construction-related contaminants (fuels, lubricants, etc.) into the environment. Potential impacts due to the use of herbicides for weed control during Project implementation would be reduced to a less-than-significant level by ensuring that herbicide application is conducted by a licensed applicator, in accordance with label directions and US EPA recommendations to avoid overspray and accidental water introduction (during non-aquatic uses). To prevent the accidental ignition of a wildfire during construction, appropriate fire suppression equipment will be available on all work sites and other BMPs will be implemented to reduce fire risks.

Land Use

Agricultural land uses within the Project reaches could potentially be impacted by construction activities and long-term operations of the Program, including maintenance activities and potential trespass by recreational users. These impacts would be mitigated to a less-than-significant level by (1) coordinating all construction and maintenance activities with adjacent landowners to ensure that access does not impact agricultural operations, and (2) installing access restrictions, such as warning signs and wildlife-friendly fencing, as needed. There would be no impact to non-agricultural land uses.

Aesthetics

There would be no long-term adverse impact to views within the Project reaches due to Program implementation. There may be short-term impacts to views within Project reaches and adjacent areas during construction due to the presence of construction equipment and changes in the appearance of the riparian area and creek channel. These short term impacts would be mitigated to a less-than-significant level by the use of interpretive signs explaining the restoration process, locating stockpiles away from public view, and, in some cases, installing visual screening fencing to limit the view of construction equipment and stockpiles from existing public access areas.

Recreation

The Program would not have any long-term adverse impacts on recreation. Recreation within the reaches would be temporarily impacted during construction and potentially for a period of time following construction due to disturbance by construction and associated access restrictions. The primary impacts would be loss of access to the creek

and associated recreational amenities, including trails, picnic areas, and boating access. These impacts would be mitigated to a less-than-significant level by providing alternate access to high-use recreational sites during construction, minimizing the impact of construction upon recreational site access where feasible, and by working with adjacent landowners to facilitate their provision of public access and recreational infrastructure into the Proposed Project where impacts to sensitive biological resources can be avoided.

Cultural Resources

The Program would not have any long-term adverse impacts on cultural resources. The presence of documented cultural resources within the Project Area indicates that there is a possibility that additional significant sites, features, and artifacts could be discovered or disturbed as a result of Program-related ground-disturbing activities, resulting in a potentially significant impact. These impacts would be reduced to a less-than-significant level by establishing a construction buffer ($\geq$ 100 feet) beyond the known boundaries of documented cultural resources, and by contacting a qualified cultural resource specialist to assess any unrecorded cultural resources encountered during construction. In accordance with the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, excavation in the area of the burial shall be halted and the County Coroner and a professional archaeologist shall be contacted to determine the nature and extent of the remains.

Transportation and Traffic

Implementation of the Program would not result in any significant long- or short-term impacts to transportation and traffic.

Public Services

Implementation of the Program would not result in any significant long- or short-term impacts to the demand for public services.

Utilities and Service Systems

Construction activities involving excavation could inadvertently damage pipelines crossing underneath some of the Project reaches, which could result in short-term and long-term impacts such as work injuries, property damage, unintentional fire or explosions, and environmental damage. Such potentially significant impacts would be avoided by identification of pipeline locations before excavation activities begin. Also, as

described in the hydrology section, within the Project reaches occasional small roadway or agricultural storm drains may need to be modified or replaced due to channel realignment. Such impacts would be avoided by designing any modifications of storm drainage systems according to current standards appropriate for the setting.

CUMULATIVE IMPACTS

A cumulative impact refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The individual effects may be changes resulting from a single project or a number of separate projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period. The cumulative impacts identified in this EIR include issues regarding: hydrology and geomorphology, water quality, geology and soils, air quality, noise, aesthetics, land use, recreation, transportation/traffic, public services, utilities and service systems, and hazardous materials. However, none of these impacts are considered to be cumulatively significant given the nature and extent of other planned/ongoing projects within the Program vicinity.

ALTERNATIVES

Three alternative programs were analyzed in this effort alongside the proposed Program. These alternatives and the variation in impacts, as compared to the proposed Program, are described below. Table ES-2 provides a summary of the potential effects of the two alternatives, as compared to the proposed Program.

Alternative 1 – No Project

The No Project Alternative analyzes the environmental effects of the future conditions along the Project reach absent the Project. This alternative assumes that the Project Area would remain in its current condition as a degraded-habitat stream corridor. Unlike the proposed Project, the No Project Alternative would not catalyze funding by creating a series of “shovel-ready” projects. Although some restoration projects may occur in the proposed Project’s absence, the number of likely future restoration projects and their scale is dependent on episodic funding which is not predictable. This alternative assumes nominal restoration, but ongoing implementation of existing maintenance activities such as irrigation to establish native vegetation, management of non-native vegetation (including manual and mechanical removal and chemical control), and maintenance of long-term access points.

Table ES-2 Comparison of Alternatives to the Proposed Program

Environmental Category	Proposed Project	Alternative 1 No Project	Alternative 2 Pool Filling Only	Alternative 3 Reduced Project
Aesthetics	LS/MM	NI	LS/MM	LS/MM-
Air Quality & Greenhouse Gas Emissions	LS/MM	NI	LS/MM-	LS/MM-
Biological Resources	LS/MM	NI	LS/MM-	LS/MM-
Cultural Resources	LS/MM	NI	LS/MM-	LS/MM-
Geology and Soils, Mineral Resources	LS/MM	NI	LS/MM-	LS/MM-
Hazards	LS/MM-	NI	LS/MM-	LS/MM-
Hydrology	LS/MM-	NI	LS/MM-	LS/MM-
Land Use	LS	NI	LS	LS/MM-
Noise	SU/MM	NI	SU-	SU-
Public Services	NI	NI	NI	NI
Recreation	LS	NI	LS-	LS-
Transportation/Traffic	LS	NI	LS/MM-	LS/MM-
Utilities	LS/MM	NI	LS/MM-	LS/MM-
Water Quality	LS/MM	NI	LS/MM-	LS/MM-
Consistency with Project Objectives	Consistent	Inconsistent	Less Consistent	Less Consistent

Notes:
NI = No impact would occur.
LS = All impacts would be less than significant, no mitigation required.
LS/MM = All impacts would be less than significant after mitigation.
SU = One or more impacts would be significant and unavoidable, even after mitigation.
- = Alternative impacts are less severe than the Proposed Project.
+ = Alternative impacts are more severe than the Proposed Project.
Where no **+** or **-** is indicated, impacts of the Proposed Project and the Alternative are identical or very similar.

This alternative would not fully meet any of the Program objectives. Degraded conditions associated with the deep pools would not be remedied, or may be partially remedied depending on funding available for maintenance and periodic restoration activities. Existing erosion and habitat degradation associated with non-native vegetation and invasive weeds would likely continue.

Alternative 2 – Restoration of Pools Only

This alternative limits restoration activities to only re-contouring the channel to remove approximately 112.5 acres of wide, deep pools in the Program Area. No Program-wide

channel re-construction or restoration would occur. This alternative assumes nominal restoration but ongoing implementation of existing maintenance activities such as irrigation to establish native vegetation, management of non-native vegetation (including manual and mechanical removal and chemical control), and maintenance of long-term access points. Alternative 2 could feasibly accomplish significant restoration of areas with the worst aquatic habitat and water quality effects.

This alternative would only partially fulfill the Program objectives and would not meet the integrative restoration needs of the creek system as a whole. Therefore, Alternative 2 would be less consistent with project objectives than the proposed Project.

Alternative 3 – Reduced Project Alternative

This alternative focuses all of the proposed potential restoration activities in the four reaches from PDD to the Interstate 505 (I-505) bridge (NAWCA/Mariani, Duncan-Giovannoni, Winters Putah Creek Nature Park, and East of I-505), a distance of approximately 4 miles. Activities would be accomplished over a 2-year period, 2 miles per year. This alternative was selected instead of a downstream Reduced Project Alternative because upstream areas of the creek contain colder water and higher quality fisheries habitat than downstream, resulting in better project results and the most efficient use of funding. This alternative would provide very high value aquatic and riparian habitat for the colder water species and a contiguous corridor for movement, linking to the existing high quality PDD to Berryessa riparian corridor.

This alternative fulfills many of the Program objectives, but to a lesser extent than the Proposed Program due to the reduction in the Program implementation area. However, this alternative fails to meet Objective 6 (Maintain a balance of existing fish and wildlife habitats, hunting, fishing, wildlife viewing, and other public benefits, including water supply and agriculture, between the PDD and YBWA) because it would not perform activities along Putah Creek all the way to the YBWA, and instead would stop at I-505 near the City of Winters. For this reason, Alternative 3 fails to meet the integrative restoration needs of the Creek system as a whole. Therefore, Alternative 3 would be less consistent with project objectives than the proposed Program.

Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires that the environmentally superior alternative be identified. If the environmentally superior alternative is the No Project/No Development Alternative, the EIR shall also identify an environmentally

superior alternative among other alternatives. CEQA also requires public agencies to mitigate or avoid significant effects of a project whenever it is feasible to do so (Public Resources Code Section 21002.1).

The environmentally superior alternative is Alternative 2, Pool Filling Only, which achieves some of the water quality and habitat benefits of the proposed Project but with lessened short-term construction-related impacts. However, this alternative is less consistent with the Project objectives than the proposed Projects, as shown in Table ES-2.

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
Hydrology			
3.1-1	Excessive erosion and siltation within stream reaches due to construction activities.	**3.1-1: Implement Erosion and Sediment Control BMPs.** In the cases in which a SWPPP is not required for Project activities, the Project applicant shall implement BMPs selected by a Qualified SWPPP Developer. The BMPs shall be drawn from the Construction BMP Handbook published by the California Stormwater Quality Association (CASQA) or equivalent prior to the start of any ground-disturbing activities. These BMPs may include, but are not restricted to, the menu of measures listed below, and would be applied both during and after construction, until the work site is stabilized according to the same closure requirements that would be applicable were the work area subject to a SWPPP. In order to ensure that the BMPs implemented are functioning to prevent erosion and sediment impacts, a California-qualified Qualified SWPPP Practitioner (QSP) must inspect functioning of the BMPs on a weekly basis. If the BMPs are insufficient, the QSP shall make recommendations for additional or sufficient BMPs. Erosion Controls – Menu of Potential BMPs • Stream Bank and Channel Stabilization: Where creek banks and channels are disturbed by construction, application of the full suite of available BMPs shall be coordinated by the QSP for application during and following construction to reduce the discharge of sediment and other pollutants from stream banks to minimize the impact of construction activities (CASQA, 2009, Fact Sheet EC-12). • Scheduling: The QSP shall prepare a written plan to sequence construction activities and the implementation of other BMPs to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking. Environmental constraints such as nesting season prohibitions shall also be taken into account in developing a schedule (CASQA, 2009a, Fact Sheet EC-1). • Preservation of Existing Vegetation: Where possible, existing non-invasive and native vegetation shall be preserved to minimize the	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		potential of removing or injuring existing trees, vines, shrubs, and grasses that protect soil from erosion (CASQA, 2009, Fact Sheet EC-2). • Hydroseeding: Where soil has been disturbed by construction and requires temporary protection until permanent stabilization is established, a mixture of hydraulic mulch, seed, fertilizer, and stabilizing emulsion shall be applied to temporarily protect exposed soils from erosion by water and wind (CASQA, 2009, Fact Sheet EC-4). • Geotextiles and Mats: Where soil has been disturbed by construction on slopes where the erosion hazard is high and vegetation will be slow to establish, mattings shall be used to cover the soil surface to reduce erosion from rainfall, hold soil in place, and absorb and hold moisture near the soil surface (CASQA, 2009, Fact Sheet EC-7). • Wood Mulching: Where soil has been disturbed by construction and temporary protection is needed until permanent stabilization is established, an applied mixture of shredded wood mulch, bark, or compost shall be applied to disturbed soils to reduce erosion by protecting bare soil from rainfall. This BMP shall not be used on areas exposed to concentrated flows or on slopes steeper than 3:1 (H:V) (CASQA, 2009, Fact Sheet EC-8). • Velocity Dissipation Devices: Where needed, a physical device composed of rock, grouted riprap, or concrete rubble, shall be placed at the outlet of a pipe or channel to prevent scour of the soil caused by concentrated high velocity flows. This BMP will be applied to stormwater structures as needed to divert run-on flow during construction (CASQA, 2009, Fact Sheet EC-10). Sediment Controls– Menu of Potential BMPs • Silt Fence: Where needed, a woven geotextile that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support will be installed temporarily to detain sediment-laden water and promote sedimentation behind the fence. This shall be used in areas disturbed by construction as a perimeter	

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		control, above channels, and/or below the toe or downslope of exposed and erodible slopes (CASQA, 2009, Fact Sheet SE-1). • Fiber Rolls: Where needed, fiber rolls shall be placed at the toe and on the face of slopes along the contours to intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (CASQA, 2009, Fact Sheet SE-5). • Gravel Bag Berm: Where needed, a series of gravel-filled bags shall be placed on a level contour to intercept sheet flow runoff, allow sediment to settle out, and release runoff slowly as sheet flow, preventing erosion (CASQA, 2009, Fact Sheet SE-6). • Straw Bale Barrier: Where needed, a series of straw bales shall be placed on a level contour to intercept sheet-flow runoff and allow sediment to settle out (CASQA, 2009h). • Compost Sock and Berm: Where needed, a three-dimensional biodegradable filtering structure shall be used at the site perimeter or at intervals on sloped areas to intercept runoff where sheet flow occurs to retain sediment (CASQA, 2009, Fact Sheet SE-13). • Stabilized Construction Entrance and Exit: A pad of aggregate underlain with filter cloth shall be constructed at a point where traffic would be entering or leaving a construction site to or from a public right of way, street, alley, sidewalk, or parking area. The purpose of a stabilized construction entrance is to reduce or eliminate the tracking of sediment onto roadways and help prevent deposition of sediments into local storm drains and production of airborne dust (CASQA, 2009i). • Stabilized Construction Roadway: Access roads and parking areas shall be stabilized immediately after any grading and maintained to prevent erosion and control dust after grading (CASQA, 2009, Fact Sheet TC-2). Non-Stormwater Controls • Temporary Stream Crossing: Where needed, a temporary culvert, ford, or bridge shall be placed across a waterway to provide access for	

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		construction purposes for a period of less than 1 year. These crossings are intended to eliminate erosion and downstream sedimentation caused by vehicles (CASQA, 2009, Fact Sheet NS-4).	
3.1-2	Diversion of stream flows around construction areas during Project implementation.	N/A	No impact
3.1-3	Increase in flood hazards in the program vicinity due to changes in channel geometry or roughness.	N/A	No impact
3.1-4	Reduced performance or ineffective operation of roadway and agricultural storm drains if they are not modified/replaced according to current design standards.	**3.1-2: Standards for Modification or Replacement of Storm Drains.** In the event roadway or agricultural storm drains need to be modified or replaced as a result of the channel alignment or other Project activities, such modification or replacement will be done in a manner to bring the drain(s) up to current standards. The Project would replace or upgrade the facility to applicable standards in consultation with property owner. Depending on the funding source or location for a given Project activity, the improvements would be conducted be under city, county, state, or federal standards. For drains in Solano County, the Project would rely on the Solano County Public Works specifications. For portions of the Project occurring exclusively within Yolo County (Mace Road to Road 106A Reach and Road 106A to the YBWA) replacement drains would rely on the Yolo County Public Works specifications. In the event that roadway or agricultural storm drains within flood levees need to be modified or replaced as a result of Project activities, such modification or replacement shall be performed in strict consultation with the Central Valley Flood Protection Board (CVFPB) and according to CVFPB standards and requirements.	Less than significant
Water Quality			
3.2-1	Impacts to water quality due to excessive erosion and sediment release during construction activities.	*See Mitigation Measure 3.1-1, Implement Erosion and Sediment Control BMPs. in the hydrology section*.	Less than significant
3.2-2	Impacts to water quality from operation of construction equipment within stream.	**3.2-1: Procedures to Prevent Contamination from Construction Equipment.**	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
	channels and the potential introduction of fuel and lubricants.	In order to prevent contamination from vehicle or equipment leaks during Project activities, the Project Applicant shall implement the following actions: 1. Vehicles shall be maintained and operated in a leak-free condition. 2. Project vehicles shall not park or stored on impervious surfaces. 3. No fueling or maintenance of vehicles or equipment shall occur in the channel or floodplain. The exception would be if equipment that cannot be readily relocated (e.g., pumps and generators). 4. All off-site fueling sites (e.g., on access roads above the top-of-bank) shall be equipped with secondary containment and avoid a direct connection to underlying soil, surface water, or the storm drainage system. 5. For any stationary equipment (e.g., pumps and generators) that must be fueled on-site, secondary containment, such as a drain pan, drop cloth or booms, shall be provided in such a manner to prevent accidental spill of fuels to underlying soil, surface water, or the storm drainage system. 6. Petroleum products, chemicals, cement, fuels, lubricants, and non-storm drainage water or water contaminated with the aforementioned materials shall not be allowed to enter receiving waters or the storm drainage system. 7. Waste disposal containers shall be covered when they are not in use.	
3.2-3	Impacts of the Project upon stream temperature, dissolved oxygen, and biological oxygen demand.	N/A	Less than significant
3.2-4	Impacts to water quality due to the release of contaminants, such as boron, mercury, fertilizers, and pesticides/herbicides.	*See Mitigation Measure 3.1-1, Implement Erosion and Sediment Control BMPs, in the Hydrology section and Mitigation Measure 3.4-5, Swainson's Hawk Avoidance, in the biological resources section.*	Less than significant
Geology and Soils, and Mineral Resources			
3.3-1	Damage to structures or injury to people from seismic activity such as fault rupture, ground shaking, or liquefaction.	N/A	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
3.3-2	Exacerbated or new channel bank slope failure hazards due to project implementation.	N/A	Less than significant
3.3-3	Substantial soil erosion within restored areas during or after Project construction.	*See Mitigation Measure 3.1-1, Implement Erosion and Sediment Control BMPs. in the Hydrology section.*	Less than significant
3.3-4	Loss of access to mineral resources, such as aggregate and natural gas, within restored areas	N/A	No impact
Biological Resources			
3.4-1	General impacts on special-status species and habitats.	**3.4-1: Worker Environmental Awareness Program (WEAP).** During construction of the Project, before any work occurs on the Project site, including grading, vegetation removal and equipment staging, all construction personnel shall participate in an environmental awareness training regarding special status species and sensitive habitats present on the Project site. Any additional construction personnel that are employed following the initial start of construction shall receive the mandatory training before starting work. As part of the training, an environmental awareness handout will be provided to all personnel that describes and illustrates sensitive resources (i.e., special status species and habitat, nesting birds/raptors) to be avoided during proposed Project construction and lists measures to be followed by personal for the protection of biological resources. Such measures shall include, but are not limited to: • Procedures to follow if a special status species is found within the work area. • Checking under equipment and staging areas for wildlife species each morning prior to work. • Staying within designated work areas. • Maintaining exclusion/silt fencing. • Reduced Project speed limits. • No pets or firearms on-site. • Contain trash/food waste and remove daily to avoid encouraging	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		predators onto the Project site. • Following Project Best Management Practices (BMPs).	
3.4-2	Impacts on Western pond turtle.	**3.4-2: Western Pond Turtle Avoidance.** The western pond turtle shall be protected from Project Area staging and operations areas through monitoring by a qualified biologist. The Project Area shall be inspected daily for the presence of turtles. If necessary, with consultation with CDFW, barriers shall be used when needed to direct the turtles and move them to an area of suitable habitat outside of the construction activity.	Less than significant
3.4-3	Impacts on giant garter snake.	**3.4-3: Giant Garter Snake Avoidance.** In areas that provide suitable habitat for giant garter snake, construction shall only occur during the active period for the snake, between May 1 and October 1. During the active period for giant garter snake direct mortality is lessened because snakes are expected to actively move and avoid danger. Preconstruction surveys for the giant garter snake shall occur within 24 hours prior to ground disturbing activities. A survey of the Project Area should be repeated if a lapse in construction activity of two weeks or greater has occurred. If a snake is encountered during construction, work shall stop within the vicinity of the snake and the USFWS will be contacted immediately. Only following receipt of USFWS approval shall giant garter snake be collected and transferred to the nearest suitable habitat outside the work area. Work shall not re-commence until a qualified biologist has either removed the snake from the construction area or, after thorough inspection, determined that the snake has vacated the construction area. Any dewatering or vegetation clearing within 200 feet of potential aquatic habitat for giant garter snake shall be limited to the minimum amount necessary.	Less than significant
3.4-4	Impacts on Valley elderberry longhorn beetle.	**3.4-4: Valley Elderberry Longhorn Beetle (VELB) Avoidance.** Valley elderberry plants (with stems greater than 1-inch diameter at ground level) occurring within the Project Area shall be avoided and, if avoidance is not possible, relocated to a designated location. Where Project impacts to elderberry shrubs cannot be avoided, or where shrubs are located	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		within 30.5 meters (100 feet) of Project Area-specific activities, activities shall be conducted according to USFWS Conservation Guidelines for VELB (1999), or other VELB guidance as updated by the USFWS. VELB habitat shall be considered directly affected if Project construction requires the removal of the shrub or if ground-disturbing activities would occur within 6.1 meters (20 feet) of the dripline of the shrub. The species would be considered indirectly affected if Project construction would disturb the ground between 6.1 and 30.5 meters (20 and 100 feet) from the dripline of the shrub (USFWS, 1999). Transplantation or temporary removal of the affected shrubs may be necessary as prescribed by the guidelines, but plants that are extremely difficult to remove may be exempted. Planting of additional seedlings or cuttings may be required under the Project or program USFWS Biological Opinion, depending on the number of elderberry shrubs with emergence holes present in the Project Area. A monitoring plan of any mitigation measures in the Project Area shall be implemented as required under the Biological Opinion, including monitoring the general condition of the mitigation Project Area and the condition of the elderberry plantings for up to ten consecutive years. The plan shall describe monitoring responsibilities, intervals, intensity, and success rates. The monitoring plan shall further include requirements for reporting observations and findings to the applicable agency, for example, for VELB observations, to USFWS.	
3.4-5	Impacts on Swainson's hawk.	**3.4-5: Swainson's Hawk Avoidance.** For any construction activities initiated between March 15 and September 1, surveys for nesting Swainson's hawk shall be conducted within 0.5-mile of areas of disturbance for this species as described in the *Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in the California's Central Valley* (Swainson's Hawk Technical Advisory Committee, 2000). The recommended minimum survey protocol is completion of surveys for at least the two survey periods immediately prior to a project's initiation. Survey periods correspond to typical migration, courtship, and nesting	Less than significant

Table ES-3 Impacts and Mitigation Measures

<table>
<tr><th>Impact Number</th><th>Impact</th><th>Applicable Mitigation Measures</th><th>Impact Significance after Mitigation</th></tr>
<tr><td></td><td></td><td>behavior and defined as follows:
<table><tr><th>Survey Period</th><th>Survey Dates</th><th>Survey Time</th><th>Number of Surveys</th></tr><tr><td>1 Recommend optional</td><td>January 1-March 20</td><td>All day</td><td>1</td></tr><tr><td>2</td><td>March 20-April 5</td><td>Sunrise to 1000 or 1600 to sunset</td><td>3</td></tr><tr><td>3</td><td>April 5-April 20</td><td>Sunrise to 1200 or 1630 to sunset</td><td>3</td></tr><tr><td>4 Initiating surveys is not recommended</td><td>April 21-June 10</td><td>All day; Monitoring known nests only</td><td>Ongoing</td></tr><tr><td>5</td><td>June 10-July 30</td><td>Sunrise to 1200 or 1630 to sunset</td><td>3</td></tr></table>
If surveys determine that the species is present and nesting within this area, a buffer zone of 0.5-mile shall be established and coordination with CDFW shall be required prior to any work in this buffer zone during the nesting season. Work within 0.5-mile may be permitted with CDFW approval if a qualified biologist monitors the nest when Project disturbance activities occur within 0.5-mile of the nest. If the monitor determines that construction may result in abandonment of the nest, all construction activities within 0.5-mile shall be halted until the nest is abandoned or all young have fledged. The monitor shall continue monitoring the nest until construction within 0.5-mile of the nest is completed, or until all chicks have completely fledged and are no longer dependent on the nest.</td><td></td></tr>
<tr><td>3.4-6</td><td>Impacts on nesting bird species.</td><td>3.4-6: Nesting Bird Avoidance. A pre-construction survey by a qualified biologist for nesting birds shall be required if construction activities are scheduled to occur during the breeding season (February 1 to August 31) for raptors and other migratory birds, including special-status bird species. The survey shall be conducted 15 days prior to ground disturbing</td><td>Less than significant</td></tr>
</table>

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		activities and shall cover 500-foot radius surrounding the construction zone. If active nests are found, actions typically include, but are not limited to, monitoring by agency-approved biologists, establishment or refinement of species-specific buffers, reduction or elimination of the use of loud equipment, reducing foot traffic and remaining in the vehicles, and the maintenance of visual screens. Migratory birds shall be protected from Project Area staging and operations through the use of a buffer established based on the birds sensitivity and response to the potential activity. Baseline behavior of the bird should be established to inform the buffer size. The qualified biologist may start with a 100-foot nest buffer or a 250-foot nest buffer for raptors, but may adjust the buffer size based of the reaction of the bird to the activity. If there is a potential for nest abandonment due to intrusion into the buffer zone, as established by the qualified biologist, then CDFW and the USFWS shall be consulted. If a lapse in Project-related work of 15 days or longer occurs, another focused survey, and if required, consultation with CDFW and the USFWS shall be performed before Project work can resume.	
3.4-7	Impacts on special-status bats.	**3.4-7**: **Avoid and Minimize Impacts to Special-Status Bats.** In areas where suitable habitat occurs and there is potential for special-status bat species to be present, specific mitigation measure(s) will be developed in consultation with CDFW.	Less than significant
3.4-8	Impacts on rare plants.	**3.4-8: Avoid and Minimize Impacts to Rare Plants.** Before the initiation of any vegetation removal or ground-disturbing activities, in areas that provide suitable habitat for special-status plants, the following measures shall be implemented: • A qualified botanist shall conduct appropriately timed surveys for special status plant species, in all suitable habitat that would be potentially disturbed by the Project. • Surveys shall be conducted following CDFW- or other approved protocol. • If no special status plants are found during focused surveys, the	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		botanist shall document the findings in a letter to the lead agency, and other appropriate agencies as needed, and no further mitigation will be required. • If special status plants are found during focused surveys, the following measures shall be implemented: – Information regarding the special status plant population shall be reported to the CNDDB. – If the populations can be avoided during Project implementation, they shall be clearly marked in the field by a qualified botanist and avoided during construction activities. Before ground clearing or ground disturbance, all on-site construction personnel shall be instructed as to the species' presence and the importance of avoiding impacts to this species and its habitat. – If special status plant populations cannot be avoided, consultations with CDFW and/or USFWS would be required. If allowed under the appropriate regulations, the plants shall be mapped, photographed, and then transplanted to a suitable location by a qualified botanist. If required by the relevant agency, a plan to compensate for the loss of special status plant species, detailing appropriate replacement ratios, methods for implementation, success criteria, monitoring and reporting protocols, and contingency measures that would be implemented if the initial mitigation fails; the plan would be developed in consultation with the appropriate agencies prior to the start of local construction activities. – If mitigation is required, the Project proponent shall maintain and monitor the mitigation area for 5 years following the completion of construction and restoration activities. Monitoring reports shall be submitted to the resource agencies at the completion of restoration and for 5 years following restoration implementation. Monitoring reports shall include photo-documentation, planting specifications, a site layout map, descriptions of materials used, and justification for any deviations from the mitigation plan. Additional mitigation, monitoring may be required or modified by the administering	

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		agency, and those requirements would supersede this section.	
3.4-9	Impacts on riparian habitat.	**3.4-9: Monitor Riparian Habitat.** In advance of construction, a Riparian Revegetation and Monitoring Plan shall be prepared for riparian areas which will describe the thresholds of revegetation success, monitoring and reporting requirements, and a description of the site-specific planting plan. The long-term ecological monitoring program described in the Plan will provide the basis for gauging the achievement of minimum performance standards. The Plan will describe a three-year riparian monitoring program that assesses the survival and health of on-site plantings. Appropriate performance standards may include, but are not limited to: an 80 percent survival rate of restoration tree and shrub plantings; absence of invasive plant species in restored areas; and self-sustaining conditions (i.e., plant viability without supplemental water) at the end of three years. The Plan will be submitted to the appropriate regulatory agencies for review and approval.	Less than significant
3.4-10	Impacts on fish.	**3.4-10: Implement Aquatic Habitat Protection.** Aquatic habitat shall be protected during Project Activities by limiting the amount of in-channel work and acquiring proper permits for work done within aquatic habitats. A fence shall be installed to the extent necessary to prevent the unintended discharge of excavated material and turbid water. The fencing shall be checked regularly and maintained until construction is complete. If needed, fish salvage shall be performed under the direct supervision of an approved biologist to avoid incidental take from Project activities. Following installation of any water diversion structures, and prior to placement of fill, the approved biologist shall perform surveys for any fish in the Project Area, collect, and transfer native fish, including Pacific lamprey, to the nearest suitable habitat to the work area. During holding and transportation, fish would be held in stream water collected from the Project reach. • Before removal and relocation begins, the approved biologist shall identify the most appropriate release location(s). Release locations should offer ample habitat for Pacific lamprey and other native fish	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		and should be selected to minimize the likelihood of reentering the work area. • Relocation activities shall be performed during the morning when temperatures are coolest. Air and water temperatures would be periodically measured during dewatering activities to ensure native fish that may be present are protected. • If Pacific lamprey are relocated, the following procedure shall be used: 1. Handling of fish would be minimized. However, when handling is necessary, hands and nets would be wetted prior to handling. 2. Any handled fish would be immediately placed in an aerated container with a lid in cool, shaded water. Aeration would be provided with a battery powered external bubbler. Fish would not be held more than 30 minutes. 3. All handled fish would be moved directly to the nearest suitable habitat in the creek, as identified above.	
3.4-11	Impacts on wetland habitats.	N/A	Less than significant
3.4-12	Impacts on wildlife corridors and movement in the Project Area.	**3.4-11: Native or Migratory Fish or Wildlife Species Avoidance.** The Native or Migratory Fish and Wildlife Species, such as North American beaver, North American otter, and other protected species shall be protected from Project staging and operations impacts through monitoring by a qualified biologist. Prior to construction, the Project Area shall be inspected for the presence of these species. If necessary, with consultation with CDFW, appropriate measures shall be taken to avoid and minimize Project impacts to these species. Additional specific measures to protect native or migratory wildlife species, may be required by CDFW under the 1600 series permit for the Project and shall be adhered to by the Project proponent.	Less than significant
3.4-13	Impacts on biological resources from herbicide use.	**3.4-12: Implement Herbicide Protective Actions.** During all Project activities, herbicides shall only be used by a licensed applicator and shall be applied only to target plants. Herbicides shall not be used within 100 feet of blue elderberry plants.	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		In order to avoid and minimize impacts related to herbicide use, use any herbicides during Project activities in accordance with all directions and protective actions listed on the product label of the herbicide being applied. In addition, take the following actions to ensure protection of fish, plant, and bird life during use of the herbicides listed below: 1. Glyphosate: a. Implement the following US EPA recommendations during Project activities (US EPA, 1993): i. For non-aquatic uses, do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters and rinsate. ii. For aquatic uses, only end-use products that are registered for aquatic uses. Do not contaminate water when disposing of equipment washwaters and rinsate. Treatment of aquatic weeds can result in oxygen loss from decomposition for dead plants. This loss can cause fish kills. 2. Triclopyr: a. As recommended by US EPA, avoid spray drift to prevent toxicity to non-target plants during Project activities (US EPA, 1998). b. Do not apply to open water or wetland areas to prevent toxicity to freshwater fish. 3. Imazapyr: a. Implement the following US EPA recommendations during Project activities (US EPA, 2006): i. If groundborne application is performed, take the following precautions to minimize potential risk to non-target terrestrial plants, aquatic vascular plants, and threatened and endangered species (US EPA, 2006, p. 33): • Use a nozzle height below 4 feet above the ground or plant canopy and coarse or coarser droplet size. (ASABE S572) or, if specifically using a spinning atomizer nozzle,	

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		use a volume mean diameter (VMD) of 385 microns or greater. • Do not apply with wind speeds greater than 10 mph. • Do not apply into temperature inversions. b. To minimize potential risk to aquatic vascular plants, do not apply to bodies of water or portions of bodies of water where emergent and/or floating weeds do not exist (US EPA, 2006, p. 32-33). 4. Aminopyralid: a. In addition to following all directions and protective actions listed on the product label, apply aminopyralid using hand-spray and spot treatments only (US EPA, 2005a, p. 19). 5. Chlorsulfuron: a. To minimize potential harm to non-target plants, implement the following US EPA recommendations during Project activities (US EPA, 2005b, p. 6): i. Employ measures to control spray drift. ii. Restrict use to only one application per growing season. 6. Dithiopyr: a. Do not apply dithiopyr in or near water due to its toxicity to fish. b. To minimize potential harm to non-target plants, implement the following US EPA recommendations during Project activities (US EPA, 1991, p. 8): i. Do not apply dithiopyr aerially. 7. Isoxaben: a. To minimize exposure to fish and aquatic invertebrates, implement the following actions (WSDOT, 2006, p. 3): i. Do not apply directly to water, to areas where surface water is present, to wetlands, or to intertidal areas below the mean high water mark. ii. Employ measures to control spray drift. iii. Do not contaminate water when disposing of equipment washwaters and rinsate.	

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
Air Quality and Greenhouse Gas Emissions			
3.5-1	Population and/or employment growth that exceeds growth estimates included in the applicable air quality plan.	N/A	Less than significant
3.5-2	Short-term construction emissions of criteria pollutants that contribute to existing or projected air quality violations.	**3.5-1: Implementation of Construction Best Management Practices.** Project construction activities should implement as feasible and necessary to control dust, the Best Management Practices for construction identified in Section 6.1 of the YSAQMD 2007 CEQA Handbook. Best Management Practices identified to reduce dust emissions include: • Water all active construction sites at least twice daily. Frequency should be based on the type of operation, soil, and wind exposure. • Haul trucks shall maintain at least 2 feet of freeboard. • Cover all trucks hauling dirt, sand, or loose materials. • Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed area. • Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days). • Plant tree windbreaks on the windward perimeter of construction projects if adjacent to open land. • Plant vegetative ground cover in disturbed areas as soon as possible. • Cover inactive storage piles. • Sweep streets if visible soil material is carried out from the construction site. • Treat accesses to a distance of 100 feet from the paved road with a 6 to 12 inch layer of wood chips or mulch. • Treat accesses to a distance of 100 feet from the paved road with a 6-inch layer of gravel.	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
3.5-3	Short-term construction emissions that expose persons to substantial levels of toxic air contaminants.	N/A	Less than significant
3.5-4	Short-term objectionable odors exposure to sensitive receptors due to construction activities.	N/A	Less than significant
3.5-5	Long-term emissions from project maintenance activities.	N/A	Less than significant
3.5-6	Program-related emissions conflict with state goals for reducing greenhouse gas emissions.	N/A	Less than significant
Noise			
3.6-1	Construction-related conflicts with local noise standards.	**3.6-1: Noise Reducing Construction Practices.** The following mitigation measures shall be implemented to reduce noise impacts of construction activities within 400 feet of residences: • Limit construction activities in all cases to 7:00 a.m. to 7:00 p.m. • Configure the construction site in a manner that keeps noisier equipment and activities as far as possible from noise sensitive locations, including the placement of staging areas as far as practicable from nearby residences. • Require 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. • Preventing excessive noise by shutting down idle vehicles or equipment. • When practical, use noise barriers between major construction activities and noise sensitive land uses or take advantage of existing barrier features (e.g., terrain to block sound transmission to noise-sensitive land uses). To be effective, the barriers shall break the line of sight between the noise-sensitive use and on-site construction equipment. • Designate an on-site construction complaint and enforcement	Potentially significant and unavoidable

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		manager for the project and notify neighbors and occupants within 400 feet of the Project construction area at least 30 days in advance of extreme noise generating activities about the estimated duration of the activity.	
3.6-2	Temporary construction noise disturbances to local receptors.	*See Mitigation Measure 3.6-1 above.*	Potentially significant and unavoidable
Hazards and Hazardous Materials			
3.7-1	Encounter and potential release of undocumented contaminated soil or groundwater during construction.	**3.7-1: Procedures if Hazardous Materials Discovered.** If evidence of hazardous materials is discovered during Project activities, the Applicant shall notify the appropriate County Environmental Health Services. The Applicant shall test and analyze the materials following proper protocols to determine the presence of hazardous substances prior to making arrangements for off-site reuse/recycling or disposal. Testing shall be performed according to one of the following methods: 1. The method recommended by the County Environmental Health Services in the county in which the materials are located. 2. If the County Environmental Health Services does not specify a method, then the potentially hazardous material shall be tested as follows: a. Conduct representative sampling of the material in accordance with procedures specified in Section One of "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" SW-846, 3rd Edition, US EPA (US EPA, 2014; US EPA, 2013). b. Arrange for testing of the material by a laboratory following the analytical procedures outlined in CCR Title 22, Division 4.5. The laboratory performing the testing shall be certified to perform the specific waste analysis by the State of California Department of Environmental Health. c. Deliver samples to the testing laboratory with a "Chain of Custody" type document which indicates the sample type, date	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		and time sample was taken, sample size, source of the waste, quantity of the waste, the type of sample container, place and address of collection, and the name and signature of collector. 3. If testing indicates the presence of contamination, then the contaminated materials shall be excavated and disposed of in a permitted off-site disposal facility prior to completion of construction.	
3.7-2	Contamination from accidental release of contaminants from construction equipment (fuels, lubricants, etc.)	*See Mitigation Measure 3.2-1, Procedures to Prevent Contamination from Construction Equipment, in the Water Quality section.*	Less than significant
3.7-3	Human health hazards from misapplication of herbicides.	*See Mitigation Measure 3.4-12, Implement Herbicide Protective Actions, in the Biology section.*	Less than significant
3.7-4	Accidental ignition of a wild fire by construction equipment.	**3.7-2: Fire Prevention Measures.** 1. All earthmoving and portable equipment with internal combustion engines shall be equipped with spark arrestors. 2. Work crews shall have appropriate fire suppression equipment available at the work site. 3. On days when the fire danger is high and a burn permit is required (as issued by the relevant Air Pollution Control District), flammable materials, including flammable vegetation slash, shall be kept at least 10 feet away from any equipment that could produce a spark, fire, or flame.	Less than significant
Land Use			
3.8-1	Potential conflicts with adjacent non-agricultural land uses.	N/A	No impact
3.8-2	Potential conflicts with adjacent agricultural land uses.	**3.8-1: Coordinate with Adjacent Landowners and Implement Access Restrictions.** The following measures shall be implemented to reduce impacts of restoration on adjacent agricultural lands: • The Project sponsor shall coordinate with adjacent landowners providing access and/or storage areas for project construction activities and materials. Access and construction work area plans	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		acceptable to all parties shall be developed prior to the start of any construction abutting potentially affected lands. • In locations where post-construction access to private agricultural lands by the public may be facilitated by restoration efforts, the Project shall provide warning signage (i.e., Private Property – No Trespassing) and wildlife-friendly fencing along the creek as needed.	
Aesthetics			
3.9-1	Short-term impacts to views during construction.	**3.9-1**: **Construction Fencing and Educational Signage.** In areas where construction activities would be visible to substantial numbers of viewers, SCWA shall place interpretive signage explaining the restoration process and goals. In addition, stockpiles shall be located away from public views and, if that is not feasible, screening fencing shall be placed to limit public views of equipment storage and soil stockpiles from public paths and recreation areas.	Less than significant
3.9-2	Long-term Program impacts on views.	N/A	No impact
Recreation			
3.10-1	Reduction in recreation opportunities during and following project construction.	**3.10-1: Provide Alternate Access to High-Use Recreational Sites.** The following measures shall be implemented as feasible to reduce impacts of construction access: • Where feasible, provide alternate trail and creek access where such access would be eliminated due to Project construction. • Stage restoration work in high-use areas to permit continued access to parts of reaches that are not undergoing active construction activities. • Minimize construction work limits. • To the maximum extent feasible, store equipment and soil stockpiles within the active construction zone. • If necessary, provide alternate access to picnic areas and formal trails/pathways that avoid the active construction zone. • Provide an alternative canoe take out above the Olmo-Hammond-UCD site when boat take-out at that site is interrupted.	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		3.10-2: Implement Applicable Yolo County Recreation Policies, Where Feasible. The Project sponsors shall work closely with Solano and Yolo Counties, University of California, Davis, and adjacent landowners to facilitate their provision of public access and recreational infrastructure into the Proposed Project on public lands and in places where the landowner is a willing participant and where impacts to sensitive biological resources can be avoided.	
Cultural Resources			
3.11-1	Construction impacts to significant cultural resources.	**3.11-1**: **Establish a Buffer.** In order to minimize or eliminate the possibility that Project-related ground-disturbances would impact the integrity of the documented site components and/or human remains, a buffer of at least 100 feet shall be defined around the presently-mapped boundaries of each archaeological site. No ground-disturbing Project activities could occur within this buffer or the mapped site boundaries. This would reduce potential impacts to less-than-significant levels. **3.11-2**: **If Unrecorded Cultural Resources are Encountered.** If an inadvertent discovery of cultural materials (e.g., unusual amounts of shell, animal bone, glass, ceramics, structure/building remains, dark soil deposits and charcoal, stone implements and flakes, etc.) is made during Project-related construction activities, ground disturbances in the area of the find shall be halted and a qualified professional archaeologist will be notified regarding the discovery. The archaeologist shall determine whether the resource is potentially significant per the CRHR and develop appropriate mitigation to protect the integrity of the resource and ensure that no additional resources are impacted. Mitigation could include, but not necessarily be limited to preservation in-place, archival research, subsurface testing, or contiguous block unit excavation and data recovery.	Less than significant
3.11-2	Construction impacts to human remains.	**3.11-3**: **Human Remains.** The county sheriff/coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		of a Native American, he or she must contact the NAHC by phone within 24 hours of making that determination (Health and Safety Code Section 7050[c]). Following the coroner's findings, the property owner, contractor or Project proponent, an archaeologist, and the NAHC-designated MLD shall determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in PRC Section 5097.9. The landowner shall ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD shall have 48 hours to complete a site inspection and make recommendations after being granted access to the site. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. Assembly Bill (AB) 2641 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. AB 2641(e) includes a list of site protection measures and states that the landowner shall comply with one or more of the following: • Record the site with the NAHC or the appropriate Information Center; • Utilize an open-space or conservation zoning designation or easement; and/or • Record a document with the county in which the property is located. The landowner or their authorized representative shall rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface	

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		disturbance if the NAHC is unable to identify a MLD or the MLD fails to make a recommendation within 48 hours after being granted access to the site. The landowner or their authorized representative may also re-inter the remains in a location not subject to further disturbance if they reject the recommendation of the MLD, and mediation by the NAHC fails to provide measures acceptable to the landowner. Adherence to these procedures and other provisions of the California Health and Safety Code and AB 2641(e) will reduce potential impacts to human remains to a less-than-significant level.	
Transportation/Traffic			
3.12-1	Construction conflicts with Yolo or Solano County transportation planning policies.	N/A	Less than significant
3.12-2	Substantial increase in roadway hazards during construction.	N/A	Less than significant
3.12-3	Adverse effects on emergency access during construction.	N/A	No impact
3.12-4	Adverse effects on public transit, bicycle, or pedestrian facilities.	N/A	No impact
Public Services			
3.13-1	Increased demand for police services during or after construction.	N/A	Less than significant
3.13-2	Increased demand for fire services during or after construction.	N/A	Less than significant
Utilities and Service Systems			
3.14-1	Potential impacts on storm water drainage facilities.	*See Mitigation Measure 3.1-2, Standards for Modification or Replacement of Storm Drains, in the Hydrology section.*	Less than significant
3.14-2	Impacts on landfill capacity due to construction waste.	N/A	Less than significant
3.14-3	Construction impacts to pipelines and electrical lines.	**3.14-1**: **Locate and Avoid Buried Pipelines.** In accordance with state Government Code Section 4216 et seq. and guidance issued by the U.S. Department of Transportation Pipeline & Hazardous Materials Safety	Less than significant

Table ES-3 Impacts and Mitigation Measures

Impact Number	Impact	Applicable Mitigation Measures	Impact Significance after Mitigation
		Administration (PHMSA), the Project applicant and excavator will contact the regional notification center at least two working days, but not more than 14 calendar days, prior to commencing that excavation. If practical, the excavator shall delineate the area to be excavated with white paint or other suitable markings. In accordance with Government Code Section 4216.4, if consultation with the regional notification center indicates a Project excavation is near a pipeline, then the excavator shall determine the exact location of the pipeline by excavating with hand tools before using any power-operated or power-driven excavating or boring equipment. However, power-operated or power-driven equipment may be used for the removal of any existing pavement if there are no subsurface installations contained in the pavement. If documented notice of the intent to use vacuum excavation devices, or power-operated or power-driven excavating or boring equipment, has been provided to the pipeline operator, and it is mutually agreeable with the operator and the excavator, the excavator may utilize vacuum excavation devices, or power-operated or power-driven excavating or boring equipment within the approximate location of a pipeline. If the exact location of the pipeline cannot be determined by hand excavating, the excavator shall request the pipeline operator to provide additional information, to enable the excavator to determine the exact location of the installation. In the event Project activities discover damage or cause damage to a pipeline installation, including all breaks, leaks, nicks, dents, gouges, grooves, or other damage, to lines, conduits, coatings, or cathodic protection, the Project applicant and excavator shall immediately notify the pipeline operator. If a pipeline is damaged and the operator cannot be contacted, the excavator shall call 911 emergency services.	