DRAFT

INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION

LOWER PUTAH CREEK RESTORATION PROJECT, NISHIKAWA REACH

YOLO AND SOLANO COUNTIES, CALIFORNIA

LSA

March 2023

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YOLO AND SOLANO COUNTIES, CALIFORNIA

Submitted to:

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March 2023

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LIST OF ABBREVIATIONS AND ACRONYMS

2016 Program EIR	Program Environmental Impact Report for the Lower Putah Creek Restoration Project – Upper Reach Program
2017 Ozone Plan	2017 Sacramento Regional 2008 8-Hour Ozone and Further Reasonable Progress Plan
A-40	Agriculture
AB	Assembly Bill
AB 939	California Integrated Waste Management Act
APE	Area of Potential Effect
APN	Assessor's Parcel Number
Basin Plans	Water Quality Control Plans
BMP	Best Management Practices
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
California Register	California Register of Historical Resources
CARB	California Air Resources Board
CC	State Candidate for listing as an Endangered Species
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CE	Listed as Endangered by the State of California
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Data Base
CNEL	community noise equivalent level

CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CR	California Rare
CSC	California Species of Special Concern
CT	Listed as Threatened by the State of California
CVFPB	Central Valley Flood Protection Board
CWA	Clean Water Act
dB	decibel(s)
dBA	A-weighted decibel(s)
DOC	Department of Conservation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
EDR	Environmental Data Resources
EIR	Environmental Impact Report
EFZ	Earthquake Fault Zones
EQ Zapp	California Earthquake Hazards Zone Application
FC	Candidate to become a proposed species.
FE	Federally Endangered
FEMA	Federal Emergency Management Agency
FESA	Federal Endangered Species Act
FGC	Fish and Game Code
FIRM	Flood Insurance Rate Map
FIS	Flood Insurance Study
FP	State Fully Protected
FSC	Federal Species of Concern
FT	Federally Threatened
GHG	greenhouse gas
GP	General Permit
GSAs	Groundwater Sustainability Agencies
GSPs	Groundwater Sustainability Plans

HCP/NCCP	Yolo Habitat Conservation Plan/Natural Community Conservation Plan
HFCs	hydrofluorocarbons
IBC	International Building Code
IS/MND	Initial Study/Mitigated Negative Declaration
L_{dn}	day-night average level, also DNL
L_{eq}	equivalent continuous sound level
L_{max}	maximum noise level
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendant
mph	miles per hour
MRZ	Mineral Resource Zone
N_2O	nitrous oxide
NAHC	Native American Heritage Commission
NAWCA 3	North American Wetlands Conservation Act 3 – Lower Putah Creek Floodplain Restoration Project
NCCP	Natural Community Conservation Plan
NFIP	National Flood Insurance Program
NMFS	National Marine Fisheries Service
NO_2	nitrogen dioxide
NOA	Notice of Applicability
NOD	Notice of Determination
NOI	Notice of Intent
NO_X	nitrogen oxide
NPDES	National Pollutant Discharge Elimination System
NWIC	Northwest Information Center
NWP	Nationwide Permit
O_3	ozone
OHWM	Ordinary High Water Mark
OPR	Governor's Office of Planning and Research
PAHs	polyaromatic hydrocarbons

Pb	lead
PCBs	polychlorinated biphenyls
PFCs	perfluorocarbons
PHMSA	U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration
PM	particulate matter
PM_{10}	particulate matter less than 10 microns in size
$PM_{2.5}$	particulate matter less than 2.5 microns in size
Porter-Cologne Act	Porter-Cologne Water Quality Control Act
PQP	Public/Quasi-Public
PRC	Public Resources Code
PRD	Permit Registration Document
the Program	Lower Putah Creek Restoration Project, Upper Reach Project
RCIS/LCP	Regional Conservation Investment Strategy and Local Conservation Plan
RWQCB	Regional Water Quality Control Board
SCE	State Candidate Endangered
SCWA	Solano County Water Agency
SF_6	sulfur hexafluoride
SGMA	California Sustainable Groundwater Management Act
SLF	Sacred Lands File
SMARA	Surface Mining and Reclamation Act of 1974
SMARTS	Stormwater Multiple Application and Report Tracking System
SO_2	sulfur dioxide
SRA	State Responsibility Area
SSC	State Species of Special Concern
SR	State Route
State Water Board	State Water Resources Control Board
Statewide Order	Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Restoration Projects Statewide
Statewide Order EIR	Consolidated Final Restoration Project Statewide Order Program Environmental Impact Report
SVAB	Sacramento Valley Air Basin

SWCA	Solano County Water Agency
SWPPP	Storm Water Pollution Prevention Plan
TMDL	Total Maximum Daily Load
UC	University of California
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VELB	Valley Elderberry Longhorn Beetle
VHFHSZ	Very High Fire Hazard Severity Zone
VMT	vehicle miles traveled
VOC	volatile organic compound
WEAP	Worker Environmental Awareness Program
WOTUS	Waters of the United States
WPCNP	Winters Putah Creek Nature Park
YSAQMD	Yolo-Solano Air Quality Management District
ZE	Zero Emissions

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1.0 INTRODUCTION

This Supplemental Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared in accordance with the provisions of the California Environmental Quality Act (CEQA) and assesses the potential environmental impacts of implementing the Lower Putah Creek Restoration Project, Nishikawa Reach (hereafter referred to as the "proposed project"). The attached Initial Study consists of a completed environmental checklist and an explanation of the environmental topics addressed in the checklist.

The proposed project involves restoring a section of active channel that is currently in an over-widened condition. This project aims to create a narrow design channel in a more central, meandering form to create 0.5 mile of nearly continuous salmon spawning habitat across a gravel-rich floodplain. The project design includes grading of 11 acres to floodplain elevation, and construction of 15 riffles and several rock vanes.

The Solano County Water Agency (SCWA) proposes to complete channel restoration involving recontouring and realignment along a 0.5-mile section of the low-flow channel of Putah Creek, upstream of the Pedrick Road Bridge near Davis, California in Yolo and Solano counties. This project is an element of the Lower Putah Creek Restoration Project, Upper Reach Project (hereafter referred to as "the Program") which proposes to restore and enhance geomorphic and ecological function on approximately 24.2 miles of Putah Creek between the Putah Diversion Dam and the Western Boundary of the Yolo Bypass Wildlife Area. Because the proposed project is an element of the Program, this Initial Study relies on the *Program Environmental Impact Report for the Lower Putah Creek Restoration Project – Upper Reach Program*[1] (hereafter referred to as the "2016 Program EIR"), which was certified by SCWA in May 2016.

In addition, the State Water Resources Control Board (State Water Board) developed an Order for Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Restoration Projects Statewide (Statewide Order) to improve the efficiency of regulatory reviews for projects throughout the State that would restore aquatic or riparian resource functions and/or services. The Statewide Order establishes an authorization process for environmentally beneficial restoration project types and associated measures to protect species and the environment. The State Water Board, as the CEQA lead agency (for Statewide Order development) prepared and certified the *Consolidated Final Restoration Project Statewide Order Program Environmental Impact Report*[2] (hereafter referred to as the "Statewide Order EIR") in August 2022. Because the proposed project qualifies as a beneficial restoration project, it may be covered under the Statewide Order, with approval by the Regional Water Quality Control Board (RWQCB). As such, it must comply with CEQA and be consistent with the Statewide Order EIR. Therefore, this Initial Study references and applies the applicable mitigation measures from the Statewide Order EIR, as necessary, to reduce potential environmental impacts.

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1 Solano County Water Agency. 2016. *Program Environmental Impact Report for the Lower Putah Creek Restoration Project – Upper Reach Program.* May.

2 California Water Boards. 2022. *Consolidated Final Restoration Project Statewide Order Program Environmental Impact Report*. August 16.

SCWA's decision to complete channel restoration along the Nishikawa Reach associated with the Lower Putah Creek Restoration Project, Upper Reach Project constitutes a "project" under CEQA and requires a discretionary action by SCWA. SCWA is both the project proponent and the Lead Agency for review of the proposed project under CEQA. Pursuant to the requirements of CEQA, SCWA must evaluate the potential for construction or operation of the proposed project to create adverse environmental effects. This Supplemental IS/MND has been prepared for the proposed project pursuant to the rules for supplemental environmental review under Public Resources Code (PRC) Section 21166 and *State CEQA Guidelines* Section 15163. This Initial Study analyzes whether proposed changes to the Program, which comprise the Lower Putah Creek Restoration Project, Nishikawa Reach would result in any new or substantially more severe significant environmental impacts than those analyzed in the prior CEQA documents or whether any of the other standards requiring further environmental review under CEQA are met.

2.0 PROJECT INFORMATION

1. **Project Title:**

   Lower Putah Creek Restoration Project, Nishikawa Reach

2. **Lead Agency Name and Address:**

   Solano County Water Agency (SCWA)
   810 Vaca Valley Parkway, #203
   Vacaville, California 95688

3. **Contact Person and Phone Number:**

   Max Stevenson, PhD
   (530) 681-6004
   mstevenson@scwa2.com

4. **Project Location:**

   The section of Putah Creek that is central to the project site is the 2,500-foot (0.47-mile) reach of Putah Creek west of the Pedrick Road Bridge. The project area encompasses 29 acres of primarily riparian habitat between the top of the northern and southern banks of the Putah Creek channel. The project site is approximately 3.75 miles west of downtown Davis and 5.7 miles north of Dixon, California.

5. **Project Sponsor's Name and Address:**

   Solano County Water Agency
   810 Vaca Valley Parkway, #203
   Vacaville, California 95688

6. **General Plan Designation:**

   Public/Quasi-Public (PQP) to the north in Yolo County, Agriculture with Agricultural Reserve Overlay to the south in Solano County.

7. **Zoning:**

   Public/Quasi-Public (PQP) to the north in Yolo County, Agricultural (A-40) to the south in Solano County.

8. **Description of Project:**

   SCWA proposes to complete channel restoration involving recontouring and realignment along a 0.5-mile section of the low-flow channel of Putah Creek, upstream of the Pedrick Road Bridge near Davis, California in Yolo and Solano counties. The project is part of a series of restoration activities intended to restore Putah Creek to a more natural condition that is self-maintaining and supports native plant and animal species. The project involves restoring a section of active channel that is currently in an over-widened condition. This project aims to create a narrow design channel in a more central, meandering form to create 0.5-mile of nearly continuous

salmon spawning habitat across a gravel-rich floodplain. The project design includes grading of 11 acres to floodplain elevation, and construction of 15 riffles and several rock vanes. A more detailed project description is provided in Section 3.0, Project Description.

9. Surrounding Land Uses and Setting:

The project area is bounded by farmland on the south (Solano County) and the UC Davis Center for Aquatic Biology and Aquaculture, Putah Creek Facility (formerly the Animal Science Trout Hatchery) to the north. Land uses along this reach are comprised of a 400- to 600-foot swath of open space/habitat within the project reach, surrounded on the south by field crops and on the north by a wastewater pond and treatment facility. There is public access to the north side of Putah Creek from Pedrick Road/Lincoln Highway. The north bank parcel (Yolo County Assessor's Parcel Number [APN] 037-190-009) is owned by the Davis Joint Unified School District and houses numerous institutes, labs, and field sites for the University of California (UC), Davis. The riparian portion of the 433-acre parcel constitutes the UC Davis Riparian Reserve, a teaching and research site along Putah Creek. A popular hiking trail traverses portions of the UC Davis Riparian Reserve, leading from a gravel parking lot down to the floodplain and along Putah Creek towards the City of Davis. The south bank parcel (Solano County APN 0110-010-010) is owned by the Nishikawa Family Trust; the entire parcel is 496 acres and is currently in agricultural production. This project site is also known as "Site 20" or the "Nishikawa site."

10. Other Public Agencies Whose Approval is Required (e.g., permits, financial approval, or participation agreements):

- California Department of Fish and Wildlife – *Lake or Streambed Alteration Agreement*
- Regional Water Quality Control Board - *Coverage under the Statewide Order*
- U.S. Army Corps of Engineers - *Nationwide Permit (NWP) 27 Aquatic Habitat Restoration, Establishment, & Enhancement Activities*
- University of California, Davis – *License for temporary access and staging for construction on UC Davis lands*

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resource Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?

In January 2023, SCWA provided formal notification to those California Native American tribes that are traditionally and culturally affiliated with the geographic area within which the proposed project is located pursuant to the consultation requirements of Assembly Bill (AB) 52. Letters were sent to all tribal representatives identified by the Native American Heritage Commission. To date, SCWA has received no requests for consultation.

3.0 PROJECT DESCRIPTION

The Solano County Water Agency (SCWA) proposes to complete channel restoration involving recontouring and realignment along a 0.5-mile section of the low-flow channel of Putah Creek, upstream of the Pedrick Road Bridge near Davis, California in Yolo and Solano counties. The project is part of a series of restoration activities intended to restore Putah Creek to a more natural condition that is self-maintaining and supports native plant and animal species. The project involves restoring a section of active channel that is currently in an entrenched, unnaturally straight, and over-widened condition. This project aims to create a narrow design channel in a more central, meandering form with lower inset floodplain heights. This would create a 0.5 mile of nearly continuous salmon spawning habitat across a gravel-rich floodplain. The project design includes grading of 9 acres to floodplain elevation, and construction of 15 riffles and several rock vanes.

3.1 PROJECT LOCATION

Putah Creek forms the boundary between Solano County and Yolo counties from Monticello Dam to the outskirts of Davis, California. The section of Putah Creek that is central to the project site is the 2,500-foot (0.47-mile) reach of Putah Creek west of the Pedrick Road Bridge. The project area encompasses 29 acres of primarily riparian habitat between the top of the northern and southern banks of the Putah Creek channel. The project site is approximately 3.75 miles west of downtown Davis and 5.7 miles north of Dixon. Figure 1 shows the project site location and vicinity.

The project area is bounded by farmland on the south (Solano County) and the UC Davis Center for Aquatic Biology and Aquaculture, Putah Creek Facility (formerly the Animal Science Trout Hatchery) to the north. Land uses along this reach are comprised of a 400- to 600-foot swath of open space/habitat within the project reach, surrounded on the south by field crops and on the north by a stormwater pond. There is public access to the north side of Putah Creek from Pedrick Road/Lincoln Highway. The north bank parcel (Yolo County Assessor's Parcel Number [APN] 037-190-009) is owned by the Davis Joint Unified School District and houses numerous institutes, labs, and field sites for UC Davis. The riparian portion of the 433-acre parcel constitutes the UC Davis Riparian Reserve, a teaching and research site along Putah Creek. A popular hiking trail traverses portions of the UC Davis Riparian Reserve, leading from a gravel parking lot down to the floodplain and along Putah Creek towards the City of Davis. The south bank parcel (Solano County APN 0110-010-010) is owned by the Nishikawa Family Trust; the entire parcel is 496 acres and is currently in agricultural production. This project site is also known as "Site 20" or the "Nishikawa site" in the 2016 Program EIR. Figure 2 depicts the project site on an aerial base.

3.2 PROJECT BACKGROUND

Putah Creek is a major stream in Northern California that is a tributary of the Yolo Bypass and, ultimately, the Sacramento River. Stretching approximately 85 miles, Putah Creek runs through Yolo and Solano counties in Northern California. Prior to human intervention, Putah Creek flowed out of the Vaca Mountains across a broad area, frequently changing its course. In the lower reaches of the watershed, a mildly sloping alluvial plain formed by accumulated sediment deposition from Putah Creek created the rich agricultural land of this region.

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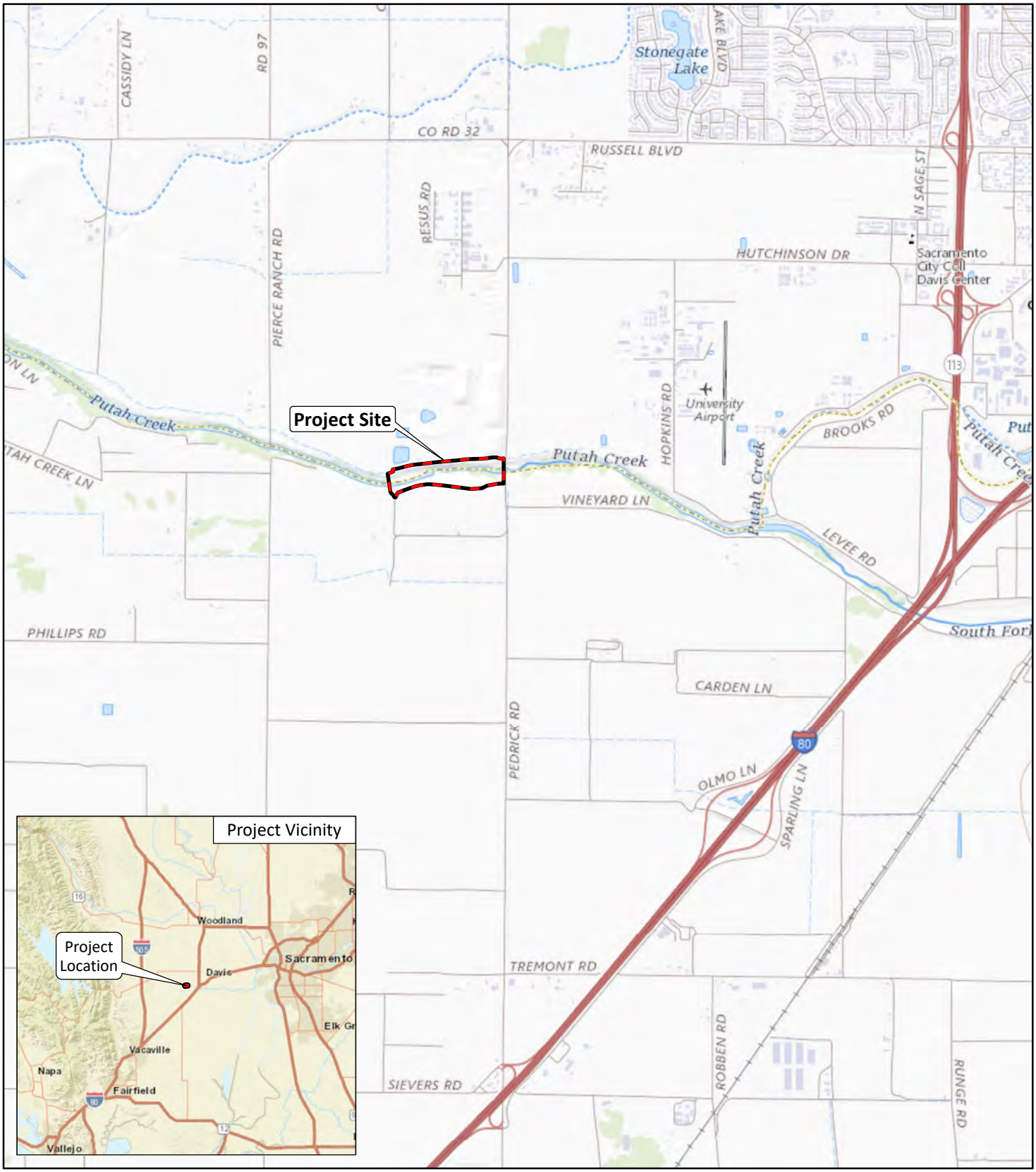

LSA

LEGEND

FIGURE 1

N

0 62500 125000

FEET

Lower Putah Creek Salmon Habitat Restoration
Yolo and Solano Counties, California

Project Location and Vicinity

SOURCE: USGS The National Map (08/2021); Esri World Street Map (2022).

I:\SWG2201\GIS\MXD\Biological Assessment\Figure 1_Location of the Project Area.mxd (10/10/2022)

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LSA

LEGEND

- Action Area
- Existing Channel
- Existing Road
- Putah Creek Trail

0 150 300
FEET

SOURCE: Nearmap (05/2022);

I:\SWG2201\GIS\MXD\Biological Assessment\Figure 2_Location Detail on Aerial.mxd (10/10/2022)

FIGURE 2

Lower Putah Creek Salmon Habitat Restoration
Yolo and Solano Counties, California

Location Detail on Aerial

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Flood control measures, development, and grading for agriculture have caused the present lower Putah Creek to carve out a deeper channel. The excavation of a south fork channel for additional flood control and gravel mining upstream of the Pedrick Road Bridge and the city of Winters in the 1960s and 1970s also contributed to the downcutting of the channel. At the base of the railroad bridge at Winters, there is a 3-foot depth of exposed rough concrete footing beneath the smooth surface of the formed support pillar, attesting to 3 feet of incision that has occurred since the bridge was built in 1906.

After several drought years in the late 1980s, the majority of Putah Creek went dry, prompting a landmark lawsuit that resulted in the signing of the Putah Creek Accord in 2000.[3] The Accord established releases from the Monticello Dam and Putah Diversion Dam to maintain stream flows in Putah Creek, with regulated flow regimes which spike in winter/spring and ebb in summer/fall to protect native fish species. The restoration of flow regimes has resulted in a doubling of riparian bird species and a return of spawning native steelhead trout and Chinook salmon as well as protecting the livelihood of farmers on the lower watershed.

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. These reaches cannot "self-adjust" to more natural morphology because flow velocities are insufficient to mobilize sediment and natural gravel recharge is substantially arrested due to both Monticello and Putah Diversion Dams preventing sediment transport downstream. In this condition, the creek is virtually devoid of riffles and spawning habitat, and lacks the materials and functions needed to build such features naturally.

3.2.1 Lower Putah Creek Restoration Project – Upper Reach Program

In 2015, the SCWA developed a comprehensive plan for restoration of the lower Putah Creek to benefit native salmonids and their spawning and rearing habitat. Funded by a Proposition 1 grant, SCWA developed conceptual habitat restoration plans and baseline habitat assessments for 30 miles of lower Putah Creek from Monticello Dam to the Yolo Bypass. 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 work included geomorphic, biological, and hydrologic/soils assessments, and facilitated public meetings to restore natural ecological form and function for 33 project sites, including 17 sites named in the draft "Programmatic Environmental Impact Report for the Lower Putah Creek Restoration Project – Upper Reach Program" prepared by SCWA in 2016. The project delivered conceptual plans for all 33 project sites and detailed plans, specifications and bid documents for 3 of these sites.

[3] Lower Putah Creek Coordinating Committee. 2000. Putah Creek Accord. Website: https://www.scribd.com/doc/249390335/putah-creek-accord-2000 (accessed September 12, 2022).

3.2.2 Winters Putah Creek Nature Park Restoration

In one of the first projects under the Lower Putah Creek Restoration Project – Upper Reach Program, the SCWA completed channel restoration involving recontouring and realignment of the low-flow channel of Putah Creek upstream, within, and downstream of the Winters Putah Creek Nature Park (WPCNP). The overall project encompasses three locations within Putah Creek from upstream to downstream: (1) WPCNP Phase I and II (408 Permission #19047, completed in 2011), (2) WPCNP Phase III (408 Permission #19047-1, completed 2018), and (3) the North American Wetlands Conservation Act 3 – Lower Putah Creek Floodplain Restoration Project (NAWCA 3). The SCWA's consulting biologists confirmed the following ecological benefits within the completed phases of the WPCNP Project:

- Salmon were observed spawning in sections of the narrowed channel that contained supplemental spawning gravel. Salmon had never been observed spawning in this section of Putah Creek prior to construction of the project.

- The project increased the range of sensitive aquatic invertebrates, which indicates an improvement in the health of the aquatic environment.

- In addition, data collected by researchers with the UC Davis, Department of Wildlife, Fish, and Conservation Biology, suggests that riparian breeding birds and native fish in Putah Creek have responded positively to large-scale habitat restoration and management work.

3.3 PROJECT ELEMENTS

As a next step in the Lower Putah Creek Restoration Project – Upper Reach Program, the SCWA proposes to restore salmon habitat along a 0.5-mile section of Putah Creek in Yolo and Solano counties. The project involves restoring a section of active channel that is currently in an over-widened condition (i.e., essentially stagnant, receiving excessive solar radiation, with long residence time of water in pools and degraded aquatic habitat). The project aims to create a narrow design channel in a more central, meandering form and to seal the existing channel to create a 0.5 mile of nearly continuous salmon spawning habitat across a gravel-rich floodplain. The project design would include grading of 9 acres to floodplain elevation, and construction of 16 riffles and several rock vanes. Figure 3 shows the proposed project elements.

Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. All in-stream activities would be implemented adaptively, based upon an understanding of the ecosystem and its changes over time. A site-specific Adaptive Management Plan would be developed based on the desired environmental outcomes and the potential for environmental impacts.

LSA

LEGEND

- Action Area
- Proposed Channel
- Proposed Rip Rap
- Proposed Soil Mitigation Trench
- Proposed Field Nursery Area

0 150 300
FEET

SOURCE: Nearmap (05/2022); SCWA (2022).

I:\SWG2201\GIS\MXD\Biological Assessment\Figure 3_Action Area.mxd (10/10/2022)

FIGURE 3

Lower Putah Creek Salmon Habitat Restoration
Yolo and Solano Counties, California

Proposed Project Elements

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The following outcomes are identified as targeted objectives of the proposed project:

- Treat, remove, and control invasive weeds.
- Establish native riparian species to replace invasive weeds and improve the diversity and population of native riparian obligate species
- Reconfigure the floodplain to a functional and natural state that is maintained and adapted to current peak flows. The operation of Monticello Dam has reduced annual peak flows from 80,000+ cubic feet per second to approximately 20,000 cubic feet per second. The reconfigured floodplain would be configured to the existing peak flows.
- Narrow the over-widened backwater reaches of the channel. The project is designed to reduce the width-to-depth ratio of the backwater reach to create a more functional channel and floodplain connection.
- Facilitate natural processes of channel recovery.
- Enhance native fish habitat and spawning areas. Fish habitat is a prime focus of the project design.

3.3.1 Channel Reconfiguration

The proposed project would include the reconfiguring of degraded areas of the creek channel to a more natural cross-sectional form to stabilize eroding banks, facilitate channel shading with bank-side riparian vegetation, lower water temperatures, and improve habitat values for native fish species. A narrower low-flow channel would also serve to increase flow velocities, restore competency of the channel to mobilize gravels for spawning, and restore geomorphic processes that support a natural channel and ecosystem. The total volume of cut for the design channel and floodplain recontouring would be 37,500 cubic yards with a total fill volume of 12,700 cubic yards. The project would result in a net gain of 1,000 feet of spawning and juvenile salmonid rearing habitat.

3.3.1.1 Floodplain Recontouring

Portions of the existing floodplain would be graded to create a lowered floodplain elevation with a gentle slope of 1-2 percent. Recontouring the floodplain to an elevation that is below the ordinary high-water mark (OHWM) would subject it to frequent overland flow of water and associated natural processes, such as erosion and depositions. The project would cut a total of 28,000 cubic yards of native floodplain material to restore natural form and function to the floodplain. This would allow the natural geomorphological processes of scour and deposition to increase both terrestrial and aquatic habitat complexity within the project area as the site modifications mature. The project would have the immediate benefit of reduced water temperatures and an increase in suitable salmon spawning and juvenile rearing habitat. The lower top-of-bank elevation and gentle floodplain slope would also maximize the surface area suited for the natural recruitment of many different native plant species, including high-value, wetland-dependent species. Additionally, a number of native trees would be planted or re-established after the floodplain work has been

completed. Plants would be chosen specifically to support a wide range of native fish, birds, insect pollinators, amphibians, and other animals.

3.3.1.2 Channel Filling

The existing over-widened channel has high water residence time and a large water surface area that is exposed to solar radiation, both of which promote warm water temperatures. In addition, the over-widened section is straight and shallow, thereby offering little cover and structure for fish and other aquatic organisms. To create a low flow channel bordered by functional floodplain surfaces, 14,000 cubic yards of alluvial material from within the stream corridor would be excavated and placed within the over-wide channel. This activity would completely fill the existing channel to the proposed floodplain elevation of 42 feet. Work areas within the active channel would be isolated from flowing water and dewatered as needed.

3.3.1.3 Design Channel

The proposed project includes the creation of a new narrow channel with an average width of approximately 18 feet that would be located within the recontoured floodplain. The new channel would be approximately 1.2 acres in surface dimensions (or approximately 50 percent of the original surface area). The stream length would be 2,720 feet (approximately 8 percent longer than the current stream channel). The new meandering low-flow channel alignment would be excavated, and the excavated material would be used to fill the former, straightened channel alignment. Narrowing the over-widened section of the channel would immediately promote cooler water temperatures by increasing flow velocity and reducing the surface area of water that is exposed to solar radiation. Water temperatures would also be reduced as nearby vegetation matures and provides shade over a larger percentage of open water than was possible with pre-project conditions. The design channel would also include 18 pools/runs and 16 riffles where the channel width would generally be widened to reduce the flow velocity. The total volume of cut for the design channel would be 8,000 cubic yards. Approximately 2,000 cubic yards of clean gravel would be placed within the channel. The gravel size and composition would be suitable for spawning salmon.

3.3.1.4 Riffles

Riffle and pool habitats are lacking in Putah Creek and are critical to successful enhancement efforts. Riffles (i.e., high points in the channel bed with higher flow velocities) provide spawning habitat if suitable gravel size and flow conditions are present. Pools (i.e., low points in the channel bed with slower velocities) provide valuable and necessary locations for juvenile salmonid rearing, cover, and foraging and are resting locations for migrating adults. Riffles would be constructed by placing appropriately sized, relatively coarse substrate material into the active channel to raise the channel invert adjacent to or within existing in-channel pools, or by realigning the low-flow channel so that it crosses suitable in-channel gravels and fills the former channel. Appropriately sized gravels would be salvaged from within the reach or imported from local sources. Where gravels must be imported, the majority would come from the nearby Putah South Canal spoil site. Gravels would be placed into the streambed using a loader. A maximum of 37,500 cubic yards of earthwork would be repositioned (cut and fill) in the project area. Wood structures would be installed in conjunction with gravel placement activities to improve channel sinuosity and bar formation. This would also support natural processes of forming and/or maintaining riffles and pools. Installation of wood

structures at the channel margins would also provide immediate critical cover and foraging habitat for fish.

3.3.1.5 Stabilized Channel Banks

Channel bank stabilization methods that may be employed as part of the proposed project include installation of rock revetment, log revetment, root wads, and/or large woody debris. Priority would be given to bank stabilization methods that can provide multiple benefits such as cover, velocity refuge, shade, and foraging opportunities. These structural approaches may also incorporate the use of native plant materials (e.g., willow fascines, live stakes and cuttings, brush matting). Rock material used in these installations would be sourced on site to the extent possible. Large logs and or root wads would be sourced on site from removed nonnative trees (primarily eucalyptus). Live native cuttings and brush would similarly be collected on site. Channel bank stabilization would be accomplished with the following methods:

1. Rock revetments may be combined with other bank stabilization measures to protect the stream bank area above the revetment. Rock revetments would be created by first excavating a trench below the invert of the stream along the toe of the stream bank. In this trench, a series of generally large, flat or rectangular boulders would be placed as a foundation for the revetment stones. Once the foundation stones have been installed, the revetment stones would be placed on top of the foundation stones. Rocks or boulders would be placed up to the OHWM elevation. Used alone, rock revetments have only a modest potential to enhance stream habitat. Rock revetment may be combined with the planting of live cuttings in interstices between the rocks to increase habitat value.

2. Wood structures would be installed in conjunction with gravel placement activities to improve channel sinuosity and stability, bar formation, and to support natural processes that would continue to form and/or maintain riffles and pools. Installation of wood structures at the channel margins would also provide immediate critical cover and foraging habitat for fish. Log revetments are constructed by cabling logs along eroding stream banks to deflect, absorb, and diffuse the erosive force of stream flows. To facilitate sediment settling, brush is densely packed around the large logs. Logs would be placed at the streambed, bank toe, and bank, up to the OHWM elevation, aligned along the channel banks, and stacked on top of each other. Logs would be anchored to the bed and bank of the channel and attached to each other using cable, rebar, or other similar materials. Logs used to construct revetments would typically vary between 12 inches and 36 inches in diameter. Live plant cuttings, brush, and in some cases, soil (e.g., where log revetments are installed in conjunction with the creation of floodplain surfaces) would be packed between the logs and into the eroding banks and incorporated with log revetments to further stabilize the structures and provide forage and refugia for fish and other aquatic and terrestrial wildlife. Root wads would be constructed by embedding the trunk of a "footer log" into the bank, below the thalweg,[4] topped diagonally by a second log, with root crown and roots projecting into the channel to form an "X." The logs would be anchored to the bed and bank of the channel and attached to each other using cable, rebar, or other similar materials. Large wood structures installed in the action area would consist of one to three logs

[4] The line of lowest elevation within a valley or watercourse.

with intact root wads. Construction would include excavation and trenching to embed logs, driving logs into the bank and bed, and interlocking individual logs. The logs would be stabilized using large boulders for ballast, pinning with other logs that would be driven vertically into the bank, or using existing trees to interlock the logs. Large logs would be sourced on site while anchoring boulders would be brought in as needed.

3. Rock weirs would be used within the floodplain to provide grade control to the adjacent upstream and downstream sections of Putah Creek and the outflow of the Willow Canal. This ensures that flow dynamics throughout the restored section maintain design specifications. Rock weirs would be V-shaped, and the top rocks would be embedded into the bank.

3.3.2 Vegetation Management

3.3.2.1 Vegetation Removal

The recontoured floodplain and the design channel would be cleared of vegetation and debris. Equipment used for this operation would include excavators, loaders/dozers, chainsaws, and hand tools. A mechanized tree spade would be used to remove and salvage rooted sandbar willows and other native trees and shrubs from the floodplain. The tree spade would be mounted on a front loader to dig or transplant trees with their complete root ball attached.

3.3.2.2 On-Site Native Plant Field Nursery

An on-site native plant field nursery would be developed to temporarily store and grow plants of native shrubs and trees salvaged from the project area in the floodplain. Due to extensive heavy clay at the site, soil amendments with organic matter (wood chips) would be applied to two areas (10 by 45 feet). Approximately 20 cubic yards of soil would be amended, replaced, and planted with natives. A ‘mini’ excavator would be used because discing equipment is inappropriate for a plot this small. Wood chips would be delivered by trailer and pickup truck on existing dirt access roads to the site. Total area disturbed would be 900 square feet or 2 percent of 1 acre. Water infiltration trenches (reverse French drain) through the impervious clay would connect Putah Creek to the subsurface of the test planting areas. Each reverse French drain would be 50 feet long and 32 inches wide for a total disturbed area of 533 square feet of drain. Round planting areas would be 10 feet in diameter for a total of 400 square feet. A total of 933 square feet would be disturbed. A temporary irrigation system would be installed to serve the soil amendments and the upper bench areas. No trees would be removed. Small amounts of invasive Himalayan blackberry and native sandbar willow (less than 2 inches diameter at breast heigh [DBH]) may be removed to provide access paths for equipment and irrigation, although these activities occur in already open areas with little to no canopy cover. No work would occur directly in the wetted channel. Final connections of the reverse French drains to the creek would be completed after all backfill work of the drains is completed. Nursery transplants would be replanted along the design channel after the construction is complete to ensure that floodplain substrate is stabilized, water surfaces are shaded to the greatest extent, and that habitat conditions are re-established. Care and tending of the transplanted native plants would continue for up to 2 years. Test holes may be made to evaluate success of the trials (look for root growth, rooting depth, presence of water, etc.).

3.3.2.3 Weed Control

Invasive vegetation control activities would be implemented in combination with clearing and grubbing, followed by revegetation with native wetland and riparian plant species. Invasive vegetation control would be accomplished via manual/mechanical removal, chemical control, or a combination of these methods. Temporary access trails may be created to facilitate weed control activities. Creation of such temporary access features would be undertaken during the construction season.

- **Manual and/or Mechanical Removal:** Mechanical equipment (e.g., Excavators, weed whackers, and hand tools, including broom wrenches) would be used to remove invasive weeds and other nuisance vegetation.

- **Chemical Control:** Herbicides that are approved by the California Department of Pesticide Regulation would be used in accordance with their labels to control invasive weeds and other nuisance vegetation, such as giant reed (*Arundo donax*), perennial pepperweed (*Lepidium latifolium*), Himalayan blackberry (*Rubus armeniacus*), tamarisk (*Tamarix* spp.), and tree of heaven (*Ailanthus altissima*).

3.3.3 Replanting/Maintenance

3.3.3.1 Riparian Forest Restoration

The primary goal of leveling the floodplain is to establish a functioning riparian habitat and increase the cover of a functioning riparian forest at the project site. Removal of up to 71 trees, the majority of which are nonnative, is required to facilitate grading within the floodplain and to provide material for bank revetment. All invasive vegetation within the grading area would be removed. The recontoured floodplain would be revegetated with native grasses, trees, and shrubs. Only species that are endemic to Putah Creek would be used for revegetation. The project's Streambed Alteration Agreement with the California Department of Fish and Wildlife (CDFW) likely would require approximately 26,000 native plants to be installed and maintained within the recontoured floodplain. In addition, the plantings would be maintained for a minimum of 5 years, at which point they should achieve a minimum of 80 percent survival and 75 percent coverage. Remediation would occur if the plantings do not meet the survivability and coverage requirements at the end of the 5-year period.

3.3.3.2 Reverse Drainage and Subsurface Irrigation

The current floodplain of the project area is underlain by a thick layer of clay. In some places, this layer exceeds 12 feet. Recontouring the floodplain would bring the actual surface closer to this clay layer and may expose it in places. Due the impermeability of the clay layer, planting trees may be challenging. Therefore, reverse drains are designed to bring water from the design channel to the trees in subsurface "reverse French drains". These drain channels would be constructed as a perpendicular trench leading from the design channel into the newly created floodplain. Trenches would be dug to the elevation of the design channel bottom and would be sloped slightly downward from the channel to provide a flow gradient for moisture away from the channel. The drain would be filled with up to 1 foot of coarse gravel and rocks and then backfilled to grade with regular floodplain material, mixed with mulch. Trees would be planted into these drains, while shrubs and

willows would fill the interstitial spaces between the drain locations. This design ensures that the entire floodplain is quickly re-populated with site-adapted trees and shrubs. Over the years, as the drains fill with sediment, trees and shrubs would have completely conquered the available rooting zone.

3.4 PROJECT CONSTRUCTION

Project construction is estimated to take 4 to 5 months to complete and would begin in summer 2023 or summer 2024. Project construction would start the end of nesting season (August 1) and end at the beginning of salmon migration into Putah Creek (October 15). Net spoils exported from the site would equal approximately 25,000 cubic yards not accounting for shrink and swell factors. Prior to grading actions, invasive vegetation, trees, and shrubs that are currently located within the footprint of the new design channel features would be removed under the SCWA's Routine Maintenance Agreement. Native shrubs and trees salvaged from the project area in the floodplain, including shrubs removed with the tree spade, would be temporarily stored and grown in the field nursery. Nursery transplants would be replanted along the design channel after the construction is complete to ensure that floodplain substrate is stabilized, water surfaces are shaded to the greatest extent, and that habitat conditions are re-established. Care and tending of the transplanted native plants would continue for up to 2 years.

The following construction activities would occur as part of project implementation:

- **Equipment Access and Staging:** The north side of Putah Creek would be accessed through a privately owned agricultural parcel that is adjacent to the creek and is accessible from Pedrick Road. Equipment would use a pre-existing ramp that leads from the top of the creek's embankment to the creek's terrace. The site would have staging areas on the north and south sides of the creek. Equipment would be staged along the creek's embankment.

- **Floodplain Recontouring:** The floodplain recontouring would follow vegetation clearing and salvage. Heavy equipment (e.g., graders, excavators, water trucks, dump trucks, dozers, and scrapers) would be needed to recontour portions of the existing floodplain. Access to the floodplain would be primarily from the south side and along an unimproved surface road from the Nishikawa property (Figure 3). This access road would be cleared of woody debris, if necessary. No additional reinforcement, major grading, or other surface modifications are planned.

- **Design Channel Excavation:** Construction operations would begin by mapping out the design channel location on the floodplain, avoiding existing native trees to the maximum extent possible. The forming of the design channel can begin with little to no disturbance to the existing creek or to large native trees that may be in the area. The design channel would consist of riffle and pool sequences to mimic formations found in natural settings. Heavy equipment needed for this phase would include excavators.

- **Water Diversion:** Once built, temporary coffer dams would be put in place at the beginning and end of the new channel, including the middle cross-over section, which would divert water into

the newly created design channel. After this, cut-and-fill operations can begin, with most of the material being provided by lowering the existing floodplains.

- **Channel Plugging:** The current over-widened channel would be filled with material excavated from the floodplain and the design channel. The total fill needed would be 12,700 cubic feet.

- **Grade Control:** Grade control structures (e.g., rock cross-vanes and weirs) can decrease near-bank shear stress, velocity, and stream power, but also increase the energy in the center of the channel. Rock cross-vanes and similar grade-control structures would be installed to establish grade control, reduce bank erosion, create a stable width/depth ratio, and maintain channel capacity while maintaining sediment transport capacity and sediment competence. The cross-vane also can improve stream habitat by increasing bank cover due to a differential rise in the water surface in the bank region. Furthermore, it creates holding and refuge cover during both high- and low-flow periods in the deep pool, and aids in the development of feeding lanes in the flow separation zones (the interface between fast and slow water) due to the strong down-welling and up-welling forces in the center of the channel. Finally, cross-vanes and similar structures can also create spawning habitat in the tail-out or glide portion of the pool. Heavy equipment needed for this phase would include Excavator and loader.

- **Revegetation:** Recruits can be planted directly into fill material to provide additional root structure stability against erosion in the future. Caution would be used around existing native trees that provide valuable habitat, while larger invasive species such as eucalyptus would be removed and used to reinforce banks and provide fish habitat with their root structures.

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4.0 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist in Chapter 3.0.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

4.1 DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "Potentially Significant Impact" or "Potentially Significant Unless Mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☒ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL IMPACT REPORT or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature _____ Date _____

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5.0 CEQA ENVIRONMENTAL CHECKLIST

5.1 AESTHETICS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Except as provided in Public Resources Code Section 21099, would the project:				
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway	☐	☐	☐	☒
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

5.1.1 Background

The visual character of the project site primarily consists of Putah Creek and its associated riparian vegetation. The public can access the Nishikawa reach by driving up to the back of the riparian zone from Pedrick Road/Lincoln Highway. The creek views include a strip of trees and a slow-moving pool of water. There is also a walking path near the creek and through the riparian vegetation of the site, which permits views of the channel and associated vegetation.

The project area is bounded by farmland on the south (Solano County) and the UC Davis Center for Aquatic Biology and Aquaculture, Putah Creek Facility (formerly the Animal Science Trout Hatchery) to the north. Land uses along the project reach are comprised of a 400- to 600-foot swath of open space/habitat within the project reach, surrounded on the south by field crops and on the north by a wastewater pond and treatment facility.

5.1.2 Prior Environmental Analysis

5.1.2.1 2016 Program EIR

The 2016 Program EIR determined that temporary impacts to aesthetics would result from the removal of vegetation and trees and the presence of construction equipment, workers, and construction fencing during the construction period. The 2016 Program EIR concluded that long-term visual quality would generally be improved due to the elimination of many stagnant pools and weedy areas and the reestablishment of a more free-flowing creek surrounded by native vegetation. The 2016 Program EIR did not include an evaluation of night lighting impacts because construction would be limited from 7:00 a.m. to 7:00 p.m. The 2016 Program EIR concluded that although the visual quality of the site would be altered during the construction period, views of the Nishikawa

reach are limited to road crossings by Pedrick Road/Lincoln Highway and most viewers would be in passing vehicles with only a few seconds of viewing time. Therefore, the 2016 Program EIR determined that visual impacts would be less than significant, and mitigation would not be required.

5.1.2.2 Statewide Order EIR

The Statewide Order EIR determined that construction activities for restoration projects permitted under the Statewide Order could cause temporary changes in local visual conditions; however, because construction elements would be removed after construction, their presence would not cause permanent changes to local visual conditions. The Statewide Order EIR determined that the long-term effects of most projects are expected to be beneficial or neutral, because the projects would involve habitat restoration that would return the existing sites to more natural characteristics. However, some projects could result in the placement of infrastructure that could cause substantial degradation of visual quality. The Statewide Order also identified a significant impact associated with the generation of nighttime lighting and glare resulting from construction activities or the use of construction lighting for restoration projects. Mitigation measures were identified in the Statewide Order EIR to reduce impacts related to visual resources to a less-than-significant level. As part of the State Water Board or RWQCB's issuance of a Notice of Applicability (NOA) for a restoration project under the Statewide Order, compliance with Mitigation Measures AES-1 and AES-2 would be required when applicable to a given project.

Applicable Mitigation Measures. As discussed further below, the proposed project would not include any structural features that would degrade visual quality or lighting for construction or operation; therefore, Mitigation Measures AES-1 and AES-2, identified in the Statewide Order EIR would not apply.

5.1.3 Impact Analysis

a. Would the project have a substantial effect on a scenic vista? ***(No New Impact)***

A scenic vista is defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public. Aesthetic components of a scenic vista generally include: (1) scenic quality, (2) sensitivity level, and (3) view access. The project site is primarily characterized by Putah Creek and its associated riparian vegetation. The project site does not contain any unique visual features or scenic resources, including landmark trees, rock outcroppings or historic structures and it is not highly visible from public vantage points. Development in the project vicinity includes local roads, agricultural land, trails, and the UC Davis Center for Aquatic Biology and Aquaculture.

As previously discussed, the project site is visible from Pedrick Road/Lincoln Highway and there is a walking path near the creek and through the riparian vegetation of the site, which permits views of the channel and associated vegetation. Implementation of the proposed project would require removal of vegetation and trees within the project area; however, the proposed project would replace all trees removed and provide extensive restoration planting. All areas temporarily impacted during construction would be revegetated with native species. Implementation of the proposed project would reconfigure degraded areas of the creek channel to a more natural cross-sectional form to stabilize eroding banks, facilitate channel shading with bank-side riparian vegetation, lower

water temperatures, and improve habitat values for native fish species. All proposed improvements would either be at-grade or within the existing channel and would not obstruct scenic vistas. Once completed, the visual character or quality of the site would be enhanced due to the filling of the existing over-widened channel, the creation of a new, more natural narrow channel, and the establishment of functioning riparian habitat. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

b. Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? ***(No New Impact)***

The Caltrans Landscape Architecture Program administers the Scenic Highway Program, contained in Streets and Highways Code Sections 260–263. State highways are classified as either Officially Listed or Eligible. No Officially Listed or Eligible State Scenic Highways designated under the Scenic Highway Act are located in close proximity to the project site.[5] The nearest eligible State Scenic Highway is Route 128 in Winters, located approximately 7.7 miles west of the project site. The nearest officially designated State Scenic Highway is Route 160 in Sacramento, located approximately 16.5 miles southeast of the project site. Due to distance, the project site is not visible from either highway. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

c. In non-urbanized areas, would the project substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality? ***(No New Impact)***

The project site is in a non-urbanized area, primarily surrounded by agricultural uses and open space. There are no County-designated scenic resources (vistas) within the boundaries of the proposed project.[6,7] The visual character of the project site is primarily defined by Putah Creek and its associated riparian vegetation.

During project construction activities, the visual character of the area would change with the introduction of construction equipment, construction materials, construction equipment staging areas, construction workers, and clearing of vegetation in the Putah Creek channel. This temporary condition would be visible to motorists approaching the project site from Pedrick Road and Levee Road and users of nearby trails and visitors to the UC Davis Center for Aquatic Biology and Aquaculture. However, construction activities would be confined to Putah Creek and its associated riparian vegetation and floodplain and construction would not degrade the visual characteristics of the open space and agricultural uses surrounding the site. Additionally, the change of visual

5 California, State of. 2019. Department of Transportation, California State Scenic Highway System Map. Website: https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa (accessed October 7, 2022).

6 Yolo, County of. 2009. *2030 Countywide General Plan.* November 10.

7 Solano, County of, 2008. *Solano County General Plan.* November.

character at the project site during construction would be temporary in nature and would be returned to preconstruction conditions after completion of the proposed project.

Implementation of the proposed project would require removal of vegetation and trees within the project area; however, the proposed project would replace all trees removed and provide extensive restoration planting. All areas temporarily impacted during construction would be revegetated with native species. Implementation of the proposed project would result in the reconfiguration of degraded areas of the creek channel to a more natural cross-sectional form to stabilize eroding banks, facilitate channel shading with bank-side riparian vegetation, lower water temperatures, and improve habitat values for native fish species. All proposed improvements would either be at-grade or within the existing channel and would not obstruct scenic vistas. Once completed, the visual character or quality of the site would be enhanced due to the filling of the existing over-widened channel, the creation of a new narrow channel, and the establishment of a functioning riparian habitat. Therefore, the proposed project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

d. Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? ***(No New Impact)***

Streetlights, vehicle headlights and taillights, and lighting along Pedrick Road and Levee Road, as well as existing lighting sources associated with nearby UC Davis Center for Aquatic Biology and Aquaculture provide the existing sources of light and glare in the project area. No new light standards would be installed as part of the proposed project. Implementation of the proposed restoration project would not generate any additional traffic (e.g., additional vehicle headlights) or light or glare. As previously discussed, construction would be limited to the hours of 7:00 a.m. to 7:00 p.m. and would not contribute to nighttime light pollution. Therefore, implementation of the proposed project would not create a new source of light or glare, which would adversely affect day or nighttime views. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

5.2 AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and the forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

5.2.1 Background

The project area is bounded by farmland on the south and the UC Davis Center for Aquatic Biology and Aquaculture, Putah Creek Facility (formerly the Animal Science Trout Hatchery) to the north. Land uses along the project reach are comprised of a 400- to 600-foot swath of open space/habitat within the project reach, surrounded on the south by field crops and on the north by a wastewater pond and treatment facility.

The project site is primarily classified as "Other Land" by the State Department of Conservation; however, portions of the project may also extend into land to the south of Putah Creek designated as "Unique Farmland" and land to the north of Putah Creek designated as "Urban and Built-Up

Land".[8] The northern portion of the project site within Yolo County is zoned as Public/Quasi-Public (PQP) and the southern portion of the project site within Solano County is zoned as Agricultural (A-40). However, no portions of the project site are currently used for agricultural or forestry purposes and the site is not subject to a Williamson Act contract.

5.2.2 Prior Environmental Analysis

5.2.2.1 2016 Program EIR

The 2016 Program EIR determined that the vast majority of land adjacent to the stream channel reaches associated with the Program are in active agricultural use and that construction could potentially result in conflicts with adjacent agricultural operations from construction vehicles using farm roads and the storage of soils and construction materials and equipment. Construction and maintenance of the Nishikawa reach would involve access through orchard properties; however, all of the work would be located within the open space and riparian creekside areas. The 2016 Program EIR determined that after the completion of stream restoration activities, boaters and hikers in the restored creek channel could find their way onto adjacent agricultural lands due to increased access afforded by the removal of existing dense non-native vegetation along the creek banks.

Impacts to agricultural resources was determined to be potentially significant; therefore, the 2016 Program EIR included Mitigation Measure 3.8-1, which requires coordination with adjacent landowners and implementation of access restrictions. The 2016 Program EIR concluded that implementation of stream restoration activities on the Nishikawa reach would not change or otherwise adversely affect long term existing or planned land uses on the site or adjacent properties and that potential impacts to agricultural lands would be reduced to a less-than-significant level with implementation of Mitigation Measure 3.8-1, below.

Applicable Mitigation Measures. The following mitigation measure identified in the 2016 Program EIR would apply to the proposed project.

Mitigation Measure 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 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

[8] California, State of. 2016. Department of Conservation. California Important Farmland Finder. Website: maps.conservation.ca.gov/dlrp/ciff (accessed October 7, 2022).

Property – No Trespassing) and wildlife-friendly fencing along the creek as needed.

5.2.2.2 Statewide Order EIR

The Statewide Order EIR determined that some restoration projects permitted under the Statewide Order could result in new long-term or permanent features that could result in permanent conversion of Special Designation Farmland to nonagricultural use or conflicts with agricultural zoning or Williamson Act contracts. Mitigation measures were identified to reduce potential impacts; however, because the extent and location of such actions were not known and the effectiveness of the mitigation measures could not be determined, the Statewide Order EIR determined that this impact would be significant and unavoidable. Impacts to forest and timber land were determined to be less than significant.

As part of the State Water Board or RWQCB's issuance of an NOA for a restoration project under the Statewide Order, compliance with Mitigation Measure AG-1 and AG-2 and Mitigation Measure GEO-6 (see Section 5.7, Geology and Soils) would be required when applicable to a given project.

Applicable Mitigation Measures. In addition to Mitigation Measure GEO-6 (see Section 5.7 Geology and Soils), the following mitigation measure would apply to the proposed project:

Mitigation Measure AG-1: **Minimize and Avoid Loss of Special Designation Farmland.** The following measures shall be implemented before and during construction of restoration projects permitted under the Order to minimize and avoid loss of Special Designation Farmland, as applicable.

- Restoration projects shall be designed to minimize, to the greatest extent feasible, the loss of agricultural land with the highest values.

- Restoration projects that will result in permanent conversion of Special Designated Farmland shall preserve other Special Designation Farmland in perpetuity by acquiring an agricultural conservation easement, or by contributing funds to a land trust or other entity qualified to preserve Special Designation Farmland in perpetuity (at a target ratio of 1:1, depending on the nature of the conversion and the characteristics of the Special Designated Farmland to be converted, to compensate for the permanent loss).

  Based upon the cost and availability of farmland, whether the landowner is sponsoring the project, recent (within 5 years) and ongoing farmland viability, and other factors, the CEQA lead agency for the individual restoration project should consider whether a 1:1 ratio is appropriate and feasible on a case-by-case basis. For example, contributions to a program such as the

California Farmland Conservancy Program, which establishes conservation easements to preserve existing farmland in California, may be prohibitively expensive at a 1:1 ratio where there is a significant amount of affected Special Designated Farmland because it is based on a farm real estate average value per acre. For example, the farm real estate average value per acre in 2019 was $10,000 [USDA 2019].

- Restoration project features shall be designed to minimize fragmentation or isolation of Special Designation Farmland. Where a project involves acquiring land or easements, the remaining non project area shall be of a size sufficient to allow viable farming operations. The project proponents shall be responsible for acquiring easements, making lot line adjustments, and merging affected land parcels into units suitable for continued commercial agricultural management.

- Any utility or infrastructure serving agricultural uses shall be reconnected if it is disturbed by project construction. If a project temporarily or permanently cuts off roadway access or removes utility lines, irrigation features, or other infrastructure, the project proponents shall be responsible for restoring access as necessary to ensure that economically viable farming operations are not interrupted.

- Where applicable to a project site, buffer areas shall be established between restoration projects and adjacent agricultural land. The buffers shall be sufficient to protect and maintain land capability and flexibility in agricultural operations. Buffers shall be designed to protect the feasibility of ongoing agricultural operations and reduce the effects of construction-related or operational activities(including the potential to introduce special-status species in the agricultural areas)on adjacent or nearby properties. Buffers shall also serve to protect restoration areas from noise, dust, and the application of agricultural chemicals. The width of each buffer shall be determined on a project-by-project basis to account for variations in prevailing winds, crop types, agricultural practices, ecological restoration, or infrastructure. Buffers can function as drainage swales, trails, roads, linear parkways, or other uses compatible with ongoing agricultural operations.

As noted above and described further below, the project site is not under Williamson Act contract, therefore, Mitigation Measure AG-2 identified in the Statewide Order EIR would not apply.

5.2.3 Impact Analysis

a. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? ***(No New Impact)***

The project site is primarily classified as "Other Land" by the State Department of Conservation; however, portions of the project may extend into land to the south of Putah Creek designated as "Unique Farmland" and land to the north of Putah Creek designated as "Urban and Built-Up Land."[9] The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. Although project activities may occur on land designated as "Unique Farmland," the proposed project would be limited to riparian creekside areas and would not result in the conversion of agricultural land to a non-agricultural use. After the completion of construction, the land use of the project site would be consistent with existing conditions. Furthermore, Mitigation Measure 3.8-1 identified in the 2016 Program EIR and Mitigation Measure AG-1 identified in the Statewide Order EIR would be implemented to ensure restoration activities would not result in any significant impacts to adjacent agricultural lands. Therefore, with implementation of Mitigation Measure 3.8-1 and Mitigation Measure AG-1, no new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

b. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract? ***(No New Impact)***

The California Land Conservation Act of 1965 (the Williamson Act) is a voluntary program that incentivizes the preservation of farmland. The project site is not located on land that is under a Williamson Act contract.[10,11]

The northern portion of the project site within Yolo County is zoned as Public/Quasi-Public (PQP) and the southern portion of the project site within Solano County is zoned as Agricultural (A-40). Although portions of the project site are located on land zoned for agricultural use, project activities would be limited to riparian creekside areas and no portions of the project site are currently used for agricultural purposes. The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. These activities would not conflict with the Solano County Agricultural (A-40) zoning and project activities would have no impact on the nearby agricultural operations with implementation of Mitigation Measure 3.8-1 and Mitigation Measure AG-1. Therefore, with

9 California, State of. 2016. op. cit.
10 Solano, County of, 2008. *Solano County General Plan.* Figure AG-2, Williamson Act Contracts (2006). November.
11 Yolo, County of, 2009. *County of Yolo 2030 Countywide General Plan.* Figure AG-5, Williamson Act Contracts. November 10.

implementation of Mitigation Measure 3.8-1 and Mitigation Measure AG-1, no new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

c. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? ***(No New Impact)***

Neither the project site nor the surrounding area is zoned for forest land, timberland, or timberland production. Therefore, no new or substantially more severe significant impacts to farmland beyond what has been analyzed in the prior environmental document would occur. No additional analysis is required.

d. Would the project result in the loss of forest land or conversion of forestland to non-forest use? ***(No New Impact)***

No forest or timberland exists on the project site or in the surrounding area. Therefore, the proposed project would not result in the loss of forest land or the conversion of forest land to non-forest use. Therefore, no new or substantially more severe significant impacts to forest land beyond what has been analyzed in the prior environmental document would occur. No additional analysis is required.

e. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use? ***(No New Impact)***

As previously discussed, no forest land or timberland exists on the project site or in the surrounding area and the proposed project would not result in the conversion of forest land to non-forest use. The southern portion of the project site within Solano County is located on land zoned as Agricultural (A-40); however, the proposed restoration activities would be limited to riparian creekside areas and no portions of the project site are currently used for agricultural or purposes. Furthermore, implementation of Mitigation Measure 3.8-1 and Mitigation Measure AG-1 would ensure that restoration activities would not result in any significant impacts to the adjacent agricultural lands. Therefore, with implementation of Mitigation Measure 3.8-1 and Mitigation Measure AG-1, no new impacts or substantially more severe significant impacts would occur with implementation of the proposed project.

5.3 AIR QUALITY

Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations.

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☐	☒
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

5.3.1 Background

The proposed project is located in the Sacramento Valley Air Basin (SVAB), which encompasses 11 counties including all of Shasta, Tehama, Glenn, Colusa, Butte, Sutter, Yuba, Sacramento, and Yolo counties, the westernmost portion of Placer County and the northeastern half of Solano County and is within the jurisdiction of the Yolo-Solano Air Quality Management District (YSAQMD). The YSAQMD operates a regional monitoring network for ambient concentrations of criteria pollutants. Currently, the criteria pollutants of most concern in the SVAB are ozone and particulate matter (PM). The YSAQMD-operated monitoring stations closest to the project site that represent the rural nature of the project area are the Davis station at UC Davis, approximately 2 miles to the north of the site, and the Woodland station on Gibson Road, approximately 10 miles to the north of the project site. Data from these air monitoring stations for the last three years show a small number of violations related to State and federal ozone standards, and State PM_{10} standards. No other State or federal air quality standards were exceeded during the three-year period.[12]

Within the SVAB, ambient air quality standards for ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10}, $PM_{2.5}$), and lead (Pb) have been set by both the State of California and the federal government. The State has also set standards for sulfate and visibility. The SVAB is currently designated "nonattainment" for State and federal ozone standards, the State PM_{10} standard, and federal $PM_{2.5}$ standard. The SVAB is designated "attainment" or "unclassified" with respect to the other ambient air quality standards.

[12] California Air Resources Board (CARB), 2022. *iAdam: Air Quality Data Statistics. Top 4 Summary: Top 4 Measurements and Days Above the Standard*. Website: https://www.arb.ca.gov/adam/index.html

5.3.2 Prior Environmental Analysis

5.3.2.1 2016 Program EIR

The 2016 Program EIR concluded that implementation of the Program would not result in population or employment growth and therefore would result in no impact related to the applicable air quality plans. However, the 2016 Program EIR determined that short-term emissions generated from construction activities and use of construction equipment including dump trucks, rubber-tired loaders, off-highway trucks, tractors/loaders/backhoes, an excavator, and a generator could result in potentially significant impacts to air quality that could contribute to existing or projected air quality violations. Therefore, the 2016 Program EIR included Mitigation Measure 3.5-1, below, which requires implementation of air quality construction Best Management Practices, to reduce potential impacts to air quality from construction emissions to a less-than-significant level.

The 2016 Program EIR determined that although construction activities would entail the use of diesel equipment that would generate emissions of diesel particulate matter (DPM), exhaust emissions associated with construction would be relatively low, short-term in nature, and would not result in an elevated health risk to nearby homes. Additionally, although objectionable odors could occur during project construction with the use of diesel-powered heavy equipment, the 2016 Program EIR concluded that these odors would be temporary in nature and would not generate any objectionable odors that would affect a substantial number of people. The proposed stream restoration activities would be primarily self-maintaining and although some maintenance and adaptive management may be required, the 2016 Program EIR determined that implementation of the Program would not result in long-term emissions.

Applicable Mitigation Measures. The following mitigation measure identified in the 2016 Program EIR would apply to the proposed project.

Mitigation Measure 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.

5.3.2.2 Statewide Order EIR

The Statewide Order EIR concluded that operation and maintenance activities associated with the various restoration projects permitted under the Statewide Order could temporarily generate emissions of air pollutants; however, given the temporary and intermittent nature of the impacts and the dissipation of pollutant concentrations, such emissions were unlikely to affect a substantial number of people. In addition, implementation of general protection measures identified in the Statewide Order would further reduce emissions such that air quality impacts associated with operation and maintenance activities would be less than significant. However, the Statewide Order EIR determined that short-term emissions associated with construction activities could result in potentially significant air quality impacts. The Statewide Order EIR included Mitigation Measures AIR-1 and AIR-2 to reduce potential impacts to air quality from construction emissions; however, these impacts were still determined to be significant and unavoidable.

As part of the State Water Board or RWQCB's issuance of an NOA for a restoration project under the Statewide Order, compliance with Mitigation Measures AIR-1 and AIR-2 would be required when applicable to a given project.

Applicable Mitigation Measures. The following mitigation measure would apply to the proposed project:

Mitigation Measure AIR-1: **Minimize Conflicts with Applicable Air Quality Plans.** Proponents of restoration projects permitted under the Order and their construction contractors shall implement the following measures to minimize conflicts between project construction and applicable air quality plans:

- Use equipment and vehicles that comply with CARB requirements and emission standards for on-road and off-road fleets and engines. New engines and retrofit control systems should reduce NOX and PM emissions from diesel-fueled on-road and off-road vehicles and equipment.

- Minimize idling times, either by shutting equipment off when not in use or by reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure, Title 13, Section 2485 of the California Code of Regulations). Clear signage should be posted for construction workers at all entrances to the site.

- Maintain all equipment in proper working condition according to the manufacturer's specifications.

- Use electric equipment when possible. Use lower emitting alternative fuels to power vehicles and equipment where feasible.

- Use low–volatile organic compound (VOC) coatings and chemicals; minimize chemical use.

Mitigation Measure AIR-2: **Minimize Construction Air Pollutant Emissions.** Air quality analyses prepared for future restoration projects shall evaluate human health risks from potential exposures of sensitive receptors to substantial pollutant concentrations from the projects. The need for a human health risk analysis should be evaluated using approved screening tools, and discussed with the local air quality management district or air pollution control district during the preparation of the air quality analysis.

If the project's health risk is determined to be significant, control measures should be implemented to reduce health risks to levels below the applicable air district threshold.

Implementation of one or more of the following requirements, where feasible and appropriate, would reduce the effects of construction:

- Use equipment with diesel engines designed or retrofitted to minimize DPM emissions, usually through the use of catalytic particulate filters in the exhaust.

- Use electric equipment to eliminate local combustion emissions.

- Use alternative fuels, such as compressed natural gas or liquefied natural gas.

If the restoration project would result in significant emissions of airborne, naturally occurring asbestos, or metals from excavation, hauling, blasting, tunneling, placement, or other handling of rocks or soil, a dust mitigation and air monitoring plan shall identify individual restoration project measures to minimize emissions and ensure that airborne concentrations of the TACs of concern do not exceed regulatory or risk-based trigger levels.

5.3.3 Impact Analysis

a. Would the project conflict with or obstruct implementation of the applicable air quality plan? ***(No New Impact)***

The applicable air quality plan is the 2017 Sacramento Regional 2008 8-Hour Ozone and Further Reasonable Progress Plan (2017 Ozone Plan). Consistency with the 2017 Ozone Plan can be determined if the proposed project supports the goals of the plan, includes applicable control measures from the plan, and would not disrupt or hinder implementation of any control measures from the plan. Consistency with the 2017 Ozone Plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of an applicable air quality plan.

In compliance with the *State CEQA Guidelines*, the analysis below evaluates whether implementation of the proposed project would conflict with or otherwise obstruct implementation of regional air quality plans. For air quality planning purposes, the 2017 Ozone Plan contains emissions inventories based on existing and foreseeable future land uses within its jurisdiction. If a new project is consistent with the planned land use designation that was considered in the development of an air quality management plan, the proposed project would not conflict with and would not obstruct implementation of the applicable air quality management plan. Generally, a project's conformance with a local general plan that was considered in the preparation of an air quality management plan would demonstrate that the project would not conflict with or obstruct implementation of the air quality management plan.

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The proposed stream channel restoration activities would not conflict with Yolo and Solano counties' land use plan designations and zoning. In addition, as discussed below, the proposed project would not generate emissions that would exceed YSAQMD thresholds. As such, the project would not conflict with or obstruct implementation of the applicable air quality plan, and this impact would be less than significant. Therefore, no new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

b. Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? ***(No New Impact)***

The YSAQMD is currently designated as a non-attainment area for State and national $PM_{2.5}$ and O_3 standards. The YSAQMD non-attainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in non-attainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the YSAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. To meet these standards, the YSAQMD has established project-level thresholds for criteria pollutant emissions generated during both construction and operation of projects as shown in Table A, below.

Table A: YSAQMD Thresholds of Significance for Criteria Pollutants of Concern

Pollutant	Thresholds of Significance
ROG	10 tons per year
NO_x	10 tons per year
PM_{10}	80 pounds per day
CO	Violation of a State ambient air quality standard for CO

Source: YSAQMD, 2007. Handbook for Assessing and Mitigating Air Quality Impacts. July 11. Website: https://yolosolanoair.wpenginepowered.com/wp-content/uploads/Planning/CEQAHandbook2007.pdf (accessed January 2023).
CO = carbon monoxide
NO_x = nitrogen oxide
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic gases

The following analysis assesses the potential construction- and operation-related air quality impacts and CO impacts of the proposed project.

Construction Emissions. During restoration activities, short-term degradation of air quality may occur due to the release of particulate matter emissions (i.e., fugitive dust) generated by demolition, grading, hauling, and other activities. Emissions from construction equipment are also anticipated and would include CO, nitrogen oxide (NO_x), reactive organic gases (ROG), directly-emitted particulate matter ($PM_{2.5}$ and PM_{10}), and toxic air contaminants (TACs) such as diesel exhaust particulate matter.

Site preparation and project construction would involve demolition, grading, paving, and other activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these

activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. In addition to dust related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, sulfur dioxide (SO_2), NO_x, ROG, and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles are delayed. These emissions would be temporary and limited to the immediate area surrounding the construction site.

Construction emissions were estimated for the project using the California Emissions Estimator Model version 2022.1 (CalEEMod), consistent with YSAQMD recommendations (Appendix A). The proposed project is estimated to take 4 to 5 months to complete beginning in summer 2023 or summer 2024, which was included in CalEEMod. In addition, net spoils exported from the site would equal approximately 25,000 cubic yards, which was included in CalEEMod. This analysis also assumed the use of graders, excavators, water trucks, dump trucks, dozers, scrapers, and loaders during project construction. Other construction details are not yet known (construction worker trips); therefore, default assumptions were used. Construction-related emissions are presented in Table B, below.

Table B: Project Construction Emissions

	Maximum Daily Emissions (pounds per day)				
	ROG	**NO_x**	**CO**	**$PM_{2.5}$**	**PM_{10}**
Maximum Daily	4.8	46.7	39.3	12.2	74.7
YSAQMD Significance Threshold	N/A	N/A	N/A	N/A	80
Above Threshold?	N/A	N/A	N/A	N/A	No
	Annual Emissions (tons per year)				
	ROG	**NO_x**	**CO**	**$PM_{2.5}$**	**PM_{10}**
Annual Emissions	0.3	2.5	2.1	0.6	4.1
YSAQMD Significance Threshold	10	10	N/A	N/A	N/A
Above Threshold?	No	No	N/A	N/A	N/A

Source: (December 2022).
CalEEMod = California Emissions Estimator Model
CO = carbon monoxide
N/A = not applicable
NO_x = nitrogen oxide
$PM_{2.5}$ = particulate matter less than 2.5 microns in size
PM_{10} = particulate matter less than 10 microns in size
ROG = reactive organic gases

As shown in Table B, maximum daily emissions from project construction would be 74.7 pounds/day for PM_{10}, which is below the threshold of 80 pounds/day for PM_{10}. Additionally, as shown in Table B, the annual emissions from project construction would be 0.3 tons/year for ROG and 2.5 tons/year for NO_x, which is below the threshold of 10 tons/year for ROG and NO_x. The YSAQMD also requires the implementation of best management practices to reduce construction fugitive dust impacts, as required by 2016 Program EIR Mitigation Measure 3.5-1 and Mitigation Measure AQ-1 identified in the Statewide Order EIR. As such, construction emissions associated with the proposed project would be below established thresholds. Therefore, with implementation of 2016 Program EIR Mitigation Measure 3.5-1 and Statewide Order EIR Mitigation Measure AQ-1, which require the implementation of BMPs, construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standard. With implementation of the mitigation measures identified in the prior CEQA documents, no new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

Operational Emissions. Long-term air emission impacts are associated with stationary sources and mobile sources. Stationary source emissions result from the consumption of natural gas and electricity. Mobile source emissions result from vehicle trips and result in air pollutant emissions affecting the entire air basin. As discussed above, the proposed project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The project would not result in an increase in the generation of operational vehicle trips or vehicle miles traveled that would increase air pollutant emissions. The project would not be a source of stationary source emissions. Therefore, operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or State ambient air quality standards. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

c. Would the project expose sensitive receptors to substantial pollutant concentrations? ***(No New Impact)***

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks.

Construction of the proposed project may expose nearby sensitive receptors to airborne particulates, as well as a small quantity of construction equipment pollutants (i.e., usually diesel-fueled vehicles and equipment). However, construction contractors would be required to implement BMPs to reduce construction fugitive dust, as required by 2016 Program EIR Mitigation Measure 3.5-1 above and Statewide Order EIR Mitigation Measure AQ-1. With implementation of Mitigation Measure 3.5-1 and Mitigation Measure AQ-1, project construction emissions would be below YSAQMD significance thresholds. Once the project is constructed, the project would not be a source

of substantial emissions. Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during project construction or operation. With implementation of mitigation measures identified in the prior CEQA documents, no new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

d. Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people? ***(No New Impact)***

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source, the wind speeds and direction, and the sensitivity of the receiving location each contribute to the intensity of the impact. While offensive odors rarely cause any physical harm, they can be unpleasant and cause distress among the public and generate citizen complaints.

During construction, diesel exhaust from construction equipment would generate some odors. However, construction-related odors would be temporary and would not persist upon construction completion.

Once operational, the proposed project would not include any sources of odor emissions; therefore, operation of the proposed project would not generate any odor impacts. The proposed project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

5.4 BIOLOGICAL RESOURCES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☒	☐	☐
b. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

5.4.1 Background

To identify biological resources on the project site, a biological resources reconnaissance-level survey was conducted at the project site on August 18, 2020, while an additional site visit was completed on October 20, 2020. A complete tree inventory was conducted from March 30 through April 1, 2020. Prior to conducting the reconnaissance-level survey, the California Natural Diversity Database,[13] California Native Plant Society Inventory of Rare and Endangered Plants,[14] official species list from the United States Fish and Wildlife Service (USFWS) of federally listed species[15] and other background studies were reviewed in order to compile a list of special-status species that

[13] California Department of Fish and Wildlife (CDFW). 2022. California Natural Diversity Database (CNDDB), Rarefind V. 5. Website: https://www.wildlife.ca.gov/Data/CNDDB/Maps-and-Data (accessed July 7, 2022)

[14] California Native Plant Society (CNPS). 2022. Rare Plant Program, Inventory of Rare and Endangered Plants of California (online edition). Website: https://www.rareplants.cnps.org (accessed July 24, 2022).

[15] U.S. Fish and Wildlife Service. 2020. IPaC Information for Planning and Consultation. List of Threatened and Endangered Species That May Occur in Your Proposed Project Location, and/or May Be Affected By Your Proposed Project. November 16.

could occur at the site. The vegetation and jurisdictional waters present at the project site are described below.

Vegetation. Most of the project area is characterized by varying levels of disturbance. Some areas are relatively unimpacted native habitats; other areas include invasive plant vegetation. The survey area is located within the Sacramento Valley subregion of the California Floristic Province.[16] Invasive weed species are common along both banks of the reach, with Himalayan blackberry being the most prevalent and insidious species. Some effort has been initiated by the Lower Putah Creek Coordinating Committee and UC Davis to control invasives along the banks of the project area. Vegetation communities in the project area consist of riparian and upland habitat, which support a diverse assemblage of trees, shrubs, grass, and herbaceous species.

The site's primary vegetation community type is valley foothill riparian natural community, which consists of a multilayered woodland plant community with a tree overstory and diverse shrub layer. The valley foothill riparian natural community is usually associated with streams and creeks with low-velocity flows, floodplains, and low topography. The riparian natural community supports a diversity of plant and animal species and a variety of specialized plant and animal species that are restricted to this natural community. The following plant community descriptions are considered representative of current plant community conditions at the project site:

- **Mixed Riparian Forest:** The most common plant community in the lower Putah Creek riparian corridor and at the project area is Mixed Riparian Forest. The width and complexity of Mixed Riparian Forest varies and is characterized by one or more well-developed canopy layers, consisting of an upper layer of tall Fremont cottonwood trees (*Populus fremontii*) and black walnut (*Juglans nigra*); intermediate canopy layers composed of valley oak (*Quercus lobata*), Oregon ash (*Fraxinus latifolia*), red willow (*Salix laevigata*), Goodding's willow (*Salix gooddingii*), box elder (*Acer negundo*); and a discontinuous shrub layer comprising elderberry (*Sambucus nigra*), Himalayan blackberry (*Rubus armeniacus*), wild rose (*Rosa californica*), poison oak (*Toxicodendron diversilobum*), and wild grape (*Vitis californica*). In some areas near the creek, a subcanopy layer consists of dense riparian vegetation dominated by willow species, including scattered individuals of arroyo willow and sandbar willow. Mixed Riparian Forest at the project area has been invaded by tree of heaven in the subcanopy and shrub layers, and red gum (Eucalyptus camaldulensis) in the canopy layer. The most abundant tree species in the project area is black walnut (31 percent), followed by valley oak (24 percent), red gum (15 percent), and Oregon ash (12 percent). Consequently, the project area's primary vegetation community is a black walnut–valley oak riparian forest.

- **Riparian Scrub:** Riparian Scrub occurs within the floodplain along stream margins. Dominant species include sandbar willow, arroyo willow, and red willow. Sometimes the early-successional stage stands of mixed riparian forest (e.g., arroyo willow) are considered riparian scrub because

[16] Baldwin, B.G., D.H. Goldman, D.J. Keil, R. Patterson, T.J. Rosatti, and D.H. Wilken (eds.). 2012. The Jepson Manual: Vascular Plants of California (2nd edition). Berkeley and Los Angeles, California: University of California Press

of the shrub-like stature of the trees. Stands typically lack an understory but may support an understory of Himalayan blackberry, wild rose, wild grape, and various nonnative grasses.[17]

- **Annual Grasslands:** Small patches of Annual Grasslands are distributed throughout the project area in upland positions. These areas can support non-wetland species and a variety of nonnative grasses and forbs such as soft chess (*Bromus hordeaceus*), filaree (*Erodium botrys*), Mediterranean barley (*Hordeum marinum*), slender oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), and rose clover (*Trifolium hirtum*). Annual Grasslands may occasionally contain small areas of perennial native grasses, including purple needlegrass (*Stipa pulchra*) and creeping wildrye (*Elymus triticoides*). These patches of native grasslands are very small and scattered in areas with relict floodplains and prior restoration areas. Invasive weeds such as milk thistle (*Silybum marianum*) and Italian thistle (*Carduus pycnocephalus*) are abundant.

- **Ruderal:** Ruderal vegetation occurs throughout the project area in the riparian corridor and particularly along the edge of agricultural fields, roads, parking lots, etc. These areas are generally disturbed by adjacent land uses (farming, roadsides) and are therefore dominated by nonnative herbs such as yellow starthistle (*Centaurea solstitialis*), milk thistle, Italian thistle, prickly lettuce (*Lactuca serriola*), mustard species (*Brassica nigra, Hirschfeldia incana*), soft chess, ripgut brome, and wild oat (*Avena fatua*).

- **Riverine Wetland:** Riverine Wetlands within the project area are perennial wetlands along the creek channel and lower bank, and instream wetlands that formed on sand or gravel bars. There are no patches of emergent freshwater marsh (i.e., dominated by cattails, tules, and California bulrush [*Schoenoplectus californicus*]). Riverine Wetlands are influenced by frequent flooding, scour, and seasonal and annual water level fluctuations. Common associates in these and more seasonal types of Riverine Wetlands include smartweed (*Polygonum* spp.), umbrella sedge (*Cyperus eragrostis*), sedges (*Carex* spp.), common rush (*Juncus effusus*), mugwort (*Artemisia douglasiana*), cocklebur (*Xanthium strumarium*), rice cutgrass (*Leersia oryzoides*), canary grass (*Phalaris* spp.), field mint (*Mentha arvensis*), and western goldenrod (*Euthamia occidentalis*).

The project site may support two natural communities that are considered rare: Elderberry Savannah and Great Valley Cottonwood Riparian Forest.

Jurisdictional Waters. The entire project area was evaluated to determine the current presence, location, and size of federal and State jurisdictional wetlands and other waters of the United States (WOTUS), and to identify their connection to on-site and off-site hydrologic resources. Based on the jurisdictional delineation, the total area of jurisdictional wetlands within the study area boundaries is 6.35 acres (Table C). The total length of non-wetland waters that cross the study area boundaries is 2.121 acres. The total area of non-wetland areas within the study area boundaries is 20.528 acres.

[17] EDAW. 2005. Lower Putah Creek Watershed Management Action Plan: Phase I—Resource Assessments. Prepared for Lower Putah Creek Coordinating Committee. Vacaville, California.

Table C: Wetland Delineation Summary

Waters Name	Acres	Description	Latitude	Longitude
Wetland 1	2.865	Forested, Lotic, Riparian (RP1FO)	38.52700000	-121.81110000
Wetland 2	3.485	Forested, Lotic, Riparian (RP1FO)	38.52600000	-121.80800000
Total Wetlands	**6.350**			
Putah Creek	2.121	Unconsolidated Shore, Upper Perennial, Riverine (R3US)	38.52600000	-121.81000000

Source: Nishikawa Wetland Delineation Draft. Unpublished report to the Solano County Water Agency (Vollmar & LifeSciences! 2020).

5.4.2 Prior Environmental Analysis

5.4.2.1 2016 Program EIR

The 2016 Program EIR determined that the proposed stream restoration activities would result in temporary disturbance of the project area which could support special-status wildlife species, such as federal and California threatened or endangered species of special concern, including the valley elderberry longhorn beetle, Swainson's hawk, and the western pond turtle. Additionally, herbicide use during project activities could impact elderberry plants that may be present within the Nishikawa reach. However, implementation of Mitigation Measures 3.4-1 through 3.4-12 would be required which entail implementation of a worker environmental awareness program; avoidance and minimization measures for western pond turtle, giant garter snake, valley elderberry longhorn beetle, Swainson's hawk, nesting birds, special-status bats, and rare plants; implementation of a Riparian Revegetation and Monitoring Plan; implementation of aquatic habitat protection measures; avoidance and minimization measures for native or migratory fish or wildlife species; and implementation of herbicide protective actions. The 2016 Program EIR concluded that implementation of Mitigation Measures 3.4-1 through 3.4-12 would reduce potential impacts to special-status species to a less-than-significant level.

The 2016 Program EIR determined that riparian habitat and riverine wetlands would be enhanced and restored in the long-term but short-term construction activities associated with the Program, including the removal or alteration of the existing vegetation, soil, and channel would result in potential impacts to riparian habitat and wetlands. However, this impact would be reduced to a less-than-significant level with the implementation of Mitigation Measure 3.4-9, which requires implementation of a Riparian Revegetation and Monitoring Plan.

The 2016 Program EIR determined that in the long-term, the Program would result in the conversion of aquatic habitat within the project area from low quality open water habitat to high quality and function transitional floodplain and riparian habitat. However, short-term construction activities could have direct and indirect impacts to aquatic habitat through potential disturbance to existing vegetation, soils, and species. The 2016 Program EIR determined that implementation of Mitigation Measure 3.4-10, which requires implementation of aquatic habitat protection measures, would reduce short-term impacts to less-than-significant levels.

The 2016 Program EIR determined that project implementation may temporarily interfere with the movement of species within the project area, including Song sparrow, Swainson's hawk, valley elderberry longhorn beetle, western pond turtle, and white-tailed kite, North American beaver,

North American river otter, and fish species. However, potential impacts would only occur during construction activities and implementation of Mitigation Measure 3.4-11, which requires the implementation of avoidance and minimization measures for native or migratory fish and wildlife species, would prevent any significant impacts on species movement during the construction period. The 2016 Program EIR concluded that species movement would be improved after the completion of construction.

Applicable Mitigation Measures. The following mitigation measure identified in the 2016 Program EIR would apply to the proposed project.

Mitigation Measure 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 shall 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. Haul trucks shall maintain at least 2 feet of freeboard.
- 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 predators onto the Project site.
- Following Project Best Management Practices (BMPs).

Mitigation Measure 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.

Mitigation Measure 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.

Mitigation Measure 3.4-4: **Valley Elderberry Longhorn Beetle (VELB) Avoidance.** Blue 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 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.

Mitigation Measure 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 behavior and defined as follows:

Survey Period	Survey Dates	Survey Time	Number of Surveys
1	January 1 to March 20	All day	1
2	March 20 to April 5	Sunrise to 1000 or 1600 to sunset	3
3	April 5 to April 20	Sunrise to 1200 or 1630 to sunset	3
4	April 21 to June 10	All day; Monitoring known nests only	Ongoing

5	June 10 to July 30	Sunrise to 1200 or 1630 to sunset	3

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.

Mitigation Measure 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 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.

Mitigation Measure 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.

Mitigation Measure 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 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 agency, and those requirements would supersede this section.

Mitigation Measure 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.

Mitigation Measure 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, in consultation with the appropriate agencies, shall identify the most appropriate release location(s). Release locations should offer ample habitat for Pacific lamprey and other native fish 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.

Mitigation Measure 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.

Mitigation Measure 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.

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:

Glyphosate:

a. Implement the following US EPA recommendations during Project activities:

    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.

Triclopyr:

a. As recommended by US EPA, avoid spray drift to prevent toxicity to non-target plants during Project activities.

b. Do not apply to open water or wetland areas to prevent toxicity to freshwater fish.

Imazapyr:

a. Implement the following US EPA recommendations during Project activities:

    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:

- 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, 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.

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.

Chlorsulfuron:

a. To minimize potential harm to non-target plants, implement the following US EPA recommendations during Project activities:

    i. Employ measures to control spray drift.

    ii. Restrict use to only one application per growing season.

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:

    i. Do not apply dithiopyr aerially.

Isoxaben:

a. To minimize exposure to fish and aquatic invertebrates, implement the following actions:

    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 wash waters and rinsate.

5.4.2.2 Statewide Order EIR

The Statewide Order EIR concluded that implementing restoration projects permitted under the Statewide Order could adversely affect habitat for special-status plant species and result in adverse direct effects on special-status wildlife species. Projects would be required to integrate applicable general protection measures and species protection measures included in the Statewide Order into project designs and plans, which would reduce, avoid, or minimize direct construction-related impacts on special-status plant and wildlife species and would address many indirect effects of construction activities. However, the Statewide Order EIR determined that these measures may not be sufficient on their own to address all long-term effects of restoration projects on special-status plants and wildlife; therefore, impacts on special-status plant and wildlife species were determined to be significant and unavoidable.

The Statewide Order EIR also concluded that implementing restoration projects permitted under the Statewide Order could result in adverse effects on riparian habitat or sensitive natural communities and State and federally protected wetlands through direct removal, hydrological interruption, or other means. Implementing restoration projects permitted under the Order could interfere with the movement of native resident and migratory wildlife species. As described above, projects would be required to integrate applicable general protection measures and species protection measures included in the Statewide Order into project designs and plans, which would reduce the potential for impacts on riparian habitat, sensitive natural communities, jurisdictional wetlands and other waters, and wildlife movement. Further, prior to project implementation, project proponents would be required to consult with appropriate federal, State, and/or local agencies, potentially including USACE, EPA, USFWS, and CDFW in addition to the State and/or RWQCBs. Implementing these regulatory requirements, the general protection measures, and species protection measures included in the Statewide Order would reduce the impact of project construction on riparian habitat, sensitive natural communities, jurisdictional waters and other waters, and wildlife movement to a less-than-significant level.

The Statewide Order EIR determined that implementing restoration projects permitted under the Statewide Order could conflict with local policies or ordinances protecting biological resources and with the provisions of various adopted habitat conservation plans or natural community conservation plans throughout the State. It is expected that the general protection measures identified in the Statewide Order that would protect special-status plants, special-status wildlife,

sensitive natural communities, and jurisdictional wetlands and waters of the United States and/or state would be adequate to satisfy any requirements set forth by a local jurisdiction intended to protect biological resources. Therefore, these impacts were determined to be less than significant. Although constructed facilities and operation and maintenance activities are expected to provide a net benefit, the potential exists for conflicts with approved conservation plans. Implementation of Mitigation Measure TERR-1 would reduce this impact to less than significant. As part of the State Water Board or RWQCB's issuance of a NOA for a restoration project under the Statewide Order, compliance with Mitigation Measure TERR-1 would be required when applicable to a given project.

Applicable Mitigation Measures. The following mitigation measure applies to the proposed project:

Mitigation Measure TERR-1: **Coordinate with CDFW, USFWS, and Permittees Regarding HCPs, NCCPs, and Other Conservation Plans.** If the site for a restoration project permitted under the Order is within the planning area for any adopted HCP, NCCP, or similar conservation plan, the CEQA lead agency for the project shall consult with the plan permittee(s), CDFW and/or USFWS, as applicable, to identify any potential conflicts with the plan's goals, objectives, or conservation measures. As part of this consultation, the CEQA lead agency shall seek input regarding potential design features, conservation measures, or other mitigation strategies to avoid potential conflicts and achieve substantial conformance with the objectives of the HCP, NCCP, or similar conservation plan. The CEQA lead agency shall implement these elements as applicable to ensure that the restoration project conforms to applicable goals and policies set forth in the adopted conservation plan.

5.4.3 Impact Analysis

a. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? ***(New Mitigation Required)***

The California Natural Diversity Database (CNDDB) lists 9 plant species and 19 animal species occurrences within 5 miles of the project site (Table D); the CNPS lists 5 rare plant species (all contained within the CNDDB species) for Quad 3812157 (Merritt). Impacts to special-status species that have a California rare plant rank of 1B, meaning that they are rare, threatened, or endangered throughout their range and many are endemic to California, would be considered significant under CEQA. The USFWS lists an additional 15 animal species with federal status that could be present. Due to prior disturbance, no suitable habitat for special-status plants is present. Therefore, the proposed project would have no impact on special-status plant species.

Special-status animal species detected in the project area or that have moderate potential to occur on the project site are discussed in more detail below. As shown in Table D, other species, which

Table D: Special-Status Species and Sensitive Natural Communities Occurring within 5 Miles of the Project Site

Common Name/Scientific Name	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank	CDFW Status	Habitat	Potential to Occur
Plants								
Alkali Milk-vetch *Astragalus tener var. tener*	None	None	G2G1	S1	1B.2		Occurs in playas, vernal-pools, freshwater wetlands, alkali sink, valley grassland, wetland-riparian	No suitable habitat
Brittlescale *Atriplex depressa*	None	None			1B.2		Saline or alkaline depressions or vernal pools	No suitable habitat
Ferris' Milk-vetch *Astragalus tener var. ferrisiae*	None	None	G2T1	S1	1B.1		Meadows in valley grasslands, wetland-riparian	No suitable habitat
Heartscale *Atriplex cordulata var. cordulata*	None	None	G3T2	S2	1B.2		Shadscale Scrub, Valley Grassland, wetland-riparian	No suitable habitat
Heckard's Pepper-grass *Lepidium latipes var. heckardii*	None	None			1B.2		Occurs usually in wetlands, occasionally in non-wetlands in Valley Grassland, wetland-riparian	No suitable habitat
Keck's Checkerbloom *Sidalcea keckii*	Endangered	None	G2	S2	1B.1		Foothill Woodland, Valley Grassland. grassy slopes in Colusa, Napa, Solano, Yolo County	No suitable habitat
San Joaquin Spearscale *Extriplex joaquinana*	None	None	G2	S2	1B.2		On alkaline soils in non-wetlands, occasionally in wetlands, Meadows, Shadscale Scrub, Valley Grassland	No suitable habitat
Adobe-lily *Fritillaria pluriflora*	None	None	G2G3	S2S3	1B.2		Grasslands, adobe clay soils of the Coast Ranges and low hills in the Central Valley from Tehama and Mendocino counties south to Solano County	No suitable habitat
California Alkali Grass *Puccinellia simplex*	None	None	G2	S2	1B.2		Occurs usually in wetlands, occasionally in non-wetlands, Valley Grassland, wetland-riparian	No suitable habitat
Crustaceans								
Vernal pool fairy shrimp *Branchinecta lynchi*	Threatened	None	G3	S3			Vernal pools	No suitable habitat
Conservancy fairy shrimp *Branchinecta conservatio*	Endangered	None	G2	S2			Vernal pools	No suitable habitat
Insects								
Monarch butterfly *Danaus plexippus*	Candidate		G4	None			Milkweed species (*Asclepias* spp.) are the sole larval host plants	High to Moderate
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	Threatened	None	G3T2	S2			Riparian habitat, requires elderberry bushes	No suitable habitat
Crotch Bumble Bee *Bombus crotchii*	None	Candidate Endangered	G2	S1			Open grassland and scrub habitats. Nesting occurs underground.	No suitable habitat
Western Bumble Bee *Bombus occidentalis*	None	Candidate Endangered	G2	S1			Open grassland and scrub habitats. Nesting occurs underground.	No suitable habitat

Fish								
Delta smelt *Hypomesus transpacificus*	Threatened	Endangered	G1	S1			Coastal lagoons, bays, estuaries, sloughs, tidal freshwater streams and offshore habitat	No suitable tidal habitat
Steelhead *Oncorhynchus mykiss*	Threatened		T2	S2			Inland streams and rivers	Low
CV fall run Chinook *Oncorhynchus tshawytscha*	None	High Concern	T2	S3			Inland streams and rivers	High to moderate
CV winter-run and spring-run Chinook salmon *Oncorhynchus tshawytscha*	Endangered	High Concern	T2	S3			Inland streams and rivers	No suitable habitat
Reptiles								
Giant garter snake *Thamnopis gigas*	Threatened	None	G2	S2			Agricultural wetlands and other waterways such as irrigation and drainage canals, sloughs, ponds, small lakes, low gradient streams, and adjacent uplands in the Central Valley	No suitable habitat
Western Pond Turtle *Emys marmorata*	None	None	G3	none		SSC	Permanent and intermittent waters of rivers, creeks, small lakes and ponds, marshes, irrigation ditches and reservoirs. Turtles bask on land or near water on logs, branches or boulders. Nesting and overwintering in uplands.	Present Widespread along the creek (Truan et al. 2010).
Amphibians								
California tiger salamander *Ambystoma californiense*	Threatened	Threatened	G2G3	S2S3		WL	Vernal pool grasslands	No suitable habitat
Birds								
Western yellow-billed cuckoo *Coccyzus americanus*	Threatened	Endangered	T2	S1			Mature riparian woodlands	High to Moderate
Burrowing Owl *Athene cunicularia*	None	None	G4	S3		SSC	Open, dry, sparsely vegetated land with available burrows, adequate food supply, and perches for horizontal visibility.	No suitable habitat
Swainson's Hawk *Buteo swainsoni*	None	Threatened	G5	S3			Needs open habitats for foraging; adjusted well to agricultural settings (e.g., hay and alfalfa fields, pastures, grain crops, and row crops). Nests in riparian woodlands and scattered stands of trees near agricultural fields and grasslands.	Present
Tricolored Blackbird *Agelaius tricolor*	None	Threatened	G1G2	S1S2		SSC	Nests in wetlands with cattails, bulrushes, and willows, triticale fields, patches of Himalayan blackberry near stock ponds or irrigated pastures. Foraging habitats include cultivated fields, feedlots associated with dairy farms, and wetlands.	No suitable habitat
White-tailed Kite *Elanus leucurus*	None	None	G5	S3S4		FP	Common in savannas, open woodlands, marshes, desert grasslands, partially cleared lands, and cultivated fields.	High

Mammals								
American Badger *Taxidea taxus*	None	None	G5	S3		SSC	Open areas like plains and prairies, farmland, and the edges of woods	None. No suitable habitat
Pallid Bat *Antrozous pallidus*	None	None	G4	S3		SSC	Grasslands and deserts. Roosts in rock crevices, caves, mine shafts, under bridges, in buildings and tree hollows. Some hibernate; many remain active all year in low to mid-elevations.	Moderate
Silver-haired Bat *Lasionycteris noctivagans*	None	None	G3G4	S3S4			Roosts singly or in small groups in wooded areas, especially in old growth forests. During migration, may be found in sheds, wood piles, outbuildings and fence posts.	Low

Source: California Native Plant Society (2020). California Department of Fish and Wildlife. (2020), US Fish and Wildlife Service (2020).
Status Codes:

Federal (USFWS)
FE = Listed as Endangered (in danger of extinction) by the Federal Government.
FT = Listed as Threatened (likely to become Endangered within the foreseeable future) by the Federal Government.
FC = Candidate to become a proposed species.
FSC = Federal Species of Concern. May be Endangered or Threatened, but not enough biological information has been gathered to support listing at this time.

State (CDFW)
CE = Listed as Endangered by the State of California
SSC = California Species of Special Concern
CT = Listed as Threatened by the State of California
CR = California Rare
CC = State Candidate for listing as an Endangered Species

California Native Plant Society Rare Plant Inventory
Rank 1A: Plants Presumed Extinct in California
Rank 1B: Plants Rare, Threatened, or Endangered in California and Elsewhere
Rank 2: Plants Rare, Threatened, or Endangered in California, But More Common Elsewhere
Rank 3: Plants About Which We Need More Information—A Review List
Rank 4: Plants of Limited Distribution—A Watch List

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were identified by the CNDDB[18] or are on the USFWS species list,[19] are not likely to occur at the project site because the site does not contain suitable habitat for these species.

5.4.3.1 Invertebrates

Monarch Butterfly (*Danaus plexippus*) is a migratory butterfly that has been listed as a candidate for inclusion on the USFWS list of endangered and threatened wildlife since December 2020. The USFWS has concluded that listing monarchs under the Federal Endangered Species Act would be warranted but is precluded due to other high priority species. Currently, the monarch is scheduled to be federally listed in 2024. Monarchs are not listed as threatened or endangered under the California Endangered Species Act (CESA) and were therefore, not considered in the 2016 Program EIR.

However, monarch butterflies are listed by the State of California as a California Special Resource because their overwintering habitat is threatened by disturbance and by alteration and destruction of habitat. However, the likelihood that the monarch butterfly is overwintering in the project site is considered to be none.

Monarch butterfly relies exclusively on milkweed species as a larval host plant. No milkweed plants have been identified during biological surveys of the site. Milkweed plants, however, may be present in the project action area; therefore, monarch larvae may be present as well. The likelihood that monarch butterfly is present in the project area is considered to be moderate; therefore, project activities could impact this species. Implementation of Mitigation Measure BIO-1 would reduce potential impacts to milkweed and monarch butterfly to a less-than-significant level because it would require preconstruction surveys to identify and relocate (if needed) monarch breeding habitat prior to project construction activities.

Mitigation Measure BIO-1: **Monarch Butterfly Avoidance.** Preconstruction surveys shall be conducted during the monarch breeding season (March 16 through November 30) to determine if milkweed is present on the site and, if present, is being used for monarch breeding. Surveys shall be conducted by a qualified biologist no more than 14 days prior to ground or vegetation disturbance activities. The biologist shall search for evidence of monarch eggs, caterpillars, chrysalises, and adults. If active monarch breeding is identified, the milkweed stand shall be avoided until the applicant develops and implements a salvage and relocation plan that has been reviewed and approved by SCWA and the applicable Resource Agencies**.**

Valley Elderberry Longhorn Beetle (*Desmoderus californicus*) has been observed to occur along Putah Creek from Monticello Dam east to Davis.[20] The beetle is dependent on blue elderberry shrubs (*Sambucus mexicana*), which is its host plant. Elderberry is a common shrub in Lower Putah Creek and has been found along the borders of the project area. As specified in Mitigation Measure

18 California Department of Fish and Wildlife. 2022. op. cit.
19 U.S. Fish and Wildlife Service. 2020, op. cit.
20 California Department of Fish and Wildlife (CDFW). 2022. op. cit.

3.4-4, in the 2016 Program EIR, the project shall avoid all elderberry shrubs, and construction activities shall keep a minimum distance of 20 feet from the drip lines of the shrubs. Construction would occur after the beetle's adult emergence period (March through June), and temporary protective fencing and signage would be erected around the elderberry shrubs, consistent with the Conservation Guidelines for the Valley Elderberry Longhorn Beetle.[21] With implementation of Mitigation Measure 3.4-4, as identified in the Program EIR, impacts to Valley elderberry longhorn beetle would be less than significant. No new impacts or substantially more severe significant impacts on Valley elderberry longhorn beetle would result with implementation of the proposed project.

Western Bumble Bee (*Bombus occidentalis*) and **Crotch Bumble Bee** (*Bombus crotchii)* are currently considered candidate species by the California Department of Fish and Wildlife. As candidate species, the Western and Crotch's bumble bee receive the same legal protection afforded to endangered or threatened species.[22] No meadow habitat or grasslands would be affected by project activities, thus the potential for destruction of underground nests is very low. However, there is some suitable grassland habitat and nectar plants within the project site; therefore, the potential for Crotch's and western bumble bees to occur in the project area is moderate. Ground disturbance and vegetation removal may impact low quality foraging habitat. Vegetation clearing and ground disturbance for floodplain recontouring, design channel installation and channel plugging could affect some foraging plants. Implementation of Mitigation Measure 3.4-1, as identified in the Program EIR, would minimize potential impacts to Western and Crotch's bumble bee by requiring that workers be trained to identify special-status species and associated habitats and to implement appropriate measures to avoid impacts during construction activities. In addition, implementation of the following mitigation measure would limit all herbaceous vegetation removal activities from September 1 through February 28, which would benefit pollinators. With implementation of these mitigation measures, impacts to western bumble bee and Crotch's bumble bee would be reduced to a less-than-significant level.

Mitigation Measure BIO-2: **Pollinator Habitat Restoration.** To limit any potential adverse effects on pollinators, all herbaceous vegetation removal activities shall be conducted from September 1 through February 28, including any vegetation control with herbicides (refer to Mitigation Measure 3.4-12 of the 2016 Program EIR). When using herbicides, application shall be implemented by a person holding a Qualified Applicator License from the State of California. Any application of pesticides shall be completed in a manner that avoids drift and contamination of non-target plants and areas. Ecologically invasive weeds shall be treated with spot spraying of an approved herbicide only. Targeted application of herbicides may be used in conjunction with removal of nonnative invasive weeds. Restoration of floodplain

[21] United States Fish and Wildlife Service. 2017. Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*). U.S. Fish and Wildlife Service, Sacramento, California. 28 pp. Website: https://www.fws.gov/sites/default/files/documents/survey-guidelines-for-valley-elderberry-longhorn-beetle.pdf. (Accessed September 20,2022)

[22] California Code, Fish and Game Code - FGC § 2074.2 and §2085.

habitat shall include establishing native seed mixes containing a diversity of native wildflowers, including milkweed, as appropriate. Native seed mixes should be applied in bare soil areas, including those recently cleared, graded, or disturbed. Nesting needs of ground nesting bees and bumble bees should be taken into consideration when restoring this habitat. Snags and other resources should be left for wood nesting bees.

5.4.3.2 Fish

Central Valley fall-run Chinook salmon (*Oncorhynchus tshawytscha*) are anadromous fish that migrate upstream as adults to spawn in freshwater streams and migrate downstream as juveniles to physically develop in the ocean. This species is classified as a California Special Species of Concern. This species, while not abundant, are commonly found within the project area. Spawning, rearing, and migratory habitat is present within the project area and fall-run Chinook salmon occur in Putah Creek from fall through spring. Therefore, the likelihood that fall-run Chinook salmon are present in the project area is considered to be high. However, no in-water work would be conducted during times when adult Chinook salmon are present in Putah Creek. Implementation of Mitigation Measure 3.4-10, identified in the 2016 Program EIR, which requires SWCA to protect aquatic habitat during project activities, would reduce potential impacts to a less-than-significant level. Overall, the project would result in a net gain of 1,000 feet of spawning and juvenile salmonid rearing habitat. Therefore, the proposed project would have significant beneficial effects on this species by providing spawning habitat.

Pacific Lamprey (*Entosphenus tridentatus*) rears in freshwater before migrating to the ocean, where it grows to full size prior to returning to natal streams to spawn. This species is classified as an SSC. Pacific lampreys have been reported to maintain small runs in Putah Creek.[23] Adults are expected to migrate upstream into the project area between December and early April, when the Los Rios Check Dam, located approximately 9 miles east of the project site, is open, and continue to migrate upstream to spawn between March and July. The larval stage (ammocoetes) and juveniles are expected to occur throughout the Upper Reach upstream of the Highway 505 bridge (approximately 6 miles west of the project site) year-round and may occur downstream of Highway 505 when water temperatures are suitable. Because Pacific lamprey have been documented within Putah Creek and may occur year-round, this species has a high occurrence potential within the project area. Implementation of Mitigation Measure 3.4-10 identified in the 2016 Program EIR, which requires SWCA to protect aquatic habitat during project activities, would ensure that aquatic habitat would be protected during project activities by limiting the amount of in-channel work and acquiring proper permits for work done within aquatic habitats. With implementation of this mitigation measure, impacts to Pacific lamprey would be reduced to a less-than-significant level. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

Steelhead trout (*Oncorhynchus mykiss* (i.e., the anadromous type of rainbow trout), is listed by the National Marine Fisheries Service (NMFS) as potentially present at the site. This species could be

[23] Moyle, P. B. 2002. Inland fishes of California. Revised edition. University of California Press, Berkeley

within the project area for a limited timeframe, specifically from December 1st through April 1st when the flashboards at the Los Rios Check Dam are installed.[24] Although steelhead have been observed on the Yolo Bypass during flooding events, there has been no confirmed documentation of steelhead in Putah Creek since 1959, when the Monticello Dam was constructed. Lower Putah Creek is not considered Critical Habitat for steelhead. Therefore, the likelihood that steelhead is present in the project area is considered to be low.

Rainbow trout are commonly found during fish surveys in Lower Putah Creek. Most of the trout are found in the upper reach of the creek, between the Putah Diversion Dam and the city of Winters, where water temperatures are lowest. The existing population of rainbow trout in the creek are likely resident fish. Construction of the proposed project is not likely to adversely affect rainbow trout, because the project would occur during the summer months when the daily average water temperature within the project area would be too high. In addition, the project's construction activities would have a minimal effect on water quality because any work areas within the channel would be isolated from flowing water, and any fish or turtles within the isolated area would be rescued and relocated immediately upstream of the project area. The proposed project would improve salmonid habitat by narrowing a wide segment of the existing channel to promote cooler water temperatures, creating a design channel with riffles and spawning gravel, and creating a functional floodplain that will recruit native vegetation and ultimately increase the area of shaded water within the project area. Therefore, impacts to this species would be less than significant. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

5.4.3.3 Birds

The **western yellow-billed cuckoo** (*Coccyzus americanus*) is a migratory bird species. It is federally listed as threatened, State listed as threatened, and a Covered Species under the Yolo Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP). The species winters in Central and South America and moves to breeding grounds in North America (Continental U.S. and Mexico) each spring.

The western yellow-billed cuckoo is presently a rare migrant in Yolo County. The likelihood that yellow-billed cuckoo would be found in the project area is considered moderate since there have been a few sightings of single birds along Putah Creek between 2005 and 2007[25] and from 2012[26] and 2013.[27] Because individual western yellow-billed cuckoos have been documented within the

[24] The Los Rios Check Dam—a 30-foot-wide concrete dam, fitted with wooden flash-boards—is operated in conjunction with installation of the flash-boards at the dam at Road 106A (approximately 6 miles east of the project site) to control the hydrology of the lower creek. From approximately from April 1 to December 1, these dams are operated to form a pool of water for diversion to irrigation canals, and are also operated to impound water for irrigation and flood-up of wetlands managed by CDFW.

[25] Truan, M.L., A. Engilis, Jr., and J.R. Trochet. 2010. Putah Creek Terrestrial Wildlife Monitoring Program: Comprehensive Report 1997–2009. Department of Wildlife, Fish, and Conservation Biology, Museum of Wildlife and Fish Biology. University of California, Davis.

[26] Hampton, S. 2012. Hampton's checklist S11489178 from eBird: an online database of bird distribution and abundance. Ithaca New York. Website: (http://www.ebird.org accessed August 29, 2022).

[27] Gallagher, L. 2013. Gallagher's checklist S14936688 from eBird: an online database of bird distribution and abundance. Ithaca New York. Website: http://www.ebird.org (accessed August 29, 2022).

project area, which overlaps with their historical range, this species could occur within the project area but are not expected to nest within the project area. While migrants could potentially use riparian habitats along Putah Creek, there are few areas that support sufficient contiguous patches of suitable habitat to support breeding cuckoos.

The proposed project would restore the channel to a more natural, meandering condition, which would enhance habitat conditions in the project area for yellow-billed cuckoo. In addition, implementation of the proposed project would maintain mature riparian trees, multiple canopy layers, and a diverse mixed-forest type of a sufficient size. However, impacts to yellow-billed cuckoo could occur during project activities, including:

- Disruption of courtship, nesting, incubation, and rearing of young during the breeding season due to disturbance from equipment and human presence.
- Loss of nest trees (if they choose to nest in invasive eucalyptus tree earmarked for removal); and
- Predation of young due to nest predators (ravens, crows) being attracted to the construction site.

Implementation of Mitigation Measure 3.4-1 (Worker Environmental Awareness Program) and Mitigation Measure 3.4-6 (Nesting Bird Avoidance), identified in the 2016 Program EIR, would reduce impacts to western yellow-billed cuckoo during habitat restoration and maintenance activities associated with the project to less than significant by requiring preconstruction surveys for nesting birds and establishment of buffers and other measures, if needed, to protect identified nests. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

White-tailed kite (*Elanus leucurus*) is a Covered Species under the Yolo HCP/NCCP. White-tailed kite is a CDFW Fully Protected species. White-tailed kite is a resident (breeding and wintering) species throughout central and coastal California, up to the western edge of the foothills of the Sierra Nevada. White-tailed kite is widely distributed within the project area.[28] There is nesting habitat in tall trees along the majority of Putah Creek. Because white-tailed kites have been documented along the project area, this species is likely to occur in the project area. However, all work would occur during the time when white-tailed kite is not breeding, nesting or rearing young (i.e., from August to February). In addition, implementation of Mitigation Measure 3.4-1 (Worker Environmental Awareness Program) and 3.4-6 (Nesting Bird Avoidance) identified in the 2016 Program EIR, would further reduce impacts to white-tailed kite during habitat restoration and maintenance activities associated with the project by requiring preconstruction surveys for nesting birds and establishment of buffers and other measures, if needed, to protect identified nests. With implementation of these mitigation measures, impacts to this species would be less than significant. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

Swainson's hawk (*Buteo swainsoni*) occurs widely in the lowlands of Solano and Yolo counties. Swainson's hawks are known to nest in trees within industrial landscapes as long as suitable foraging

[28] Truan et al. 2010. op. cit.

habitat is located in nearby areas. The closest known Swainson's hawk nest site is approximately 300 yards from the project site in a farmyard tree south of Putah Creek. Impacts to Swainson's hawk from project activities could include:

- Disruption of courtship, nesting, incubation, and rearing of young during the breeding season due to disturbance from equipment and human presence. However, Swainson's hawks frequently select roadside tree rows, isolated trees, and rural residential trees as nesting trees and exhibit a remarkable tolerance to human presence, noise and disturbance. This species is also highly responsive to farming activities that expose and concentrate prey, such as cultivating, harvesting, and disking. During these activities, particularly late in the season, Swainson's hawks will hunt behind tractors searching for exposed prey.
- Loss of nest trees (if they choose to nest in invasive eucalyptus tree earmarked for removal); and
- Predation of young due to nest predators (ravens, crows) being attracted to the construction site.

However, all work would occur during the time when Swainson's hawk is likely not present (i.e., from August to February). In addition, implementation of Mitigation Measure 3.4-1 (Worker Environmental Awareness Program), 3.4-5 (Swainson's Hawk Avoidance) and 3.4-6 (Nesting Bird Avoidance), identified in the 2016 Program EIR, would avoid and minimize effects on Swainson's hawk during habitat restoration and maintenance activities associated with the project by requiring that workers be trained to identify and avoid special-status species, preconstruction surveys for Swainson's hawk and establishment of buffers and other measures, if needed, to protect identified nest trees. With implementation of these mitigation measures, impacts to this species would be less than significant. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

Other Birds: Birds protected under the California Fish and Game Code and the Migratory Bird Treaty Act (MBTA) could potentially nest on or near the property; however, implementation of Mitigation Measures 3.4-1 (Worker Environmental Awareness Program) and 3.4-6 (Nesting Bird Avoidance), identified in the 2016 Program EIR, would avoid and minimize effects on all nesting birds during habitat restoration and maintenance activities associated with the project by requiring preconstruction surveys for nesting birds and establishment of buffers and other measures, if needed, to protect identified nests. With implementation of these mitigation measures, impacts to other bird species would be less than significant. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

Tricolored blackbird (*Agelaius tricolor*) is State listed as threatened and a CDFW Species of Special Concern. This species is a year-round resident in California, where it is largely endemic. The species is common locally throughout the Central Valley and in coastal areas from Sonoma County south through Monterey County. There may be suitable nesting habitat in expansive marsh vegetation or large blackberry thickets along Putah Creek. However, there is no suitable nesting habitat present within the project area, and no known colonies of breeding tricolored blackbirds exist within 5 miles of the project area. However, foraging blackbirds could occasionally use the surrounding agricultural fields outside the project area. Project activities, such as noise, dust, machinery and

staging along access roads could disturb foraging tricolored blackbirds. Implementation of Mitigation Measures 3.4-1 (Worker Environmental Awareness Program) and 3.4-6 (Nesting Bird Avoidance), identified in the 2016 Program EIR, would reduce impacts to this species to a less-than-significant level by requiring preconstruction surveys for nesting birds and establishment of buffers and other measures, if needed, to protect identified nests. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

5.4.3.4 Reptiles

The **western pond turtle** (*Actinemys marmorata marmorata*) is a California Species of Special Concern that inhabits permanent and intermittent waters of rivers, creeks, small lakes and ponds, marshes, irrigation ditches, and reservoirs. Western pond turtle is documented as being widespread along Putah Creek.[29] There is suitable aquatic habitat where sections of creek are relatively slow-moving and deep, with structures for basking such as logs, rocks, or exposed banks. Nesting habitat may include upland areas not prone to flooding that are exposed to sun, with low-growing vegetation. Because western pond turtle has been documented as widespread in Putah Creek, this species is likely to occur in the project area and could be impacted by project activities if present in the project area during habitat restoration and maintenance activities. Implementation of Mitigation Measure 3.4-2 (Western Pond Turtle Avoidance), identified in the 2016 Program EIR, would reduce potential impacts to this species to a less-than-significant level by requiring daily monitoring of the project area for the presence of this species, and relocation, as needed, to an area of suitable habitat outside of the construction area. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

5.4.3.5 Mammals

Pallid bat (*Antrozous pallidus*), a CDFW Species of Special Concern, is fairly widespread in California. Pallid bats occupy a variety of habitats, from arid deserts to grasslands to conifer forests and riparian areas. Roosts (including day, night, and maternity roosts) are typically located in rock crevices and cliffs; day roosts can also be found in tree hollows and caves. Overwintering roosts require relatively cool and stable temperatures out of direct sunlight. Pallid bats may day-roost in the project area within the riparian forest if there are large tree hollows present. However, pallid bats are not expected to night or maternity roost within the project area, which has no rock crevices for reproduction and rearing young, though roosts could occur in abandoned structures immediately outside the riparian corridor. Though pallid bats have not been documented within the project area, their range overlaps with the project area, which contains roosting habitat, and therefore pallid bats have a low to moderate potential to occur within the project area. However, implementation of Mitigation Measures 3.4-1 (Worker Awareness Program) and 3.4-9 (Avoid and Minimize Impacts to Special-Status Bats), as identified in the 2016 Program EIR, would reduce potential impacts to pallid bat to a less-than-significant level because these measures would ensure that on-site construction workers are trained to identify and avoid these species and that, if encountered, appropriate mitigation measures would be implemented in consultation with CDFW. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

[29] Truan et al. 2010. op. cit.

Western red bat (*Lasiurus blossevillii*) is a CDFW Species of Special Concern. In California, the western red bat has been observed near the Pacific Coast, Central Valley, and the Sierra Nevada range and foothills. Western red bat roosts have often been observed in edge habitats near streams, fields, orchards, and urban areas. There is suitable roosting habitat for western red bat in riparian stands of cottonwood along Putah Creek, thus there is a moderate potential for western red bats to occur within the project area. However, implementation of Mitigation Measures 3.4-1 (Worker Awareness Program) and 3.4-9 (Avoid and Minimize Impacts to Special-Status Bats), as identified in the 2016 Program EIR, would reduce potential impacts to western red bat to a less-than-significant level because these measures would ensure that on-site construction workers are trained to identify and avoid these species and that, if encountered, appropriate mitigation measures would be implemented in consultation with CDFW. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

As described above, project activities, including habitat restoration and maintenance, have the potential to impact several special status wildlife species with the potential to occur within the project area. Implementation of mitigation measures identified in the 2016 Program EIR and project-specific mitigation measures described herein, would reduce potential impacts to special-status species to a less-than-significant level.

b. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service? ***(No New Impact)***

Riparian woodland covers the majority of the project site and occurs along both banks of Putah Creek. Riparian habitat is considered a sensitive habitat and is subject to CDFW jurisdiction. The primary goal of the project is to establish a functioning riparian habitat and increase the cover of a functioning riparian forest at the project site. Removal of up to 71 trees, the majority of which are nonnative, is required to facilitate grading within the floodplain and to provide material for bank revetment. All invasive vegetation within the grading area would be removed and the recontoured floodplain would be revegetated with native grasses, trees, and shrubs. Only species that are endemic to Putah Creek would be used for revegetation.

Project activities would, in the long-term, improve the quality and extent of riparian habitat and wildlife access to habitat by removing invasive vegetation and increasing the extent of riparian habitat within the project site. However, short-term adverse impacts to riparian habitat would occur due to the removal, movement, and alteration of the existing channel. These short-term impacts would be temporary, until new native vegetation is planted or establishes itself. Temporary loss of riparian habitat would last 1 to 3 years in the lower understory. Removal of mature eucalyptus trees would affect the canopy for 5 to 10 years until replanted trees have occupied the vacated canopy space. Although the proposed project would result in beneficial impacts to riparian habitat along the creek channel, impacts due to removal of vegetation during construction could result in a minor temporal loss of functions and values of riparian habitat.

The proposed project would establish approximately 26,000 native plants within the recontoured floodplain. In addition, the plantings would be maintained for a minimum of 5 years, at which point they should achieve a minimum of 80 percent survival and 75 percent coverage. Remediation would

occur if the plantings do not meet the survivability and coverage requirements at the end of the 5-year period. Mitigation Measure 3.4-9 (Monitor Riparian Habitat), identified in the 2016 Program EIR, requires the development of a site-specific planting plan, long-term ecological monitoring, and minimum performance standards to ensure that after completion of the revegetation and monitoring period the project site would support a functioning riparian forest consisting of a majority of native species. With Implementation of Mitigation Measure 3.4-9, identified in the 2016 Program EIR, impacts to riparian habitat would be less than significant. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

As described above, the project site may support two rare natural communities – elderberry savanna and Great Valley cottonwood riparian forest. Several mitigation measures previously identified in the 2016 Program EIR would be applicable and would ensure that any potentially occurring elderberry savanna or Great Valley cottonwood riparian forest are not significantly impacted. With implementation of Mitigation Measures 3.4-4 and 3.4-9, impacts to these rare natural communities would be less than significant. Therefore, no new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

c. Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? ***(No New Impact)***

Project construction activities would have direct and indirect impacts to wetlands, including potential disturbance to existing vegetation and soils. Over the long term, impacts to wetlands would be mitigated through the conversion of low-quality to high-quality wetlands. Although the creation of a narrower design channel (compared with the over widened current conditions) would cause a net loss of approximately 1.2 acres in low-value wetland surface dimensions (or approximately 50 percent of the original surface area), the proposed project would increase the ecological function and habitat value of the channel by creating multiple pool/riffle/run sequences, overhanging banks, structural diversity and increased velocity in riffle sections that would increase aeration. With implementation of the proposed project, the total stream length would be 2,720 feet (approximately 8 percent longer than the current stream channel). Nearly all of the current open-water river (pool) area would be converted to high-quality riverine emergent wetland. Low-value wetlands that are currently overrun with invasive non-native plant species would be converted to high-value wetlands occupied by primarily native wetland plant species. The project would result in a net gain of 1,000 feet of high-quality aquatic habitat with improved ecological function. Therefore, the proposed project would result in a net benefit related to wetland habitat. No new impact would occur.

d. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? ***(No New Impact)***

The proposed project would restore and enhance habitat for native or migratory corridor species. Project construction could result in short-term disturbance and habitat removal that may impede species migration or movement along the river corridor. Resident and migratory species such as

North American beaver (*Castor canadensis*) and North American river otter (*Lontra canadensis*) may be present within the project area.

Although the proposed channel restoration may temporarily affect the local movement of aquatic species along Putah Creek, such impacts are expected to be minor and short-term in duration. Wildlife movement through the creek for some aquatic species is already limited since barriers to upstream fish movement exist within and downstream of the project site. After project completion, native fish and wildlife species would be able to move through this reach of Putah Creek, resulting in a beneficial effect for wildlife movement. The impacts to migratory fish and wildlife species would be temporary and reduced to a less-than-significant level with the implementation of Mitigation Measures 3.4-1 and 3.4-11 (Native or Migratory Fish or Wildlife Species Avoidance) as identified in the 2016 Program EIR.

If conducted during the breeding season (March through July), construction activities could directly impact nesting birds by removing trees, understory vegetation, and structures that support active nests. Prolonged loud construction noise could also disturb nesting birds, resulting in nesting failure. All nesting native birds are protected under the federal Migratory Bird Treaty Act and/or California Fish and Game Code. Implementation of the Mitigation Measure 3.4-6 identified in the 2016 Program EIR would reduce the proposed project's impacts to nesting birds to less than significant.

With implementation of mitigation measures identified in the 2016 Program EIR, the proposed project would not interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors or impede the use of native wildlife nursery sites. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

e. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? ***(No New Impact)***

The Solano County General Plan contains policies to protect and improve water quality, preserve wetlands, protect watersheds and aquifer recharge areas, and conserve riparian vegetation.[30] The General Plan also discusses special-status species within the County.

The Yolo County General Plan contains policies to protect and enhance biological resources through the conservation, maintenance, and restoration of key habitat areas and corresponding connections that represent the diverse geography, topography, biological communities, and ecological integrity of the landscape.[31]

The 2016 Program EIR addresses all pertinent local regulations, particularly the Solano and Yolo county General Plans. The mitigation measures identified in this section reference and supplement the relevant measures in the 2016 Program EIR and therefore are in compliance with all local and

30 Solano, County of. 2008. op. cit.
31 Yolo, County of. 2009. op. cit.

regional laws, ordinances, Plans and Conservation strategies. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

f. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? ***(No New Impact)***

The project area is covered by two, partially overlapping Habitat Conservation Plans (HCP), the Solano HCP (due to be approved in early 2023) and the Yolo HCP/NCCP (approved 2018). The Yolo HCP/NCCP Plan Area encompasses all areas within the boundaries of Yolo County and a 1,174-acre expanded Plan Area for riparian conservation in Solano County, on the south side of Putah Creek. This expanded area includes the project site.

Both plans include Conservation Measures designed to protect, enhance and restore Covered Species and to mitigate unavoidable impacts from Covered Activities. The 2016 Program EIR for the Upper Reach Program addresses the Yolo County HCP/NCCP, the Draft Solano HCP, and the Yolo Regional Conservation Investment Strategy and Local Conservation Plan (RCIS/LCP).

The mitigation measures identified in this section reference and supplement the relevant measures in the 2016 Program EIR and therefore are in compliance with all local and regional laws, ordinances, Plans and Conservation strategies. In addition, in compliance with Mitigation Measure TERR-1, identified in the Statewide Order EIR, SWCA would be required to implement design measures, conservation measures or other mitigation strategies to achieve conformance with the adopted conservation plans. Therefore, no new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

5.5 CULTURAL RESOURCES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒
b. Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c. Disturb any human remains, including those interred outside of formal cemeteries?	☐	☐	☐	☒

5.5.1 Background

CEQA defines a "historical resource" as a resource which meets one or more of the following criteria:

- Listed in, or eligible for listing in, the California Register of Historical Resources (California Register);
- Listed in a local register of historical resources as defined in Public Resources Code (PRC) Section 5020.1(k);
- Identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code; or
- Determined to be a historical resource by a project's lead agency (PRC Section 21084.1 and State CEQA Guidelines Section 15064.5[a]).

The California Register defines a "historical resource" as a resource that meets one or more of the following criteria: (1) associated with events that have made a significant contribution to the broad patterns or local or regional history of the cultural heritage of California or the United States; (2) associated with the lives of persons important to local, California, or national history; (3) embodies the distinctive characteristics of a type, period, region, or method of construction or represents the work of a master or possesses high artistic values; or (4) has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation. Under CEQA, historical resources can include precontact (i.e., Native American) archaeological deposits, historic period archaeological deposits, historic buildings, and historic districts.

LSA conducted a cultural resources study for the proposed project consisting of background research and a field survey. The results of the study are summarized below.

Background Research. On August 1, 2022, a cultural resources record search was conducted for the project by staff at the Northwest Information Center (NWIC) at Sonoma State University. It included a review of all recorded historic and prehistoric archaeological sites within 0.5 mile of the project and a review of known cultural resource survey and excavation reports. Data from the NWIC

indicate there have been four cultural resource studies previously conducted within 0.5 mile of the proposed project, none of which included any portion of the project area. Similarly, no cultural resources are documented within the project site or within 0.5 mile.

Native American Heritage Commission (NAHC) Sacred Lands File. A Sacred Lands File (SLF) search was requested from the Native American Heritage Commission (NAHC) on June 15, 2022, and the NAHC responded on July 25, 2022, with negative results and a list of tribes and individuals recommended for contact.

Historic-Period Aerial Photograph and Map Review. Based on review of historic aerial photographs and historic maps, a building was depicted within the project area on the southern bank of Putah Creek in the early 1940s, but it had been removed by the early 1950s, and two pumps depicted on the periphery of the project site (on either side of the creek) between the early 1950s and mid-1980s were removed by the early 1990s.

Field Survey. On August 11 and 31, 2022, an LSA archaeologist conducted a pedestrian survey of all accessible areas of the project area. No cultural resources were identified.

5.5.2 Prior Environmental Analysis

5.5.2.1 2016 Program EIR

The 2016 Program EIR concluded that there are no known cultural resources within the Nishikawa reach; however, there is a possibility that significant sites, features, and artifacts could be discovered or disturbed as a result of the project. Subsurface disturbances have the potential to destroy or damage undiscovered prehistoric or historic-era cultural resources and if these resources were to represent "unique archaeological resources" or "historical resources" as defined by CEQA, a significant impact would occur. However, implementation of Mitigation Measures 3.11-2 and 3.11-3 would be required, which require following proper protocols if unrecorded cultural resources or human remains are encountered. Implementation of these measures would reduce impacts to less-than-significant levels.

Applicable Mitigation Measures. The following mitigation measure identified in the 2016 Program EIR would apply to the proposed project.

Mitigation Measure 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.

Mitigation Measure 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 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 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.

5.5.2.2 Statewide Order EIR

The Statewide Order EIR determined that project construction and operation activities for restoration projects permitted under the Statewide Order are the types of activities that have the potential to affect historical (i.e., architectural) and archaeological resources and human remains. Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 were identified to reduce potential impacts to historical and archaeological resources; however, because the efficacy of the mitigation measures could not be determined at the time the EIR was certified, these impacts were determined to be significant and unavoidable.

As part of the State Water Board or RWQCB's issuance of a NOA for a restoration project under the Statewide Order, compliance with Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4 would be required when applicable to a given project.

Applicable Mitigation Measures. As described further below, no architectural resources are located within the project area; therefore, Mitigation Measure CUL-1 identified in the Statewide Order EIR would not apply. The following mitigation measures would be applicable to the proposed project:

Mitigation Measure CUL-2: **Conduct Inventory and Significance Evaluation of Archaeological Resources.** Before implementation of any project permitted under the Order that includes ground disturbance, an archaeological records search and sensitivity assessment, inventory and significance evaluation of archaeological resources identified in the C-APE shall be conducted. The inventory and evaluation should be done by or under the direct supervision of a qualified archaeologist, defined as one who meets the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, and shall include the following:

- Map(s) and verbal description of the project C-APE for cultural resources that delineates both the horizontal and vertical extents of where a project could result in impacts, including both direct and indirect, on cultural resources.

- A records search at the appropriate repository of the California Historical Resources Information System (CHRIS) for the C-APE and vicinity (typically areas within 0.25 or 0.5 mile, based on

setting) to acquire records on previously recorded cultural resources in the C-APE and vicinity and previous cultural resources studies conducted for the C-APE and vicinity. This task can be performed by either the qualified archaeologist or the appropriate local CHRIS center staff.

- Outreach to the California Native American Heritage Commission, including a request of a search of the Sacred Lands File for the C-APE, to determine if any documented Native American sacred sites could be affected by the project.

- Consultation with California Native American Tribes pursuant to PRC Section21080.3 to determine whether any indigenous archaeological resource or tribal cultural resources could be affected by the project. Project proponents shall submit a Sacred Lands File & Native American Contacts List Request to the Native American Heritage Commission (NAHC) at the initial stages of project development (or as early as practicable) to determine if a project would have an impact on Native American cultural resources. The project proponent shall coordinate with the approving Water Board or other CEQA lead agency, if applicable, as soon as possible whenever tribes that are traditionally and culturally affiliated to a project area are identified. Any tribe identified by the NAHC will require notification of the proposed project by the lead agency as soon as practicable during early design. Tribes will be consulted if a request is received after initial notification. Consultation will include discussion regarding project design, cultural resource survey, protocols for construction monitoring, and any other tribal concern. Construction of the project will not commence until the approving Water Board or other CEQA lead agency achieves compliance with the California Environmental Protection Agency Tribal Consultation Protocol (April 2018).

- If the C-APE is in or adjacent to navigable waterways, outreach to the California State Lands Commission to request a search of their Shipwrecks Database, to determine whether any submerged archaeological resources may be present in the C-APE.

- Background research on the history, including ethnography and indigenous presence, of the C-APE and vicinity.

- An archaeological sensitivity analysis of the C-APE based on mapped geologic formations and soils, previously recorded

archaeological resources, previous archaeological studies, and Native American consultation.

- If an archaeological study is not warranted based on the above review, a summary of the assessment and justification of the determination will be prepared. If the CEQA lead agency agrees with the determination, no further study is needed.

If a study is warranted, as a result of these archival studies and consultations, an archaeological field survey of the C-APE will be conducted. The field survey shall include, at a minimum, a pedestrian survey. If the archaeological sensitivity analysis suggests a high potential for buried archaeological resources in the C-APE, a subsurface survey shall also be conducted. If previous archaeological field surveys no more than two years old have been conducted for the C-APE, a new field survey is not necessary, unless their field methods do not conform to those required above (e.g., no subsurface survey was conducted but C-APE has high potential for buried archaeological resources). Any archaeological resources identified in the C-APE during the survey shall be recorded on the appropriate California Department of Parks and Recreation 523 forms (i.e., site record forms).

- An evaluation of any archaeological resources identified in the C-APE for California Register eligibility (i.e., as qualifying as historical resources, as defined in State CEQA Guidelines Section 15064.5) as well as whether they qualify as unique archaeological resources, pursuant to PRC Section 21083.2. Such evaluation may require archaeological testing (excavation), potentially including laboratory analysis, and consultation with relevant Native American representatives (for indigenous resources).

- An assessment of potential project impacts on any archaeological resources identified in the C-APE that qualify as historical resources (per State CEQA Guidelines Section 15064.5) and/or unique archaeological resources (per PRC Section 21083.2). This shall include an analysis of whether the project's potential impacts would materially alter a resource's physical characteristics that convey its historical significance and that justify its inclusion (or eligibility for inclusion) in the California Register or a qualified local register.

- A technical report meeting U.S. Secretary of the Interior's Standards for archaeological technical reporting. This report will document the mitigation measures taken and any study results,

and, following CEQA lead agency review and approval, completes the requirements of this mitigation measure.

If potentially significant impacts on archaeological resources that qualify as historical resources (per State CEQA Guidelines Section 15064.5) and/or unique archaeological resources (per PRC Section 21083.2) are identified, develop, before project implementation and in coordination with interested or consulting parties (e.g., Native American representatives [for indigenous resources], historical societies [for historic-era resources], local communities) an approach for reducing such impacts. If any such resources are on or in the tide and submerged lands of California, this process. shall also include coordination with the California State Lands Commission. Typical measures for reducing impacts include:

- Modify the project to avoid impacts on resources.
- Plan parks, green space, or other open space to incorporate the resources.
- Develop and implement a detailed archaeological resources management plan to recover the scientifically consequential information from archaeological resources before any excavation at the resource's location. Treatment for most archaeological resources consists of (but is not necessarily limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to target the recovery of important scientific data contained in the portion(s) of the resource to be affected by the project.
- Develop and implement interpretive programs or displays, and conduct community outreach.

Mitigation Measure CUL-3: **Implement Measures to Protect Archaeological Resources during Project Construction or Operation.** If archaeological resources are encountered during project construction or operation of any project permitted under the Order, all activity within 100 feet of the find shall cease and the find shall be flagged for avoidance. The lead agency and a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, shall be immediately informed of the discovery. The qualified archaeologist shall inspect the discovery and notify the lead agency of their initial assessment. If the qualified archaeologist determines that the resource is or is potentially indigenous in origin, the lead agency shall consult with culturally affiliated California

Native American Tribes to assess the find and determine whether it is potentially a tribal cultural resource.

If the lead agency determines, based on recommendations from the qualified archaeologist and culturally affiliated California Native American Tribes, that the resource is indigenous, that the resource may qualify as a historical resource (per State CEQA Guidelines Section 15064.5), unique archaeological resource (per PRC Section 21083.2), or tribal cultural resource (per PRC Section 21074), then the resource shall be avoided if feasible. If avoidance of an identified indigenous resource is not feasible, the lead agency shall consult with a qualified archaeologist, culturally affiliated California Native American Tribes, and other appropriate interested parties to determine treatment measures to minimize or mitigate any potential impacts on the resource pursuant to PRC Section 21083.2 and State CEQA Guidelines Section 15126.4. If any such resources are on or in the tide and submerged lands of California, this process shall also include coordination with the California State Lands Commission. Once treatment measures have been determined, the lead agency shall prepare and implement an archaeological (and/or tribal cultural) resources management plan that outlines the treatment measures for the resource. Treatment measures typically consist of the following steps:

- Determine whether the resource qualifies as a historical resource (per State CEQA Guidelines Section 15064.5), unique archaeological resource (per PRC Section 21083.2), or tribal cultural resource (per PRC Section 21074) through analysis that could include additional historical or ethnographic research, evaluative testing (excavation), or laboratory analysis.

- If it qualifies as a historical resource (per State CEQA Guidelines Section15064.5) and/or unique archaeological resource (per PRC Section 21083.2),implement measures for avoiding or reducing impacts such as the following:

    - Modify the project to avoid impacts on resources.

    - Plan parks, green space, or other open space to incorporate resources.

    - Recover the scientifically consequential information from the archaeological resource before any excavation at the resource's location. This typically consists of (but is not necessarily limited to) sample excavation, artifact collection, site documentation, and historical research, with the aim to

target the recovery of important scientific data contained in the portion(s) of the resource to be affected by the project.

- Develop and implement interpretive programs or displays.

- If it qualifies as a tribal cultural resource (per PRC Section 21074) implement measures for avoiding or reducing impacts such as the following:
  - Avoid and preserve the resource in place through measures that include but are not limited to the following:
    - Plan and construct the project to avoid the resource and protect the cultural and natural context.
    - Plan greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria.
  - Treat the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, through measures that include but are not limited to the following:
    - Protect the cultural character and integrity of the resource.
    - Protect the traditional use of the resource.
    - Protect the confidentiality of the resource.
  - Implement permanent conservation easements or other interests in real property, with cultural appropriate management criteria for the purposes of preserving or using the resource or place.

Mitigation Measure CUL-4: **Implement Measures to Protect Human Remains during Project Construction or Operation.** If human remains are encountered during construction or operation and maintenance of any project permitted under the Order, all work shall immediately halt within 100 feet of the find and the lead agency shall contact the appropriate county coroner to evaluate the remains and follow the procedures and protocols set forth in State CEQA Guidelines Section 15064.5(e)(1). If human remains encountered are on or in the tide and submerged lands of California, the lead agency shall also contact the California State Lands Commission. If the coroner

determines that the remains are Native American in origin, the appropriate county shall contact the California Native American Heritage Commission, in accordance with California Health and Safety Code Section 7050.5(c) and PRC Section 5097.98. Per PRC Section 5097.98, the project's lead agency shall ensure that the immediate vicinity, according to generally accepted cultural or archaeological standards or practices, where the Native American human remains are located is not damaged or disturbed by further development activity until the lead agency has discussed and conferred, as prescribed PRC Section 5097.98, with the most likely descendants and the property owner regarding their recommendations, if applicable, taking into account the possibility of multiple human remains.

5.5.3 Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? ***(No New Impact)***

Although a built environment (a building and two pumps) was depicted within the project area from the early 1940s into the mid-1980s, these improvements had all been removed by the late 1990s and no trace of these former improvements was identified via survey. Additionally, no archaeological resources have been identified within the project area as a result of the NWIC records search, additional research, or the cultural resources survey. The project site consists of a stream channel, which is a dynamic geological context and not conducive to archaeological deposition. Therefore, subsurface sensitivity appears low, and potential to encounter undocumented archaeological resources is low.

Despite the negative results of the field survey, it cannot be entirely be ruled out that archaeological historical cultural resources could be encountered during project construction at the project site. Should archaeological historical deposits be encountered during project ground disturbance, a substantial adverse change in the significance of a historical resource would occur from its demolition, destruction, relocation, or alteration such that the significance of the resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)). With implementation of Mitigation Measure 3.11-2, identified in the 2016 Program EIR and Mitigation Measure CUL-3 identified in the Statewide Order EIR, which require following proper protocols if unrecorded cultural resources or are encountered, potential impacts to historical resources would be reduced to a less-than-significant level. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

b. Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? ***(No New Impact)***

According to the CEQA Guidelines, "When a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource" (CEQA Guidelines Section 15064.5(c)(1)). Those archaeological sites that do not qualify as historical resources shall be

assessed to determine if these qualify as "unique archaeological resources" (California PRC Section 21083.2).

Archaeological deposits identified during project construction shall be treated by SCWA—in consultation with a qualified archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for Archaeology—in accordance with Mitigation Measure 3.11-2 identified in the 2016 Program EIR and Mitigation Measure CUL-3 identified in the Statewide Order EIR. With implementation of Mitigation Measure 3.11-2, identified in the 2016 Program EIR and Mitigation Measure CUL-3 identified in the Statewide Order EIR, which require following proper protocols if unrecorded cultural resources are encountered, impacts to archaeological resources would be less than significant. Therefore, no new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

c. Would the project disturb any humans remains, including those interred outside of formal cemeteries? ***(No New Impact)***

Based on previous archaeological investigation and analysis, there is a low potential for the disturbance of archaeological cultural resources or human remains. However, if human remains are encountered in the project area, State Health and Safety Code Section 7050.5 and State CEQA Guidelines Section 15064.5(e)(1) state that no further disturbance shall occur to the area of the find until the County Coroner has made a determination of origin and disposition of the human bone pursuant to PRC Section 5097.98 and as required by Mitigation Measure 3.11-3 identified in the 2016 Program EIR and Mitigation Measure CUL-4 identified in the Statewide Order EIR. The County Coroner must be notified of the find immediately and shall make a determination within two working days of being notified. If the remains are determined to be Native American, the County Coroner shall notify the NAHC by phone within 24 hours, and the NAHC shall then immediately determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection and make recommendations or preferences for treatment of the remains within 48 hours of being granted access to the site. The MLD's recommendations may include scientific removal and nondestructive analysis of human remains and items associated with Native American burials, preservation of Native American human remains and associated items in place, relinquishment of Native American human remains and associated items to the descendants for treatment, or any other culturally appropriate treatment.

Implementation of Mitigation Measure 3.11-3 identified in the 2016 Program EIR and Mitigation Measure CUL-4 identified in the Statewide Order EIR, which requires compliance with Section 7050.5 of the California Health and Safety Code and Public Resources Code Section 5097.98 regarding the treatment of human remains would ensure that potential impacts to human remains would be less than significant. Therefore, no new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

5.6 ENERGY

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation?	☐	☐	☐	☒
b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

5.6.1 Background

Energy demand is typically associated with day-to-day operations and fuel consumption associated with project construction. This section discusses energy use resulting from implementation of the proposed project and evaluates whether the proposed project would result in the wasteful, inefficient, or unnecessary consumption of energy resources or conflict with any applicable plans for renewable energy and energy efficiency.

5.6.2 Prior Environmental Analysis

5.6.2.1 2016 Program EIR

The topic of energy use was not analyzed in the 2016 Program EIR.

5.6.2.2 Statewide Order EIR

Impacts associated with energy use were determined to be less than significant in the Statewide Order EIR.

5.6.3 Impact Analysis

a. Would the project result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation? ***(No New Impact)***

This analysis evaluates energy consumption for both construction and operation of the proposed project, including diesel fuel use for construction off-road equipment.

Construction. Restoration activities would require the use of energy to fuel construction equipment and vehicles. All or most of this energy would be derived from non-renewable resources. Construction activities are not anticipated to result in an inefficient use of energy as gasoline and diesel fuel would be supplied by construction contractors who would conserve the use of their supplies to minimize their costs on the project. Energy usage on the project site during construction would be temporary in nature and would be relatively small in comparison to the State's available energy sources. As such, construction energy usage would be less than significant. In addition, construction workers would be required to shut off idle equipment, which would increase energy

efficiency on the site during project construction. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

Operation. Typically, energy consumption is associated with fuel used for vehicle trips and electricity and natural gas use. The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. Once restoration activities are complete, the project would not result in energy use. Therefore, operational energy impacts would be less than significant. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

b. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? ***(No New Impact)***

In 2002, the Legislature passed Senate Bill 1389, which required the California Energy Commission (CERCLA) to develop an integrated energy plan every two years for electricity, natural gas, and transportation fuels, for the California Energy Policy Report. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero emission (ZE) vehicles and their infrastructure needs, and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

The most recently CEC adopted energy reports are the 2021 Integrated Energy Policy Report[32] and 2022 Integrated Energy Policy Report Update.[33] The Integrated Energy Policy Reports provide the results of the CEC's assessments of a variety of energy issues facing California. Many of these issues will require action if the State is to meet its climate, energy, air quality, and other environmental goals while maintaining energy reliability and controlling costs. The Integrated Energy Policy Reports cover a broad range of topics, including implementation of Senate Bill 350, integrated resource planning, distributed energy resources, transportation electrification, solutions to increase resiliency in the electricity sector, energy efficiency, transportation electrification, barriers faced by disadvantaged communities, demand response, transmission and landscape-scale planning, the California Energy Demand Preliminary Forecast, the preliminary transportation energy demand forecast, renewable gas (in response to Senate Bill 1383), updates on Southern California electricity reliability, natural gas outlook, and climate adaptation and resiliency.

As indicated above, the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation. Because California's

[32] California Energy Commission, 2021. *2021 Integrated Energy Policy Report.* California Energy Commission. Docket # 21-IEPR-01.

[33] California Energy Commission, 2022. 2022 Integrated Energy Policy Report Update. California Energy Commission. Docket # 22-IEPR-01.

energy conservation planning actions are conducted at a regional level, and because the proposed project's total impact to regional energy supplies would be minor, the proposed project would not conflict with California's energy conservation plans as described in the CEC's Integrated Energy Policy Reports. Impacts would be less than significant, and no mitigation is required. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

5.7 GEOLOGY AND SOILS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii. Strong seismic ground shaking?	☐	☐	☐	☒
iii. Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv. Landslides?	☐	☐	☐	☒
b. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
c. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☐	☒
d. Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

5.7.1 Background

The project site is located in the northwestern portion of Great Valley Geomorphic Province. The California Coast Range rises to the west of the project alignment and consists of uplifted northwest-trending mountain ranges and valleys. Lower Putah Creek is situated on a broad alluvial fan that originates in the Coast Ranges to the west and extends to the deep alluviums of the valley floor at the Yolo Bypass.[34]

No faults pass through the project site; however, it is located in an area with a high potential for moderate to intense ground shaking. Topography at the project site is generally flat lying except for the incised channel. Soils in the project reach have a moderate to moderately high erosion potential. Soil types occurring in the project reach include Yolo loam, Yolo silt loam, Riverwash, and Water.[35]

[34] Solano County Water Agency, 2016. op. cit.
[35] Ibid.

5.7.2 Prior Environmental Analysis

5.7.2.1 2016 Program EIR

The 2016 Program EIR concluded that the completion of the proposed channel restoration activities along the Nishikawa reach would not increase the existing seismic and landslide risks at the project site. The 2016 Program EIR determined that there is a small potential for inadvertent, short-term bank destabilization during construction activities, which could present a hazard to workers on-site. However, the 2016 Program EIR concluded that normal grading operations would include consideration of these hazards and implementation of channel restoration activities along the Nishikawa reach would have a less than significant impact related to seismic hazards and landslides.

The 2016 Program EIR concluded that project activities would not increase existing erosion or long-term erosion risks within the Nishikawa reach. Restoration activities could result in potential short-term effects related to erosion during construction activities; however, erosion and sediment controls implemented to comply with Section 401 Water Quality Certification and the Construction General Permit would ensure that short-term construction-related project erosion and siltation impacts would be less than significant.

Due to the location and characteristics of the Nishikawa reach, the 2016 Program EIR concluded that there would be no impacts related to on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse. Additionally, the analysis determined that that the proposed restoration activities would not worsen the existing lateral spread risk of the creek because the project includes creek restoration activities aimed at stabilizing the stream banks. Overall, the 2016 Program EIR determined that the proposed stream restoration activities would not result in any significant or potentially significant impacts related to geology and soils and no mitigation measures were required.

5.7.2.2 Statewide Order EIR

The Statewide Order EIR determined that because the specific locations and scale of possible future permitted restoration projects were not known at the time the EIR was certified, the impacts associated with seismic hazards, including fault rupture, and liquefaction, and expansive soils would be potentially significant. Mitigation measures were identified to reduce potential impacts to a less-than-significant level. Additionally, the Statewide Order EIR determined that restoration projects permitted under the Statewide Order could directly or indirectly result in the loss of a unique paleontological resource or geological resource. Mitigation measures were identified to reduce potential impacts; however, because the efficacy of the mitigation measures could not be determined at the time the EIR was certified, impacts to paleontological resources/unique geologic resources were determined to be significant and unavoidable.

As part of the State Water Board or RWQCB's issuance of a NOA for a restoration project under the Order, compliance with Mitigation Measures GEO-1 through GEO-10 would be required when applicable to a given project.

Applicable Mitigation Measures. The following mitigation measures would be applicable to the proposed project:

Mitigation Measure GEO-1: **Include Geotechnical Design Recommendations.** To minimize potential impacts from seismic events and the presence of adverse soil conditions, lead agencies shall ensure that geotechnical design recommendations are included in the design of facilities and construction specifications. Recommended measures to address adverse conditions shall conform to applicable design codes, guidelines, and standards.

Mitigation Measure GEO-2: **Comply with the Alquist-Priolo Act.** For construction in an Alquist-Priolo Earthquake Fault Zone, a determination must be made by a licensed practitioner (California Certified Engineering Geologist) that no fault traces are present within structures, such as setback levees. The standard of care for such determinations includes direct examination of potentially affected subsurface materials (soil and/or bedrock) by logging of subsurface trenches. Levee structures may also be required to have heavier reinforcement against strong ground motion, in compliance not only with California regulations but, in many cases, with additional federal regulations.

Mitigation Measure GEO-3: **Conduct Individual Restoration Project Geotechnical Investigation and Report.** When a restoration project involves potentially significant grading activities and warrants consideration of geotechnical factors and/or constraints (e.g., work on flood control levees, work in areas with certain soil types subject to liquefaction), the project proponent shall conduct and prepare a geotechnical report to address potential issues and concerns. The geotechnical report shall include a quantitative analysis to determine whether excavation or fill placement would result in a potential for damage due to soil subsidence during and/or after construction. Project designs shall incorporate measures to reduce the potential damage to a less-than-significant level. Measures shall include but not be limited to:

- Removal and recompaction of existing soils susceptible to subsidence
- Ground improvement (such as densification by compaction or grouting, soil cementation)
- Reinforcement of structural components to resist deformation due to subsidence

The assessment of subsidence for specific projects shall analyze the individual restoration projects potential for and severity of cyclic seismic loading. A geotechnical investigation shall also be performed by an appropriately licensed professional engineer

and/or geologist to determine the presence and thickness of potentially liquefiable sands that could result in loss of bearing value during seismic shaking events. Project designs shall incorporate measures to mitigate potential damage to a less-than-significant level. Measures shall include but not be limited to:

- Ground improvement (such as grouting or soil cementation)
- Surcharge loading by placement of fill, excavation, soil mixing with non-liquefiable finer-grained materials, and replacement of liquefiable materials at shallow depths
- Reinforcement of structural components to resist deformation due to liquefaction

An analysis of individual restoration projects probable and credible seismic acceleration values, conducted in accordance with current applicable standards of care, shall be performed to provide for a suitable project design. Geotechnical investigations shall be performed, and geotechnical reports shall be prepared in the responsible care of California licensed geotechnical professionals including professional civil engineers, certified geotechnical engineers, professional geologists, certified engineering geologists, and certified hydrogeologists, all of whom practice within the current standards of care for such work.

Mitigation Measure GEO-4: **Adhere to International Building Code.** Constructed facilities shall be required to adhere to the current approved version of the International Building Code (IBC), and to comply with the IBC for critical structures (e.g., levees).

Mitigation Measure GEO-5: **Conduct Expansive Clay Investigation.** In areas where expansive clays exist, a licensed professional engineer or geologist shall perform a hydrogeological/geotechnical investigation to identify and quantify the potential for expansion, particularly differential expansion of clayey soils caused by leakage and saturation beneath new improvements. Measures could include but are not limited to removing and recompacting problematic expansive soils, stabilizing soils, and/or reinforcing the constructed improvements to resist deformation from expansion of subsurface soils.

Mitigation Measure GEO-6: **Implement Measures for Waterway Construction Activities.** For projects that involve the engineered subsurface structural components (e.g., of surface impoundments, levees, bridge footings/abutments) project design shall provide for protection from leakage to the subsurface. Measures could include but are not

limited to rendering concrete less permeable by specifying concrete additives such as bentonite, designing impermeable liner systems, designing leakage collection and recovery systems, and constructing impermeable subsurface cutoff walls.

For restoration projects that could cause subsurface seepage of nuisance water onto adjacent lands, the following measures shall be implemented:

- Perform seepage monitoring studies by measuring the level of shallow groundwater in the adjacent soils, to evaluate baseline conditions. Continue monitoring for seepage during and after project implementation.
- Develop a seepage monitoring plan if subsurface seepage constitutes nuisance water on the adjacent land.
- If it is determined that seepage from the restoration project is responsible for making adjacent lands not usable, implement seepage control measures, such as installing subsurface agricultural drainage systems to avoid raising water levels into crop root zones. Cutoff walls and pumping wells can also be used to mitigate the occurrence of subsurface nuisance water.

Mitigation Measure GEO-7: **Implement Measures for Levee Construction and Other Fill Embankment Designs.** For projects that involve the construction of setback levees, surface impoundments, and other fill embankments, the project design shall place fill in accordance with state and local regulations and the prevailing standards of care for such work. Measures could include but are not limited to blending the soils most susceptible to landsliding with soils that have higher cohesion characteristics; installing slope stabilization measures; designing top-of-slope berms or v-ditches, terrace drains, and other surface runoff control measures; and designing slopes at lower inclinations.

Mitigation Measure GEO-8: **Assess the Presence of Highly Organic Soils.** For projects that would result in a significant or potentially significant risk to structures because of the presence of highly organic soils, the lead agencies shall require a geotechnical evaluation before construction to identify measures to mitigate organic soils. The following measures may be considered:

- Over-excavation and import of suitable fill material.
- Structural reinforcement of constructed works to resist deformation.

- Construction of structural supports below the depth of highly organic soils into materials with suitable bearing strength.

Mitigation Measure GEO-9: **Conduct a General Project-Level Analysis.** Restoration projects implemented by other public proponents under the Order would be required to do a desktop search on whether the project site would be located in a paleontological sensitive unit. If the project site was determined to be located on a paleontological sensitive unit, then Mitigation Measure GEO-9 (and Mitigation Measure GEO-10, below, as applicable) would be implemented. If restoration projects implemented under the Order fall outside a paleontological sensitive unit, GEO-9 (and Mitigation Measure GEO-10, below) would be not required.

During project development and project-level analysis, a paleontological resource monitoring and recovery plan shall be developed and implemented for all actions determine by the project proponent to be located on a paleontological sensitive unit. The plan shall include protocols for paleontological resources monitoring in areas where construction-related excavation would affect sediment with moderate to high paleontological sensitivity.

The paleontological resource monitoring and recovery plan shall provide guidelines for the establishment of a yearly or biannual monitoring program led by a qualified paleontologist to determine the extent of fossiliferous sediment being exposed and affected by erosion and determine whether paleontological resources are being lost. If the loss of scientifically significant paleontological resources is documented, then a recovery program should be implemented.

Mitigation Measure GEO-10: **Conduct Worker Training.** For projects that are determined to have moderate to high paleontological sensitivity, before the start of any ground-disturbing activity (e.g., excavation or clearing), a qualified paleontologist shall prepare paleontological resources sensitivity training materials for use during project worker environmental training or equivalent. This training shall be conducted by a qualified environmental trainer under the supervision of the qualified paleontologist. For restoration projects that involve construction crew phases, additional trainings shall be conducted for new construction personnel. The paleontological resource sensitivity training shall focus on the types of resources that could be encountered within the individual restoration project site and the procedures to follow if they are found. Project proponents and/or project contractors shall retain documentation demonstrating that all construction personnel attended the paleontological resource

sensitivity training before the start of work on the site and shall provide documentation to the project manager upon request.

5.7.3 Impact Analysis

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. ***(No New Impact)***

The State of California enacted the Alquist-Priolo Earthquake Fault Zoning Act in 1972, requiring the State Geologist to delineate Earthquake Fault Zones (EFZ) along known active faults that have high potential for fault rupture. Active faults are defined as a fault that has surface displacement within the last 11,000 years.[36] State regulations prohibit habitable structures from being sited within 50 feet of an active fault. According to the California Earthquake Hazards Zone Application ("EQ Zapp"),[37] the project site is approximately 23 miles northeast of the Green Valley Fault, which is the nearest Alquist-Priolo Fault Zone. Therefore, fault rupture through the site is not anticipated and the proposed project would not directly or indirectly cause substantial adverse effects related to fault rupture. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

ii. Strong seismic ground shaking? ***(No New Impact)***

The project site is located in an area with a high potential for moderate to intense ground shaking. However, the project proposes no changes to the existing land use and the potential for strong seismic ground shaking to occur at the project area would be the same as in the existing condition. No structures or other developments are proposed as part of the project. The project footprint would be limited to Putah Creek and its associated riparian habitat and human occupation of the project area would not occur after the completion of construction other than for occasional maintenance activities. Consequently, the proposed project is not expected to expose people or structures to risks associated with strong ground shaking. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

iii. Seismic-related ground failure, including liquefaction? ***(No New Impact)***

Liquefaction occurs when loose, fine-grained soil temporarily transforms to a fluid-like state similar to quicksand. This phenomenon occurs due to strong seismic activity and lessens the soil's ability to support a structural foundation. The Solano County General Plan and earthquake planning

[36] California, State of. 2019. Department of Conservation. Alquist-Priolo Earthquake Fault Zones. Website: www.conservation.ca.gov/cgs/alquist-priolo (accessed October 10, 2022).

[37] California, State of. Department of Conservation. *California Earthquake Hazards Zone Application ("EQ Zapp").* Website: https://maps.conservation.ca.gov/cgs/EQZApp/app/ (accessed October 10, 2022).

documents indicate that the project site has a medium liquefaction potential.[38] The Yolo County General Plan and emergency planning documents do not identify the level of liquefaction risk in the project area. However, no habitable structures or other developments are proposed as part of the project. The project footprint would be limited to Putah Creek and its associated riparian habitat and human occupation of the project area would not occur after the completion of construction other than for occasional maintenance activities. Consequently, the proposed project is not expected to expose people or structures to risks associated with seismic-related ground failure. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

iv. Landslides? ***(No New Impact)***

Seismically induced landslides and other slope failures are common occurrences during or soon after earthquakes in areas with significant ground slopes. Topography at the project site is generally flat lying except for the incised channel. The Solano County General Plan identifies the project area as having slopes of less than 4 percent and does not include the project area as an area of slope hazard.[39] The Yolo County General Plan identifies the project area's landslide susceptibility as low.[40] Additionally, no habitable structures or other developments are proposed as part of the project. The project footprint would be limited to Putah Creek and its associated riparian habitat and human occupation of the project area would not occur after the completion of construction other than for occasional maintenance activities. Consequently, the proposed project would not expose people or structures to risks associated with landslides. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

b. Would the project result in substantial soil erosion or the loss of topsoil? ***(No New Impact)***

Construction activity anticipated for the proposed project components would disturb soil that could be subject to wind or water erosion. The potential for soil erosion exists during the period of earthwork activities and between the time when earthwork is completed and new vegetation is established. Exposed soils could be entrained in stormwater runoff and transported off the project site. Construction specifications require the preparation of a Stormwater Pollution and Prevention Plan (SWPPP) prior to any ground disturbance activities as required by the National Pollutant Discharge Elimination System (NPDES) General Permit (GP) for Construction (Order 2009-009-DWQ). The SWPPP would provide the details of the erosion control measures to be applied on the project site during the construction period, including Best Management Practices (BMPs) for erosion control that are recognized by the San Francisco Bay RWQCB. Additional details regarding the SWPPP are provided in Section 5.10, Hydrology and Water Quality.

Additionally, project activities would be subject to Clean Water Act (CWA) Section 401, Water Quality Certification, for discharges of dredged and fill materials through the Central Valley Regional Water Quality Control Board (CVRWQCB). As part of this certification, CVRWQCB would require erosion controls in all areas disturbed by project activities, as is discussed in further detail in Section

38 Solano, County of. 2008. *Solano County General Plan.* Figure HS-9, Liquefaction Potential. November.
39 Solano, County of, 2008. *Solano County General Plan.* Figure HS-7, Slope Hazards. November.
40 Yolo, County of, 2009. *Yolo County General Plan.* Figure HS-2, Landslide Susceptibility. November.

5.10, Hydrology and Water Quality. These regulatory controls would ensure that the project's erosion impacts are less than significant.

One of the purposes of project activities is to reduce existing erosion in the project reach. The project would utilize a number of stabilization methods, including slope recontouring, constructing rock cross-vane grade/flow control structures and installing of rock revetment, log revetment, and/or root wads to stabilize stream banks and reduce erosion. Meandering of the low-flow stream channel within the incised larger channel over time is a natural process and would not be considered an adverse impact if sediment inputs and outputs are more or less in equilibrium.

Erosion and sediment controls implemented to comply with Section 401, Water Quality Certification, with any required SWPPPs would ensure that project impacts resulting in substantial soil erosion or the loss of topsoil would be less than significant. No new or substantially more severe significant impacts related to erosion would occur.

c. Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? ***(No New Impact)***

With the exception of the stream banks, there are no steep slopes in the project area that could become unstable. One of the purposes of the proposed project is to stabilize streambanks in the project area, which would reduce risk of landslides and slope failure compared to existing conditions. There is a small potential for inadvertent, short-term bank destabilization during construction, which could present a hazard to workers on-site. Under these conditions, the construction manager and equipment operators would take all precautions to minimize this hazard as part of normal operations.

No habitable structures or other developments are proposed as part of the project. The project footprint would be limited to Putah Creek and its associated riparian habitat and human occupation of the project area would not occur after the completion of construction other than for occasional maintenance activities. Consequently, the proposed project is not expected to expose people or structures to risks associated with unstable soils. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

d. Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property? ***(No New Impact)***

Expansion and contraction of volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. Expansive soils are common throughout California and can cause damage to foundations and slabs unless properly treated during construction.

Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. No structures or

other developments are proposed as part of the project. The project footprint would be limited to Putah Creek and its associated riparian habitat and human occupation of the project area would not occur after the completion of construction other than for occasional maintenance activities. No new or substantially more severe significant impacts related to expansive soils would occur.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? ***(No New Impact)***

The proposed project would not involve the use of septic systems or alternative wastewater disposal systems. No new impacts or substantially more severe significant impacts related to soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems would occur.

f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? ***(No New Impact)***

Paleontological resources include fossilized remains or traces of mammals, plants, and invertebrates, as well as their imprints. Such fossil remains, as well as the geological formations that contain them, are also considered a paleontological resource. Together, they represent a limited, nonrenewable scientific and educational resource. No paleontological resources are currently known to exist on the project site; however, the proposed project would require excavation of approximately 27,686 cubic yards of soil. Ground-disturbing activities could adversely impact previously unidentified fossils. Implementation of Mitigation Measures GEO-9 and GEO-10, identified in the Statewide Order EIR would reduce impacts on paleontological resources to less-than-significant levels by requiring monitoring in paleontologically sensitive areas and training for construction workers so that they can identify and avoid paleontological resources during construction activities.

5.8 GREENHOUSE GAS EMISSIONS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

5.8.1 Background

Greenhouse gases (GHGs) are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO_2);
- Methane (CH_4);
- Nitrous oxide (N_2O);
- Hydrofluorocarbons (HFCs);
- Perfluorocarbons (PFCs); and
- Sulfur Hexafluoride (SF_6).

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere and enhancing the natural greenhouse effect, believed to be causing global warming. While manmade GHGs include naturally occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation.

These gases vary considerably in terms of Global Warming Potential (GWP), a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The GWP is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere ("atmospheric lifetime"). The GWP of each gas is measured relative to CO_2, the most abundant GHG. The definition of GWP for a particular

GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e).

5.8.2 Prior Environmental Analysis

5.8.2.1 2016 Program EIR

The 2016 Program EIR determined that implementation of the Program would not conflict with any of the 39 recommended actions contained in the State's AB 32 Climate Change Scoping Plan and that the State's AB 32 Scoping Plan will generally be implemented through mandatory regulations enacted by the CARB. Additionally, the 2016 Program EIR determined that the maximum total GHG emissions from the project would be approximately 997 metric tons per year of CO_2e, which would be less than 4 percent of the threshold of 25,000 metric tons per year. If a project's total emissions are below this limit, it is assumed that the activities of the project would generally not conflict with the State's ability to reach AB 32 overall goals. The 2016 Program EIR determined that the Program would not be in conflict with any of the local plans for Yolo County, Solano County, the City of Winters, or the YSAQMD AQMP for reducing GHG emissions and that the local plans do not contain restrictions on minor construction projects. Overall, the 2016 Program EIR concluded that impacts regarding GHG emissions would be less than significant and mitigation would not be required.

5.8.2.2 Statewide Order EIR

The Statewide Order EIR determined that construction activities for restoration projects permitted under the Statewide Order could emit GHGs. Mitigation Measure AIR-3 was identified to reduce impacts associated with GHG emissions during construction activities; however, because the efficacy of this mitigation measure could not be quantified, this impact was determined to significant and unavoidable. Operation and maintenance activities associated with potential restoration projects permitted under the Statewide Order were determined to be less than significant.

As part of the State Water Board or RWQCB's issuance of a NOA for a restoration project under the Statewide Order, compliance with Mitigation Measure AIR-3 would be required when applicable to a given project.

Applicable Mitigation Measures. The following mitigation measure would apply to the proposed project:

Mitigation Measure AIR-3: **Minimize GHG Emissions.** Restoration projects permitted under the Order shall implement the GHG mitigation measures listed in the most recent air district guidance documents (e.g., CAPCOA 2010; BAAQMD 2011), as appropriate for the project site and conditions. Current versions of such guidance documents list the following for construction of projects:

- Use alternative fuels for construction equipment.
- Use electric and hybrid construction equipment.

- Limit construction equipment idling beyond regulatory requirements.
- Institute a heavy-duty off-road vehicle plan.
- Implement a construction vehicle inventory tracking system.
- Use local building materials for at least 10 percent of total materials.
- Recycle or reuse at least 50 percent of construction waste or demolition materials.

In addition, the California Attorney General's Office has developed a list of measures and strategies to reduce GHG emissions at the individual project level. As appropriate, the measures can be included as design features of a restoration project, required as changes to the project, or imposed as mitigation (whether undertaken directly by the project proponent or funded by mitigation fees). The measures are examples; the list is not intended to be exhaustive. The following are best management practices to consider and implement (as applicable) during design, construction, and O&M of project facilities.

Transportation and Motor Vehicles

- Limit idling time for commercial vehicles, including delivery and construction vehicles.
- Use low- or zero-emission vehicles, including construction vehicles.
- Institute a heavy-duty off-road vehicle plan and a construction vehicle inventory tracking system for construction projects.
- Promote ridesharing.
- Provide the necessary facilities and infrastructure to encourage the use of low- or zero-emission vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).
- Provide a shuttle service to public transit/work sites.
- Provide information on all options for individuals and businesses to reduce transportation-related emissions.

SmartWay Truck Efficiency

This strategy involves requiring existing trucks/trailers to be retrofitted with the best available "SmartWay Transport" and/or CARB-approved technology. Technologies that reduce GHG emissions from trucks include devices that reduce aerodynamic drag and rolling resistance. Aerodynamic drag may be reduced using devices such as cab roof fairings, cab side gap fairings, cab side skirts, and on the trailer side, skirts, gap fairings, and trailer tail. Rolling resistance can be reduced using single wide tires or low-rolling resistance tires and automatic tire inflation systems on both the tractor and the trailer.

Tire Inflation Program

The strategy involves actions to ensure that vehicle tire pressure is maintained to manufacturer specifications.

Blended Cements

The strategy to reduce CO2 emissions involves the addition of blending materials such as limestone, fly ash, natural pozzolan, and/or slag to replace some of the clinker in the production of Portland cement.

Anti-Idling Enforcement

The strategy guarantees emissions reductions as claimed by increasing compliance with anti-idling rules, thereby reducing the amount of fuel burned through unnecessary idling. Measures include enhanced field enforcement of anti-idling regulations, increased penalties for violations of anti-idling regulations, and restriction on registrations of heavy-duty diesel vehicles with uncorrected idling violations.

5.8.3 Impact Analysis

a. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? ***(No New Impact)***

This section describes the proposed project's construction- and operational-related GHG emissions and contribution to global climate change.

Construction Activities. The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation

management plan. During restoration activities, GHGs would be emitted through the operation of construction equipment and from worker vehicles, which typically use fossil-based fuels to operate. The combustion of fossil-based fuels creates GHGs such as CO_2, CH_4, and N_2O. Furthermore, CH_4 is emitted during the fueling of heavy equipment.

The YSAQMD does not have an adopted threshold of significance for construction-related GHG emissions. However, lead agencies are encouraged to quantify and disclose GHG emissions that would occur during construction. Using CalEEMod, it is estimated that construction of the proposed project would generate approximately 579.6 metric tons of CO_2e (Appendix A). Because construction activities would be temporary and emissions would not exceed an established threshold, project construction impacts associated with GHG emissions would be considered less than significant. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

Operational Emissions. Long-term GHG emission impacts are associated with stationary sources and mobile sources. Stationary source emissions result from the consumption of natural gas and electricity. Mobile source emissions result from vehicle trips and result in air pollutant emissions affecting the entire air basin. As discussed above, the proposed project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The project would not result in an increase in the generation of operational vehicle trips or vehicle miles traveled that would generate GHG emissions. The project would not be a source of stationary source emissions. Therefore, project operational impacts associated with GHG emissions would be considered less than significant. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

*b. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases? **(No New Impact)***

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. Due to the nature of the proposed project, the proposed stream channel restoration activities would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases. No new impacts or substantially more severe significant impacts would result with implementation of the proposed project.

5.9 HAZARDS AND HAZARDOUS MATERIALS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e. For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

5.9.1 Background

The project site is undeveloped and there is no evidence of hazardous materials storage within the project area including underground or aboveground storage tanks; polychlorinated biphenyl (PCB)-containing equipment; hazardous storage pits, ponds, or lagoons; or other physical evidence of contamination at the project site or in the nearby project vicinity.

5.9.2 Prior Environmental Analysis

5.9.2.1 2016 Program EIR

The 2016 Program EIR determined that there were no hazards or hazardous material sites within or in the nearby vicinity of the Nishikawa reach. However, it was determined that a potentially significant impact could arise if hazardous materials were discovered in the reach during construction. Implementation of Mitigation Measures 3.7-1 and 3.2-1, which require procedures to prevent contamination from construction equipment and implementation of procedures if hazardous materials are discovered, would reduce potential risks related to construction vehicle and equipment fluid drips, spills, or leaks to a less-than-significant level.

The 2016 Program EIR determined that the misapplication of herbicides during project activities to reduce invasive species and weeds could result in potential environmental impacts. Implementation of Mitigation Measure 3.4-12, which requires implementation of herbicide protective actions (as detailed in Section 5.4, Biological Resources), would reduce this potential impact to a less-than-significant level.

The 2016 Program EIR determined that the potential exists for an accidental ignition of a wildland fire due to the use of power equipment and vehicles. Implementation of Mitigation Measure 3.7-2 would reduce this impact to less-than-significant levels by requiring on-site fire suppression equipment and spark arrestors on all equipment with internal combustion engines and restricting activities on high fire danger days.

Applicable Mitigation Measures. The following mitigation measure identified in the 2016 Program EIR would apply to the proposed project.

Mitigation Measure 3.2-1: **Procedures to Prevent Contamination from Construction Equipment.** 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.

Mitigation Measure 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.

    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 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.

Mitigation Measure 3.7-2: **Fire Prevention Measures.** The following fire prevention measures shall be implemented:

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 Yolo-Solano Air Quality Management 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.

5.9.2.2 Statewide Order EIR

The Statewide Order EIR determined that certain restoration projects permitted under the Statewide Order would have ground-disturbing construction activities that could cause the release of previously unidentified contaminated soil and/or groundwater that could expose construction workers, the public, and the environment to hazardous materials. Implementation of Mitigation Measures HAZ-1 through HAZ-3, which require implementation of procedures if hazardous materials are discovered, would reduce potential risks related to construction to a less-than-significant level.

The Statewide Order EIR determined that construction of restoration projects, constructed facilities (natural or artificial infrastructure), and operations and maintenance of those facilities permitted by the Statewide Order could be located within 2 miles of an airport, which could create a safety hazard for construction workers, people in the surrounding area, and airport operations. Mitigation Measure HAZ-4 was identified to reduce this impact; however, because the efficacy of the mitigation measure could not be determined at the time the EIR was certified, this impact was determined to be significant and unavoidable.

The Statewide Order EIR determined that future restoration projects permitted under the Statewide Order could be located in areas where their construction could physically interfere with adopted emergency response plans or evacuation plans or result in inadequate emergency access. Implementation of Mitigation Measure HAZ-5 would reduce potential risks related to emergency access to a less-than-significant level. In addition, the Statewide Order EIR determined that restoration projects could pose a threat to people and structures because of wildfires and could create new vector habitat that would pose a significant public health hazard. The Statewide Order EIR identified Mitigation Measures FIRE-1 (see Section 5.20 Wildfire) and HAZ-6 to reduce these impacts to a less-than-significant level.

As part of the State Water Board or RWQCB' issuance of a NOA for a restoration project under the Statewide Order, compliance with Mitigation Measures FIRE-1 and HAZ-1 through HAZ-6 would be required when applicable to a given project.

Applicable Mitigation Measures. As described further below in Section 5.20, Wildfire, Mitigation Measure FIRE-1 would not apply to the proposed project. The following mitigation measures would apply to the proposed project:

Mitigation Measure HAZ-1: **Prepare and Implement a Health and Safety Plan and Provide Qualified Oversight of Fill Removal Related to Earthmoving Activities.** The following measures shall be implemented before and during construction of any restoration project permitted under the Order:

A health and safety plan for the project shall be developed and implemented. This plan shall clearly notify all workers of the potential to encounter hazardous materials during ground-disturbing work and other construction activities. The plan shall identify proper handling and disposal procedures for contaminants expected to be on-site and shall provide maps and phone numbers for local hospitals and other emergency contacts. Construction workers shall comply with all protocols outlined in the health and safety plan throughout project implementation.

Any hazardous materials being stored in the project area and not needed for construction activities shall be removed and disposed of at appropriately permitted locations before construction. A qualified professional (e.g., geologist or engineer) shall oversee fill excavation activities and work in potential project areas that contain abandoned underground storage tanks requiring removal, to properly identify any contaminated soils that may be present. Excavation of underground storage tanks must comply with county ordinances and policies. If contaminated soils are found, Mitigation Measure HAZ-2 shall be implemented.

Removal of underground storage tanks associated with the restoration project shall include measures to ensure their safe transport and disposal. Remediation actions, if necessary, shall be defined in consultation with the local RWQCB and implemented during construction.

Mitigation Measure HAZ-2: **Notify Appropriate Federal, State, and Local Agencies If Contaminated Soils Are Identified, and Complete Recommended Remediation Activities.** The following measures shall be implemented before construction of any restoration project

permitted under the Order if contaminated soils are found on the project site:

- The appropriate federal, state, and local agencies shall be notified if evidence of previously undiscovered soil or groundwater contamination (e.g., stained soil, odorous groundwater) is encountered during construction activities. Any contaminated areas shall be cleaned up in accordance with there commendations of the RWQCB, DTSC, or other appropriate federal, state, or local regulatory agencies.

- A site plan shall be prepared for the remediation activities appropriate for the proposed land uses, including excavation and removal of on-site contaminated soils, and needed redistributions of clean fill material on the study area. The plan shall include measures to ensure the safe transport, use, and disposal of contaminated soil and building debris removed from the site. If ground-disturbing activities encounter contaminated groundwater, the construction contractor shall report the contamination to the appropriate agencies, dewater the area, and treat the groundwater to remove the contaminants before discharge into the sanitary sewer system. The construction contractor shall comply with the plan and applicable federal, state, and local laws. The plan shall outline specific procedures for handling and reporting of hazardous materials, and for disposing of hazardous materials removed from the site at an appropriate off-site facility.

Mitigation Measure HAZ-3: **Notify Appropriate Federal, State, and Local Agencies If Accidental Discharges of Hazardous Materials**. Following an accidental discharge of a reportable quantity of a hazardous material or an unknown material, the appropriate federal, state, and local agencies shall be notified. Any contaminated areas shall be cleaned up in accordance with the recommendations of the RWQCB, DTSC, or other appropriate federal, state, or local regulatory agencies.

Mitigation Measure HAZ-4: **Establish Airport Operation Area Buffer Zones.** Restoration projects permitted under the Order shall avoid creating hazardous wildlife attractants within a distance of 10,000 feet of a designated Airport Operations Area.

Mitigation Measure HAZ-5: **Coordinate with Applicable Federal, State, and Local Agencies and Districts.** Before construction, project proponents implementing restoration projects permitted under the Order shall coordinate with the appropriate federal, state, and local government agencies, districts, and emergency response agencies regarding the timing of

construction projects that would occur near the project sites. Specific measures to mitigate potentially significant impacts shall be determined during the interagency coordination, and shall include measures to achieve the following performance standards:

- Reduce potential traffic impacts so that no more than 30 trucks per hour will be added to any road (e.g., by scheduling construction truck trips and designating alternate haul routes to disperse truck trips).
- Reduce potential traffic safety impacts (e.g., by employing flaggers to manage traffic flow at conflict locations).
- Provide outreach and community noticing (e.g., via the web, utility bill inserts, and other methods) for locations where multiple projects will create construction traffic simultaneously.

Mitigation Measure HAZ-6: **Prepare and Implement a Vector Management Plan.** The following measures shall be implemented by restoration projects permitted under the Order to prevent public health hazards posed by vector habitat as applicable (e.g., restoration projects that result in standing water and are located near populated areas):

- Freshwater habitat management shall include management of water control structures, vegetation management, mosquito predator management, drainage improvements, and other best management practices. The agency implementing the restoration project shall coordinate with the California Department of Fish and Wildlife and local mosquito and vector control agencies regarding these strategies and specific techniques to help minimize mosquito production.
- Permanent ponds shall be maintained to increase the diversity of waterfowl yet decrease the introduction of vectors through constant circulation of water, vegetation control, and periodic draining of ponds.
- The project shall avoid ponding in tidal marsh habitat or in areas within the waterside of setback levees. Restoration projects shall be designed with methods to reduce mosquito breeding.

5.9.3 Impact Analysis

a. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? ***(No New Impact)***

Hazardous substances include chemicals regulated under both the United States Department of Transportation[41] and the U.S. Environmental Protection Agency (USEPA)[42] "Hazardous Materials" regulations. Hazardous waste requires specific handling and disposal procedures because of potential damage to public health and the environment. The use of construction vehicles and equipment, such as trucks and excavators, could result in minor contamination releases from gasoline, oil, antifreeze, grease, or other equipment fluid drips or leaks within the project area. Construction activities would be conducted with standard construction practices and in accordance with all applicable Cal-OSHA and other safety regulations to minimize the risk to the public. Compliance with federal, State, and local hazardous materials laws and regulations would minimize the risk to the public presented by these potential hazards during construction of the project. Transportation of any hazardous materials generated by demolition or excavation is regulated by the federal Department of Transportation and the California Department of Transportation (Caltrans). As such, transportation of hazardous materials off-site must be handled by licensed hazardous waste haulers. Additionally, implementation of Mitigation Measure 3.2-1 would require proper procedures to prevent contamination from vehicle or equipment leaks during project activities, which would reduce impacts related to construction to a less-than-significant level.

Misapplication of herbicides used during project activities to reduce invasive species and weeds could result in potential human health impacts. However, implementation of Mitigation Measure 3.4-12 as detailed in Section 5.4, Biological Resources, would require the implementation of herbicide protection actions, which would reduce impacts to less-than-significant levels.

With implementation of Mitigation Measures 3.2-1 and 3.4-12, the proposed project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. No new impacts or substantially more severe significant impacts would occur.

b. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? ***(No New Impact)***

There are two main ways that the public and/or the environment could be affected by the release of hazardous materials from the project site, including: (1) exposing workers and/or the public to potentially contaminated soil and groundwater during construction and/or operation of the project; or (2) exposing workers and/or the public to hazardous building materials (e.g., lead paint, asbestos) during demolition of existing structures.

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41 United States Department of Transportation. *Regulations.* Available online at: phmsa.dot.gov/regulations (accessed October 10, 2022).

42 U.S. Environmental Protection Agency, 2012. *Hazardous Waste Regulations.* Available online at: www.epa.gov/osw/lawsregs/regs-haz.htm (accessed October 10, 2022).

As described above, small quantities of common hazardous materials would be used at the project site during construction of the proposed project. Improper use, storage, or handling could result in a release of hazardous materials into the environment which could pose a risk to construction workers and the public. However, SCWA would be required to comply with existing government regulations in its use and disposal of these materials, and such materials would not be used in sufficient strength or quantity to create a substantial risk to human or environmental health. Furthermore, implementation of Mitigation Measure 3.2-1, identified in the 2016 Program EIR, would require proper procedures to prevent contamination from vehicle or equipment leaks during project activities, which would reduce impacts related to construction to a less-than-significant level.

If soil or groundwater contamination were encountered in the project area during the course of construction, project workers could be affected, and, if contaminated soil were placed in the streambed, water quality impacts may occur. This potentially significant impact would be mitigated to a less-than-significant level through implementation of Mitigation Measure 3.7-1, Mitigation Measure HAZ-1, Mitigation Measure HAZ-2 and Mitigation Measure HAZ-3, which require proper procedures to be followed if hazardous materials are discovered.

With implementation of the mitigation measures identified in the previous CEQA documents, the proposed project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. No new impacts or substantially more severe significant impacts would occur.

c. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? ***(No New Impact)***

The project site is adjacent to the UC Davis Center for Aquatic Biology and Aquaculture, Putah Creek Facility. There are no schools or other school facilities within one-quarter mile of the project site. The proposed project would not routinely emit hazardous emissions, and handling of hazardous or acutely hazardous materials, substances, or waste on the project site (if any) would be temporary and cease upon project completion. Implementation of Mitigation Measures 3.7-1 and 3.2-1 would reduce potential risks related to construction vehicle and equipment fluid drips, spills, or leaks to a less-than-significant level. In addition, implementation of Mitigation Measure HAZ-1 through HAZ-3, identified in the Statewide Order EIR, which require proper procedures be followed if hazardous materials are discovered would ensure that impacts associated with the emission or handling of hazardous materials within 0.25 mile of an existing or proposed school would be less than significant. No new impacts or substantially more severe significant impacts would occur.

d. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? ***(No New Impact)***

The project site is not listed on any list of hazardous materials sites compiled pursuant to Government Code Section 65962.5[43] and no listed active sites are located in close proximity to the proposed project site.[44] Therefore, no significant hazard to the public or environment would be associated with a listed site. No new impacts or substantially more severe significant impacts would occur.

e. Would the project be located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? ***(No New Impact)***

The project site is approximately 0.75 miles southwest of the UC Davis University Airport. The University Airport does not have an airport land use plan but is required to have an Airport Layout Plan, which has been prepared by UC Davis. The proposed project does not include any structures and would not introduce any obstructions to the necessary airport clear space, and a safety hazard for people residing or working in the project area would not occur due to implementation of the proposed project. Furthermore, implementation of Mitigation Measure HAZ-4 identified in the Statewide Order EIR would require restoration projects permitted under the Order to avoid creating hazardous wildlife attractants within a distance of 10,000 feet of a designated Airport Operations Area. This would further ensure that the proposed project would not result in a safety hazard for people residing or working in the project area. No new impacts or substantially more severe significant impacts would occur.

f. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? ***(No New Impact)***

The proposed project involves stream restoration activities and would not alter the roadway network or build structures or impediments on or near the roadway network or create significant roadway hazards. Furthermore, project activities would not substantially increase traffic volumes at an intensity that would interfere with the emergency access to and from the project area; therefore, the project would have no impact related to emergency access. As required by Mitigation Measure HAZ-5, SWCA would coordinate with the appropriate local government agencies and emergency response providers regarding the timing of construction activities in order to ensure that project implementation would not impair implementation of or interfere with an adopted emergency response/evacuation plan. Therefore, no new impacts or substantially more severe significant

[43] California Environmental Protection Agency. 2020. Cortese List Data Resources. Website: calepa.ca.gov/sitecleanup/corteselist (accessed October 10, 2022).

[44] State Water Resources Control Board. 2021. GeoTracker. Website: https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=2100+Donald+Drive%2C+Moraga%2C+CA# (accessed October 10, 2022).

impacts related to implementation of an adopted emergency response plan or emergency evacuation plan would occur.

g. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires? ***(No New Impact)***

The project site is not located within a State Responsibility Area and has not been designated as High or Very High Fire Hazard Severity Zone.[45] Nonetheless, Mitigation Measure 3.7-2 identified in the 2016 Program EIR would be implemented which require on-site fire suppression equipment and spark arrestors on all equipment with internal combustion engines and restricting activities on high fire danger days. Construction and maintenance activities associated with the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. In the long term, reduction of invasive riparian vegetation along the creek channel would reduce the risk of fire. Therefore, no new or substantially more severe significant impacts related to wildland fires would occur.

[45] California Department of Forestry and Fire Protection Fire and Resource Assessment Program. *FHSZ Viewer.* Website: https://egis.fire.ca.gov/FHSZ/ (accessed October 10, 2022).

5.10 HYDROLOGY AND WATER QUALITY

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☐	☒
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☐	☒
i. Result in substantial erosion or siltation on- or off-site;	☐	☐	☐	☒
ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☐	☒
iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv. Impede or redirect flood flows?	☐	☐	☐	☒
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

5.10.1 Background

5.10.1.1 Hydrology

The Putah Creek watershed lies along the eastern flank of the California Coast Range and the western side of the Central Valley, within USGS hydrologic unit code (HUC) 18020109. In all, the 90-mile-long creek drops over 3,540 feet and drains a watershed area of approximately 660 square miles. The Putah Creek watershed is bordered by the watersheds of Cache Creek to the north and Napa River to the southwest.[46]

Putah Creek is a major stream in Northern California that is a tributary of the Yolo Bypass and, ultimately, the Sacramento River. Stretching approximately 85 miles, Putah Creek runs through Yolo and Solano counties in Northern California. Prior to human intervention, Putah Creek flowed out of the Vaca Mountains across a broad area, frequently changing its course. In the lower reaches of the watershed, a mildly sloping alluvial plain formed by accumulated sediment deposition from Putah Creek created the rich agricultural land of this region.

[46] Solano County Water Agency, 2016. Op. cit.

Flood control measures, development, and grading for agriculture have caused the present lower Putah Creek to carve out a deeper channel. The excavation of a south fork channel for additional flood control and gravel mining upstream of the Pedrick Road Bridge and the city of Winters in the 1960s and 1970s also contributed to the downcutting of the channel. After several drought years in the late 1980s, the majority of Putah Creek went dry, prompting a landmark lawsuit that resulted in the signing of the Putah Creek Accord in 2000. The Accord established releases from the Monticello Dam and Putah Diversion Dam to maintain stream flows in Putah Creek, with natural flow regimes which spike in winter/spring and ebb in summer/fall.

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. These reaches cannot "self-adjust" to more natural morphology because flow velocities are insufficient to mobilize sediment and natural gravel recharge is substantially arrested. In this condition, the creek is virtually devoid of riffles and spawning habitat, and lacks the materials and functions needed to build such features naturally.

5.10.1.2 Water Quality

According to the *Final 2018 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report*), Putah Creek is listed as impaired by mercury.[47]

5.10.1.3 Groundwater

Lower Putah Creek, including the project area, overlies the northern end of the Solano Subbasin, a 664-square-mile subbasin of the Sacramento Valley Groundwater Basin. The Solano Subbasin is the largest groundwater basin in Solano County. Groundwater within the Solano Subbasin is considered to be of generally good quality. Total dissolved solids (TDS) range from 250 parts per million (ppm) to 500 ppm in the northern portion of the basin (which includes the project area), below or approaching the 500-ppm secondary maximum contaminant level (MCL). Most of the water within the subbasin is classified as hard to very hard. Boron concentrations are less than 0.75 ppm in the project area's portion of the basin (levels above 1.0 ppm can affect sensitive tree crops). Basin arsenic concentrations are typically between 0.02 ppm and 0.05 ppm (the primary MCL for arsenic is 0.05 ppm).[48,49]

5.10.1.4 Floodplains

The Federal Emergency Management Agency (FEMA) is the lead federal agency responsible for flood hazard assessment and mitigation and is the nationwide administrator of the National Flood

47 State Water Resources Control Board (SWRCB). 2021. *Final 2018 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report).* Website: www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2018_integrated_report.html (accessed October 13, 2022).

48 Department of Water Resources, 2004. *Sacramento Valley Groundwater Basin Solano Subbasin, California's Groundwater Bulletin 118.* February 27. Website: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/5_021_66_SolanoSubbasin.pdf (accessed October 13, 2022).

49 Solano County Water Agency, 2016. Op. cit.

Insurance Act of 1968 enacted to protect lives and property, and to reduce the financial burden of providing disaster assistance. FEMA has adopted the 100-year floodplain as the base flood standard for the National Flood Insurance Program (NFIP). FEMA issues the Flood Insurance Rate Maps (FIRMs) for communities that participate in the NFIP. These FIRMs present delineations of flood hazard zones.

According to FEMA Flood Insurance Rate Map (FIRM) Map No. 06113C0593G (June 18, 2010), the project site is located within Zone A, a special flood hazard flood hazard area. Zone A is defined by FEMA as areas with a 1 percent annual chance of flooding. The 100-year floodplain is largely within the creek banks because the creek channel is deeply incised. The 100-year mapped floodplain does not appreciably extend beyond the project area.

5.10.1.5 Water Quality Regulations

Clean Water Act. The USEPA adopted the Clean Water Act (CWA) in 1977 to set a framework for establishing regulations to protect the chemical, physical, and biological integrity of the nation's waters. Section 401 of the federal CWA requires an applicant for a federal license or permit to conduct any activity, which may result in a discharge to Waters of the U.S., to obtain certification from the State that the discharge will comply with other provisions of the act. A Section 401 Water Quality Certification is also required under the State Porter-Cologne Act which predates the CWA and regulates discharges to Waters of the State. Waters of the State include more than just Waters of the U.S., like groundwater and surface waters not considered Waters of the U.S. Additionally, it prohibits discharges of "waste" as defined and this definition is broader than the CWA definition of "pollutant." Discharges under the Porter-Cologne Act are permitted by Waste Discharge Requirements (WDRs) and may be required even when the discharge is already permitted or exempt under the CWA. The applicable waste discharge requirements for the proposed project are contained in the National Pollutant Discharge Elimination System (NPDES) *the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities*[50] (Construction General Permit), which is described further below.

The NPDES under Section 402(p) of the CWA aims to reduce the direct discharge of pollutants into waterways and manage additional pollution runoff. The Central Valley Regional Water Quality Control Board (RWQCB) has the authority to administer permits within its jurisdiction including Yolo and Solano counties.

Section 303(d) of the CWA requires that each state identify "impaired" water bodies or segments of water bodies that do not meet at least one of the listed state water-quality standards. When the water body or segment is listed as impaired, the state institutes a Total Maximum Daily Load (TMDL) for the pollutant found to be creating the impairment. The TMDL is the maximum amount of a pollutant that a water body can receive and still meet water-quality standards and is usually calculated based on the total amount of allowable loads generated by a single pollutant deriving from all of its originating point and non-point sources. The 303(d) list identifies water bodies that will need to establish a TMDL in the future in order to abide by water-quality standards. As per

[50] State Water Resources Control Board (SWRCB). 2009. Order No. 2009-0009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ.

303(d), the RWQCB has identified impaired water bodies within its authority as well as the associated pollutants causing the impairment.

Porter Cologne Water Quality Act. California adopted the Porter-Cologne Water Quality Act in 1969, giving the SWRCB and Regional Water Quality Control Boards (RWQCB) the authority over State water rights and policies in relation to managing and enforcing water quality. The RWQCBs adopt Water Quality Control Plans (Basin Plans) that outline their region's water quality conditions and standards as well as beneficial uses of the region's ground and surface water. The Project site lies within the boundaries of Region 5 governed by the Central Valley RWQCB (CVRWQCB) within the Sacramento River Basin. The most recent Basin Plan[51] for the Sacramento River Basin was updated by the RWQCB in 2019 and is revised periodically to reflect relevant ecological, technological, and political changes. The Basin Plan also includes water quality standards for groundwater.The Basin Plan lists the following narrative and numeric water quality objectives for the region's surface waters: bacteria, bio-stimulatory substances, chemical constituents, cryptosporidium and giardia, color, dissolved oxygen, floating material, mercury, methylmercury, oil and grease, pH, pesticides, radioactivity, salinity, sediment, settleable material, suspended material, taste and odors, temperature, toxicity, and turbidity.

Putah Creek beneficial uses listed in the Basin Plan include municipal and domestic supply, agricultural irrigation and stockwatering, contact and noncontact recreation, warm and cold freshwater habitat, warm spawning, and wildlife habitat. According to the *Final 2018 California Integrated Report (Clean Water Act Section 303(d) List / 305(b) Report*), Putah Creek is listed as impaired by mercury.[52]

Statewide Construction General Permit. Construction projects or activities that are one acre or more must obtain a Construction General Permit (CGP) from the SWRCB. The CGP has been developed to be protective of water quality during construction activities and covers any construction or demolition activity, including, but not limited to clearing, grading, grubbing or excavation, or any other activity that results in a land disturbance of equal to or greater than one acre. Prior to construction, the landowner or other applicable entity must submit online Permit Registration Document (PRDs) to the Stormwater Multiple Application and Report Tracking System (SMARTS) website. The PRDs include a Notice of Intent (NOI), Risk Assessment, Post-Construction Calculations, a Site Map, Stormwater Pollution Prevention Plan (SWPPP), a signed certification by the landowner or other applicable entity, and the first annual fee. Construction contractors are also required develop best management practices (BMPs) in accordance with the development of a SWPPP. The SWPPP maps the boundaries of the project site, identifying the existing and proposed structures and roads within the vicinity of the site, as well as stormwater collection and discharge points and drainage patterns. These BMPs should address strategies to prevent soil erosion and the proper treatment and discharge of other pollutants generated by construction, which could contaminate waterways on or nearby the site. A SWPPP must also include a visual chemical monitoring program of nonvisible pollutants and a sediment-monitoring program. The RWQCB

51 California Regional Water Quality Control Board Central Valley Region, 2019. Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region, the Sacramento River Basin and the San Joaquin River Basin. February.

52 State Water Resources Control Board (SWRCB). 2021. Op. cit.

enforces compliance with the CGP through site inspections and fines. As the project site is larger than one acre, it is subject to these listed requirements. **Prior Environmental Analysis**

5.10.2.1 2016 Program EIR

The 2016 Program EIR evaluated the potential for short-term erosion and/or siltation to occur during construction and the potential for construction equipment to adversely affect water quality through leaks, spills, or drips of fluids including motor oils, diesel fuel, and lubricants. However, it was determined that erosion and sediment controls implemented to comply with Section 401 Water Quality Certification and the Construction General Permit would ensure that short-term construction-related erosion and siltation impacts would be less than significant. Additionally, implementation of Mitigation Measure 3.2-1, as detailed in Section 5.9, Hazards and Hazardous Materials, would require proper procedures to prevent contamination from vehicle or equipment leaks during project activities, which would reduce potential risks related to construction vehicle and equipment fluid drips, spills, or leaks to a less-than-significant level.

The 2016 Program EIR determined that channel restoration activities in the Nishikawa reach would not substantially alter the amount of water passing through the creek, channel capacity, or increase flooding risks on- or off-site above the current level. Additionally, the 2016 Program EIR determined that project activities along the Nishikawa reach would have no effect on surface runoff because project activities would not affect flows or overall channel capacity in this reach. The 2016 Program EIR concluded that project activities along the Nishikawa reach would have no impact on flood risk.

The 2016 Program EIR determined that the misapplication of herbicides used during project activities to reduce invasive species and weeds could result in potential water quality impacts. However, implementation of Mitigation Measure 3.4-12 as detailed in Section 5.4, Biological Resources, would require the implementation of herbicide protection actions, which would reduce impacts to less-than-significant levels.

The 2016 Program EIR determined that occasional small roadway or agricultural storm drains may need to be modified or replaced as a result of the channel alignment and if modifications or replacement of these drainage systems were not performed according to current standards, they could be damaged or perform less efficiently or in a substandard manner. Implementation of Mitigation Measure 3.1-2 below, which requires storm drains necessitating modification or replacement due to project construction activities to be completed consistent with current standards, would reduce impacts related to stormwater drainage systems to a less-than-significant level.

Applicable Mitigation Measures. The following mitigation measure identified in the 2016 Program EIR would apply to the proposed project.

Mitigation Measure 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.

5.10.2.2 Statewide Order EIR

The Statewide Order EIR concluded that implementing restoration projects permitted under the Statewide Order could result in the release of pollutants into surface water and/or groundwater that could violate water quality standards or waste discharge requirements, substantially degrade water quality, or obstruct implementation of a water quality control plan. Projects would be required to integrate applicable general protection measures included in the Statewide Order into project designs and plans, which would reduce impacts from construction activities on the water quality of the project area. Other impacts related to groundwater supplies, groundwater recharge, existing drainage patterns, stormwater drainage systems and flood flows were determined to be less than significant. No mitigation measures were required.

5.10.3 Impact Analysis

a. Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality? ***(No New Impact)***

Construction. Pollutants of concern during construction include sediment, trash, petroleum products, concrete waste (dry and wet), sanitary waste, and chemicals. Each of these pollutants on its own or in combination with other pollutants can have a detrimental effect on water quality. During construction activities, excavated soil would be exposed, and there would be an increased potential for soil erosion and sedimentation compared to existing conditions. In addition, chemicals, liquid products, petroleum products (such as solvents, and fuels), and concrete-related waste may be spilled or leaked during construction. Any of these pollutants have the potential to be transported via storm water runoff into receiving waters.

Because the project would disturb greater than 1 acre of soil, the project is subject to the requirements of the State Water Resources Control Board's NPDES General Permit for Storm Water Discharge Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-DWQ, as amended by Orders No. 2010-0014-DWQ and 2012-0006-DWQ, NPDES No. CAS000002) (Construction General Permit). Under the Construction General Permit, the Construction Contractor would be required to prepare a SWPPP and implement construction BMPs detailed in the SWPPP

during construction activities. Construction BMPs would include, but not be limited to, erosion and sediment control, designed to minimize erosion and retain sediment on site, and good housekeeping practices to prevent spills, leaks, and discharge of construction debris and waste into receiving waters.

Additionally, project activities would be subject to CWA Section 401 Water Quality Certification for discharges of dredged and fill materials through the CVRWQCB. This certification would ensure that project activities are consistent with the State's water quality standards and criteria. As part of this certification, CVRWQCB would require erosion controls in all areas disturbed by project activities and the completion of monitoring. The proposed project would also be subject to Mitigation Measure 3.2-1, as detailed in Section 5.9, Hazards and Hazardous Materials, which requires proper procedures to prevent contamination from vehicle or equipment leaks during project activities. Implementation of these measures would reduce potential risks related to construction vehicle and equipment fluid drips, spills, or leaks to a less-than-significant level.

Compliance with the requirements of the Construction General Permit, CWA Section 401 Water Quality Certification, and Mitigation Measure 3.2-1 would ensure that the proposed project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality. No new impacts or substantially more severe significant impacts related to water quality violations, wastewater discharges, or water quality degradation would occur.

Operation. The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. Implementation of the proposed project would improve water quality, resulting in a beneficial environmental effect. Therefore, long-term operation of the project would not violate any water quality standards or waste discharge requirements. No new impacts or substantially more severe significant impacts related to water quality violations, wastewater discharges, or water quality degradation would occur.

b. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin? ***(No New Impact)***

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The proposed project would not result in an increase in impervious surfaces or require groundwater dewatering. Implementation of the proposed project would not significantly affect groundwater supplies and groundwater recharge and would not cause a net deficit in aquifer volume or a lowering of the local groundwater level. No new impacts or substantially more severe significant impacts related to groundwater supplies would occur.

c. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:

i. Result in substantial erosion or siltation on- or off-site; ***(No New Impact)***

Construction. During construction activities, soil would be exposed and disturbed, and drainage patterns would be temporarily altered during grading and other construction activities, resulting in an increased potential for soil erosion and siltation compared to existing conditions. Additionally, during a storm event, soil erosion could occur at an accelerated rate. As discussed above in Section 5.10.3.a, the Construction General Permit requires preparation of a SWPPP and implementation of construction BMPs to reduce impacts to water quality during construction, including those impacts associated with soil erosion and siltation. Additionally, a California Department of Fish and Wildlife (CDFW) Lake and Streambed Alteration Agreement would be required which would forbid leaving bare ground and would require revegetation of exposed soils, as well as soil stabilization until new vegetation becomes established. Project activities would also be subject to CWA Section 401 Water Quality Certification for discharges of dredged and fill materials through the CVRWQCB. As part of this certification, CVRWQCB would require erosion controls in all areas disturbed by project activities.

Erosion and sediment controls implemented to comply with Federal Clean Water Act Section 401 Water Quality Certification, the CDFW Lake and Streambed Alteration Agreement, and the Construction General Permit would ensure that project impacts from erosion and siltation to the environment would remain less than significant. No new impacts or substantially more severe significant impacts related to on- or off-site erosion or siltation during project construction would occur.

Operation. The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The project would include a number of measures to reduce existing erosion problems. Following implementation, downstream erosion and siltation would be reduced, resulting in a beneficial environmental effect. No new impacts or substantially more severe significant impacts related to on- or off-site erosion or siltation during project operation would occur.

ii. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; ***(No New Impact)***

Construction. Construction activities would temporarily alter on-site drainage patterns and compact soil, which can increase the volume and velocity of storm water runoff. However, construction activities would be temporary, and the increase in runoff would not be substantial. As discussed in Section 5.10.3.a above, the Construction General Permit requires the preparation of a SWPPP to identify construction BMPs to be implemented as part of the project to reduce impacts to water quality during construction, including those impacts associated with flooding. Therefore, adherence to the Construction General Permit would ensure that construction activities would result in a less

than significant impact. No new impacts or substantially more severe significant impacts related to flooding on- or off-site during project construction would occur.

Operation. The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. Following implementation, the channel would have greater capacity to accommodate stormwater runoff and prevent on-site and off-site flooding, resulting in a beneficial environmental effect. No new impacts or substantially more severe significant impacts related to flooding on- or offsite during project operation would occur.

iii. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or ***(No New Impact)***

Construction. As discussed above, construction activities could alter drainage patterns during grading and other construction activities, and spill, leak, or transport construction-related pollutants such as liquid and petroleum products and concrete waste via stormwater runoff into adjacent drainages and downstream receiving waters. The proposed project would be required to comply with the requirements set forth in the Construction General Permit, which requires the preparation of a SWPPP and implementation of construction BMPs to control stormwater runoff. The proposed project would also be subject to Mitigation Measure 3.2-1, as detailed in Section 5.9, Hazards and Hazardous Materials, which requires proper procedures to prevent contamination from vehicle or equipment leaks during project activities. Compliance with these requirements would ensure that impacts related to the creation or contribution of runoff that would exceed the capacity of the storm water drainage system or provide substantial additional sources of polluted runoff would be less than significant. No new impacts or substantially more severe significant impacts related to stormwater drainage systems or polluted runoff during project construction would occur.

Operation. Implementation of proposed improvements would not result in a significant increase in impervious surface area or an associated increase in the volume and rate of runoff during a storm. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. Following implementation, the channel would have greater capacity to accommodate stormwater runoff to prevent overflow of the stormwater drainage system and reduce polluted runoff, resulting in a beneficial environmental effect. Therefore, the proposed project would not create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems. No new impacts or substantially more severe significant impacts related to stormwater drainage systems or polluted runoff during project operation would occur.

iv. Impede or redirect flood flows? ***(No New Impact)***

As described above, the project site is located within a 100-year flood hazard zone as mapped by FEMA. The project involves restoring a section of active channel that is currently in an over-widened

condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The proposed project would narrow the low-flow channel which may cause minor increases in the average water elevation and velocity, but these minor elevations (a matter of a few inches) would not lead to greater out-of-bank flooding. The proposed project would have no effect on flow volumes in the creek because flows are controlled by Monticello Dam and regulated by the Putah Creek Accord, as discussed above in Section 5.10.1, Background. Therefore, the proposed project would not increase flooding risks or areas of flooding on- or off-site and no new impacts or substantially more severe significant impacts related to on- or off-site flooding would occur.

d. In flood hazard, tsunami, or seiche zones, would the project risk release of pollutants due to project inundation? ***(No New Impact)***

The project site is not within an area mapped as a Tsunami Inundation Zone[53] nor is it near a river, reservoir, pond, or lake that could result in seismic seiche waves generated from an earthquake. The project site is located within a 100-year flood hazard zone as mapped by FEMA; however, construction staging areas would be placed outside of the existing 100-year floodplains and, as described in Section 5.10.3.a above, BMPs would be implemented, which would reduce the risk of pollutants released during inundation. Implementation of the proposed project would restore the meandering, natural stream channel to enhance riparian and aquatic habitat, which would reduce the long-term risk of pollutants to be released. Therefore, the proposed project would not result in pollutant discharges from flooding events. No new impacts or substantially more severe significant impacts related to flood hazard, seiche or tsunami would occur.

e. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan? ***(No New Impact)***

As discussed in Section 5.10.3.a, the proposed project would be required to comply with requirements set forth by the Construction General Permit, the CDFW Lake and Streambed Alteration Agreement, and CWA Section 401 Water Quality Certification which require the implementation of construction BMPs to control stormwater runoff and discharge of pollutants. With adherence to these regulatory requirements, the project would not result in water quality impacts that would conflict with the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan) for the Central Valley Region.[54] Therefore, impacts related to conflict with a water quality control plan would be less than significant.

The proposed project would not conflict the California Sustainable Groundwater Management Act (SGMA), which took effect on January 1, 2015. SGMA established a framework of priorities and requirements to facilitate sustainable groundwater management throughout the State.[55] The intent of SGMA is for groundwater to be managed by local public agencies (e.g., water districts, irrigation

53 California, State of. Department of Conservation (DOC), 2019. *California Tsunami Maps and Data.* Website: https://www.conservation.ca.gov/cgs/tsunami/maps (accessed October 13, 2022).

54 California Regional Water Quality Control Board Central Valley Region, 2019. Op. cit.

55 California, State of. 2021. Department of Water Resources. *Sustainable Groundwater Management Act*. Website: water.ca.gov/Programs/Groundwater-Management/SGMA-Groundwater-Management (accessed October 13, 2022).

districts, etc.) and newly formed Groundwater Sustainability Agencies (GSAs) to ensure a groundwater basin is operated within its sustainable yield (no long term overdraft) through the development and implementation of Groundwater Sustainability Plans (GSPs). As described in Section 5.10.1, Background, the project site is located within the Solano Subbasin, which has been designated as a medium priority subbasin and is therefore required to develop a Groundwater Sustainability Plan. A group of Groundwater Sustainability Agencies (GSAs) in the Solano Subbasin formed the Solano Subbasin GSA Collaborative and developed The Solano Subbasin Groundwater Sustainability Plan which was finalized in December 2021. The proposed project would not conflict with the GSP for this area, given the fact that the proposed project would not include any on-site groundwater utilization, nor would it significantly reduce groundwater recharge. Therefore, no impact related to groundwater sustainability or conflict with a GSP would occur. No new impacts or substantially more severe significant impacts related implementation of a water quality control plan or sustainable groundwater management plan would occur.

5.11 LAND USE AND PLANNING

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

5.11.1 Background

As previously discussed, the section of Putah Creek that is central to the project site is the 2,500-foot (0.47-mile) reach of Putah Creek west of the Pedrick Road Bridge. The project area encompasses 29 acres of primarily riparian habitat between the top of the northern and southern banks of the Putah Creek channel. The project site is approximately 3.75 miles west of downtown Davis and 5.7 miles north of Dixon, California.

The project area is bounded by farmland on the south (Solano County) and the UC Davis Center for Aquatic Biology and Aquaculture, Putah Creek Facility to the north. Land uses along the project reach are comprised of a 400- to 600-foot swath of open space/habitat within the project reach, surrounded on the south by field crops and on the north by a wastewater pond and treatment facility. There is public access to the north side of Putah Creek from Pedrick Road/Lincoln Highway. The north bank parcel (Yolo County Assessor's Parcel Number [APN] 037-190-009) is owned by the Davis Joint Unified School District and houses numerous institutes, labs, and field sites for UC Davis. The riparian portion of the 433-acre parcel constitutes the UC Davis Riparian Reserve, a teaching and research site along Putah Creek. A popular hiking trail traverses portions of the UC Davis Riparian Reserve, leading from a gravel parking lot down to the floodplain and along Putah Creek towards the City of Davis. The south bank parcel (Solano County APN 0110-010-010) is owned by the Nishikawa Family Trust; the entire parcel is 496 acres and is currently in agricultural production.

5.11.2 Prior Environmental Analysis

5.11.2.1 2016 Program EIR

The 2016 Program EIR concluded that the proposed stream channel restoration activities in the Nishikawa reach would not change or otherwise adversely affect long term existing or planned land uses of the site or adjacent properties. The analysis concluded that the project would be consistent with applicable Solano and Yolo General Plan land use designations and policies as it would not reduce recreational access or interfere with agricultural activities after implementation of Mitigation Measure 3.8-1, which requires coordination with adjacent landowners and implementation of access restrictions as discussed in Section 5.2, Agriculture and Forestry Resources.

5.11.2.2 Statewide Order EIR

The Statewide Order EIR determined that impacts associated with construction of restoration projects permitted under the Statewide Order would be temporary and would be required to

comply with applicable city and county general plans and other local policies and ordinances; therefore, land use impacts associated with construction of restoration projects would be less than significant. However, constructed facilities and operation associated with restoration projects permitted under the Statewide Order could result in conflicts with a land use plan, policy, or regulation adopted to avoid or mitigate an environmental effect. In these limited instances, compliance with required permits and approvals would reduce impacts associated with individual projects to a less-than-significant level. However, if there is no jurisdiction by the agency and no requirement to obtain a permit, land use policy conflicts could occur. Because there could be potential adverse changes to land use and planning due to the construction of restoration projects, this impact was determined to be significant and unavoidable. No mitigation measures were identified.

5.11.3 Impact Analysis

a. Would the project physically divide an established community? ***(No New Impact)***

The physical division of an established community typically refers to the construction of a feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway through an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside of the community.

The project site consists of Putah Creek and its associated riparian vegetation. The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The proposed project would not result in the realignment or closure of any existing roads or introduce a new physical barrier that would divide an established community. Therefore, the proposed project would not result in the physical division of an established community or adversely affect the continuity of land uses in the vicinity. This impact would not result in new significant or substantially more severe significant impacts beyond those analyzed in the prior environmental document.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect? ***(No New Impact)***

The northern portion of the project site within Yolo County is zoned as Public/Quasi-Public (PQP) and the southern portion of the project site within Solano County is zoned as Agricultural (A-40). The general plan land designation in the northern portion of the project site within Yolo County is Public/Quasi-Public (PQP), and the designation for the southern portion of the site within Solano County is Agriculture with Agricultural Reserve Overlay. The PQP zone and land use designation is intended for lands that are occupied or used for public and governmental offices, places of worship, schools, libraries, and civic uses. Other typical uses include airports, water and wastewater treatment plants, drainage basins, and sanitary landfills. The A-40 zone is intended for the

promotion and preservation of agriculture and allows agricultural-related support uses. The agriculture land use designation provides areas for the practice of agriculture as the primary use, including areas that contribute significantly to the local agricultural economy, and allows for secondary uses that support the economic viability of agriculture. Agricultural land use designations protect these areas from intrusion by nonagricultural uses and other uses that do not directly support the economic viability of agriculture. The agricultural reserve overlay encourages private landowners to voluntarily participate in agricultural conservation easements.

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The proposed stream channel restoration activities would not conflict with Yolo and Solano counties' land use plan designations and zoning as discussed above. The proposed project would not reduce recreational access or interfere with agricultural activities after the implementation of Mitigation Measure 3.8-1, which requires coordination with adjacent landowners and implementation of access restrictions as discussed in Section 5.2, Agriculture and Forestry Resources. Furthermore, the proposed project would result in no changes to the existing land use. Therefore, the proposed project would not conflict with an adopted land use plan, policy, or regulation. No new impacts or substantially more severe significant impacts related to conformity with land use plans would occur.

5.12 MINERAL RESOURCES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b. Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

5.12.1 Background

Minerals are any naturally occurring chemical element or compound, or groups of elements and compounds, formed from inorganic processes and organic substances including, but not limited to, coal, peat and oil bearing rock, but excluding geothermal resources, natural gas, and petroleum.

The California Department of Conservation, Geological Survey (CGS) and the California State Mining and Geology Board are required by the Surface Mining and Reclamation Act of 1974 (SMARA) to categorize lands into four Aggregate and Mineral Resource Zones (MRZs), described below. These MRZs classify lands that contain significant regional or Statewide mineral deposits. Lead Agencies are mandated by the State to incorporate MRZs into their General Plans.

MRZs are classified on the basis of geologic factors without regard to existing land use and land ownership. The four MRZs are categorized as follows:

- **MRZ-1:** An area where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- **MRZ-2:** An area where adequate information indicates that significant mineral deposits are present, or where it is judged that a high likelihood exists for their presence.
- **MRZ-3:** An area containing mineral deposits, the significance of which cannot be evaluated.
- **MRZ-4:** An area where available information is inadequate for assignment to any other MRZ zone.

Of the four categories, lands classified as MRZ-2 are of the greatest importance because such areas are underlain by demonstrated mineral resources or are located where geologic data indicate that significant measured or indicated resources are present. MRZ-2 areas are designated by the State Mining and Geology Board as being "regionally significant." Such designations require that a Lead Agency make land use decisions involving designated areas in accordance with its mineral resource management policies and that it consider the importance of the mineral resource to the region or the State as a whole, not just to the Lead Agency's jurisdiction.

In a report on aggregate resources, the Department of Conservation (DOC) has mapped an MRZ-1 zone (no significant mineral deposits) in the Nishikawa reach.[56] According to the County of Yolo General Plan, there are no known mineral resources zones at the project site.[57]

5.12.2 Prior Environmental Analysis

5.12.2.1 2016 Program EIR

The 2016 Program EIR concluded that there are no known mineral resources at the Nishikawa reach and there would be no impact.

5.12.2.2 Statewide Order EIR

The Statewide Order EIR determined that construction of restoration projects, constructed facilities (natural or artificial infrastructure), and operations and maintenance of those facilities permitted under the Statewide Order could affect mineral resources designated by the California Geological Survey as resources of regional and Statewide importance (MRZ-2) and could result in the loss of availability of a locally important mineral resource recovery site, depending on the projects' locations and proximity to mineral resources. Mitigation Measures MIN-1 and MIN-2 were identified to reduce potential impacts to less-than-significant levels.

Applicable Mitigation Measures. No known mineral resources have been identified at the project site; therefore, Mitigation Measures MIN-1 and MIN-2 would not apply to the proposed project.

5.12.3 Impact Analysis

a. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? ***(No New Impact)***

As previously discussed, the project site is designated as an MRZ-1 zone (no significant mineral deposits). Therefore, no new or substantially more severe significant impacts related to mineral resources would occur.

b. Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? ***(No New Impact)***

Please refer to Section 3.12.a. The proposed project would not result in the loss of availability of any known locally important mineral resource recovery site. Therefore, no new or substantially more severe significant impacts related to mineral resources would occur.

56 Solano County Water Agency, 2016. Op. cit.

57 Yolo, County of. 2009. *County of Yolo 2030 Countywide General Plan*. Figure CO-5 Mineral and Gas Resources. November.

5.13 NOISE

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project result in:				
a. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

5.13.1 Background

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, or sleep. Several noise measurement scales exist that are used to describe noise in a particular location. A decibel (dB) is a unit of measurement that indicates the relative intensity of a sound. Sound levels in dB are calculated on a logarithmic basis. An increase of 10 dB represents a 10-fold increase in acoustic energy, while 20 dB is 100 times more intense and 30 dB is 1,000 times more intense. Each 10 dB increase in sound level is perceived as approximately a doubling of loudness; and similarly, each 10 dB decrease in sound level is perceived as half as loud. Sound intensity is normally measured through the A-weighted sound level (dBA). This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. The A-weighted sound level is the basis for 24-hour sound measurements that better represent human sensitivity to sound at night.

As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level would be. Geometric spreading causes the sound level to attenuate or be reduced, resulting in a 6 dB reduction in the noise level for each doubling of distance from a single point source of noise to the noise sensitive receptor of concern.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. Equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within one dBA of each other and are normally

exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours.

A project would have a significant noise effect if it would substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of applicable regulatory agencies, including, as appropriate, Solano County and Yolo County.

Solano County does not have a noise ordinance nor any exclusion for construction noise. The Noise section of the Public Health and Safety Element of the Solano County General Plan contains Land Use Compatibility Guidelines as well as noise performance standards for non-transportation noise sources. The Health and Safety Element of the Yolo County General Plan contains noise compatibility guidelines that describe exterior and interior noise standards consistent with the Office of Planning and Research Noise Compatibility Guidelines and California State Noise Insulation Standards. Yolo County does not have a noise ordinance nor any exclusion for construction noise.

Certain land uses are considered more sensitive to noise than others. Examples of these land uses include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project area is bounded by farmland on the south (Solano County) and the UC Davis Center for Aquatic Biology and Aquaculture, Putah Creek Facility (formerly the Animal Science Trout Hatchery) to the north. Land uses along the project reach are comprised of a 400- to 600-foot swath of open space/habitat within the project reach, surrounded on the south by field crops and on the north by a wastewater pond and treatment facility. There are no sensitive receptors in the vicinity of the project site.

5.13.2 Prior Environmental Analysis

5.13.2.1 2016 Program EIR

The 2016 Program EIR determined that implementation of the Program would result in temporary noise impacts during construction activities that would require the use of heavy equipment such as front-end loaders, dump trucks, backhoes, bulldozers, and excavators, which generate maximum noise levels of 76 to 82 dB at a distance of 50 feet. However, the 2016 Program EIR concluded that the Nishikawa Reach has no sensitive receptors in the nearby vicinity and that the effects of temporary construction noise would be less than significant. Additionally, the 2016 Program EIR concluded that implementation of the Program would not conflict with the Solano County General Plan Noise Element or any standards within Yolo County. The 2016 Program EIR determined that no mitigation measures would be required for noise associated with construction activities within the Nishikawa Reach.

5.13.2.2 Statewide Order EIR

The Statewide Order EIR concluded that construction activities associated with the implementation of future restoration projects permitted under the Statewide Order would result in temporary increases in ambient noise levels in excess of established standards and expose sensitive receptors to excessive groundborne vibration and noise. Mitigation Measure NOISE-1 was identified to reduce potential impacts associated with construction activities; however, because the efficacy of the

mitigation measure could not be determined at the time the EIR was certified, these impacts were determined to be significant and unavoidable.

Additionally, the Statewide Order EIR concluded that routine operation and maintenance activities for restoration projects that would be permitted by the Statewide Order could result in a permanent increase in ambient noise. Mitigation Measure NOISE-2 was identified to reduce potential impacts associated with these activities. With implementation of Mitigation Measure NOISE-2, this impact would be less than significant.

Construction of restoration projects that would be permitted under the Statewide Order could be located in the vicinity of a private airstrip, an airport land use plan, or within 2 miles of a public airport or public use airport. Implementation of projects in the vicinity of an airport could expose people working in the project area to excessive noise levels. With implementation of Mitigation Measure NOISE-3, this impact would be less than significant.

As part of the State Water Board or RWQCB's issuance of a NOA for a restoration project under the Statewide Order, compliance with Mitigation Measures NOISE-1 through NOISE-3 would be required when applicable to a given project.

Applicable Mitigation Measures. The following mitigation measures would apply to the proposed project:

Mitigation Measure NOISE-1: **Minimize Noise Conflicts.** The following measures shall be implemented during construction of any restoration project permitted under the Order:

- Noise-generating activities shall follow the applicable general plan and/or noise ordinances for the jurisdiction located within the vicinity of the project.
- Construction equipment shall be located away from sensitive receptors, to the extent feasible, to reduce noise levels below applicable local standards.
- Construction equipment shall be maintained to manufacturers' recommended specifications, and all construction vehicles and equipment shall be equipped with appropriate mufflers and other approved noise-control devices.
- Idling of construction equipment shall be limited to the extent feasible to reduce the time that noise is emitted.
- An individual traffic noise analysis of identified haul routes shall be conducted and mitigation, such as reduced speed limits, shall be provided at locations where noise standards cannot be maintained for sensitive receptors.

- The project shall incorporate the use of temporary noise barriers, such as acoustical panel systems, between construction activities and sensitive receptors if it is concluded that they would be effective in reducing noise exposure to sensitive receptors.

Mitigation Measure NOISE-2: **Minimize Operations and Maintenance Noise Conflicts.** The following measures shall be implemented during O&M activities for any restoration project permitted under the Order:

- Noise-sensitive receptors in the vicinity of project activities shall be identified and projects shall be designed to minimize exposure of sensitive receptors to long-term, operational noise sources (for example, water pumps) to reduce noise levels below applicable local standards.

- The hours of operation at noise generation sources near or adjacent to noise-sensitive areas shall be limited, wherever practicable, to reduce the level of exposure to meet applicable local standards.

Mitigation Measure NOISE-3: **Prepare Preconstruction Safety Plans.** To reduce potential impacts on people residing or working in the vicinity of a private airstrip, an airport land use plan, or where such a plan has not been adopted within 2 miles of a public airport or public use airport, construction contracts shall include requirements for the contractor to prepare a construction safety plan. The plan shall be developed before construction activities begin, in collaboration with aviation base personnel, to coordinate construction activities including a schedule, coordination of personnel with aviation radios, and notice requirements. Furthermore, the contractor shall coordinate with emergency service personnel.

5.13.3 Impact Analysis

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? ***(No New Impact)***

The following section describes how the short-term construction and long-term operational noise impacts of the proposed project would be less than significant.

Construction. Restoration activities would result in short-term noise impacts on nearby land uses. Maximum construction noise would be short-term, generally intermittent depending on the construction phase, and variable depending on receiver distance from the active construction zone.

The proposed project is estimated to take 4 to 5 months to complete beginning in June 2024. This analysis assumes the use of default construction equipment during Phase 1 and the use of graders, excavators, water trucks, dump trucks, dozers, scrapers, and loaders during Phase 2. As identified in the 2016 Program EIR, this equipment generates maximum noise levels of 76 to 82 dB at a distance of 50 feet.

Although construction noise would result in a temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, no sensitive receptors are located within the project vicinity. As such, similar to the findings of the 2016 Program EIR, construction-related noise impacts would be less than significant. No new impacts or substantially more severe significant impacts would occur.

Operation. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. Once restoration activities are complete, the project would not result in an increase in operational vehicle trips and would not be a source of operational noise. Therefore, the proposed project would not expose persons to noise levels in excess of local standards. Operational noise impacts would be considered less than significant. No new impacts or substantially more severe significant impacts would occur.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels? ***(No New Impact)***

Common sources of ground borne vibration and noise include trains and construction activities such as blasting, pile driving and operating heavy earthmoving equipment. Construction of the proposed project would involve demolition, site preparation, and construction activities but would not involve the use of construction equipment that would result in substantial ground-borne vibration or ground-borne noise on properties adjacent to the project site, or other construction activity that would generate very high noise levels or ground borne vibration. Furthermore, operation of the proposed project would not generate substantial ground-borne noise and vibration. Therefore, the project would not result in the exposure of persons to, or generation of, excessive ground-borne noise and vibration impacts would be less than significant, and no mitigation is required. No new impacts or substantially more severe significant impacts would occur.

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? ***(No New Impact)***

The project site is approximately 0.75 miles southwest of the UC Davis University Airport. Aircraft noise is occasionally audible at the project site; however, no portion of the project site lies within the 60 dBA CNEL noise contours of any public airport nor does any portion of the project site lie within 2 miles of any private airfield or heliport. The project would not result in any development of the site and is not within close proximity to an airport; therefore, the proposed project would not result in the exposure of people residing or working in the project area to excessive noise levels.

There would be no impact. No new impacts or substantially more severe significant impacts would occur.

5.14 POPULATION AND HOUSING

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

5.14.1 Background

The proposed project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. No residential units currently exist at the project site or in the nearby vicinity.

5.14.2 Prior Environmental Analysis

5.14.2.1 2016 Program EIR

The 2016 Program EIR concluded that the proposed stream channel restoration activities would not displace or create housing or population. Therefore, the 2016 Program EIR determined that no adverse impact to population and housing would occur.

5.14.2.2 Statewide Order EIR

The Statewide Order EIR determined that restoration projects that could be permitted under the Statewide Order would not displace or create housing or population growth that would exceed the availability of vacant housing in the project area. Therefore, the Statewide Order EIR determined that impacts related to population and housing would be less than significant.

5.14.3 Impact Analysis

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? ***(No New Impact)***

The proposed project does not include the expansion or development of additional housing units or the extension of public roads or other infrastructure. Therefore, the proposed project would not directly or indirectly induce population growth. No new or substantially more significant impacts related to population growth would occur.

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere? ***(No New Impact)***

The proposed project does not include the demolition of any existing structures or the removal of any existing housing units. Therefore, the proposed project would not displace any existing people or housing and there would be no impact. Therefore, the proposed project would not result in new significant or substantially more severe significant housing impacts than were analyzed in the prior environmental documents.

5.15 PUBLIC SERVICES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☐	☒
ii. Police protection?	☐	☐	☐	☒
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☐	☒
v. Other public facilities?	☐	☐	☐	☒

5.15.1 Background

The project site is located within Yolo and Solano counties and is served by the following existing public services.

Fire Protection. Fire protection, rescue, and emergency medical services are provided to the northern portion of the project site by Yolo County Fire Department and to the southern portion of the project site by Solano County Fire Department. The nearest fire station to the project site is the UC Davis Fire Station located at 625 Kleiber Hall Drive in Davis.

Police Protection. Police services are provided to the northern portion of the project site by Yolo County Sheriff's Office and to the southern portion of the project site by Solano County Sheriff's Office.

Schools. The northern portion of the project site is located within the Davis Joint Unified School District and the southern portion of the project site is located within the Dixon Unified School District. The Davis Joint Unified School District serves approximately 8,500 students at 16 school sites and campuses.[58] Dixon Unified School District serves approximately 3,000 students at seven school sites and campuses.[59]

Parks. The project site is located within the UC Davis Riparian Reserve. There is public access to the north side of the creek and walking path, the Putah Creek Riparian Preserve Trail, that provides recreational access within the project reach.

[58] Davis Joint Unified School District, 2022. *About Davis Joint Unified School District.* Website: https://www.djusd.net/about/overview (accessed October 12, 2022).

[59] National Center for Education Statistics, 2022. *District Directory Information (2021-2022 School Year), Dixon Unified District.* Website: https://nces.ed.gov/ccd/districtsearch/district_detail.asp?ID2=0611280&details=5 (accessed October 12, 2022).

5.15.2 Prior Environmental Analysis

5.15.2.1 2016 Program EIR

The 2016 Program EIR determined that the proposed creek restoration activities would not result in new public access or substantially increase public use of the creek. Therefore, there would not be a substantial new demand on police of fire services. Because the Nishikawa reach is located within the UC Davis Riparian Reserve and a walking path that provides recreational access is located within the project reach, the 2016 Program EIR determined that project activities could have adverse effects on recreation during the construction period. However, implementation of Mitigation Measure 3.10-2, which requires alternate access to high-use recreational sites, would reduce this impact to a less-than-significant level.

Applicable Mitigation Measures. The following mitigation measure identified in the 2016 Program EIR would apply to the proposed project.

Mitigation Measure 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.

5.15.2.2 Statewide Order EIR

The Statewide Order EIR concluded that construction activities for future restoration projects permitted under the Statewide Order would not include new land development or occupied structures that would increase population and add new public service demands. Therefore, impacts related to public services were determined to be less than significant.

5.15.3 Impact Analysis

a. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:

i. Fire protection? ***(No New Impact)***

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. Use of the walking path that provides recreational access within the project reach could increase as a result of proposed improvements. However, the potential increase in use is not anticipated to be substantial. Because proposed improvements would be for habitat restoration and would not include housing units or other structures, the incremental increase in demand for fire protection services would not be significant and would not exceed the physical and financial capabilities of the Yolo County and Solano County Fire Departments, resulting in the need for new or expanded fire protection services. Therefore, impacts to fire service and protection would be less than significant. No new significant or substantially more severe significant impacts related to fire services would occur.

ii. Police protection? ***(No New Impact)***

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. Use of the walking path that provides recreational access within the project reach could increase as a result of proposed improvements. However, the potential increase in use is not anticipated to be substantial. Because proposed improvements would be for habitat restoration and would not include housing units or other structures, the incremental increase in demand for police protection services would not be significant and would not exceed the physical and financial capabilities of the Yolo County and Solano County Sheriff Offices, resulting in the need for new or expanded police protection services. Therefore, impacts to police protection would be less than significant. No new significant or substantially more severe significant impacts related to fire protection would occur.

iii. Schools? ***(No New Impact)***

Implementation of the proposed project would not result in any local or regional population increase. Therefore, the project would not require construction of new schools, or result in schools exceeding their capacities. Therefore, the proposed project would not result in new significant or substantially more severe significant impacts related to schools.

*v. Parks? **(No New Impact)***

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The proposed project may temporarily affect the nearby walking path during construction due to the disturbance of facilities from construction activities and associated access restrictions. This could result in a reduction of use of the nearby trail resulting in an increase in use of other nearby trails; however, implementation of Mitigation Measure 3.10-1, identified in the 2016 Program EIR, which requires alternate access to high-use recreational sites, would reduce potential access impacts during construction to a less-than-significant level. Use of the walking path that provides recreational access within the project reach could increase as a result of proposed improvements. However, the potential increase in use is not anticipated to be substantial. The proposed project would not significantly increase employment or result in the construction of residential uses within Yolo or Solano counties. As such, implementation of the proposed project would not result in the increased the use of existing parks or other recreation uses and would not require the expansion of parks. Therefore, the proposed project would not result in new significant or substantially more severe significant impacts related to parks.

*vi. Other public facilities? **(No New Impact)***

Development of the proposed project would not increase demand for other public services including libraries, community centers, and public health care facilities. As previously discussed, the project does not include development of residential uses or an increase in employment at the project site and would, therefore, not result in increased demand for other public facilities. As such, the proposed project would not result in new significant or substantially more severe significant impacts related to other public facilities.

5.16 RECREATION

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

5.16.1 Background

The project site is located within the UC Davis Riparian Reserve. There is public access to the north side of the creek and walking path, the Putah Creek Riparian Preserve Trail, that provides recreational access within the project reach.

5.16.2 Prior Environmental Analysis

5.16.2.1 2016 Program EIR

The 2016 Program EIR concluded that recreation within the Nishikawa reach would be temporarily affected during construction and potentially for a period of time following construction due to the disturbance of existing facilities from 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. However, implementation of Mitigation Measure 3.10-1, identified in the 2016 PEIR, which requires alternate access to high-use recreational sites, would reduce this impact to a less-than-significant level. The 2016 Program EIR concluded that in the long-term, recreational resources and access associated with this site would be improved compared to existing conditions.

5.16.2.2 Statewide Order EIR

The Statewide Order EIR concluded that restoration projects permitted under the Statewide Order could permanently impair or eliminate recreational resources, depending on the project locations and types. In addition, the Statewide Order EIR determined that construction activities and constructed facilities for restoration projects permitted under the Statewide Order could result in the construction and modification of recreational facilities with associated environmental impacts and could displace recreation users from some facilities, increasing the use of other existing recreational resources or facilities, potentially leading to substantial physical deterioration. Implementation of Mitigation Measures REC-1, REC-2, and NOI-2 (see Section 5.13 Noise), identified in the Statewide Order EIR, would reduce these impacts to a less-than-significant level.

As part of the State Water Board or RWQCB's issuance of a NOA for a restoration project under the Statewide Order, compliance with Mitigation Measures REC-1 and REC-2 would be required when applicable to a given project.

Applicable Mitigation Measures. The following mitigation measures would apply to the proposed project:

Mitigation Measure REC-1: **Minimize Impairment, Degradation, or Elimination of Recreational Resources.** If restoration projects permitted under the Order result in the substantial impairment, degradation, or elimination of recreational facilities, replacement facilities of equal capacity and quality shall be developed and installed.

Mitigation Measure REC-2: **Minimize Impacts on Existing Recreational Resources.** If a restoration project results in substantial temporary or permanent impairment, degradation, or elimination of recreational facilities that causes users to be directed toward other existing facilities, the project proponent shall coordinate with affected public and private recreation providers to direct the displaced users to underused recreational facilities.

The project proponent shall conduct additional operations and maintenance work at existing facilities to prevent them from deteriorating. If possible, temporary replacement facilities shall be provided. If the increase in use is temporary, once use levels have decreased back to existing conditions, the degraded facilities shall be rehabilitated or restored.

Where impacts on existing facilities are unavoidable, the project proponent shall compensate for impacts through mitigation, restoration, or preservation off-site or creation of additional permanent new replacement facilities.

5.16.3 Impact Analysis

a. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? ***(No New Impact)***

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The proposed project may temporarily affect the nearby walking path during construction due to the disturbance of facilities from construction activities and associated access restrictions. This could result in a reduction of use of the nearby trail resulting in an increase in use of other nearby trails; however, as detailed in Section 5.15, Public Services, implementation of 2016 Program EIR Mitigation Measure 3.10-1 and Statewide Order EIR Mitigation Measures REC-1 and REC-2, which requires alternate access to high-use recreational sites and development of alternative recreation facilities, would reduce this impact to a less-than-significant level.

Use of the walking path that provides recreational access within the project reach could increase as a result of proposed improvements. However, the potential increase in use is not anticipated to be substantial. The proposed project would not significantly increase employment or result in the construction of residential uses within Yolo or Solano counties. As such, implementation of the proposed project would not result in the increased the use of existing parks or other recreation uses such that substantial physical deterioration would occur or be accelerated. Therefore, no new significant or substantially more severe significant impacts related to existing recreation facilities would result from the proposed project.

b. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? ***(No New Impact)***

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The proposed project does not include the construction of expansion of recreational facilities. Therefore, no new significant or substantially more severe significant impacts related to existing recreation facilities would result from the proposed project.

5.17 TRANSPORTATION

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b. Conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)?	☐	☐	☐	☒
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d. Result in inadequate emergency access?	☐	☐	☐	☒

5.17.1 Background

The project site would be accessed via Pedrick Road. This road is categorized as both a collector road and as a County Route of Regional Significance by Solano County.[60] Yolo County classifies Pedrick Road as a Major Two-Lane County Road.[61]

As outlined in Section 3.0, Project Description, the north side of Putah Creek would be accessed via Pedrick Road through a privately owned agricultural parcel adjacent to the creek. Equipment would use a pre-existing ramp that leads from the top of the creek embankment to the creek terrace. Access to the floodplain would be primarily from the south side and along an existing unimproved surface road from the Nishikawa property. This existing access road would be cleared of woody debris, if necessary. No additional reinforcement, major grading, or other surface modifications are planned.

5.17.2 Prior Environmental Analysis

5.17.2.1 2016 Program EIR

The 2016 Program EIR determined that project activities along the Nishikawa reach would increase one-way passenger vehicle trips by no more than 12 daily trips during construction and operations and increase one-way truck trips by no more than 42 daily trips during construction, which would not exceed the County thresholds. Therefore, implementation of the project along the Nishikawa reach would not conflict with any county planning policies or congestion management programs. The 2016 Program EIR determined that there are no unusual conditions within the Nishikawa reach that would result in increased roadway hazards or decreased emergency access and implementation of the project would have no adverse effects on these topics. The 2016 Program EIR concluded that there are no significant transit, bicycle, or pedestrian facilities located within the Nishikawa reach and project activities would not prevent the development of future transit, bicycle, or pedestrian facilities. The 2016 Program EIR determined that all impacts related to transportation and traffic

[60] Solano, County of. 2008. Op. cit.
[61] Yolo, County of. 2009. Op. cit.

would be less than significant and no mitigation measures would be required for project activities within the Nishikawa reach.

5.17.2.2 Statewide Order EIR

The Statewide Order EIR concluded that construction activities for future restoration projects that would be permitted under the Statewide Order could result in temporary partial or full road closures. As a result, these projects could conflict with a plan, ordinance, or policy associated with the circulation system, or could affect the use of federal, State, and local highways and bridges and transit, roadways, bicycle, and pedestrian facilities. Mitigation Measures TRA-1 through TRA-5 were identified to reduce these impacts to less-than-significant levels.

Construction activities for future restoration projects that would be permitted under the Order could exceed the threshold of significance and conflict with State CEQA Guidelines Section 15064.3(b) related to VMT. Mitigation Measure TRA-6 was identified to reduce emissions associated with VMT; however, because the efficacy of the mitigation measure could not be determined at the time the EIR was certified, this impact was determined to be significant and unavoidable.

Construction of restoration projects, constructed facilities (natural or artificial infrastructure), and operations and maintenance of those facilities permitted under the Statewide Order could affect transportation infrastructure such as roads, bridges, railroads, and navigable waterways, which could result in design hazards. Implementation of Mitigation Measures TRA-7 and TRA-8 would reduce potential impacts related to geometric design or incompatible use hazards to less-than-significant levels.

As part of the State Water Board or RWQCB's issuance of a NOA for a restoration project under the Statewide Order, compliance with Mitigation Measures TRA-1 through TRA-8 would be required when applicable to a given project.

Applicable Mitigation Measures. The following mitigation measures would apply to the proposed project:

Mitigation Measure TRA-1: **Prepare Construction Traffic Management Plan.** Before construction begins, the construction manager shall have a qualified professional prepare a construction traffic management plan. The plan shall provide the appropriate measures to reduce potential traffic obstructions or service level degradation at affected traffic facilities. The scope of the construction traffic management plan will depend on the type, size, and duration of the specific qualifying restoration project under the Order. The plan could include such measures as construction signage, flaggers for lane closures, and construction schedule and/or delivery schedule restrictions. The plan shall be submitted to the local public works department and implemented as appropriate throughout construction.

Mitigation Measure TRA-2: **Prepare Waterway Traffic Control Plan.** A waterway traffic control plan shall be prepared before project construction begins. The plan shall be followed throughout construction to ensure that vessels can navigate safely and efficiently during construction. The plan shall identify vessel traffic control measures to reduce congestion and navigation hazards to the extent feasible. Construction zones in waterways shall be barricaded or guarded by readily visible barriers or other effective measures to warn boaters of their presence and restricted access. Warning devices and signage shall comply with the California Uniform State Waterway Marking System and shall be operational during nighttime hours and periods of dense fog.

Mitigation Measure TRA-3: **Develop Channel Closure Plan for Affected Facilities.** Before construction begins in areas where temporary partial waterway closure is necessary, a temporary channel closure plan shall be developed. The plan shall identify alternative detour routes and procedures for notifying boaters of construction activities and partial closures including coordination with the U.S. Coast Guard, local boating organizations, and marinas. The channel closure plan shall be implemented as appropriate throughout construction.

Mitigation Measure TRA-4: **Reduce Project Effects on Boat Passage and Transit Facilities.** To the extent feasible, the following actions shall be implemented to reduce impacts of project construction on boat passage and transit facilities:

- To the extent feasible, ensure that safe boat access to public launch and docking facilities, businesses, and residencies is maintained.
- Coordinate with transit system operators, as appropriate, to establish alternative transit system routes to be rerouted during construction.
- Provide boat passage as an integral component of operable gate facilities, and design such facilities to provide uninterrupted boat passage when the gates are in the “up” position. Floating docks with mooring bits shall be provided along the shoreline on both sides of the boat passage facilities for boaters to use while waiting.
- Before construction begins in areas where bridge closure may be necessary, develop a traffic plan that identifies traffic control measures to reduce congestion and provide alternative routes.

Mitigation Measure TRA-5: **Minimize Effects on Trails and Bicycle and Pedestrian Circulation and Identify Alternatives.** To minimize potential impacts of project construction on trails and bicycle and pedestrian circulation, the following actions shall be taken when feasible**:**

- Minimize closure of paths.
- Provide for temporary or permanent relocation of the trails and bicycle pedestrian circulation locations to the extent feasible.
- Consult with the appropriate public works department to determine the most feasible alignment for facility relocation.

Mitigation Measure TRA-6: **Reduce Emissions.** To comply with State CEQA Guidelines Section 15064.3(b), the following measures shall be taken to reduce effects associated with increased VMT:

- Limit idling time for commercial vehicles, including delivery and construction activities.
- Use low- or zero-emissions vehicles, including construction vehicles.
- Institute a heavy-duty off-road vehicle plan and a construction vehicle inventory tracking system for construction projects.
- Promote ridesharing.
- Provide the necessary facilities and infrastructure to encourage the use of low- or zero-carbon emissions vehicles (e.g., electric vehicle charging facilities and conveniently located alternative fueling stations).
- Increase the cost of driving and parking private vehicles, such as by imposing tolls and parking fees.
- Provide a shuttle service to public transit and worksites.
- Provide information on all options for individuals and businesses to reduce transportation-related emissions.

Mitigation Measure TRA-7: **Conduct Routine Inspections.** An inspection and operation plan shall be developed and implemented, where applicable. The plan shall include procedures for routine inspections and facility operation to allow safe navigation should the facility become

damaged or malfunctions. This plan shall include the following specific components:

- Routine inspections and correction procedures to ensure that facility safety features are in good working order.
- Routine inspections and correction procedures for navigational hazards around facilities, including floating or submerged debris and the formation of shoals.

Mitigation Measure TRA-8: **Repair Damaged Roadways and Trails Following Construction.** If damage to roads, sidewalks, trails, and/or medians occur, the construction contractor shall coordinate with the affected project proponents to ensure that any impacts are adequately repaired in accordance with applicable agency standards. Roads and/or driveways disturbed by construction activities or construction vehicles shall be properly restored to ensure long-term protection of road surfaces. Roadside drainage structures and road drainage features (e.g., rolling dips) shall be protected by regrading and reconstructing roads to drain properly. The construction contractor shall work with the applicable agencies to document preconstruction conditions of road features before the start of construction.

5.17.3 Impact Analysis

a. Would the project conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities? ***(No New Impact)***

As described above, primary vehicle access to the site is provided from Pedrick Road. No significant transit, bicycle, or pedestrian facilities are located within the project area. The proposed project consists of restoration of a reach of Putah Creek. Following construction, the proposed project would have negligible impacts on the area's transportation system as minimal inspection or maintenance activities would be required once the restoration project is complete. No new traffic would be generated once project construction activities are completed.

A small increase in traffic would occur in the project area during the construction phase of the proposed project from construction vehicles and construction workers accessing the site. However, these impacts would be short-term, occurring only during the construction period and are not expected to exceed a level of service standard for roads or highways in Solano County.

The project would be consistent with the Solano County General Plan and the Yolo County General Plan, including policies that promote the preservation of natural resources. The proposed project would not affect local roadways or preclude the provision of trails, bikeways or other alternative transportation modes. Therefore, the proposed project would not conflict with a program plan,

ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities. No new or substantially more significant impacts would occur.

b. Would the project conflict or be inconsistent with CEQA Guidelines §15064.3, subdivision (b)? ***(No New Impact)***

With the current CEQA Guidelines, transportation impacts are to be evaluated based on a project's effect on vehicle miles traveled (VMT). The California Office of Planning and Research guidelines for Vehicle Miles Traveled (VMT) analyses[62] state that projects that generate fewer than 110 trips per day may be assumed to cause less than significant VMT impacts. As described above, the 2016 Program EIR determined that project activities along the Nishikawa reach would increase one-way passenger vehicle trips by no more than 12 daily trips during construction and operations and increase one-way truck trips by no more than 42 daily trips during construction, which would not exceed the County thresholds. Therefore, the proposed project is unlikely to result in a substantial or measurable increase in VMT, and the transportation impact for the purposes of CEQA would be less than significant. No new or substantially more significant impacts related to conflicts with CEQA Guidelines §15064.3, subdivision (b) would occur.

c. Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? ***(No New Impact)***

The proposed project involves restoration of the creek channel. Implementation of the proposed project would not significantly alter public roadways or access to the site from public roadways. The north side of Putah Creek would be accessed through a privately owned agricultural parcel that is adjacent to the creek and is accessible from Pedrick Road. Access to the floodplain would be primarily from the south side and along an existing unimproved surface road from the Nishikawa property. No additional reinforcement, major grading, or other surface modifications are planned. Therefore, the proposed project would not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or introduce an incompatible use (e.g., farm equipment). No new or substantially more significant impacts related to design hazards or incompatible uses would occur.

d. Would the project result in inadequate emergency access? ***(No New Impact)***

Due to the nature of the proposed project, no impairment or interference with emergency response or emergency access would occur. The proposed project is not located along an identified evacuation route, nor would it affect local roadways. Because the proposed project would not substantially alter or block the adjacent roadways, the proposed project would not be expected to impair the function of nearby emergency evacuation routes. No new or substantially more significant impacts related to emergency response or evacuation would occur.

[62] California Office of Planning and Research. 2018. *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Available online at: https://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf (accessed January 4, 2023).

5.18 TRIBAL CULTURAL RESOURCES

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or	☐	☐	☐	☒
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

5.18.1 Background

AB 52, which became law on January 1, 2015, provides for consultation with California Native American tribes during the CEQA environmental review process, and equates significant impacts to "tribal cultural resources" with significant environmental impacts. PRC Section 21074 states that "tribal cultural resources" are:

- Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe and are one of the following:
- Included or determined to be eligible for inclusion in the California Register of Historical Resources.
- Included in a local register of historical resources as defined in subdivision (k) of PRC Section 5020.1.
- A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. In applying the criteria set forth in subdivision (c) of PRC Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

A "historical resource" (PRC Section 21084.1), a "unique archaeological resource" (PRC Section 21083.2(g)), or a "nonunique archaeological resource" (PRC Section 21083.2 (h)) may also be a tribal cultural resource if it is included or determined to be eligible for inclusion in the California Register.

The consultation provisions of the law require that a public agency consult with local Native American tribes that have requested placement on that agency's notification list for CEQA projects. Within 14 days of determining that a project application is complete, or a decision by a public agency to undertake a project, the lead agency must notify tribes of the opportunity to consult on the project, should a tribe have previously requested to be on the agency's notification list. California Native American tribes must be recognized by the California Native American Heritage Commission as traditionally and culturally affiliated with the project site and must have previously requested that the lead agency notify them of projects. Tribes have 30 days following notification of a project to request consultation with the lead agency.

The purpose of consultation is to inform the lead agency in its identification and determination of the significance of tribal cultural resources. If a project is determined to result in a significant impact on an identified tribal cultural resource, the consultation process must occur and conclude prior to adoption of a Negative Declaration or Mitigated Negative Declaration, or certification of an Environmental Impact Report (PRC Sections 21080.3.1, 21080.3.2, 21082.3).

As described in Section 2.0, SCWA sent letters describing the project and maps depicting the project site in January 2023 to tribes eligible to consult with SCWA. To date, SCWA has received no request for consultation; however, tribal consultation is still ongoing.

5.18.2 Prior Environmental Analysis

5.18.2.1 2016 Program EIR

The project's potential impacts to tribal cultural resources were not specifically analyzed in the 2016 Program EIR. However, the prior environmental documents analyzed prehistoric and historic resources and included mitigation measures related to archaeological resources and human remains. These measures include Mitigation Measures 3.11-2 and 3.11-3, which require following proper protocols if unrecorded cultural resources or human remains are encountered as detailed in Section 5.5, Cultural Resources, of this Initial Study.

5.18.2.2 Statewide Order EIR

The Statewide Order EIR determined that construction activities and constructed facilities and operations and maintenance for restoration projects permitted under the Statewide Order are the types of activities that have potential to affect tribal cultural resources. Mitigation Measures TCR-1, TCR-2, and CUL-4 (see Section 5.4 Cultural Resources) were identified to reduce potential impacts to tribal cultural resources; however, because the efficacy of the mitigation measures could not be determined at the time the EIR was certified, these impacts were determined to be significant and unavoidable.

As part of the State Water Board or RWQCB's issuance of a NOA for a restoration project under the Statewide Order, compliance with Mitigation Measure TCR-1, TCR-2, and CUL-4 would be required when applicable to a given project.

Applicable Mitigation Measures. The following mitigation measures would apply to the proposed project:

Mitigation Measure TCR-1: **Conduct Inventory and Significance Evaluation of Tribal Cultural Resources with Tribes that are Culturally and Geographically Affiliated with the Project Vicinity.** Before implementation of any project permitted under the Order, the following shall be conducted: consultation with California Native American Tribes pursuant to PRC Section 21080.3; a cultural resources records search; a California Native American Heritage Commission (NAHC) Sacred Lands File (SLF) search; and an inventory and significance evaluation of tribal cultural resources identified that could be impacted by the project. These tasks shall be conducted as follows.

- Project proponent shall submit an NAHC SLF & Native American Contacts List Request at the initial stages of project development (or as early as practicable) to determine if a project would have an impact on tribal cultural resources.

- Project proponent shall coordinate with the approving Water Board or other CEQA lead agency, if applicable, as soon as possible to identify California Native American Tribes that are traditionally and culturally affiliated to a project area. The CEQA lead agency shall then conduct Tribal consultation, pursuant to PRC Section 21080.3, and as soon as practicable during early design, with such Tribes to determine whether any tribal cultural resources could be affected by the project. Consultation will include discussion regarding project design, cultural resources surveys, identification of tribal cultural resources, protocols for construction monitoring, and any other Tribal concerns. Construction of the project will not commence until the approving Water Board or other CEQA lead agency achieves compliance with the California Environmental Protection Agency Tribal Consultation Protocol (April 2018) and consultation pursuant to PRC Section 21080.3 has been concluded. If potential tribal cultural resources that may be impacted by the project are identified through consultation with California Native American Tribes that are traditionally and culturally affiliated to a project area, the following shall be conducted:

- Documentation of any tribal cultural resources identified in the project area which may require additional tasks such as ethnographic research and interviews.

- If tribal cultural resources are identified in a project area, develop, before project implementation and in coordination California Native American Tribes that are traditionally and culturally affiliated to a project area, an approach for reducing such impacts. If any such tribal cultural resources are on or in the tide and submerged lands of California, this process shall also include coordination with the California State Lands Commission.

Mitigation Measure TCR-2: **Implement Measures to Protect Tribal Cultural Resources during Project Construction or Operation.** These measures include, but are not limited to, those outlined in PRC Section 21084.3.

If tribal cultural resources or indigenous archaeological resources that may qualify as tribal cultural resources are encountered during project construction or operation of any project permitted under the Order, all activity within 100 feet of the find shall cease and the find shall be flagged for avoidance. The lead agency, a qualified archaeologist, defined as one meeting the U.S. Secretary of the Interior's Professional Qualifications Standards for Archeology, and California Native American Tribes that are traditionally and culturally affiliated to a project area shall be immediately informed of the discovery. The qualified archaeologist and representatives from the notified Native American Tribes shall inspect the discovery and notify the lead agency of their initial assessment.

If the lead agency determines, based on recommendations from the qualified archaeologist and California Native American Tribes that are traditionally and culturally affiliated to a project area, that the resource may qualify as a tribal cultural resource (per PRC Section 21074), then the resource shall be avoided if feasible. If avoidance of the resource is not feasible, the lead agency shall consult California Native American Tribes that are traditionally and culturally affiliated to a project area to determine treatment measures to minimize or mitigate any potential impacts on the resource pursuant to PRC Section 21083.2 and State CEQA Guidelines Section 15126.4. If any such resources are on or in the tide and submerged lands of California, this process shall also include coordination with the California State Lands Commission. Once treatment measures have been determined, the lead agency shall prepare and implement a tribal cultural resources management plan that outlines the treatment measures for the

resource. Treatment measures typically consist of the following steps:

- Determine whether the resource qualifies as a tribal cultural resource (per PRC Section 21074) through analysis that could include additional ethnographic research, archaeological investigations, or laboratory analysis.
- If it qualifies as a tribal cultural resource (per PRC Section 21074) implement measures for avoiding or reducing impacts such as the following:
    - Avoid and preserve the resource in place through measures that include but are not limited to the following:
        - Plan and construct the project to avoid the resource and protect the cultural and natural context.
        - Plan greenspace, parks, or other open space to incorporate the resources with culturally appropriate protection and management criteria.
    - Treat the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, through measures that include but are not limited to the following:
        - Protect the cultural character and integrity of the resource.
        - Protect the traditional use of the resource.
        - Protect the confidentiality of the resource.
    - Implement permanent conservation easements or other interests in real property, with cultural appropriate management criteria for the purposes of preserving or using the resource or place.

5.18.3 Impact Analysis

a. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)? Or

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. ***(No New Impact)***

As discussed in Section 5.5, Cultural Resources, the NWIC records search and the archaeological survey completed for the project did not identify evidence of Native American archaeological deposits or ancestral remains. The proposed project would not impact known tribal cultural resources that are listed or eligible for listing in the California Register of Historical Resources or a local register of historical resources, nor has SCWA identified a tribal cultural resource at the project site. As noted in Section 5.5, Cultural Resources, implementation of Mitigation Measures 3.11-1 and 3.11-2, identified in the 2016 Program EIR, and Mitigation Measures TCR-1 and TCR-2, identified in the Statewide EIR, which require following proper protocols if unrecorded cultural resources or human remains are encountered, would ensure that potential impacts related to previously undiscovered historic or archaeological resources and human remains, including tribal cultural resources, would be less than significant.

5.19 UTILITIES AND SERVICE SYSTEMS

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
Would the project:				
a. Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒
b. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
c. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

5.19.1 Background

Water Supply. During construction, nominal amounts of water may be used for dust control purposes and other construction activities. Water from Putah Creek would be used or water would be trucked in from locations within Solano or Yolo counties. As discussed in Section 3.0, Project Description, the native plant field nursery would be watered using water infiltration trenches (reverse French drains) connected to Putah Creek.

Wastewater. No wastewater would be generated as a result of construction or operation of the proposed project; therefore, wastewater collection, treatment, and disposal services are not further discussed.

Solid Waste. Two privately owned landfills receive non-recyclable solid waste generated in Solano County: the Potrero Hills Landfill located near State Route (SR) 12 and Suisun City, and the Hay Road Landfill located on SR 113 east of Vacaville. The Potrero Hills Landfill has a maximum permitted daily throughput of 4,330 tons per day and has a remaining capacity of 13,872,000 cubic yards with an anticipated closure date of 2048.[63] The Hay Road Landfill has a maximum permitted daily throughput of 2,400 tons per day and has a remaining capacity of 30,433,000 cubic yards with an anticipated closure date of 2077.[64] These two landfills are the only facilities accepting solid waste in

[63] CalRecycle, 2019. *SWIS Facility/Site Activity Details, Potrero Hills Landfill (48-AA-0075).* Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1194?siteID=3591 (accessed October 18, 2022).

[64] CalRecycle, 2019. *SWIS Facility/Site Activity Details, Recology Hay Road (48-AA-0002).* Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1184?siteID=3582 (accessed October 18, 2022).

Solano County. Green waste is accepted at both of these facilities, as well as at recycling facilities in American Canyon, Martinez, and Benicia.[65]

Solid waste is accepted within Yolo County at the Yolo County Central Landfill located northeast of the City of Davis. This landfill has a maximum permitted daily throughput of 1,800 tons per day, a remaining capacity of 33,544,909 cubic yards and an anticipated closure date of 2124.[66] The UC Davis Landfill also provides solid waste disposal and green waste processing, but only for waste generated on the campus and Medical Facility in Sacramento. Green waste is accepted at the Yolo County Central Landfill, Grover Landscape Services Composting Facility in Zamora, and Davis Waste Removal's Green Material Facility (accepts material generated in or near the City of Davis).[67]

Stormwater. The project site is located in a rural area primarily surrounded by agricultural land uses. Small roadway or agricultural storm drains may exist within the project area.

Gas, Electricity and Telecommunications. No known electrical lines or pipelines are located within the project reach.

5.19.2 Prior Environmental Analysis

5.19.2.1 2016 Program EIR

The 2016 Program EIR determined that occasional small roadway or agricultural storm drains may need to be modified or replaced as a result of the proposed channel restoration work. However, implementation of Mitigation Measure 3.1-2, which requires storm drains necessitating modification or replacement due to project construction activities to be completed consistent with current standards as discussed in Section 5.10, Hydrology and Water Quality, would ensure that such activities are performed in a manner so that impacts related to stormwater drainage systems remain less than significant. The 2016 Program EIR determined that channel restoration activities would not generate substantial amounts of solid waste that would affect landfill capacities. Additionally, green waste generated by brush clearing and removal of invasive plant species and weeds would be disposed of either on-site after suitable treatment or at local composting/recycling facilities and would not affect landfill capacities. The 2016 Program EIR determined that construction activities would not occur at a height that could damage overhead electrical transmission lines and although no mapped pipelines are located within the Nishikawa reach, Mitigation Measure 3.14 would be necessary which requires the project applicant and excavator to contact the regional notification center for consultation prior to commencing excavation as detailed below. After the implementation of Mitigation Measures 3.14 and 3.1-2, the 2016 Program EIR determined that all impacts would be less than significant.

Applicable Mitigation Measures. The following mitigation measure identified in the 2016 Program EIR would apply to the proposed project**.**

65 Solano County Water Agency, 2016. Op cit.
66 CalRecycle, 2019. *SWIS Facility/Site Activity Details, Yolo County Central Landfill 57-AA-0001).* Website: https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/689?siteID=4033 (accessed October 18, 2022).
67 Solano County Water Agency, 2016. Op cit.

Mitigation Measure 3.14: **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 and Hazardous Materials Safety 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. The regional notification center for the Project Area is Underground Service Alert of Northern/Central California and Nevada. Contact shall be made with the regional notification center either by phone by dialing 811 or 1-800-227-2600 or through the center's website at http://usanorth811.org/ (Common Ground Alliance, 2015; USA North 811, 2015).

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. (The contact phone number of the subsurface installation operator may be obtained from the regional notification center.)

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.

5.19.2.2 Statewide Order EIR

The Statewide Order EIR concluded that impacts associated with the relocation of new water or expanded water facilities, wastewater facilities, solid waste, and other utilities would be less than significant. However, future restoration projects could require the relocation of stormwater outfalls or utilities (e.g., electric power, natural gas, or telecommunication facilities) that would cause significant and unavoidable impacts, as described herein. Therefore, this impact was determined to be significant and unavoidable. No mitigation measures were identified.

5.19.3 Impact Analysis

a. Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects? ***(No New Impact)***

Water Supply. During construction, nominal amounts of water may be used for dust control purposes and other construction activities. Water from Putah Creek would be used or water would be trucked in from locations within Solano or Yolo counties and would not require the relocation or construction of new expanded water facilities. As discussed in Section 3.0, Project Description, the native plant field nursery would be watered using water infiltration trenches (reverse French drains) connected to Putah Creek. These drain channels would be constructed as a perpendicular trench leading from the design channel into the newly created floodplain. Trenches would be dug to the elevation of the design channel bottom and would be sloped slightly downward from the channel to provide a flow gradient for moisture away from the channel. The drain would be filled with up to 1 foot of coarse gravel and rocks and then backfilled to grade with regular floodplain material, mixed with mulch. Trees would be planted into these drains, while shrubs and willows would fill the interstitial spaces between the drain locations. This design ensures that the entire floodplain is quickly re-populated with site-adapted trees and shrubs. Over the years, as the drains fill with sediment, trees and shrubs would have completely conquered the available rooting zone. The proposed reverse French drains would not cause significant environmental effects. No new impacts or substantially more severe significant impacts would occur.

Wastewater. No wastewater would be generated as a result of construction or operation of the proposed project. Therefore, the proposed project would not require or result in the relocation or construction of new or expanded wastewater treatment facilities. No new impacts or substantially more severe significant impacts would occur.

Stormwater. The project site is located in a rural area primarily surrounded by agricultural land uses. Small roadway or agricultural storm drains may exist within the project area. However, as detailed in Section 5.10, Hydrology and Water Quality, implementation of Mitigation Measure 3.1-2, which requires storm drains necessitating modification or replacement due to project construction activities to be completed consistent with current standards, would reduce impacts related to stormwater drainage systems to a less-than-significant level. No new impacts or substantially more severe significant impacts would occur.

Gas, Electricity and Telecommunications. No known electrical lines or pipelines are located within the project reach. Nonetheless, the proposed project would be subject to Mitigation Measure 3.14, identified in the 2016 Program EIR, which requires SWCA to contact the regional notification center for consultation prior to commencing excavation. Implementation of Mitigation Measure 3.14 would ensure that the proposed project would not result in impacts to any existing pipelines. No new impacts or substantially more severe significant impacts would occur.

b. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years? ***(No New Impact)***

New or expanded water supply entitlements would not be required to serve the project. The project would require potable or reclaimed water for dust suppression during project construction. However, the amount of water required would be relatively small and would only be needed during the construction period. The native plant field nursery would be watered using water infiltration trenches (reverse French drains) connected to Putah Creek. Once complete, no water would be required for the proposed project. Therefore, a less than significant impact related to water supplies would occur as a result of implementation of the project. No new impacts or substantially more severe significant impacts would occur.

c. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? ***(No New Impact)***

Refer to Section 5.19.3.a above. Implementation of the project would not result in a change in the wastewater treatment needed. No new impacts or substantially more severe significant impacts would occur.

d. Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals? ***(No New Impact)***

Waste generated during demolition and construction activities would need to be disposed of in local or regional facilities. Waste generated from construction would include: incidental trash from the construction workers and green waste removed through brush clearing and removal of invasive plant species and weeds. Incidental trash would be hauled to local disposal centers for recycling or taken to landfills and the green waste would be disposed of on-site after suitable treatment or at local composting/recycling facilities. The disposal demand would be reasonable relative to the solid waste disposal capacities of the nearby landfills including the Potrero Hills, Hay Road, or Yolo County Central Landfills discussed in Section 5.19.1, Background.

As the project would restore the creek channel, waste collected during operation of the proposed project would be limited to trash from trail users and/or visitors to the Putah Creek Riparian Reserve and nearby UC Davis Center for Aquatic Biology and Aquaculture and would be similar to existing conditions. The proposed project would not generate a substantial amount of waste during operation that would exceed the capacity of the Potrero Hills, Hay Road, or Yolo County Central Landfills. Therefore, implementation of the proposed project would result in a less than significant

impact to solid waste and landfill facilities. No new impacts or substantially more severe significant impacts would occur.

e. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste? ***(No New Impact)***

The California Integrated Waste Management Act (AB 939) changed the focus of solid waste management from landfill to diversion strategies such as source reduction, recycling, and composting. The purpose of the diversion strategies is to reduce dependence on landfills for solid waste disposal. AB 939 established mandatory diversion goals of 25 percent by 1995 and 50 percent by 2000, and to maintain the 50 percent diversion rate thereafter. As described above, the project would recycle/reuse as much of the construction-related debris, as possible, and would produce negligible solid waste during project operation. The proposed project would comply with existing or future statutes and regulations, including waste diversion programs mandated by federal, State, and local law. Therefore, impacts related to federal, State, and local statutes and regulations related to solid wastes would be less than significant. No new impacts or substantially more severe significant impacts would occur.

5.20 WILDFIRE

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

5.20.1 Background

The project site is located in a largely undeveloped area surrounded primarily by agricultural uses. Wildland fires occur in geographic areas that contain the types and conditions of vegetation, topography, weather, and structure density susceptible to risks associated with uncontrolled fires that can be started by lightning, improperly managed campfires, cigarettes, sparks from automobiles, and other ignition sources. According to mapping by the California Department of Forestry and Fire Protection (CAL FIRE), the project site is not located within a Very High Fire Hazard Severity Zone (VHFHSZ) in a State Responsibility Area (SRA) or a Local Responsibility Area (LRA).[68] The hills to the west of Winters are the nearest designated SRA. This area is located approximately 11 miles from the project site and has been designated as an SRA within a moderate fire hazard severity zone.[69]

5.20.2 Prior Environmental Analysis

5.20.2.1 2016 Program EIR

The 2016 Program EIR was adopted prior to the mandatory analysis of wildfire impacts. However, wildfire risks were discussed in Section 5.9, Hazards and Hazardous Materials. The 2016 Program EIR determined that the potential exists for an accidental ignition of a wildland fire due to the use of power equipment and vehicles during construction. Implementation of Mitigation Measure 3.7-2 would reduce this impact to less-than-significant levels by requiring on-site fire suppression equipment and spark arrestors on all equipment with internal combustion engines and restricting activities on high fire danger days, as detailed in Section 5.9, Hazards and Hazardous Materials.

68 California Department of Forestry and Fire Protection Fire and Resource Assessment Program. 2021. Op. cit.
69 Ibid.

5.20.2.2 Statewide Order EIR

The Statewide Order EIR concluded that implementing restoration projects permitted under the Statewide Order could exacerbate fire risk and could result in downslope or downstream risks as a result of runoff, post-fire slope instability, or drainage changes. These impacts were determined to be less than significant with implementation of Mitigation Measure FIRE-1, which requires preparation and implementation of a Fire Prevention Plan for restoration projects in areas designated as Very High or High Fire Hazard Severity Zones. As described above, the project site is not located within a Very High Fire Hazard Severity Zone (VHFHSZ) in a State Responsibility Area (SRA) or a Local Responsibility Area (LRA); therefore, Mitigation Measure FIRE-1 would not apply to the proposed project.

5.20.3 Impact Analysis

a. Would the project substantially impair an adopted emergency response plan or emergency evacuation plan? ***(No New Impact)***

As discussed above, the project site is not located within an SRA for fire hazards, as mapped by CAL FIRE, nor is it located in a LRA VHFHSZ.[70] Due to the nature of the proposed project, no impairment or interference with emergency response or emergency evacuation plans would occur. The proposed project is not located along an identified evacuation route, nor would it affect local roadways. Because the proposed project would not substantially alter or block the adjacent roadways, the proposed project would not be expected to impair the function of nearby emergency evacuation routes. No new or substantially more significant impacts related to emergency response or evacuation would occur.

b. Would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire? ***(No New Impact)***

The project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. During the construction period, the potential exists for an accidental ignition of a wildland fire due to the use of power equipment and vehicles. However, implementation of Mitigation Measure 3.7-2 would reduce this impact to less-than-significant levels by requiring on-site fire suppression equipment and spark arrestors on all equipment with internal combustion engines and restricting activities on high fire danger days, as detailed in Section 5.9, Hazards and Hazardous Materials. The proposed project does not involve construction of residential or commercial structures or any other structures for human occupation and people would use the site for a limited duration of time after the completion of construction. Therefore, the proposed project would not exacerbate wildfire risks, and this impact would be less than significant. No new or substantially more significant impacts would occur.

[70] California Department of Forestry and Fire Protection Fire and Resource Assessment Program. 2021. op. cit.

c. Would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment? ***(No New Impact)***

As noted above, the proposed project would include restoration of a creek channel that is currently in an over-widened condition. The proposed project would not require fuel breaks, emergency water sources, power lines, or other utilities to be installed that may exacerbate fire risk or result in impacts to the environment. Therefore, this impact would be less than significant. No new or substantially more significant impacts would occur.

d. Would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes? ***(No New Impact)***

The project site is generally level and is not located within an SRA for fire service or a VHFHSZ. As noted above, the project involves restoring a section of active channel that is currently in an over-widened condition. Project activities include stream recontouring, in-channel structural improvements (e.g., natural stone feature construction), and low-flow channel reconfiguration to prevent erosion, minor bank stabilization, and habitat enhancement following a vegetation management plan. The disturbed areas would be revegetated to minimize the potential for erosion/scour along the creek banks. The proposed project would result in a beneficial effect related to flood hazards and stormwater runoff. Therefore, the proposed project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slope instability or drainage changes. No new or substantially more significant impacts would occur.

5.21 MANDATORY FINDINGS OF SIGNIFICANCE

	New Potentially Significant Impact	New Mitigation Required	Reduced Impact	No New Impact
a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)	☐	☐	☐	☐
c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☐

a. Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory? ***(New Mitigation Required)***

As discussed and analyzed in this document, construction and operation of the proposed project would not substantially degrade the quality of the environment; reduce the habitat, population, or range of a plant or animal species; or eliminate important examples of California history or prehistory. The proposed project has been designed to minimize impacts to both biological and cultural resources and implementation of the mitigation measures identified in the 2016 Program EIR, as well as site-specific mitigation measures recommended in this Initial Study that would ensure that impacts to biological and cultural resources are reduced to a less-than-significant level. Section 3.4, Biological Resources, includes mitigation measures to minimize impacts to special-status species, nesting birds, and sensitive communities (e.g., riparian habitat). Additionally, Section 3.5, Cultural Resources, includes mitigation measures to minimize impacts to known cultural resources within the project site. With implementation of these mitigation measures, the proposed project would result in less-than-significant impacts to the quality of the environment.

b. Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)? ***(No New Impact)***

The CEQA Guidelines require a discussion of significant environmental impacts that would result from project-related actions in combination with "closely related past, present, and probably future projects: located in the immediate vicinity (CEQA Guidelines Section 15130[b][1][A]). Cumulative environmental impacts are those impacts that by themselves are not significant, but when considered with impacts occurring from other projects in the vicinity would result in a cumulative impact. Related projects considered to have the potential of creating cumulative impacts in association with the proposed project consist of projects that are reasonably foreseeable and that would be constructed or operated during the life of the proposed project.

The proposed project would be located in an undeveloped, rural area. No other projects have been approved or are currently under review in the project vicinity and could be under construction concurrently with the proposed project. As described in this IS/MND, impacts associated with the proposed project would be largely temporary, construction-related and would be reduced to less than significant with implementation of the mitigation measures contained herein. Therefore, the proposed project would not make a considerable contribution towards a cumulative impact related to construction impacts. The proposed project would restore the creek channel to provide increased flood protection and enhance habitat, resulting in a beneficial environmental effect. It would not result in individual operation period impacts or make a considerable contribution to permanent operation-period impacts of other projects in the vicinity or the region. Implementation of the proposed project, with mitigation, would not result in any new cumulative impacts or increase the severity of a previously identified significant cumulative impact as previously analyzed, and no other CEQA standards for supplemental review are met. No new impact would occur.

c. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? ***(No New Impact)***

The proposed project would not create adverse environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly. The proposed project would restore an existing creek channel to improve habitat conditions. These activities would not result in any substantial adverse effects on human beings, either directly or indirectly, as discussed throughout this document. Therefore, implementation of the proposed project would not result in any new impacts or increase the severity of a previously identified significant impact as previously analyzed, and no other CEQA standards for supplemental review are met. No new impact would occur.

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APPENDIX A

AIR QUALITY MODELING RESULTS

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Lower Putah Creek Restoration Project, Nishikawa Reach Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Lower Putah Creek Restoration Project, Nishikawa Reach
Lead Agency	Solano County Water Agency
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70
Precipitation (days)	33.8
Location	38.526917501433985, -121.80423719304963
County	Solano-Sacramento
City	Unincorporated
Air District	Yolo/Solano AQMD
Air Basin	Sacramento Valley
TAZ	332
EDFZ	4
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Other Non-Asphalt Surfaces	11.0	Acre	11.0	0.00	11.0	—	—	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

No measures selected

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.73	4.80	46.5	39.3	0.10	1.87	72.8	74.7	1.73	10.4	12.1	—	11,506	11,506	0.41	0.40	5.07	11,641
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	5.72	4.79	46.7	39.1	0.10	1.87	72.8	74.7	1.73	8.46	10.2	—	11,485	11,485	0.40	0.40	0.13	11,615
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	1.65	1.38	13.7	11.6	0.03	0.56	21.8	22.4	0.52	2.71	3.23	—	3,137	3,137	0.11	0.12	0.65	3,176
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.30	0.25	2.50	2.11	< 0.005	0.10	3.98	4.09	0.09	0.49	0.59	—	519	519	0.02	0.02	0.11	526

2.2. Construction Emissions by Year, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Year	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily - Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2023	5.73	4.80	46.5	39.3	0.10	1.87	72.8	74.7	1.73	10.4	12.1	—	11,506	11,506	0.41	0.40	5.07	11,641
Daily - Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	5.72	4.79	46.7	39.1	0.10	1.87	72.8	74.7	1.73	8.46	10.2	—	11,485	11,485	0.40	0.40	0.13	11,615
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	1.65	1.38	13.7	11.6	0.03	0.56	21.8	22.4	0.52	2.71	3.23	—	3,137	3,137	0.11	0.12	0.65	3,176
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2023	0.30	0.25	2.50	2.11	< 0.005	0.10	3.98	4.09	0.09	0.49	0.59	—	519	519	0.02	0.02	0.11	526

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	0.07	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	0.07	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005

Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Area	0.00	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Water	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Waste	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	< 0.005	< 0.005	< 0.005	< 0.005	0.00	< 0.005

3. Construction Emissions Details

3.1. Site Preparation (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	4.70	3.95	39.7	35.5	0.05	1.81	—	1.81	1.66	—	1.66	—	5,295	5,295	0.21	0.04	—	5,314
Dust From Material Movement	—	—	—	—	—	—	7.67	7.67	—	3.94	3.94	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	0.39	0.32	3.27	2.92	< 0.005	0.15	—	0.15	0.14	—	0.14	—	435	435	0.02	< 0.005	—	437
Dust From Material Movement	—	—	—	—	—	—	0.63	0.63	—	0.32	0.32	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.07	0.06	0.60	0.53	< 0.005	0.03	—	0.03	0.02	—	0.02	—	72.1	72.1	< 0.005	< 0.005	—	72.3
Dust From Material Movement	—	—	—	—	—	—	0.12	0.12	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.08	0.08	0.05	0.86	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	164	164	0.01	0.01	0.72	167
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.04	2.50	0.58	0.01	0.04	0.15	0.19	0.04	0.05	0.09	—	2,084	2,084	0.02	0.33	4.19	2,187
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.01	0.01	< 0.005	0.06	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	12.4	12.4	< 0.005	< 0.005	0.03	12.6
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.01	< 0.005	0.22	0.05	< 0.005	< 0.005	0.01	0.02	< 0.005	< 0.005	0.01	—	171	171	< 0.005	0.03	0.15	180
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Worker	< 0.005	< 0.005	< 0.005	0.01	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	2.06	2.06	< 0.005	< 0.005	< 0.005	2.09
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.04	0.01	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	—	28.4	28.4	< 0.005	< 0.005	0.02	29.7

3.3. Grading (2023) - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Location	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Onsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.54	4.66	44.0	37.5	0.09	1.83	—	1.83	1.69	—	1.69	—	9,262	9,262	0.38	0.08	—	9,294
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	5.54	4.66	44.0	37.5	0.09	1.83	—	1.83	1.69	—	1.69	—	9,262	9,262	0.38	0.08	—	9,294
Dust From Material Movement	—	—	—	—	—	—	3.59	3.59	—	1.43	1.43	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Off-Road Equipment	1.22	1.02	9.64	8.22	0.02	0.40	—	0.40	0.37	—	0.37	—	2,030	2,030	0.08	0.02	—	2,037
Dust From Material Movement	—	—	—	—	—	—	0.79	0.79	—	0.31	0.31	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Off-Road Equipment	0.22	0.19	1.76	1.50	< 0.005	0.07	—	0.07	0.07	—	0.07	—	336	336	0.01	< 0.005	—	337
Dust From Material Movement	—	—	—	—	—	—	0.14	0.14	—	0.06	0.06	—	—	—	—	—	—	—
Onsite truck	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Offsite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.12	0.11	0.08	1.23	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	234	234	0.01	0.01	1.02	238
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.04	2.41	0.56	0.01	0.04	0.15	0.19	0.04	0.05	0.09	—	2,009	2,009	0.02	0.32	4.04	2,109
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.11	0.10	0.10	1.03	0.00	0.00	0.01	0.01	0.00	0.00	0.00	—	212	212	0.01	0.01	0.03	214
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.07	0.04	2.59	0.58	0.01	0.04	0.15	0.19	0.04	0.05	0.09	—	2,011	2,011	0.02	0.32	0.10	2,107
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	0.02	0.02	0.02	0.22	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	47.3	47.3	< 0.005	< 0.005	0.10	48.0

Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	0.02	0.01	0.56	0.12	< 0.005	0.01	0.03	0.04	0.01	0.01	0.02	—	441	441	< 0.005	0.07	0.38	462
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Worker	< 0.005	< 0.005	< 0.005	0.04	0.00	0.00	< 0.005	< 0.005	0.00	0.00	0.00	—	7.84	7.84	< 0.005	< 0.005	0.02	7.95
Vendor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Hauling	< 0.005	< 0.005	0.10	0.02	< 0.005	< 0.005	0.01	0.01	< 0.005	< 0.005	< 0.005	—	72.9	72.9	< 0.005	0.01	0.06	76.5

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.3. Area Emissions by Source

4.3.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.07	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.04	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	0.07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Consumer Products	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	0.01	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.00	0.01	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

4.4. Water Emissions by Land Use

4.4.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	< 0.005	< 0.005	< 0.005	< 0.005	—	< 0.005

4.5. Waste Emissions by Land Use

4.5.2. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other Non-Asphalt Surfaces	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Phase 1 - Vegetation Management	Site Preparation	6/5/2023	7/14/2023	5.00	30.0	—
Phase 2 - Construction	Grading	7/17/2023	11/3/2023	5.00	80.0	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Phase 1 - Vegetation Management	Rubber Tired Dozers	Diesel	Average	3.00	8.00	367	0.40
Phase 1 - Vegetation Management	Tractors/Loaders/Backhoes	Diesel	Average	4.00	8.00	84.0	0.37
Phase 2 - Construction	Graders	Diesel	Average	1.00	8.00	148	0.41
Phase 2 - Construction	Excavators	Diesel	Average	2.00	8.00	36.0	0.38
Phase 2 - Construction	Tractors/Loaders/Backhoes	Diesel	Average	2.00	8.00	84.0	0.37
Phase 2 - Construction	Scrapers	Diesel	Average	2.00	8.00	423	0.48
Phase 2 - Construction	Rubber Tired Dozers	Diesel	Average	1.00	8.00	367	0.40

Phase 2 - Construction	Off-Highway Trucks	Diesel	Average	2.00	8.00	376	0.38

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Phase 1 - Vegetation Management	—	—	—	—
Phase 1 - Vegetation Management	Worker	17.5	11.7	LDA,LDT1,LDT2
Phase 1 - Vegetation Management	Vendor	—	8.40	HHDT,MHDT
Phase 1 - Vegetation Management	Hauling	29.2	20.0	HHDT
Phase 1 - Vegetation Management	Onsite truck	—	—	HHDT
Phase 2 - Construction	—	—	—	—
Phase 2 - Construction	Worker	25.0	11.7	LDA,LDT1,LDT2
Phase 2 - Construction	Vendor	—	8.40	HHDT,MHDT
Phase 2 - Construction	Hauling	28.1	20.0	HHDT
Phase 2 - Construction	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Control Strategies Applied	PM10 Reduction	PM2.5 Reduction
Water unpaved roads twice daily	55%	55%
Limit vehicle speeds on unpaved roads to 25 mph	44%	44%
Sweep paved roads once per month	9%	9%

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (sq. ft.)	Acres Paved (acres)
Phase 1 - Vegetation Management	—	7,000	45.0	0.00	—
Phase 2 - Construction	—	18,000	240	0.00	—

5.6.2. Construction Earthmoving Control Strategies

Control Strategies Applied	Frequency (per day)	PM10 Reduction	PM2.5 Reduction
Water Exposed Area	2	61%	61%

5.7. Construction Paving

Land Use	Area Paved (acres)	% Asphalt
Other Non-Asphalt Surfaces	11.0	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2023	0.00	204	0.03	< 0.005

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Other Non-Asphalt Surfaces	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
0	0.00	0.00	0.00	28,750

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Other Non-Asphalt Surfaces	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Other Non-Asphalt Surfaces	0.00	143

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Other Non-Asphalt Surfaces	0.00	0.00

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type
—	—

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	28.6	annual days of extreme heat
Extreme Precipitation	5.05	annual days with precipitation above 20 mm
Sea Level Rise	0.00	meters of inundation depth
Wildfire	0.00	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider different increments of sea level rise coupled with extreme storm events. Users may select from four model simulations to view the range in potential inundation depth for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 50 meters (m) by 50 m, or about 164 feet (ft) by 164 ft.
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	0	0	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	0	0	0	N/A
Drought	0	0	0	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.

The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	5	1	1	4
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	1	1	1	2
Drought	1	1	1	2
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	42.6
AQ-PM	30.7
AQ-DPM	36.9

Drinking Water	38.4
Lead Risk Housing	21.7
Pesticides	81.1
Toxic Releases	24.2
Traffic	56.8
Effect Indicators	—
CleanUp Sites	38.1
Groundwater	86.4
Haz Waste Facilities/Generators	69.4
Impaired Water Bodies	12.5
Solid Waste	66.7
Sensitive Population	—
Asthma	17.1
Cardio-vascular	29.2
Low Birth Weights	0.42
Socioeconomic Factor Indicators	—
Education	0.00
Housing	98.7
Linguistic	71.2
Poverty	98.7
Unemployment	88.1

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	—

Employed	—
Median HI	—
Education	—
Bachelor's or higher	—
High school enrollment	—
Preschool enrollment	—
Transportation	—
Auto Access	—
Active commuting	—
Social	—
2-parent households	—
Voting	—
Neighborhood	—
Alcohol availability	—
Park access	—
Retail density	—
Supermarket access	—
Tree canopy	—
Housing	—
Homeownership	—
Housing habitability	—
Low-inc homeowner severe housing cost burden	—
Low-inc renter severe housing cost burden	—
Uncrowded housing	—
Health Outcomes	—
Insured adults	—
Arthritis	0.0

Asthma ER Admissions	86.9
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	0.0
Cognitively Disabled	90.0
Physically Disabled	99.2
Heart Attack ER Admissions	66.7
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	0.0
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	0.0
Children	92.2
Elderly	99.5
English Speaking	0.0

Foreign-born	0.0
Outdoor Workers	98.2
Climate Change Adaptive Capacity	—
Impervious Surface Cover	49.0
Traffic Density	0.0
Traffic Access	74.5
Other Indices	—
Hardship	0.0
Other Decision Support	—
2016 Voting	0.0

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	49.0
Healthy Places Index Score for Project Location (b)	—
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	Yes
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Construction: Construction Phases	The project will progress in two phases and is estimated to take 4-5 months to complete. Project construction is anticipated to begin in June 2023.
Construction: Off-Road Equipment	Default equipment for Phase 1 and graders, excavators, water trucks, dump trucks, dozers, scrapers, and loaders for Phase 2.
Construction: Dust From Material Movement	Net spoils exported from the site would equal approximately 25,000 cubic yards.