INITIAL STUDY/MITIGATED NEGATIVE DECLARATION FOR THE YUBA COUNTY WATER AGENCY SOUTH CANAL DIVERSION WATER SUPPLY AND FISH PASSAGE ENHANCEMENT PROJECT: ANNUAL MAINTENANCE

Prepared for:

Yuba County Water Agency

Prepared by:

ROBERTSON - BRYAN, INC.
Solutions for Progress

January 2023

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January 2023

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ACRONYMS AND ABBREVIATIONS

AMM	Avoidance and Minimization Measure
BMPs	best management practices
B.P.	Before Present
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cfs	cubic feet per second
CNDDB	California Natural Diversity Database
CRPR	California Rare Plant Rank
Cu^{2+}	Free copper ion
CWA	Clean Water Act
dB	decibel
ESA	Federal Endangered Species Act
FR	Federal Register
FRAQMD	Feather River Air Quality Management District
ft/s	feet per second
GHG	greenhouse gas
NCIC	North Central Information Center
NMFS	National Marine Fisheries Service
NOx	oxides of nitrogen
OHWM	ordinary high-water mark
$PM_{2.5}$	fine particulate matter - less than 2.5 microns in diameter
PM_{10}	coarse particulate matter - from 2.5 to 10 microns in diameter
ROG	reactive organic gases
TSS	total suspended solids
µPa	micropascal
UAIC	United Auburn Indian Community
USACE	United States Army Corps of Engineers
WEAP	Worker Environmental Awareness Program
WOUS	Waters of United State
YCWA	Yuba County Water Agency

1 INTRODUCTION

1.1 Project Overview

The Yuba County Water Agency (YCWA) diverts water from the lower Yuba River through the South Canal Diversion to approximately 40,000 acres of agricultural lands in south Yuba County and the surrounding area. Throughout its 37 years of operation, diversion of river flow from the South Canal Diversion intake has required frequent annual in-river channel maintenance work in order get sufficient flow to the diversion. The scope of this annual maintenance work depends on the extent of changes to the river channels within the diversion impoundment during the preceding winter.

The South Canal Diversion is located in the Yuba River Goldfields on the south bank of the lower Yuba River within the impoundment of Daguerre Point Dam. Extreme floods that substantially changed the gravel bars and channels of the Daguerre Point Dam impoundment occurred in 1997, 2006, and 2017. These changes have created water supply and fish passage issues due to sediment deposition that partially or fully blocks the south channel. In more moderate water years, the south channel usually becomes fully or partially blocked, precluding water supply diversions. Under present conditions, the south channel can also become blocked during dry water years.

The proposed annual maintenance work is needed to remove sediment from the south channel as was most recently carried out in July 2018 and 2019 and May 2022 under expired approvals. The work area covers about three acres of the gravel bar upstream of the South Canal Diversion. Annual maintenance is proposed to occur over a period of 10 years beginning in spring 2023.

1.2 Regulatory Guidance

This document evaluates the potential environmental impacts of the Proposed Project. This document has been prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code section 21000 et seq., and the CEQA Guidelines, Title 14 California Code of Regulations section15000 et seq. This Initial Study was prepared by YCWA to determine if the Proposed Project could have significant impacts on the environment.

In accordance with CEQA Guidelines section 15064(a), an Environmental Impact Report must be prepared if there is substantial evidence that a project may have significant impacts on the environment. If the lead agency for the CEQA process determines that there is no substantial evidence for such impacts, or if the potential impacts can be reduced through revisions to the project description or the addition of mitigation measures, a Negative Declaration or Mitigated Negative Declaration can be prepared (CEQA Guidelines section 15070). YCWA, as the CEQA lead agency for the Proposed Project, has determined that an Initial Study and Mitigated Negative Declaration are the appropriate document for compliance with CEQA and the CEQA Guidelines.

1.3 Public Review

In accordance with CEQA Guidelines section 15073, this document will be circulated to local, state, and federal agencies and to interested organizations and individuals who may wish to review and comment on it. In reviewing this Initial Study and proposed Mitigated Negative Declaration, affected public agencies and the interested public should focus on whether the document sufficiently identifies and analyzes the possible impacts of the proposed project on the environment.

Following the close of the public review period, the YCWA Board of Directors would review and evaluate the evidence contained in the Initial Study and proposed Mitigated Negative Declaration and public comments received on these documents. At a scheduled and noticed YCWA Board of Directors public meeting, the Board would review a Statement of Findings prepared for the Proposed Project and would consider adoption of the Mitigated Negative Declaration and Mitigation Monitoring and Reporting Program, and approval of the Proposed Project.

1.4 Summary of Findings

Section 3 of this document contains the analysis and discussion of potential environmental impacts resulting from construction and implementation of the Proposed Project. Based on the resources evaluated, it was determined that the Proposed Project would have no impact on the following resources:

- Agriculture and Forestry Resources
- Land Use/Planning
- Mineral Resources
- Population/Housing
- Public Services
- Utilities/Service Systems

Impacts of the Proposed Project were determined to be less than significant for the following resources:

- Aesthetics
- Energy
- Geology/Soils
- Greenhouse Gas Emissions
- Hazards & Hazardous Materials
- Hydrology/Water Quality
- Noise
- Recreation
- Transportation
- Wildfire

Impacts of the Proposed Project to the following resources would be less than significant with incorporation of the mitigation measures described in Section 3:

- Air Quality
- Biological Resources
- Cultural Resources
- Tribal Cultural Resources

As required by CEQA, a Mitigation Monitoring and Reporting Program will be prepared and adopted at the time of project approval. It will include those mitigation measures that would reduce potentially significant environmental impacts to less than significant levels.

1.5 Document Organization

This document is organized in the following manner:

- **Section 1 - Introduction.** This section provides a project overview and regulatory guidance, and describes the public review process and organization of this document.

- **Section 2 - Project Description.** This section describes project location, history and background, purpose, and components.

- **Section 3 - Environmental Checklist.** This section provides an environmental setting for the Proposed Project and analyzes the potential environmental impacts of the Proposed Project. Resource topics appear in the order that they appear in Appendix G (Environmental Checklist) of the CEQA Guidelines. Mitigation measures are incorporated and discussed, where appropriate, to reduce potentially significant impacts to a less-than-significant level. Mandatory Findings of Significance also are presented in this section.

- **Section 4 - List of Preparers.** This section contains a list of people that assisted in the preparation of this document.

- **Section 5 - References.** This section identifies the references used in the preparation of this document.

2 PROJECT DESCRIPTION

This section describes the Proposed Project location, provides history and background of the project site, describes the project purpose, and provides a detailed description of the project components.

2.1 Project Location

The Proposed Project location is located at latitude 39°12’37.57”N, longitude 121°26’24.89”W on the south bank of the lower Yuba River; approximately 1,500 feet upstream of Daguerre Point Dam, and approximately 12 miles northeast of Marysville, in Yuba County, California (**Figure 1**

and **Figure 2**). **Figure 3** and **Figure 4** show pictures of the Proposed Project site in 2017. Although the Proposed Project site has undergone numerous changes since 2017, the photos and text boxes on the photos can be used to orient the reader to the different channels in the Proposed Project vicinity. This information is useful for understanding potential impacts of the Proposed Project to the various resource categories.

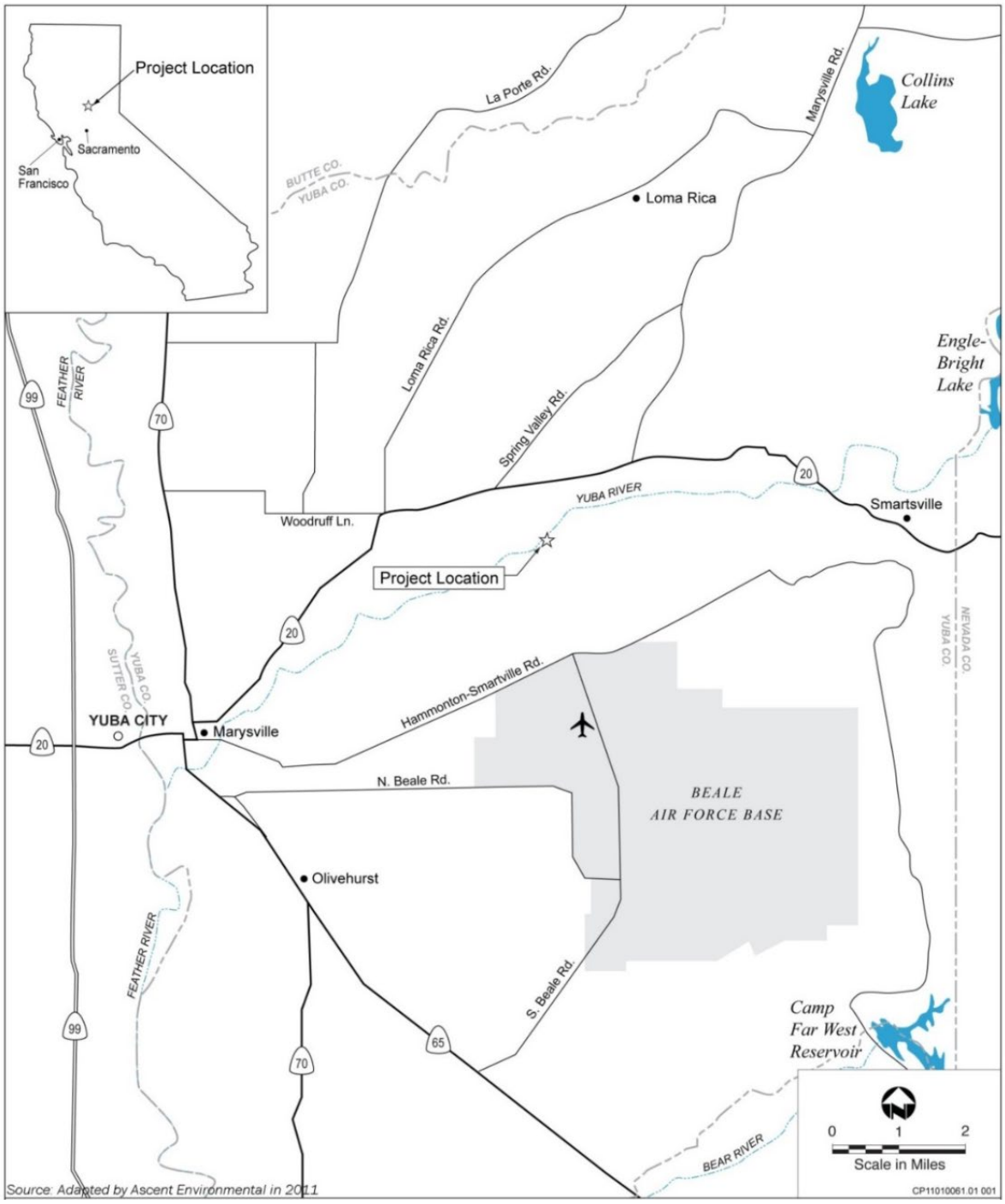

Figure 1. Regional location of project site.

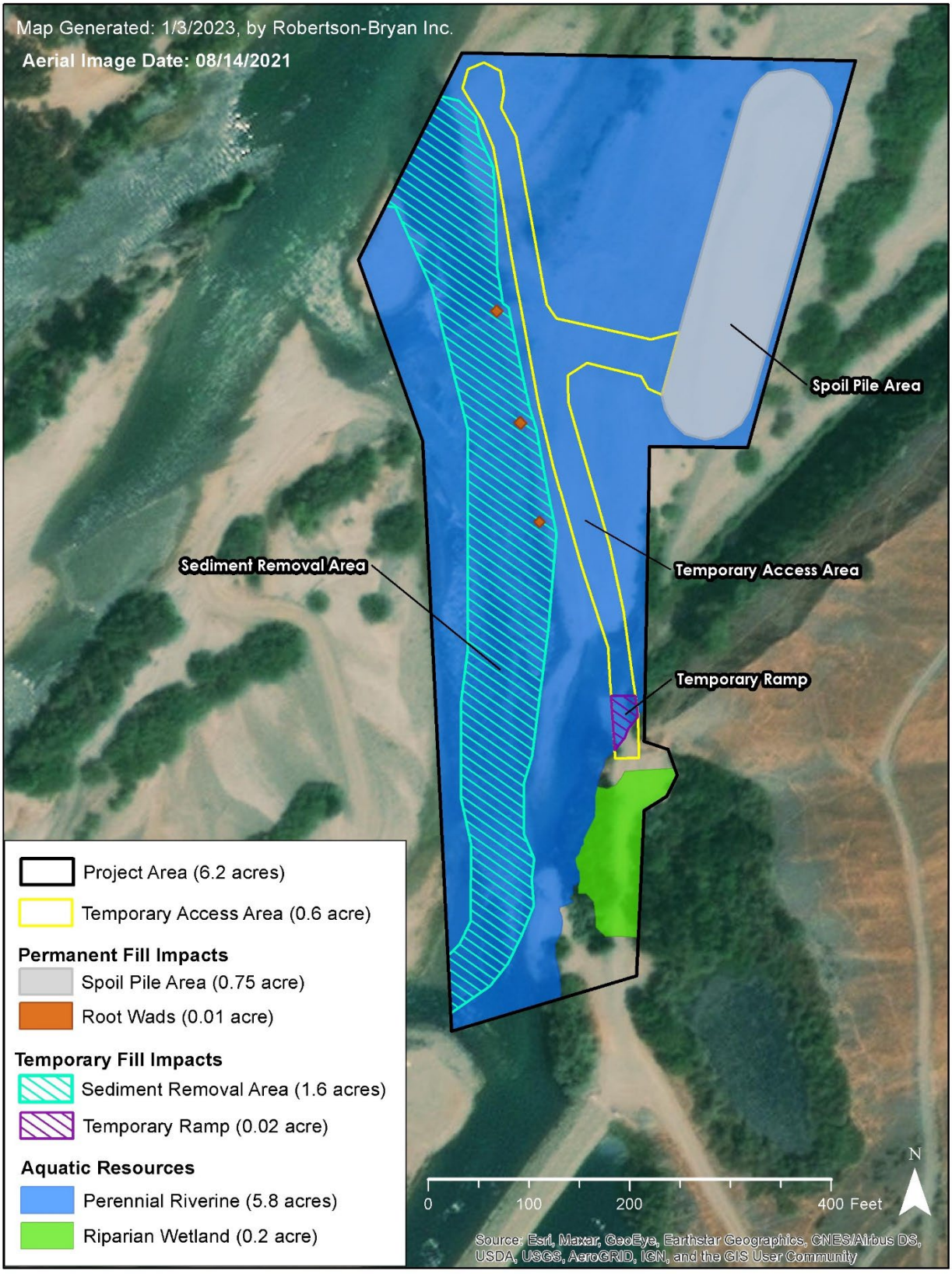

Figure 2. Close-up view of the Proposed Project site, including the potential areas of temporary and permanent impacts and borders of aquatic resources.

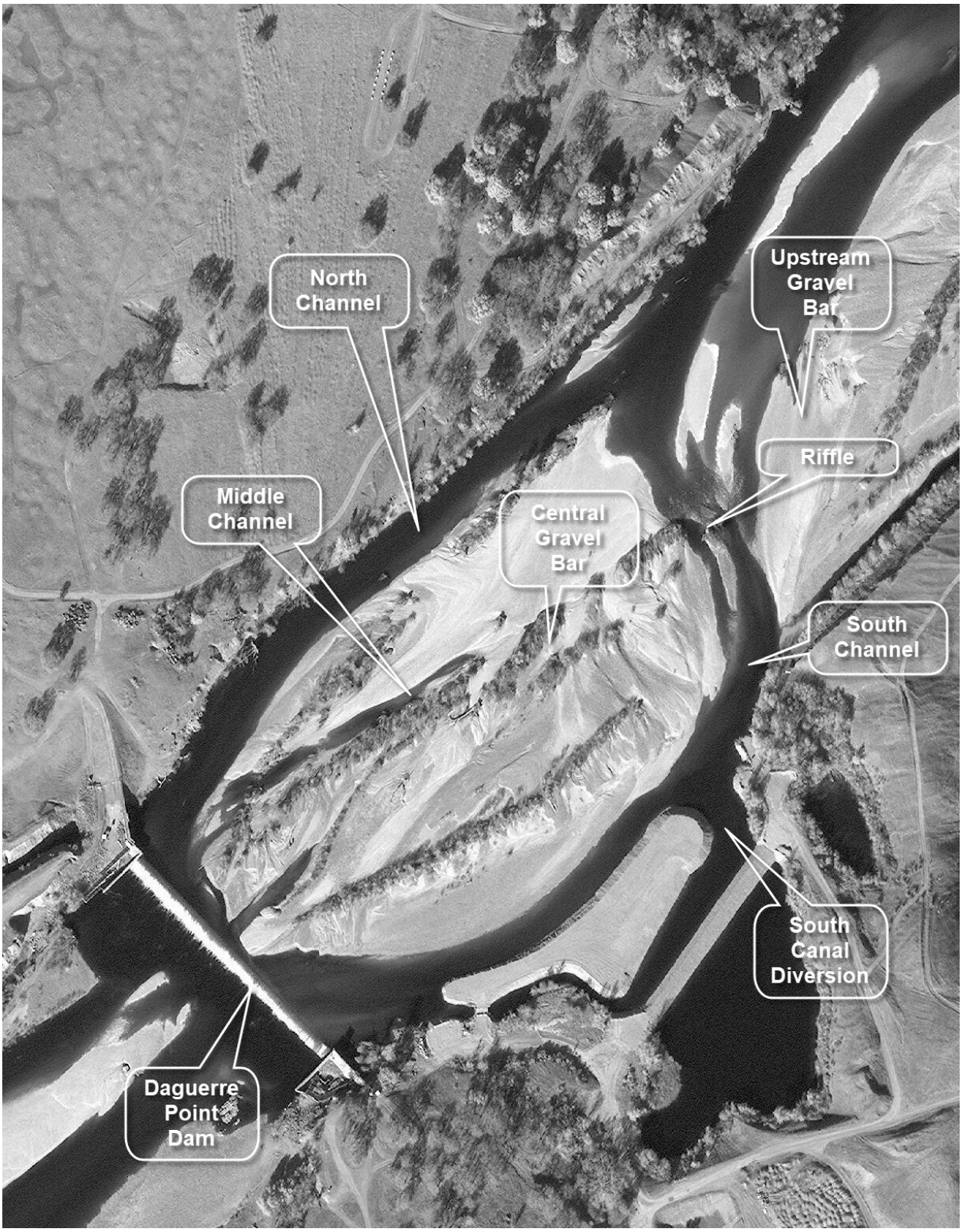

Figure 3. Aerial view of the Project site in 2017.

Figure 4. Lower Yuba River looking downstream toward the project site.

2.2 Background

YCWA's South Main Canal system supplies surface water diverted from the lower Yuba River to agricultural land in Brophy Water District, South Yuba Water District, Wheatland Water District and Dry Creek Mutual Water Company which together cover a total of about 43,100 acres (67.3 square miles) of southern Yuba County and the surrounding area.

The system provides surface water to agricultural lands that historically have had limited surface and groundwater supplies, a depleted groundwater aquifer and some poor water quality. The main crops are rice, nuts, stone fruit, and pasture. As part of YCWA's Groundwater Sustainability Program, surface water diverted from the river is also used to recharge aquifers in the South Yuba Groundwater Basin.

The South Canal Diversion was constructed in 1985. It is located in the Yuba River Goldfields on the south bank of the river within the impoundment of Daguerre Point Dam. This low concrete gravity dam and spillway was constructed by the California Debris Commission in 1910 to help control downstream migration of mine tailings from hydraulic gold mining in the upper Yuba River watershed. The dam is currently owned and operated by USACE.

The South Canal Diversion is an off-stream diversion on the south bank of the river which diverts a portion of river flow entering the impoundment created by the dam into a side channel which has a rock barrier fish screen separating the side channel from a large head pond. Water diverted from the river flows into the side channel, through the rock gabion fish screen into the head pond with a portion of flow returning to the river via a short fish bypass channel downstream of the rock barrier. A gated intake structure in the head pond controls flow of

screened water from the head pond to a large dredge pond in the Yuba Goldfields called Pond 17 which forms the first reach of the South Canal water conveyance system.

The reservoir impoundment at Daguerre Point Dam is hydraulically full of sediment which has created a dynamic system of braided gravel bars and channels which periodically change in response to the river flow regime. Rapid changes occur during large floods such as the floods of 1997, 2005 and 2017 which erode the banks of the river and entrain sediment in the reservoir into flow over the dam to be replaced by new sediment inflow from upstream. During lower flow years, normal scour and deposition processes progressively modify the topography of the gravel bars and change water flow patterns across the surface of the debris impoundment. Riparian vegetation helps to stabilize riverbanks and gravel bars by providing significant scour protection.

Throughout its 37 years of operation, diversion of river flow to YCWA's intake has required frequent annual in-river channel maintenance work both prior to commencement of irrigation season and after initial diversions have been initiated. The scope of this annual work depends on the extent of changes to the river channels within the impoundment during high flows in the preceding winter.

When the South Canal Diversion commenced operation in 1985 the main river channel through the impoundment was located along the north bank of the river, (as it is today), so a long entrance channel across the upstream end of the impoundment was required to bring water to YCWA's diversion facility on the south bank. Some 12 years later, the major New Year's Day flood of January 1997, reworked the river shifting the main channel through the impoundment to the south bank which shortened the diversion channel. The main river channel remained on the South Bank through the flood of 2005 up until the winter of 2016/2017. During the record-breaking precipitation that winter, two large floods in early 2017 severely damaged the diversion facility. Extensive emergency repairs were carried out during the summer of 2017.

Geomorphic changes at the upstream end of the impoundment that occurred during the 2017 floods resulted in the main flow channel switching back to the north bank. The entrance to the south channel became constricted by a shallow cobble riffle which impaired inflow to the South Canal Diversion affecting water diversion and anadromous fish passage. In September 2018, after extensive consultation with Federal and State fisheries agencies and USACE, YCWA constructed a new entrance channel to re-establish flow and fish passage in the south channel and restore inflow to its South Canal Diversion under a suite of permits and approvals, including a California Department of Fish and Wildlife Streambed Alteration Agreement, a Clean Water Act Section 404 permit from USACE, and a Clean Water Act Section 401 Water Quality Certification from the Central Valley Regional Water Quality Control Board.

In the following winter of 2018/2019, the entrance to the south channel was again blocked by deposition of cobble and gravel. Maintenance work conducted under the original approvals was carried out in July 2019, to clean out the channel and reopen its entrance. During the work, fish habitat was protected by isolating maintenance work from the river with temporary gravel berms and turbidity was controlled by use of a downstream silt curtain and by diverting most of the residual flow in the south channel downstream of the ongoing work through the rock barrier and into the canal system. In the winters of 2019/2020 and 2020/2021, flows in the river were low due to drought conditions, so no in-river maintenance work was required.

In March 2022, the entrance to the south channel was again partially blocked creating a water supply emergency. YCWA rapidly developed a plan to reopen the diversion channel by minimizing in-river work, isolating the in-river work area from flowing water with berms and a silt curtain and implementing a detailed plan to avoid listed fishes in the diversion channel and the downstream reach of the south channel. Following preparation of a CEQA addendum and an expedited consultation with resource agencies and receipt of authorization on May 6, 2022, YCWA immediately commenced excavation work to reopen the diversion channel and restore flow to the south channel of the river and to YCWA's South Canal Diversion. **Figure 5** below shows how the south channel looked after the excavation work was completed in May 2022.

Figure 5. View of the south channel after excavation in 2022. One of the three root wads that was placed in the south channel in 2018 can be seen on the left side of the picture.

Following the work completed in 2022, all permits and approvals to complete annual south channel maintenance expired and thus new permit applications and approvals are sought by YCWA to continue to complete annual channel maintenance upstream of the South Canal Diversion facilities to ensure water supply to the south canal diversion and enhanced fish passage to and from the south fish ladder.

2.3 Detailed Description of South Canal Diversion

YCWA's South Canal Diversion is comprised of the key facilities shown in Figure 3. A narrative description of these facilities is provided below. These facilities are referenced throughout the assessments, but particularly in the biological resources category.

A diversion channel which diverts water from the main channel of the Yuba River channel to the entrance to the diversion facility is located on the south bank of the river about 1000 feet upstream of Daguerre Point Dam. The length of this diversion channel varies according to the location of the main river channel. As of 2022, the diversion channel between the main river channel along the north bank of the river and the South Canal Diversion is 900 feet long including the 450 feet long entrance channel reconstructed in 2018. The diversion channel is 40-feet wide trapezoidal cross-section shallow channel lined with river cobble to reduce flow velocity for upstream fish passage and to resist scour. The channel has a bottom slope of 0.29% to limit the operating average water velocity to less than 6 feet per second (ft/s). Three woody-debris fish refuges (i.e., root wads) are constructed along the east bank to provide resting areas for migrating fish.

At the south bank of the river water enters a 500 feet long tapered intake channel which carries water along the upstream face of the rock gabion fish screen. The channel tapers from about 100 feet wide at its entrance down to about 40 feet wide at the downstream end of the rock gabion to stabilize flow velocity along the face of the barrier.

At the downstream end of the rock gabion water enters a 450-feet long by 30-feet wide bypass channel which allows for return of entrained fish from the intake channel to the river about 250 feet upstream of the dam. The bypass channel has a concrete culvert crossing near the downstream end which provides access to the South Bank on the North side of the bypass channel. The culvert also has a flow measurement gage to monitor flow in the bypass channel.

The 440 feet long rock gabion fish screen is constructed of 3- to 12-inch diameter river cobble with a buried permeable geotextile membrane in the front face to limit entrainment of fish.

Adjacent to the bypass channel is a 2.7-acre head pond which stores screened water before it is released into the South Canal system. A sloping gated outlet works structure located on the training embankment on the south bank of the head pond controls discharge of water from the head pond to Pond 17 in the Yuba Goldfields. Pond 17 is the upstream reach of the South Canal system.

There are three parallel outlets through the training embankment. Each outlet consists of a concrete intake with a 6-feet by 6-feet sluice gate that controls flow into a 500-feet long, 60-inch diameter buried steel pipeline which discharges to a short canal that leads to Pond 17.

2.4 Project Purpose

The purpose of the Proposed Project is to annually, as needed, complete maintenance activities to excavate river alluvium from the south channel of the lower Yuba River. These maintenance activities will allow for additional water to flow into the south channel, which supplies water to

the YCWA South Canal Diversion, and enhances fish passage for Chinook Salmon and steelhead that migrate up the south fish ladder.

2.5 Proposed Project

The scope of maintenance work required each year depends mainly on the impacts of river erosion and sedimentation processes at the upstream end of the Daguerre Point Dam impoundment during the preceding winter and spring.

Flow in the lower Yuba River is partially controlled by water storage and release from New Bullards Bar Reservoir on the North Fork of the Yuba River and the regulating effect of uncontrolled storage in Englebright Reservoir. Inflow from the smaller Middle and South forks of the river is largely unregulated and more responsive to storm runoff.

Erosion and downstream transportation of large amounts of sediment into the Daguerre Point Dam impoundment requires large amounts of hydraulic energy which occur during winters that have high amounts of precipitation and high rates of surface runoff. Extreme floods that substantially changed the gravel bars and channels of the Daguerre Point Dam impoundment occurred in 2017, 2006, and 1997. The most recent extreme flood of 2017 severely damaged the South Canal Diversion and changed flow patterns within the Daguerre Point Dam impoundment requiring extensive repairs well beyond normal channel maintenance.

In more moderate water years, the south channel usually becomes fully or partially blocked, precluding water supply diversions. The river bend at the upstream end of the Daguerre Point Dam impoundment and recent erosion of the training embankment on the north bank of the river during the 2017 flood have resulted in the North Channel being the primary flow path through the impounded hydraulic tailings to the dam. The south channel flows during winter high flow periods but the entrance to the channel typically becomes blocked by the downstream migration of sand and gravel along the south bank of the river as flow recedes.

Under present conditions, the south channel can also become blocked during dry water years. This typically occurs during small storms which result in short duration flow spikes of 10,000 to 30,000 cubic feet per second (cfs). For example, the recent blockage of the channel during the relatively dry winter of 2021/2022 was primarily caused by a brief storm which occurred during the last week of October 2021 wherein the flow at the Marysville gauge peaked at about 15,000 cfs.

Due to the short period of time between the end of the winter storm and spring snowmelt runoff seasons and the beginning of the irrigation season there is very little time to plan, prepare for, and carry out necessary in-river maintenance work. Nevertheless, construction is estimated to occur annually over a period of 10 years. Maintenance work would occur from the end of winter/spring maintenance, which is typically in April or early May, through August 31. Although maintenance would typically only occur a single time each year, if a storm blocked the entrance to the south channel after maintenance activities were complete then it is possible that a second maintenance event may be needed. Based on recent experience, the overall duration of annual maintenance work is expected to fall in the range of 1 to 10 days depending on the severity of flood damage and extent of blockage of YCWA facilities. If a second maintenance

event were necessary, the work would last for an even shorter duration. Maintenance activities would occur over a period of 10 years.

Maintenance equipment would typically include the following.

- Excavator – John Deere 450, Long Reach or similar.
- Bulldozer – Caterpillar D8 or similar.
- Off-road haul trucks – Caterpillar D350 or D400 or similar, 35 – 40-ton capacity.
- Water truck and pump.
- Service truck.
- Pick-up trucks for personnel transport.

The Project would be implemented in the following seven phases.

1. Mobilization.
2. Temporary access ramp installation.
3. Construction of temporary berms.
4. River alluvium excavation.
5. Spreading excavated river alluvium on the adjacent gravel bar.
6. Cobble lining.
7. Site clean-up and demobilization.

Determination of the precise construction methods and selection of construction equipment would be the responsibility of the construction contractor selected by YCWA. Such selection would depend on many factors such as site conditions, worker safety, construction efficiency, permit requirements and resource availability. Construction scope, methods and materials may be modified to address unforeseen issues or constraints.

The following sections describe in detail the scope of the Proposed Project.

2.5.1 Mobilization

Before initiation of construction activities, the contractor would mobilize personnel and equipment to the project site. The contractor would erect construction signage and re-establish the staging areas and access roads that were created during previous maintenance work. Construction of access roads and staging areas occurred during the emergency repair work completed in 2017. These are the same areas, which are located in upland areas away from the river and were previously cleared of vegetation. Due to the rough condition of the gravel access

road through the Yuba Goldfields, heavy construction equipment that is hauled by lowboy trailer is normally unloaded near the road entrance and is driven into the Proposed Project site.

As part of the mobilization, the contractor would install and maintain temporary facilities needed to support construction. These facilities shall include the following.

- Sanitary facilities.
- Fire control equipment.
- First aid equipment.
- Oil spill containment and cleanup equipment. (Where possible, construction equipment such as off-road haul trucks would be fueled off-site at the maintenance contractor's yard at the end of Hammonton Road.)
- Pump for filling water truck from the existing off-river head pond.
- Construction warning signs.
- Waste and rubbish containers.
- Measures such as temporary flagging or fencing to protect environmental resources.

2.5.2 Temporary Access Ramp

Access to the gravel bar adjacent to the entrance to the south channel is via a temporary ramp that would extend from the turnaround on the south bank at the upstream end of the South Canal Diversion facility to the large gravel bar on the South Bank upstream of the facility.

A temporary gravel covered riprap berm separates the turnaround from the river and acts a safety barrier for traffic and trespassers. This berm would be removed, and a temporary ramp would be constructed down the south bank to the gravel bar. The contractor would grade off (as-needed) approximately 550 feet of temporary access road on the gravel bar parallel to the entrance channel. Graded material will be spread within a 0.02-acre area within the Yuba River. From the ramp, the temporary access route will extend along the gravel bar and will utilize existing channel contours such that no placement of outside fill material is required. The overall disturbance area for vehicle traffic will be 0.6 acre. Fugitive dust on gravel roads near the river shall be controlled by a water truck.

2.5.3 Fish Avoidance Measures and Temporary Berm Construction

If work is completed from April 1 to June 30 (i.e., outside of the typical work window), fish avoidance measures would be implemented, as described below, and isolation berm(s) would be constructed at the upper end of the work site to prevent water from flowing through the area where active construction is occurring prior to the removal of any accumulated sand and gravel from the south channel (i.e., river alluvium).

2.5.4 River Alluvium Excavation

An excavator would carefully remove accumulated river alluvium which shall be loaded into off-road haul trucks. The trucks would carry the sand and gravel material across the gravel bar on the east side of the channel to an existing fill area located on a flood plain terrace near the south riverbank. The quantity of alluvium to be excavated annually from the south channel would change depending on runoff conditions but is expected to range between 500 and 1,500 cubic yards.

When the cleaning of the entrance channel is complete, the isolation berm(s) shall be removed and the entrance to the channel would be slowly reopened to allow water to flow via the diversion channel to the South Canal Diversion.

2.5.5 Spreading Excavated River Alluvium on the Adjacent Gravel Bar

The area of excavation could be up to 1.6 acres (Figure 2). The quantity of sand and gravel to be excavated annually from the south channel would change depending on runoff conditions but is expected to range between 500 and 1,500 cubic yards.

All river alluvium excavated from the south channel would be spread on the adjacent gravel bar (Figure 2) so as to be re-entrained into the river bedload during future high flow events. If regulatory permits don't allow for the the river alluvium to be spread on the adjacent gravel bar, it will be transported to an existing spoils pile located one mile from the Project site.

2.5.6 Cobble Lining and Fish Refuge

If needed, cobble lining in the south channel would be repaired using cobble from a small stockpile near the rock barrier. Up to 500 cubic yards of cobble could be used annually to maintain the cobble lining. The three root wad fish refuges on the east bank of the channel would also be cleared of gravel or replaced, if necessary (see Figure 5 for a picture of one of the root wads).

2.5.7 Site Clean-up and Demobilization

After all repair and maintenance activities are completed, clean-up activities would include: removal of any trash, debris, and construction materials, equipment, and signage. After completion of the channel maintenance work, the temporary access ramp from the turnaround on the riverbank to the upstream end of the channel would be removed. The safety berm that blocks off-road vehicle access from the turnaround to the gravel bar shall also be restored. Restoration of the excavated channel would occur naturally from winter high-flow events and, thus, would not require in-river work to restore contours with heavy construction equipment.

2.5.8 Construction Schedule

Maintenance work would occur annually, as needed, from the end of winter/spring maintenance, which is typically in April or early May, through August 31. Depending on storm events it is possible that up to two maintenance events would be needed each year. Due to the potential for severe impacts on water supply and agriculture, YCWA proposes to allow work to proceed outside of the typical work windows (i.e., between recession of winter/spring runoff and the start

of irrigation season), as needed. This time period between runoff and the start of irrigation season typically occurs during the month of April through early May.

Any in-water work completed prior to July 1 would require that a detailed fish avoidance plan be submitted to the California Department of Fish and Wildlife (CDFW) and National Marine Fisheries Service (NMFS) for approval no later than ten business days prior to the target date for initiation of any in-water work. The plan shall be prepared by the Designated or Lead Biologist and shall include feasible measures to avoid any impacts to the fish species present within the project reach in the lower Yuba River. No work shall occur until the fish avoidance plan is approved by CDFW and NMFS. It is assumed that two weeks is sufficient time for CDFW and NMFS to review the fish avoidance plan and request any necessary revisions prior to full approval. In-water work completed within the typical CDFW and NMFS work windows (i.e., between July 1 and August 31 would not require approval of a fish avoidance plan.

Based on experience over the past few years, the overall duration of annual maintenance work is expected to fall in the range of 1 to 10 days depending on the severity of flood damage and extent of blockage of YCWA facilities. Duration of construction activities would depend on factors such as climate and river conditions, access issues, wildfire, pandemic impacts and restrictions, regulatory terms and conditions and availability of skilled personnel and specialized equipment.

2.5.9 Avoidance and Minimization Measures

The following avoidance and minimization measures (AMM) listed in **Table 3** would be incorporated into YCWA's project activities to assist in minimizing the potential environmental effects during construction.

Table 1. Summary of avoidance and minimization measures.

Number	Title	Summary
AMM 1	Timing of-In Water Work	A detailed fish avoidance plan to be submitted to CDFW and NMFS for approval no later than ten business days prior to the target date for initiation of any in-water work that occurs before July 1. Construction activities would not occur at night, to allow for fish passage to occur while no construction is occurring.
AMM 2	Worker Training	Construction personnel would undergo training and education on applicable environmental rules and regulations, and measures necessary to avoid or minimize effects to sensitive resources.
AMM 3	Construction Best Management Practices (BMPs) and Monitoring	Standard practices and measures that would be implemented prior to, during, and after construction to avoid or minimize impacts to water quality, aquatic habitat, and listed species. Measures would be implemented to minimize short-term and long-term erosion.
AMM 4	Turbidity Control Measures	A turbidity curtain would be used to control downstream turbidity levels.
AMM 5	Fish Avoidance Measures	Fish surveys and sweeps would be conducted to ensure no fish are in the work area. Then berms be established to isolate the work area from fish.
AMM 6	Construction site clean-up	Includes removal of all construction equipment and site clean-up.

AMM 1: Timing of In-Water Work

To avoid and minimize impacts on State or Federal listed fish species, the following measures would be implemented.

- Due to the potential for severe impacts on water supply and agriculture, YCWA is requesting approval to allow work, as needed, to proceed outside of the typical in-water work windows (i.e., between recession of winter/spring runoff and the start of irrigation season). This time period between the end of runoff and before the irrigation season typically occurs during the month of April through early May. The typical CDFW work window for the lower Yuba River opens on July 1. The NMFS in-water work window typically opens on June 15. To ensure the same approach for both agencies, any in-water work completed prior to July 1 would require a detailed fish avoidance plan to be submitted to CDFW and NMFS for approval no later than ten business days prior to the target date for initiation of any in-water work.

- Construction work would occur only during daylight hours, which would leave the night-time hours for fish to migrate past the project site.

- Annual maintenance would be completed as quickly as possible. Each year the project is expected to be completed within 1 to 10 days.

- All work would be completed by August 31 annually.

AMM 2: Worker Training

- All contractors and equipment operators would be given Worker Environmental Awareness Program training to make them aware of the ecological value of the site, including the potential for special status species and their habitats to be present near the Proposed Project site, and educate them on how to best avoid impacting the biota and lower Yuba River The training would cover all CDFW and ESA-listed fishes with the potential to occur in the lower Yuba River and their critical habitats.

AMM 3: Construction Best Management Practices (BMPs)

- All stockpiling of materials would occur outside waters of the U.S. (WOUS) in upland areas with limited ruderal vegetation or other potential habitat and, to the extent feasible, the project applicants would confine clearing of vegetation to the minimal areas necessary for the repair activities.

- Staging and temporary and long-term material disposal areas would be located away from any WOUS.

- Movement of heavy equipment to and from the project site shall be restricted to established roadways and haul routes to the extent feasible to minimize habitat disturbance, and equipment would be stored in established staging areas.

- At all times, appropriate types and sufficient quantities of materials would be maintained on-site to contain any spills or inadvertent releases of materials that could cause a condition of pollution or nuisance if the materials were to reach WOUS or other waters.

- All feasible measures would be implemented to control erosion and runoff from areas associated with construction activities. All areas of temporary impacts and all other areas of temporary disturbance which could result in a discharge to WOUS would be restored. Restoration activities would include use of straw waddles or other erosion control avoidance and minimization measures, and revegetation with native species.

- Fueling, lubrication, maintenance, storage, and staging of vehicles and equipment would be conducted in a manner that would prevent discharges to any WOUS.

- If any repair-related contaminants do reach any surface waters, appropriate spill response procedures would be initiated as soon as the incident is discovered. In addition, the State Water Resources Control Board staff contact person identified in the Water Quality Certification would be notified via email and telephone within 24 hours of the occurrence.

- Dust would be controlled utilizing water trucks. YCWA's contractors would use water trucks to patrol, water and condition all haul roads, staging areas, and active material placement locations within the project site, as needed.

- Contractors would be required to equip all internal combustion engine equipment with intake and exhaust mufflers that are in good condition and appropriate for the machines.

AMM 4: Turbidity Control Measures

- River turbidity levels would be controlled using a permeable turbidity curtain placed in the south channel, downstream of the entrance to the South Canal Diversion channel. The permeable turbidity curtain would float six inches off of the bottom of the channel to allow for fish passage.

- Flow would be carefully balanced through the rock barrier according to residual seepage in the diversion channel downstream of the work area so that any residual flow is diverted through the rockfill barrier and head pond into the canal system rather travelling downstream over Daguerre Point Dam.

- All turbidity control and monitoring requirements included in the CDFW Streambed Alteration Agreement and Central Valley Regional Water Quality Control Board Clean Water Act Section 401 Water Quality Certification would be closely adhered to.

- Continuous monitoring of all in-water work by a qualified biologist.

AMM 5: Fish Avoidance Measures

Fish avoidance measures would only be implemented for work that occurs from April 1 to June 30.

- Preparation of a fish avoidance plan that must be approved by CDFW and NMFS.
- Prior to any work being conducted, site conditions and fish occupancy surveys would be completed.
- Upstream of the work area would be isolated using blocking nets to prevent fish from entering the work area from upstream.
- Then successive downstream seine sweeps would be conducted to facilitate fish movement from the immediate work area until no fish occur. Then additional blocking nets would be placed at the downstream end of the work area.
- A temporary berm would be installed at the upstream end of the work area as a means to prevent flowing water in the work area to the extent possible.
- Upon completion of channel work, gradually remove the upstream berm to permit flows to enter the excavated channel.

Figure 6 shows where fish avoidance measures would be implemented in the river. Importantly, river conditions are expected to differ annually, and the fish avoidance measures may be located in different areas within the south channel based on the size and location of the blockage, hence the requirement to prepare an annual avoidance plan for approval if work occurs prior to July 1.

AMM 6: Construction Site Clean-up

- Includes removal of all construction equipment and materials and a site cleanup..

Figure 6. Example of where fish avoidance measures were used in 2022 prior to excavations.

3 ENVIRONMENTAL CHECKLIST

Environmental Factors Potentially Affected

The environmental factors, if checked below, would be potentially affected by this project and would involve at least one impact that is a significant or potentially significant impact that cannot be reduced to a less-than-significant level as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Public Services
☐ Air Quality	☐ Hazards & Hazardous Materials	☐ Recreation
☐ Agricultural and Forestry Resources	☐ Hydrology/Water Quality	☐ Transportation
☐ Biological Resources	☐ Land Use/Planning	☐ Tribal Cultural Resources
☐ Cultural Resources	☐ Mineral Resources	☐ Utilities/Service Systems
☐ Energy	☐ Noise	☐ Wildfire

☐ Geology/Soils ☐ Population/Housing ☐ Mandatory Findings of Significance

Evaluation of Environmental Impacts

The following Environmental Checklist form is based on the checklist suggested in Appendix G of the State CEQA Guidelines. The Environmental Checklist identifies potential project effects as corresponding to the following categories of impacts:

- **Potentially Significant Impact**: An effect that may be significant based on substantial evidence and the significance criteria. If the project may result in one or more potentially significant impacts, an Environmental Impact Report is required.
- **Less than Significant with Mitigation Incorporated**: An effect that, with the implementation of project-specific mitigation measures, is reduced from potentially significant to less than significant.
- **Less than Significant Impact**: An effect for which no significant impacts, only less than significant impacts, result.
- **No Impact**: An effect for which the Proposed Project does not create an impact.

3.1 Aesthetics

Except as provided in Public Resource Code Section 21099, would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 publicly accessible vantage points). 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?	☐	☐	☐	☑

3.1.1 Setting

The Proposed Project site is located in a rural setting on the lower Yuba River. Several unpaved access roads lead to the site, and riparian and oak woodland vegetation grow adjacent to the river channel. Views to the south of the project site include the Yuba Goldfields. This area includes irregular gravel and cobble mounds interspersed with ponds. The cobble mounds are covered with sparse ruderal vegetation; trees occur in varying numbers in the Goldfields and scattered woody vegetation is present in upland areas. Views to the north and northeast are primarily of grazing lands. Views to the northwest include grazing lands and a few rural residences. Views to the west are of Daguerre Point Dam. The primary changes to the visual character would occur during construction due to the presence of construction equipment. These changes would not be visible from off-site and would be temporary. Rural residences in the vicinity do not have direct views of the project site.

Because of the rural setting of the project site, most off-site views are obscured by distance, topography, and vegetation. In addition, there are no scenic resources (i.e., scenic roadways, historic features) in the project vicinity, and the nearest eligible state scenic highway is State Route 49, which is more than 15 miles east of the project site. Yuba County has designated a number of roadways within the county as scenic; however, the project site is not visible from any of these roadways because of distance, topography, and intervening vegetation.

3.1.2 Discussion

a) A scenic vista is generally considered a view of an area that has remarkable scenery or a resource that is indigenous to the area. The Proposed Project would be consistent with existing characteristics of the site and would not substantially alter the visual character of the site. Therefore, the Proposed Project would have **no impact** on a scenic vista.

b) The Proposed Project is not located on, adjacent to, or visible from any scenic state highway and there are no known designated scenic resources in the project area. Therefore, the Proposed Project would have **no impact** on scenic resources.

c) The Proposed Project is located in a non-urbanized area, with minimal if any opportunity for the public to see the Proposed Project site. The following analysis considers the potential for the Proposed Project to degrade the existing visual character or quality of public views of the site in the event public were to encounter this view.

   Following maintenance work, the visual characteristics of the site would not differ appreciably from existing conditions. This is because rivers are dynamic, and the configuration of the lower Yuba River is continuously changing due to natural processes. As such, moving a blockage of alluvium from the south channel to the gravel bar would not be appreciably different than what would occur under natural processes. As such, the Proposed Project would have a **less than significant impact** on the existing visual character of the Proposed Project site and its surroundings and would not conflict with applicable zoning and other regulations governing scenic quality.

d) The Proposed Project does not include nighttime lighting or nighttime work. Further, the Proposed Project does not include any features that would create substantial light or glare

during the day. Therefore, the Proposed Project would have **no impact** on day or nighttime views in the area .

3.2 Agriculture and Forestry Resources

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 in Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 511049g)?	☐	☐	☐	☑
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?	☐	☐	☐	☑

3.2.1 Setting

As described above in Section 3.1.1, the project site is located in a rural setting on the lower Yuba River, where riparian and oak woodland vegetation grow adjacent to the river channel. None of the Proposed Project area that would be disturbed by maintenance activities is zoned or used for agriculture.

3.2.2 Discussion

a) No Prime Farmland, Unique Farmland, or Farmland of Statewide Importance is located within the project site and the Proposed Project would not directly result in the conversion of agricultural land to non-agricultural uses. Therefore, there would be **no impact** on farmland conversion to a non-agricultural use.

b) None of the Proposed Project site is located in an area zoned for agriculture. As such, the project would not disturb any land used for agriculture or that is subject to Williamson

Act contract and would not result in any changes that would conflict with the zoning. Therefore, the Proposed Project would have **no impact** on existing agricultural use zoning or a Williamson Act contract.

c-d) The Proposed Project would not involve the conversion of forest land or timberlands to another use, nor would the Proposed Project directly affect forest land or timberlands. Therefore, the Proposed Project would have **no impact** on existing zoning or loss of forest land or timberlands.

e) As identified in response "b" above, the Proposed Project would not occur on land zoned for agriculture. As such, the Proposed Project would not result in any conversion of Farmland to a different use. Therefore, the Proposed Project would have **no impact** on the conversion farmland to non-agricultural use or of forest land to a non-forest use.

3.3 Air Quality

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑

3.3.1 Setting

The Proposed Project site is located in Yuba County, which is within the Northern Sacramento Valley Area Air Basin. Atmospheric conditions such as wind speed, wind direction, and air temperature gradients interact with the physical features of the landscape to determine the movement and dispersal of air pollutants. The climate throughout the Northern Sacramento Valley Area Air Basin is similar, especially in regard to the valley floor where the majority of the population resides. Summers are typically dry and warm. Most of the precipitation occurs during the winter months from December to March (Sacramento Valley Air Quality Engineering and Enforcement Professionals 2015).

Of the many potential air pollutants, ozone, and particulate matter (i.e., respirable [PM_{10}] and fine [$PM_{2.5}$]) are of primary concern within Yuba County. Yuba County is considered to be a "non-attainment" for ozone and PM_{10}, and to be either "attainment" or unclassified for $PM_{2.5}$,

nitrogen dioxide, sulfur dioxide, sulfate, lead, carbon monoxide, hydrogen sulfide, and visibility reducing particles under the terms of the California Clean Air Act (California Air Resources Board 2020). Under the terms of the National Ambient Air Quality Standards, Yuba County is categorized as in "attainment" or unclassified for all pollutants (U.S. Environmental Protection Agency 2018).

Air quality within the Proposed Project area is regulated by the U.S. Environmental Protection Agency and California Air Resources Board at the federal and state levels, respectively, and locally by the Feather River Air Quality Management District (FRAQMD). The FRAQMD is a bi-county district that was formed to administer local, state, and federal air quality management programs for Yuba and Sutter counties. The mission of the FRAQMD is to promote and improve the air quality of Sutter and Yuba counties. This is accomplished through monitoring, evaluation, education, by implementing control measures to reduce emissions from stationary sources, permitting and inspection of pollution sources, enforcement of air quality regulations, and by supporting and implementing measures to reduce emissions from motor vehicles. The FRAQMD also responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the federal Clean Air Act (including amendments) and California Clean Air Act. The FRAQMD has established thresholds for reactive organic gases (25 lbs/day), oxides of nitrogen (25 lbs/day), and PM_{10} (80 lbs/day).

The General Conformity regulation of the Clean Air Act was established in 1993 to help states and tribes improve air quality in those areas that do not meet national ambient air quality standards. The regulation contains *de minimis* thresholds, below which, a project would not be considered to substantially interfere with attainment of national standards associated with air quality planning efforts. The Proposed Project area is in attainment for all federal standards, thus *de minimis* thresholds do not apply.

Sensitive land uses are generally considered to include those uses where exposure to pollutants could result in health-related risks to individuals. Residential dwellings and places where people recreate or congregate for extended periods of time such as parks or schools are of primary concern because of the potential for increased and prolonged exposure of individuals to pollutants. Sensitive receptors closest to potential construction activities include single-family residences located approximately 3,000 feet north of the project site.

3.3.2 Discussion

a) The Proposed Project consists of temporary maintenance activity, and would not result in increases in population or employment. Thus, the Proposed Project would have **no impact** in regard to conflicting with or obstructing implementation of an air quality plan.

b) Short-term construction-related emissions of criteria air pollutants were calculated using the California Emissions Estimator Model or CalEEMod, Version 2020.4.0, which is a statewide land use emissions computer model. CalEEMod is approved by the FRAQMD for construction projects for use in CEQA and NEPA environmental review (Feather River Air Quality Management District 2010). Modeling was completed to determine the daily amount of oxides of nitrogen (NOx), reactive organic gases (ROG), and PM_{10} emissions that would be generated by construction activity, based on project-specific

information (e.g., schedule, types of equipment, daily equipment run time). Modeling assumed CalEEMod's default values for the haul trips and trip lengths. This was a conservative approach as the number of haul trips would be substantially lower and the trip lengths would be substantially shorter than the default values. Modeling results are presented below in **Table 2** along with the FRAQMD thresholds for ROG, NOx, PM_{10}, and $PM_{2.5}$. Full modeling results can be found in **Appendix A**.

Based on the air quality modeling results, the emissions from construction activity would not exceed FRAQMD thresholds. Therefore, the project would have a **less than significant impact** regarding violation of an air quality standard. Nevertheless, the YCWA would implement **Mitigation Measure AQ-1**, consistent with the FRAQMD requirements for construction projects that would not cause exceedance air quality standards.

Table 2. Construction-generated emissions of criteria air pollutants and precursors.

Parameter	ROG (lbs/day)	NOx (lbs/day)	PM_{10} (lbs/day)	$PM_{2.5}$ (lbs/day)
Project Construction	<1	<1	<1	<1
Threshold of Significance[1]	25, not to exceed 4.5 tons per year	25, not to exceed 4.5 tons per year	80	None
Exceeds Threshold?	No	No	No	Not applicable

Notes:
ROG = reactive organic gases
NOx = oxides of nitrogen
PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
lbs/day = pounds per day

Key Modeling Assumptions:
- The equipment and assumed run times per day include: one excavator (8 hours); one bulldozer (8 hours); two off-road haul trucks (8 hours); water truck (8 hours)
- Number of work days = 10 days per year

[1] Feather River Air Quality Management District 2010

Mitigation Measure AQ-1. Implement FRAQMD Standard Mitigation Measures

YCWA and its construction constructor will implement FRAQMD's Standard Mitigation Measures, listed below, to reduce construction-related emissions.

1) Develop, submit, and implement a fugitive dust control plan to FRAQMD.

2) Control exhaust emissions from construction equipment so that they do not exceed FRAQMD Regulation III, Rule 3.0, "Visible Emissions Limitations" (40 percent opacity or Ringelmann 2.0).

3) Ensure that all construction equipment is properly tuned and maintained before and during all on-site operations.

4) Limit idling time to 5 minutes. (State of California idling rule: Commercial diesel vehicles—13 CCR 2485, effective 2/1/2005; off-road diesel vehicles—13 CCR 2449, effective 5/1/2008).

5) Use clean-fuel generators rather than temporary sources of power generation whenever possible.

Register portable engines and portable engine-driven equipment units used at the same project worksite, with the exception of on-road and off-road motor vehicles, as required by California Air Resources Board Portable Equipment Registration Program

Past, present, and future development projects contribute to a 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 nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. The Yuba County portion of the Northern Sacramento Valley Area Air Basin is currently designated as a non-attainment area relative to the State of California ambient air quality standards for ozone and PM_{10}; the county is in attainment relative to federal air quality standards. Furthermore, in developing thresholds of significance for air pollutants, FRAQMD 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. As discussed above in "b," construction-generated emissions with the Proposed Project would not exceed FRAQMD thresholds. Therefore, the Proposed Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under the California Ambient Air Quality Standards or National Ambient Air Quality Standards. Therefore, the Proposed Project would have a **less than significant impact** on the cumulative net increase of any criteria pollutant for which the project region is non-attainment.

c) The FRAQMD guidance for CEQA assessments for construction projects states that the proximity of sensitive receptors to a construction site constitutes a special consideration and may require an evaluation of toxic diesel particulate matter (Feather River Air Quality Management District 2010). Examples of sensitive receptor locations include schools, day care centers, parks/playgrounds, hospitals or nursing centers, and residential dwelling units. If a project is located within 1,000 feet of a sensitive receptor location, then the impact of diesel particulate matter should be addressed in the CEQA assessment. Considering the highly dispersive properties of diesel particulate matter, the relatively low mass of diesel particulate matter emissions that would be generated during the short project construction duration, and that the construction activity would not be located in close proximity to off-site sensitive receptors (i.e., nearby residences are located approximately 3,000 feet north of the project site), the Proposed Project would have a **less-than-significant impact** on sensitive receptors to substantial pollutant concentrations.

d) The Proposed Project does not involve the construction of new structures or other facilities that would generate odors. Therefore, the Proposed Project would have **no impact** on the creation of objectionable odors.

3.4 Biological Resources

Would the Proposed Project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑

3.4.1 Setting

The Proposed Project includes using an excavator to carefully remove accumulated river alluvium which shall then be loaded into off-road haul trucks. Trucks would carry the sand and gravel material across the gravel bar on the east side of the channel to an existing fill area located on a flood plain terrace near the south riverbank. The quantity of alluvium to be excavated

annually from the south channel would change depending on runoff conditions but is expected to range between 500 and 1,500 cubic yards.

If needed, cobble lining in the south channel would be repaired using cobble from a small stockpile near the rock barrier. Up to 500 cubic yards of cobble could be used annually to maintain the cobble lining. The three root wad fish refuges on the east bank of the channel would also be cleared of gravel or replaced, if necessary. Annual maintenance is expected to occur from 1 to 10 days between April 1 and August 30 over a period of 10 years.

This section describes the biological resources that occur in the Proposed Project area including; a description of the existing biotic environment, an overview of special status species, a general description of other wildlife, and the analysis of potential impacts from the Proposed Project to biological resources.

Existing Conditions for Plants and Wildlife

Regional Setting

The Proposed Project site is located in a rural setting on the lower Yuba River. Features within and adjacent to the site include the South Canal Diversion facility and associated canal system, Daguerre Point Dam, Hallwood-Cordua Diversion facility, USACE training levees, and the Yuba Goldfields. The Yuba Goldfields, which were formed by dredging activities associated with hydraulic mining and include significant quantities of irregular gravel and cobble mounds interspersed with ponds, are located to the south of the Proposed Project site. Several unpaved access roads lead to the site via access though the Yuba Goldfields. The Hallwood-Cordua water diversion facility is located directly across from the South Canal Diversion, also upstream of Daguerre Point Dam. Areas to the north of the Proposed Project site consist primarily of grazing lands. Daguerre Point Dam is located to the west of the Proposed Project site. The lower Yuba River and USACE training levees are located to east of the Proposed Project site.

Habitat Types

The project area contains several habitat types that potentially may be affected by the project. These habitat types are described below, with a discussion of common plant species that are found in each of the habitat types.

- Disturbed/Developed: Disturbed/developed land cover type is primarily associated with graded access roads to Daguerre Point Dam, and includes barren areas adjacent to the access roads, culverts, and a training dike. Where vegetation is present, it typically is limited to common annual ruderal species such as oat grass (*Avena fatua*), ripgut brome (*Bromus diandrus*), and yellow star-thistle (*Centaurea solstitialis*).

- Mixed Oak Woodland: The area southwest of the project site is mixed oak woodland. Mixed oak woodland habitat in the project vicinity supports several species of oak, including valley oak (*Quercus lobata*), blue oak (*Q. douglasii*), and live oak (*Q. agrifolia*), and an understory of primarily nonnative annual grassland.

- Valley Foothill Riparian: Riparian habitat in the project vicinity is associated primarily with the Yuba River, the South Canal Diversion, and adjacent ponds. Common tree

species in riparian habitat include valley oak (*Quercus lobata*), Fremont cottonwood (*Populus fremontii*), box elder (*Acer negundo*), common fig (*Ficus carica*), and willow (*Salix* sp.). Understory shrubs include Himalayan blackberry (*Rubus discolor*), California grape (*Vitis californica*), blue elderberry (*Sambucus nigra* ssp. *caerulea*), poison oak (*Toxicodendron diversilobum*), and coyote bush (*Baccharis pilularis*).

- Lacustrine and Lake/Pond: Lacustrine and lake/pond habitat types within or adjacent to the project site include the South Canal Diversion and forebay and the intake canal.

General Wildlife

Common mammal species in the vicinity of the project site include Columbian black-tailed deer (*Odocoileus hemionus columbianus*), and squirrels, such as western grey squirrel (*Sciurus griseus*). Common bird species expected to occur in the vicinity of the project site, many of which are protected under the Migratory Bird Treaty Act, include raptors, such as American peregrine falcon (*Falco peregrinus*), red-tailed hawk (*Buteo jamaicensis*) and Cooper's hawk (*Accipiter cooperii*); songbirds, including dark-eyed junco (*Junco hyemalis*) and spotted towhee (*Pipilo maculatus*); woodpeckers, such as white-headed woodpecker (*Picoides albolarvatus*) and northern flicker (*Colaptes auratus*); and owls, including great horned owl (*Bubo virginianus*) and western screech owl (*Otus kennicottii*; YCWA 2014b).

Special Status Plants and Wildlife

Special status plant species and wildlife that may occur at the Proposed Project site and that are endemic to California are described below. Special status species are defined as species that are legally protected or that are otherwise considered sensitive by federal, state, or local resource agencies. Special status species are species, subspecies, or varieties that fall into one or more of the following categories, regardless of their legal or protection status:

- officially listed by California or the federal government as endangered, threatened, or rare;
- a candidate for state or federal listing as endangered, threatened, or rare;
- taxa (i.e., taxonomic category or group) that meet the criteria for listing, even if not currently included on any list, as described in California Code of Regulations (CCR) Section 15380 of the State CEQA Guidelines;
- species identified by California Department of Fish and Wildlife (CDFW) as Species of Special Concern;
- species listed as Fully Protected under the California Fish and Game Code;
- species afforded protection under local planning documents;
- plant taxa considered by the CDFW to be "rare, threatened, or endangered in California" and assigned a California Rare Plant Rank (CRPR). The CDFW system includes five rarity and endangerment ranks for categorizing plant species of concern; and
- bird species protected under the Migratory Bird Treaty Act.

All plants with a CRPR are considered "special plants" by CDFW. The term "special plants" is a broad term used by CDFW to refer to all of the plant taxa inventoried in CDFW's California Natural Diversity Database (CNDDB), regardless of their legal or protection status. Plants ranked as CRPR 1A, 1B, and 2 may qualify as endangered, rare, or threatened species within the definition of the CEQA Guidelines, California Code of Regulations Section 15380. CDFW recommends, and

local governments may require, that CRPR 1A, 1B, and 2 species be addressed in CEQA documents.

For wildlife, special status species are considered those listed as threatened or endangered species under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA), or identified as a federal Species of Concern or California Species of Special Concern. The term "California Species of Special Concern" is applied by CDFW to animals not listed under the ESA or CESA, but that are considered to be declining at a rate that could result in listing, or historically occurred in low numbers and known threats to their persistence currently exist.

Special status species considered for this analysis are based on a review of existing documentation, including the CNDDB (2022), the Yuba County 2030 General Plan (Yuba County 2011a), the Yuba County General Plan 2030 Final Environmental Impact Report (Yuba County 2011b), and other recent documents pertaining to biological resources in the region.

The following criteria have been used to determine the potential for special status plants and wildlife species to occur within the Proposed Project area based on species life history characteristics, life history requirements, past observation, and professional expertise.

- **High:** Species is known to occur on or near the project site (based on CNDDB records within five miles and/or based on professional expertise specific to the project site or species), and there is suitable habitat within the project site.

- **Low:** Species is known to occur in the vicinity of the Proposed Project site, and there is marginal habitat within the project site, or species is not known to occur in the vicinity of the site, but there is suitable habitat on the site.

- **None:** Species is not known to occur on or in the vicinity of the project site and there is no suitable habitat within the project site, or species was surveyed for during the appropriate season with negative results, or species is not known in Yuba County. Species with no potential to occur are not discussed further in this analysis.

Special status plant and wildlife species that includes the common and scientific names for each species, regulatory status, habitat descriptions, and potential for occurrence at the Proposed Project site are listed in **Table 3**. No special status invertebrates, reptiles, or amphibians would be impacted by the Proposed Project. As such, species in these categories are not discussed further. Daguerre Point Dam appears to form a barrier to the movement of many fish species in the lower Yuba River. Thus, criteria used to determine the potential for fish species to occur at the project site includes potential to occur above Daguerre Point Dam, life history characteristics, life history requirements, past observation, and professional expertise.

Table 3. Special-status plant and wildlife species with the potential to occur at the Proposed Project site.

Species	Status[1]	Habitat	Potential for Occurrence
	FESA, CESA, CRPR		
Plants			

Species	Status[1]	Habitat	Potential for Occurrence
	FESA, CESA, CRPR		
Dwarf downingia *Downingia pusilla*	—, —, 2B.2	Moist valley and foothill grasslands and vernal pools. Blooms March–May.	None; there is no habitat for this species within the project site.
Hartweg's golden sunburst *Pseudobahia bahiifolia*	FE, CE, 1B.1	Clay soils in valley and foothill grasslands. Blooms March–April.	None; extant occurrences are limited to the San Joaquin Valley; a Yuba County occurrence from the 1840s is considered extirpated.
Legenere *Legenere limosa*	—, CT, 1B.1	Moist areas and vernal pools. Blooms April–June.	None; there is no habitat for this species within the project site.
Veiny monardella *Monardella venosa*	—, —, 1B.1	Usually in heavy clay within cismontane woodland, valley, and foothill grassland. Blooms May—July.	None; known from only two extant populations in Butte and Tuolumne counties; a Yuba County occurrence from the 1850s is considered extirpated.
Wildlife			
Invertebrates			
California linderiella *Linderiella occidentialis*	—, CT, —	Vernal pools, swales, and ephemeral freshwater habitat.	None; there is no habitat for this species within the project site.
Valley elderberry longhorn beetle *Desmocerus californicus dimorphus*	FT, —, —	Blue elderberry shrubs usually associated with riparian areas.	None; The nearest elderberry shrub is located approximately 200 yards from the project site. Since valley elderberry longhorn beetle is only found in close association with the host plant, elderberry shrubs, there is no potential for valley elderberry longhorn beetle to occur at the project site.
Vernal pool fairy shrimp *Branchinecta lynchi*	FT, —, —	Vernal pools, swales, and ephemeral freshwater habitat.	None; there is no habitat for this species within the project site.
Vernal pool tadpole shrimp *Lepidurus packardi*	FE, —, —	Vernal pools, swales, and ephemeral freshwater habitat.	None; there is no habitat for this species within the project site.
Monarch Butterfly *Danaus plexippus*	FC,	Milkweed which serves as its larval host plant. Native flowering plants also provide an important food source.	None; there is no habitat for this species within the project site.
Reptiles			
Giant garter snake *Thamnophis gigas*	FT, CT, —	Slow-moving streams, sloughs, ponds, marshes, inundated floodplains, rice fields, and irrigation/drainage ditches on the Central Valley floor with mud bottoms, earthen banks, emergent vegetation, abundant small aquatic prey and absence or low numbers of large predatory fish. Also require upland refugia not subject to flooding during the snake's inactive season.	None; there is no habitat for this species within the project site.
Western pond turtle *Emys marmorata*	—, CSC, —	Agricultural wetlands and other wetlands such as irrigation and drainage canals, low gradient streams, marshes, ponds, sloughs, small lakes, and their associated uplands.	High; ponds provide aquatic habitat. The annual grassland and riparian habitat provide upland habitat. Pond turtle has been documented in the project vicinity.
Birds			
Bank Swallow *Riparia riparia* (nesting)	—, CT, —	Nests in colonies in unvegetated vertical banks with fine-textured, sandy soils, typically next to streams, rivers, or lakes, occasionally in gravel quarries or other eroding bluffs. Forages in a variety of habitats near nests.	Low; individuals from nest colonies along the Feather River could occasionally forage in the project vicinity; but no suitable nesting habitat is present.

Species	Status[1]	Habitat	Potential for Occurrence
	FESA, CESA, CRPR		
Burrowing owl *Athene cunicularia*	—, CSC, —	Nests and forages in grasslands, agricultural lands, open shrublands, and open woodlands with existing ground squirrel burrows or friable soils. Suitable burrow sites consist of short, herbaceous vegetation with only sparse cover of shrubs or taller herbs (Schuford and Gardali 2008: 221)	High; potential nesting habitat and the annual grassland provides foraging habitat. Has been documented in the project vicinity.
California black rail *Laterallus jamaicensis coturniculus*	—, CT, —	Saltwater, brackish, and freshwater marshes. Found in numerous willow, densely vegetated wetlands throughout the northern Sierra Nevada foothills.	Low; although emergent vegetation provides potential habitat , vegetation on the site is not dense and is considered marginal quality for this species.
Loggerhead shrike *Lanius ludovicianus*	—, CSC, —	Forages in grasslands and agricultural fields, and nests in scattered shrubs and trees.	High; riparian and oak woodland provide suitable foraging habitat and suitable nest sites.
Northern harrier *Circus cyaneus*	—, CSC, —	Uses a variety of open grassland, wetland, and agricultural habitats. Breeding habitats include marshy meadows, wet and lightly grazed pastures, and freshwater and brackish marshes; and dry upland habitats, such as grassland, cropland, drained marshland, and shrub-steppe in cold deserts. Wintering habitat includes grassland, pastures, cropland, coastal sand dunes, brackish and freshwater marshes, and estuaries.	Low; potential nesting habitat adjacent to marshy areas is of marginal quality.
Song sparrow (Modesto population) *Melospiza melodia*	—, CSC, —	Emergent freshwater marsh dominated by tules, and cattails; willow riparian scrub; valley oak riparian woodland with dense understory; and along vegetated irrigation canals and levees.	Low; riparian habitat present does not have a dense understory and is considered to be marginal quality for this species.
Swainson's hawk *Buteo swainsoni*	—, CT, —	Nest peripherally to Valley riparian systems in lone trees or groves of trees in agricultural fields. Valley oak, Fremont cottonwood, walnut, and large willow trees, ranging in height from 41 to 82 feet, are the most commonly used nest trees in the Central Valley. This species is known from Alameda, Butte, Colusa, Contra Costa, Fresno, Glenn, Inyo, Kern, Kings, Lassen, Los Angeles, Madera, Merced, Modoc, Mono, Napa, Placer, Plumas, Sacramento, San Bernardino, San Joaquin, San Luis Obispo, Siskiyou, Solano, Stanislaus, Sutter, Tehama, Tulare, Yolo, and Yuba counties in California.	High; the trees provide potential nesting habitat, and the annual grassland provides foraging habitat. Has been documented in the project vicinity.
Tricolored blackbird *Agelaius tricolor*	—, CSC, — (nesting colony)	Nests in dense blackberry, cattail, tule, willow, or wild rose within emergent wetlands throughout the Central Valley and foothills surrounding the valley.	Low; riparian vegetation provides potentially suitable nesting habitat for this species.
Yellow-breasted chat *Icteria virens*	—, CSC, —	Dense riparian thickets of willow and other shrub vegetation along watercourses.	Low; riparian habitat present does not have a dense understory and is considered to be marginal quality for this species.
White-tailed kite *Elanus leucurus*	—, FP, ---	Forages in grasslands and agricultural fields; nests in riparian zones, oak woodlands, and isolated trees.	High; potential nesting habitat located within project site. Has been documented in project vicinity.
Mammals			

Species	Status[1] FESA, CESA, CRPR	Habitat	Potential for Occurrence
Western red bat *Lasiurus blossevillii*	—, CSC, —	Roosts primarily in tree foliage, especially in cottonwood, sycamore, and other riparian trees or orchards. Prefers habitat edges and mosaics with trees that are protected from above and open below with open areas for foraging, including grasslands, shrublands, and open woodlands.	Low; riparian vegetation on the project site is not likely to provide suitable roosting habitat for this species.

Notes: CRPR = California Rare Plant Rank; CNDDB = California Natural Diversity Database; CESA = California Endangered Species Act; FESA = Federal Endangered Species Act

[1] Legal Status Definitions

Federal Endangered Species Act:
FE Endangered (legally protected)
FT Threatened (legally protected)
FC Candidate species

California Endangered Species Act:
CE Endangered (legally protected)
CT Threatened (legally protected)
FP Fully Protected (legally protected)
CSC Species of special concern (no formal protection other than CEQA consideration)
CR California Rare

California Rare Plant Ranks:
1B Plant species considered rare or endangered in California and elsewhere (protected under CEQA, but not legally protected under ESA or CESA)
2B Plant species considered rare or endangered in California but more common elsewhere (protected under CEQA, but not legally protected under ESA or CESA)

Threat ranks:
.1-Seriously threatened in California (greater than 80% of occurrences threatened / high degree and immediacy of threat)
.2-Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat)
.3-Not very threatened in California (fewer than 20% of occurrences threatened/low degree and immediacy of threat or no current threats known)

Source: California Natural Diversity Database 2022; USFWS 2022 (**Appendix B**), Yuba County 2011a, Yuba County 2011b

Existing Conditions for Fisheries Resources

Lower Yuba River

Prior to 2018, the Proposed Project site contained a relatively small riffle at the entrance of the south channel that transitioned into a cascade, that then transitioned to a long run downstream to Daguerre Point Dam. However, the river has undergone numerous changes since the early 2018 high-flow events. High flows have moved significant quantities of gravel and cobble from the riffle area downstream, such that the cascade and run were filled in. Approximately 3–7 feet of material was removed from the upper riffle area and deposited downstream. Substrate in the reach where excavation would occur consists of gravel, cobble, and fines in varying percentages. Cobble ranges from 10 to 80%, gravel ranges from 50 to 80%, and fines are typically 10% of the sediment composition. Under existing conditions there is a high percentage of fine sediment below the substrate surface.

The south channel of the lower Yuba River, where work activities would occur, consists of run habitat. The constriction that forms in the south channel, which has created the need for annual maintenance, is typically located near the top of the south channel and is shown in a picture from 2017 (**Figure 7**). The middle and north channels within the Proposed Project site are also comprised of run habitat. Root wads were placed in the channel in 2018 to create areas of velocity refugia for juveniles migrating downstream.

(Picture is from 2017)

Figure 7. Example of the constriction that can form in the south channel of the lower Yuba River.

Fish Community

The 24-mile reach of the lower Yuba River downstream of Englebright Dam supports 45 fish species/races in 16 families (Yuba County Water Agency 2012; **Table 4**). These include two separate races of Chinook Salmon (fall-run and spring-run) and both the resident and anadromous (steelhead) forms of Rainbow Trout. Of the 45 fish species occurring in the lower Yuba River, 23 species (51 percent) are introduced (i.e., not native) to California waters and the remaining 22 species (49 percent) are native to California. Daguerre Point Dam appears to form a barrier to the movement of many fish species in the lower Yuba River. All 45 fish species/races occur downstream of Daguerre Point Dam. However, only 18 species/races (40 percent) have been documented upstream of the dam (Yuba County Water Agency 2012).

Table 4. Fish species occurring in the lower Yuba River.

Family	Common Name	Scientific Name	Origin	Status [1]	
				ESA	CESA
Acipensiridae (Sturgeons)	Green Sturgeon [2]	*Acipenser medirostris*	Native	T	SSC
	White Sturgeon [3]	*A. transmontanus*	Native	–	SSC
Atheriinposidae (Silversides)	Inland Silversides [2]	*Menidia beryllina*	Introduced	–	–
Catostomidae (Suckers)	Sacramento Sucker	*Catostomus occidentalis*	Native	–	–
Centrarchidae (Sunfishes and Basses)	Black Crappie [2]	*Pomoxis nigromaculatus*	Introduced	–	–
	Bluegill	*Lepomis macrochirus*	Introduced	–	–
	Green Sunfish	*L. cyanellus*	Introduced	–	–
	Largemouth Bass	*Micropterus salmoides*	Introduced	–	–
	Redear Sunfish	*L. microlophus*	Introduced	–	–

Family	Common Name	Scientific Name	Origin	Status [1]	
				ESA	CESA
	Smallmouth Bass	*M. dolomieu*	Introduced	--	--
	Warmouth [2]	*L. gulosus*	Introduced	--	--
	White Crappie [2]	*P. annularus*	Introduced	--	--
Clupidae (Herrings)	American Shad [2]	*Alosa sapidissima*	Introduced	--	--
	Threadfin Shad [2]	*Dorosoma petenense*	Introduced	--	--
Cottidae (Sculpins)	Prickly Sculpin	*Cottus asper*	Native	--	--
	Riffle Sculpin	*C. gulosus*	Native	--	SSC
Cyprinidae (Minnows)	California Roach	*Hesperoleucus symmetricus*	Native	--	--
	Common Carp [2]	*Cyprinus carpio*	Introduced	--	--
	Fathead Minnow [2]	*Pimephales promelas*	Introduced	--	--
	Golden Shiner [2]	*Notemigonus crysoleucas*	Introduced	--	--
	Hardhead	*Mylopharodon conocephalus*	Native	--	SSC
	Sacramento Blackfish [2]	*Orthodon microlepidotus*	Native	--	--
	Sacramento Hitch [2]	*Lavinia exilicauda exilicauda*	Native	--	SSC
	Sacramento Pikeminnow	*Ptychocheilus grandis*	Native	--	--
	Sacramento Speckled Dace	*Rhinichthys osculus*	Native	--	--
	Sacramento Splittail [3]	*Pogonichthys macrolepidotus*	Native	--	SSC
Embiotocidae (Surfperches)	Sacramento Tule Perch [2]	*Hysterocarpus traskii*	Native	--	--
Gasterosteidae (Sticklebacks)	Three-spined Stickleback [3]	*Gasterosteus aculeatus*	Native	--	--
Ictaluridae (Catfishes and Bullheads)	Black Bullhead [2]	*Ameiurus melas*	Introduced	--	--
	Brown Bullhead [2]	*A. nebulosus*	Introduced	--	--
	Channel Catfish [2]	*Ictalurus punctatus*	Introduced	--	--
	White Catfish [2]	*A. catus*	Introduced	--	--
Moronidae (Basses)	Striped Bass	*Morone saxatilis*	Introduced	--	--
Osmeridae (Smelts)	Wakasagi [2]	*Hypomesus nipponensis*	Introduced	--	--
Petromyzontidae (Lampreys)	Pacific Lamprey	*Lampetra tridentata*	Native	SC	SSC
	River Lamprey [2]	*L. ayresii*	Native	--	SSC
Percidae (Perches)	Bigscale Logperch [2]	*Percina macrolepida*	Introduced	--	--
Poecilidae (Livebearers)	Western Mosquitofish [2]	*Gambusia affinis*	Introduced	--	--
Salmonidae (Trout and Salmon)	Brown Trout [2]	*Salmo trutta*	Introduced	--	--
	Central Valley Steelhead	*Oncorhynchus mykiss*	Native	T	--
	Rainbow Trout (resident)	*O. mykiss*	Native	--	--
	Chinook Salmon - fall-run	*O. tshawytscha*	Native	SC	SSC
	Chinook Salmon - spring-run	*O. tshawytscha*	Native	T	T
	Chum Salmon [2]	*O. keta*	Native	--	--

Family	Common Name	Scientific Name	Origin	Status [1]	
				ESA	CESA
	Pink Salmon [2]	*O. gorbuscha*	Native	–	–

Notes:
1 - Status abbreviations: T = Threatened; SC = (federal) Species of Concern; SSC = (California) Species of Special Concern (Source: California Department of Fish and Wildlife 2016).
2 - Observed downstream of Daguerre Point Dam only (source: Yuba County Water Agency 2012).
3 - Anecdotal information suggests occurrence in the lower Yuba River downstream of Daguerre Point Dam, but presence is unverified (Source: Yuba County Water Agency 2012).
Source: Compiled by Robertson-Bryan, Inc., in 2016

Special Status Fish Species

This section provides an overview of the life history and distribution of fish species occurring in the lower Yuba River that are endemic to California waters and are listed as threatened species under the ESA or CESA, or identified as a federal Species of Concern or California Species of Special Concern. No fish species occurring in the lower Yuba River are listed as endangered species under the ESA or CESA.

Anadromous salmonids occurring in the lower Yuba River include fall-run Chinook Salmon, ESA-listed and CESA-listed spring-run Chinook Salmon, and ESA-listed steelhead. Based on their life histories, the juvenile and adult life stages of each of these anadromous salmonids may occur in the lower Yuba River. The months that each of these fish may be present in the lower Yuba River is presented below in **Table 5**.

Table 5. Salmonid life history periodicity in the lower Yuba River.

Life Stage	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
SPRING-RUN CHINOOK SALMON												
Adult Immigration and Holding												
Spawning												
Embryo Incubation												
Fry Rearing												
Juvenile Rearing												
Juvenile Downstream Movement												
Smolt (Yearling+) Emigration												
FALL-RUN CHINOOK SALMON												
Adult Immigration and Staging												
Spawning												
Embryo Incubation												
Fry Rearing												
Juvenile Rearing												
Juvenile Downstream Movement												
STEELHEAD												

Life Stage	Jan		Feb		Mar		Apr		May		Jun		Jul		Aug		Sep		Oct		Nov		Dec	
Adult Immigration and Holding	■	■	■	■	■	■									■	■	■	■	■	■	■	■	■	■
Spawning	■	■	■	■	■	■	■	■																
Embryo Incubation	■	■	■	■	■	■	■	■	■	■														
Fry Rearing							■	■	■	■	■	■	■	■										
Juvenile Rearing	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Juvenile Downstream Movement							■	■	■	■	■	■	■	■	■	■	■	■						
Smolt (Yearling+) Emigration	■	■	■	■	■	■	■												■	■	■	■	■	■

Source: Yuba County Water Agency 2013b

Spring-run Chinook Salmon

The Central Valley spring-run Chinook Salmon ESU was listed as a threatened species on September 16, 1999 (64 FR 50394). Five-year status reviews completed in 2005 and 2011 reaffirmed their threatened status. A five-year status review completed in 2016 also recommended that Central Valley spring-run Chinook Salmon remain classified as a threatened species, even though the recent drought raised concerns that Central Valley spring-run Chinook Salmon populations could deteriorate into a condition with high extinction risk in the coming years (NMFS 2016). NMFS completed a draft recovery plan for three Central Valley salmonids, including the Central Valley spring-run Chinook Salmon ESU, in 2009, and adopted a final recovery plan in 2014.

Historically, spring-run Chinook Salmon were abundant throughout the Sacramento and San Joaquin river systems, but they have been extirpated from the San Joaquin River system. Dam construction has eliminated nearly all historic spawning habitat. Much of the habitat where summer water temperatures are suitable for Chinook salmon is above 150–500-meter elevations, and most of that high elevation habitat is now upstream of impassible dams (NMFS 2005). Other threats to the ESU include: (1) operation of antiquated fish screens, fish ladders, and diversion dams; (2) levee construction and maintenance projects that have simplified riverine habitat and have disconnected rivers from floodplain; and (3) water supply and hydroelectric operations. Threats to the genetic integrity of spring-run Chinook Salmon, including hybridization with fall-run Chinook Salmon, is also identified as a serious concern.

Naturally spawning populations of spring-run Chinook Salmon currently are believed to be restricted to accessible reaches of the upper Sacramento River, Antelope Creek, Battle Creek, Beegum Creek, Big Chico Creek, Butte Creek, Clear Creek, Deer Creek, Mill Creek, the Feather River, and the lower Yuba River (CDFG 1998). A small spring-run Chinook Salmon population occurred historically in the Yuba River, but was reportedly extirpated by 1959 (CDFG 1991). Since 1991, fish straying from the Feather River and infrequent stockings in the lower Yuba River of fish from the Feather River Hatchery are believed to have contributed to the re-establishment of spring-run Chinook Salmon in the lower Yuba River (YCWA 2012, CDFG 1991).

NMFS (2012) characterizes the lower Yuba River spring-run Chinook Salmon population as having low productivity and abundance and at a high risk of extirpation. Monitoring of fish

passage through the fish ladders at Daguerre Point Dam indicated that the estimated number of adult spring-run Chinook Salmon migrating past the dam ranged from 235 to 5,274 for years where estimates were calculated during the time period 2004 through 2021 (Poxon, B. and P. Bratovich., 2020 with updates for years 2020 and 2021).

Adult spring-run Chinook Salmon typically migrate into the lower Yuba River starting in April and hold from April through August in deep pools, including the Daguerre Point Dam plunge pool and the Narrows Reach downstream of Englebright Dam, before spawning (YCWA 2013a; YCWA 2013b). Spring-run Chinook Salmon spawning in the lower Yuba River occurs from early or mid-September into October (YCWA 2013b). Spawning activity is generally associated with decreases in water temperature to 56°F or lower and, for this reason, the earliest spawning activity typically occurs in upper reaches of the lower Yuba River, where the water is colder during this period. Spawning activity extends downstream past Daguerre Point Dam as the spawning season progresses and temperatures become incrementally cooler in the downstream reaches (YCWA 2013a).

Water temperatures affect the length of time required for embryo incubation. Temperatures between 41–55.4°F and waters with high oxygen saturation are necessary for embryo survival (Moyle 2002). Embryos hatch in 40–60 days then remain in gravel as alevins for 4–6 weeks before emerging as fry (average size 44 millimeters [mm]; Moyle 2002). Juveniles generally reside in freshwater for 12–16 months and emigrate as juveniles or yearlings from October through June with peak movement during December and March (YCWA 2013a, NMFS 2014).

Based on the life histories of the lower Yuba River population, the habitat types that occur in the vicinity of the Proposed Project, the potential period of maintenance (i.e., from April 1 to August 31) adult and juvenile spring-run Chinook Salmon could occur at the Proposed Project site. Adults could utilize the Proposed Project site during their downstream migration, but there is no spring-run Chinook Salmon holding habitat (i.e., deep pool habitat) at the Proposed Project stie, so there would be no adult holding. Juvenile spring-run Chinook Salmon rearing and juvenile downstream movement could occur in at the Proposed Project site during the planned maintenance. However, rearing in the area would be limited. It is more likely that a juvenile fish may utilize the root wads for velocity refugia for a short period of time during their downstream migration.

Fall-run Chinook Salmon

The fall-run of Chinook Salmon is currently the largest run of Chinook Salmon in the Sacramento River system as a whole, and in the lower Yuba River (Yuba County Water Agency 2013a). Fall-run Chinook Salmon are a federal Species of Concern and a California Species of Special Concern. Because fall-run Chinook Salmon represent the greatest proportion of all four Sacramento River System runs, they continue to support commercial and recreational fisheries of significant economic importance. Adult fall-run Chinook Salmon migrate into the lower Yuba River from July through mid-December (YCWA 2013b; Table 5), with immigration peaking from September through November (YCWA 2013a). Unlike spring-run Chinook Salmon, adult fall-run Chinook Salmon spawn shortly after immigration, rather than holding for extended periods prior to spawning. In the lower Yuba River, fall-run Chinook Salmon generally spawn

from October through December, with embryo incubation occurring from October through March. Fry emergence typically begins in late December and continues through April.

An evaluation of rotary screw trap data collected from 1999 to 2009 indicates that peak emigration of juvenile Chinook Salmon in the lower Yuba River occurs annually from late December through late April (YCWA 2012; Table 5). Fall-run Chinook Salmon emigrate as post-emergent fry and juveniles, and as smolts after rearing in their natal streams from mid-January through June. Emigrating juveniles remain in the Delta for variable lengths of time prior to entering the ocean. In the lower Yuba River, spring- and fall-run Chinook Salmon spawn throughout the same range (YCWA 2013a). As discussed above for spring-run Chinook Salmon, the majority (≥74 percent) of all Chinook Salmon redds were established between Daguerre Point Dam and Englebright Dam and thus all life stages of fall-run Chinook Salmon may likewise occur in the project vicinity.

Snorkel surveys indicate that the density of juvenile Chinook Salmon was higher at survey locations upstream of Daguerre Point Dam compared to locations surveyed downstream of the dam (YCWA 2013a). These surveys also indicated that juvenile Chinook Salmon were generally observed in the lower half of the water column at all depths surveyed, were typically found in close association with the shoreline, and were rarely observed in habitats exceeding 4.9 feet in depth or where velocities exceeded 2 feet per second (ft/s).

Based on the life histories of the lower Yuba River population, the habitat types that occur in the vicinity of the Proposed Project, the potential period of maintenance (i.e., from April 1 to August 31) fall-run Chinook Salmon could occur at the Proposed Project site. Adults could utilize the Proposed Project site during their downstream migration from July to August, but there is no fall-run Chinook Salmon holding habitat (i.e., deep pool habitat) at the Proposed Project site, so there would be no adult holding. Juvenile fall-run Chinook Salmon rearing and juvenile downstream movement could occur in at the Proposed Project site from April to June. However, rearing in the area would be limited. It is more likely that a juvenile fish may utilize the root wads for velocity refugia for a short period of time during their downstream migration.

Central Valley Steelhead

Currently, Central Valley steelhead are considered “ocean maturing” or “winter” steelhead (McEwan and Jackson 1996), although “stream maturing” or “summer” steelhead may have been present historically (Moyle 2002). Adult steelhead, typically averaging 600 to 800 mm in length (Moyle 2002), generally leave the ocean and begin upstream migration through the Delta to spawning reaches in the Sacramento and San Joaquin rivers and their tributaries when river flows increase. Adult Central Valley steelhead migrate into the lower Yuba River starting in August, with migration and holding continuing from August through March (YCWA 2013b).

Unlike salmon, steelhead are iteroparous (i.e., able to spawn repeatedly) and may spawn and return to the ocean up to four times before dying; however, it is rare for steelhead to spawn more than twice, and the majority of repeat spawners are females (Busby et al. 1996). Although one-time spawners comprise the majority of the population, Shapovalov and Taft (1954) reported that historically repeat spawners were relatively numerous (i.e., 17.2%) in California streams. Redds (i.e., “nests” in spawning gravels) are typically dug by female fish in water depths of 10 to 150 cm where water velocities range from 20 to 155 centimeters per second (Moyle 2002). Eggs

hatch within three to four weeks and fry emerge from the gravel four to six weeks later (Shapovalov and Taft 1954).

Juvenile Central Valley steelhead are found in water with summer temperatures ranging from 32 to 81°F (NMFS 2014). However, juvenile steelhead in northern California experience various stresses in waters warmer than 71.6°F (Nielson et al. 1994). Sublethal temperature effects include reduced growth and maturation rates, increased vulnerability to predation, and increased risk of disease. Wurtsbaugh and Davis (1977) found juvenile steelhead growth rates were greatest at 61.5°F, with sufficient food rations; growth rates declined rapidly above 61.5°F, yet still were positive at 72.5°F, the highest experimental temperature used in their study. Steelhead, like most salmonids, try to avoid unsuitable temperatures through behavioral thermoregulation (i.e., by physically moving away from warmer waters) (Keefer et al. 2009).

Juvenile steelhead rear in their natal streams for one to three years prior to smoltification. These fish are found in cool flowing water or pools where there is ample cover provided by riparian vegetation (Moyle 2002). Emigration of one to three-year old sub-adults in the lower Yuba River can occur at any time during the year (YCWA 2013b) but Central Valley steelhead immigration primarily occurs from January through June (Snider and Titus 1996).

Central Valley steelhead utilize the lower Yuba River for all freshwater life stages, including adult immigration and holding, spawning, embryo incubation, fry, and juvenile rearing, and juvenile and smolt emigration. Although there was marginal spawning habitat at the Proposed Project site as recently as February 2018, the conditions in the river have changed so that there is no longer any spawning habitat within the vicinity of the Proposed Project. Today, the habitat conditions in the vicinity of the Proposed Project limit steelhead's utilization of the river near the project site to migration and juvenile rearing.

Based on the information presented in Table 5, the habitat types that occur at the Proposed Project site, and the construction schedule, juvenile rearing, and juvenile downstream movement, of Central Valley steelhead DPS could during the maintenance period (i.e., from April 1 to August 31). However, juvenile rearing in the area of the Proposed Project would be limited. It is more likely that a juvenile fish may utilize the root wads for velocity refugia for a short period of time during their downstream migration. If maintenance occurs in late July or August, then adult steelhead could occur at the Proposed Project Site during their immigration period. There is no steelhead holding habitat (i.e., deep pool habitat) in the vicinity of the Proposed Project, so there would be no adult holding.

Riffle Sculpin

Riffle sculpin (*Cottus gulosus*) is a small, bottom-dwelling fish that is endemic to California and is designated a California Species of Special Concern. Riffle Sculpin are found in many clear and cold (maximum temperatures <78°F; Moyle 2002) perennial streams dominated by rock or gravel substrates with relatively high dissolved oxygen concentration. They often occupy riffles and pools and are typically found in association with Rainbow Trout. Riffle Sculpin are opportunistic feeders that prey upon amphipods, benthic macroinvertebrates, and other small fish. Riffle Sculpin typically have a four-year life span, reaching sexual maturity at the end of their second year. Spawning typically occurs in winter through early spring. In the lower Yuba

River, Riffle Sculpin have been documented both upstream and downstream of Daguerre Point Dam (YCWA 2012).

Hardhead

Hardhead (*Mylopharodon conocephalus*), a California Species of Special Concern, is a large warmwater cyprinid (i.e., minnow) that occurs primarily in large, undisturbed low to mid-elevation rivers and streams, including the mainstem of the lower Yuba River (Moyle 2002). Hardhead mature in their third year and spawn primarily in April and May, although some data suggests that spawning may extend into August (Moyle 2002). The preferred habitats of Hardhead include clear pools and runs with substrate composition of sand, gravel, or boulder (Moyle 2002). Although the early life history of juvenile Hardhead is poorly understood, juvenile Hardhead move into deeper habitats, such as the Sacramento River, as they grow (Moyle 2002). Adult and juvenile Hardhead have been documented throughout the lower Yuba River upstream and downstream of Daguerre Point Dam (YCWA 2012).

Pacific Lamprey

The Pacific Lamprey is a federal Species of Concern and a California State Species of Special Concern. The State status was identified as "moderate concern" since the species still occupies much of its native range, but there are far fewer of the species then there were historically (Moyle et al. 2015). Pacific Lamprey are still present throughout much of their historical range. However, some populations have been reduced or extirpated from streams that have been highly degraded or modified by humans. The Pacific Lamprey range includes Pacific coast drainages extending from Hokkaido Island, Japan, to Alaska and south to Rio Santo Domingo, California (Moyle 2002) and includes rivers and creeks of the Central Valley, California. Pacific Lamprey are anadromous and highly predaceous (Moyle 2002). The predatory adult stage is spent in the ocean, although some scattered landlocked populations occur in some freshwater reservoirs.

Adult Pacific Lamprey begin their upstream spawning migrations to freshwater rivers as early as January, with peak immigration occurring from early March through late June (Moyle 2002). Spawning occurs shortly after the adult lamprey reach suitable spawning areas, primarily during the spring and summer months. Although the habitat requirements of Pacific Lamprey are not well understood, adults are believed to require clean, gravel-dominated riffles in perennial streams, similar to the spawning requirements of salmonids. Adults construct nests on gravel substrate in habitats with moderately swift currents at depths of 0.3–5 feet and temperatures typically ranging from 54–64°F (Moyle 2002). Adults typically perish following spawning. Following hatching, the ammocoetes reside in upstream waters for a period of five to seven years, where they burrow into the sediments and filter organic matter, before undergoing metamorphosis to the predatory and saltwater-tolerant adult phase and subsequently emigrating from freshwater to the ocean. Emigration occurs under high flows during the winter and spring, possibly coincident with the upstream migration of the adults (Moyle 2002).

Pacific Lamprey have been documented in the lower Yuba River both downstream and upstream of Daguerre Point Dam (YCWA 2012), thus may occur in the Proposed Project vicinity.

Other Special status Species

Based on the compiled species lists and review of other available information, other special status species may occur in the lower Yuba River, but are not addressed further in this Initial Study based on the following rationale. Federal and state special-status species that also occur in the lower Yuba River, but only occur below Daguerre Point Dam include Green Sturgeon, River Lamprey, Sacramento Hitch, Sacramento Splittail, and White Sturgeon. Because the Proposed Project would not involve work activities downstream of Daguerre Point Dam or affect the water quality or flows downstream of Daguerre Point Dam none of these species would be affected by the Proposed Project. As such, these species are not discussed further in this document.

Other Fish Species

The remaining non-special status species comprising the lower Yuba River's fish community include a diverse array of resident native and introduced fishes occupying multiple trophic levels and habitat types, and other recreationally important anadromous fishes (YCWA 2012). The fish community species assemblage is dominated by native riverine species, and native fishes comprise the majority of individual fish occurring in the lower Yuba River (YCWA 2013a). These fish species include pelagic forage fish, such as Inland Silversides (*Menidia beryliina*), Threadfin Shad (*Dorosoma petenense*), and numerous minnows in the family Cyprinidae (see Table 4). Benthic dwelling fishes occurring in the lower Yuba River include native Sacramento Sucker (*Catostomus occidentalis*), native sculpins (family Cottidae), introduced Common Carp (*Cyprinus carpio*), introduced catfishes and bullheads in the family Ictaluridae, and introduced Bigscale Logperch (*Percina macrolepida*).

Recreationally important fishes include resident Rainbow Trout, and seasonal occurrences of Striped Bass (*Morone saxatilis*) and American Shad (*Alosa sapidissima*). Rainbow Trout occur upstream and downstream of Daguerre Point Dam and Striped Bass have been documented upstream of the dam. American Shad have only been documented downstream of Daguerre Point Dam. Although introduced Brown Trout (*Salmo trutta*), native Pink Salmon (*O. gorbuscha*), and Chum Salmon (*O. keta*) are considered recreationally and commercially important, observations of these salmonids in the lower Yuba River are rare and their infrequent occurrences have only been documented downstream of Daguerre Point Dam (YCWA 2012).

Piscivorous fishes occurring in the lower Yuba River include a range of introduced sunfishes and basses in the family Centrarchidae, bullheads and catfishes in the family Ictaluridae, Striped Bass, Pacific Lamprey, and native Sacramento Pikeminnow (*Ptychocheilus grandis*). While many of these piscivorous fishes only occur downstream of Daguerre Point Dam, the piscivorous fishes that also occur upstream of Daguerre Point Dam include Bluegill (*Lepomis macrochirus*), Green Sunfish (*L. cyanellus*), Redear Sunfish (*L. microlophus*), Smallmouth Bass (*Micropterus dolomieu*), Striped Bass, Pacific Lamprey, and Sacramento Pikeminnow (Yuba County Water Agency 2012).

Critical Habitat

Critical habitat is the specific areas within a specific geographic area that contain the physical or biological features (PBFs) that are essential to the conservation of an endangered or threatened species.

Steelhead

Critical habitat for steelhead occurs in the Proposed Project area. The PBFs for critical habitat in the vicinity of the Proposed Project for Central Valley steelhead consist of:

1) **Freshwater migration corridors** free of obstruction and excessive predation with water quantity and quality conditions and natural cover such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

2) **Freshwater rearing sites** with sufficient water quantity and floodplain connectivity to form and maintain physical habitat conditions and support juvenile growth and mobility; water quality and forage supporting juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks. These features are essential to conservation because, without them, juveniles cannot access and use the areas needed to forage, grow, and develop behaviors (e.g., predator avoidance, competition) that help ensure their survival.

Spring-run Chinook Salmon

Critical habitat for spring-run Chinook Salmon occurs in the Proposed Project area. The PBFs for critical habitat in the vicinity of the Proposed Project for spring-run Chinook Salmon consist of:

1) **Freshwater rearing sites** with water quality and floodplain connectivity to form and maintain physical habitat conditions that support juvenile growth and mobility; water quality and forage that support juvenile development; and natural cover such as shade, submerged and overhanging large wood, log jams, and beaver dams, aquatic vegetation, large rocks and boulders, side channels, and undercut banks.

2) **Freshwater migration corridors** free of obstruction and excessive predation with water quantity and quality conditions and natural cover, such as submerged and overhanging large wood, aquatic vegetation, large rocks and boulders, side channels, and undercut banks supporting juvenile and adult mobility and survival.

3.4.2 Discussion

The potential for project-related affects to biological resources is assessed below in responses to the Initial Study checklist questions. The assessment of effects primarily considers the likely presence of biological resources and their habitats in the project area, the magnitude and duration of direct and indirect effects to the species and their habitats, and the availability of feasible mitigation measures to avoid or minimize the effects.

a) The following discussion assesses potential impacts of the Proposed Project, both directly and through habitat modifications, on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW (formerly California Department of Fish and Game), USFWS, and/or MBTA, occurring within the affected environment.

All special status species with the potential to occur in the project site are listed in Table 3 and Table 4, above. Special status species with the potential to occur in the project site and that have the potential to be substantially adversely affected, either directly or through habitat modifications, include species listed under the ESA and CESA, are considered federal species of concern, are considered state species of special concern, or are assigned a CRPR. No additional special status species with the potential to be substantially adversely affected are listed in any local or regional plans, policies, or regulations as candidate or sensitive.

Special Status Plants

No special-status plant species are expected to occur on or adjacent to the project site, and thus the Proposed Project would have **no impact** on special-status plants.

Special Status Wildlife

Twelve special status wildlife species have the potential to occur on or adjacent to the project site (Table 3). Eleven of the species are birds and the other special status wildlife species is the western pond turtle. Potential effects to these species are discussed below.

Temporary Effects to Special Status Wildlife

Temporary construction-related effects which would occur during active construction include:

- temporary effects to water quality, including increased turbidity and suspended solids as a result of constructing a temporary access ramp, constructing temporary berms to decrease turbidity, excavating river alluvium, placement of cobble into the bed of the excavated channel, and site clean-up and demobilization;
- temporary effects to water quality from contaminants that may wash off construction equipment working in wet areas;
- temporary effects from underwater noise as a result of operating construction equipment in and adjacent to the river channel;
- potential direct effects as a result of implementing fish avoidance measures;
- potential direct effects as a result of operating construction equipment in the river channel;
- effects to habitat as a result of excavating river alluvium from a portion of the south channel; and
- effects to flow as a result of excavating river alluvium from a portion of the south channel.

These construction activities could potentially disturb or harm individual western pond turtles or birds, if present.

Western Pond Turtle

The western pond turtle is known to occur within five miles of the project site and could occur in lacustrine, lake/pond, and riparian habitat, all of which occur within the project site. Because habitat is present on the site and individuals potentially could be present at the site, this species could be directly harmed or otherwise affected by maintenance activities that would occur in and around the aquatic habitat onsite. The potential construction-related disturbances of the western pond turtle are a potentially significant impact. Implementation of **Mitigation Measure BIO-1** would reduce this impact to a **less-than-significant** level.

Mitigation Measure BIO-1: Avoid or minimize effects to western pond turtle.

No more than 24 hours before beginning construction activities within suitable aquatic habitat for western pond turtle, a qualified biologist will inspect areas of anticipated disturbance for the presence of western pond turtle. The construction area will be re-inspected if a lapse in construction activity of two weeks or more occurs. If pond turtles are found during the survey or observed within the construction area at any other time, they will be relocated by a qualified biologist to upstream or adjacent aquatic habitat that would not be disturbed by construction activity.

Special Status and Migratory Birds

Except for noise, in-water work would not impact nesting birds and raptors. Thus, Proposed Project effects to water quality and other in-water effects are not discussed further for special status and migratory birds. Specific construction related effects of the Proposed Project to special status and migratory birds include temporary effects from noise as a result of operating construction equipment and disturbance, and injury or mortality as a result of operating equipment in the uplands.

Construction activities could produce noise that disturbs special status birds, migratory birds, and to ground-nesting species such as burrowing owl. Suitable nesting habitat for white-tailed kite, loggerhead shrike, and other raptors such as Swainson's hawk has been documented in the Proposed Project vicinity. Such potential disturbances could cause birds to temporarily move away from the area or to abandon nests. Thus, the effects of the Proposed Project on birds and raptors could be potentially significant. Implementation of **Mitigation Measure BIO-2** would reduce this impact to a **less than significant impact** level.

Mitigation Measure BIO-2: Avoid impacts to special status and migratory birds

- A qualified biologist will conduct preconstruction surveys for all potential special-status bird species (white-tailed kite, loggerhead shrike, burrowing owl, and Swainson's hawk) nesting near the project site. The surveys will be conducted no more than 10 days before the beginning of construction. If no nests are found, no further mitigation is required.

- If active nests are found, impacts on nesting birds will be avoided by establishing appropriate buffer zones around the nests. No project activity will commence within the buffer zone until a qualified biologist confirms that any young have fledged, or the nest is no longer active. A 500-foot buffer zone around raptor nests, burrows, and colonies are adequate to protect them from disturbance, but the size of the buffer may be adjusted by a qualified biologist in consultation with CDFW depending on site-specific conditions. The necessary buffer zone for a Swainson's hawk nest is 0.25 mile.

Permanent Effects to Special-Status Wildlife

The only permanent effects of the Proposed Project would be the spreading of excavated river alluvium on the adjacent gravel bar. Placement of river alluvium on the upstream gravel bar would occur in dry areas. The gravel bar can become inundated when total river flows are above approximately 3,500 cfs (at Smarstville).

Due to the relatively small amount of alluvium that would be placed on the gravel bar, placement of excavated alluvium would not alter the inundation frequency or hydraulic characteristics of the gravel bar. Additionally, because the excavated and placed alluvium is very similar in composition to the alluvium in the gravel bar, no changes in function or habitat value would occur.

If regulatory permits don't allow for placement of alluvium on the gravel bar, all excavated material would be hauled one mile to an existing spoils pile site, which would result in no long-term effects to birds or western pond turtles.

Because there would be no changes in function or habitat value there would be no long-term effects to birds or the western pond turtle. Thus, the Proposed Project would have a **less than significant impact** in regard to permanent effects on any special status wildlife species.

Special Status Fishes

The following section assesses the Proposed Project's potential to affect special status fish species in the vicinity of the Proposed Project area. An important factor in determining whether any specific project components would affect these species is the timing of occurrence of their life stages in the project site, relative to the timing, magnitude, and duration of various components of the Proposed Project In-river construction activities are expected to occur from April 1 to August 31. Fish avoidance measures would be in place from April 1 to June 30, but not from July 1 to August 31. **Table 6** lists the special status species addressed in the following assessments and identifies if juveniles and/or adults would be present during the periods with and without fish avoidance measures in place.

The Proposed Project's potential to adversely affect special status fish and their habitats can be classified into two general categories: (1) temporary construction-related effects, which would occur only during active constriction, and (2) permanent effects, which result from longer-term existence of the conditions resulting from the Proposed Project.

The temporary effects assessments consider that fish avoidance measures would be in place from April 1 to June 30, but not from July 1 to August 31.

Table 6. Potential for adult and juvenile special status fish that may occur in the lower Yuba River in the vicinity of the Proposed Project to occur in the lower Yuba River during the period that in-river maintenance activities may occur (i.e., April 1 to August 31).

Fish Species/Race	Juvenile		Adult	
	April 1 – June 30	July 1 – August 31	April 1 – June 30	July 1 – August 31
Fall-run Chinook Salmon [1,2]	--	X	X	X
Spring-run Chinook Salmon [1,2]	X	X	X	X
Steelhead [1,2]	X	X	--	X
Hardhead	X	X	X	X
Riffle Sculpin	X	X	X	X
Pacific Lamprey	X	X	X	X

X = Lifestage could be present during in-river construction work

-- = Lifestage would not be present during in-river construction work

[1] Adult refers to adult immigration. Although holding and staging can also occur during these time periods there is no deep pool habitat present in the project site. As such, only adult immigration in considered.

[2] Juvenile refers to juvenile rearing and movement/outmigration

Importantly, although the purpose of the Proposed Project is to enhance flows for water supply and salmonid migration, allowing flow through the south channel would also be beneficial to the other special status fish discussed in the assessments below.

Potential effects from implementation of the Proposed Project assessed below include:

- temporary effects to water quality, including increased turbidity and suspended solids as a result of constructing a temporary access ramp, constructing temporary berms to decrease turbidity, excavating river alluvium, placement of cobble into the bed of the excavated channel, and site clean-up and demobilization;
- temporary effects to water quality from contaminants that may wash off construction equipment working in wet areas;
- temporary effects from underwater noise as a result of operating construction equipment in and adjacent to the river channel;
- potential direct effects as a result of implementing fish avoidance measures;
- potential direct effects as a result of operating construction equipment in the river channel;

- effects to habitat as a result of excavating river alluvium from a portion of the south channel; and

- effects to flow as a result of excavating river alluvium from a portion of the south channel.

Potential permanent effects from implementation of the Proposed Project to special status fish assessed below include:

- effects of placing excavated river alluvium onto the adjacent upstream gravel bar.

Temporary Effects

Effects to Water Quality: Increased Suspended Sediment and Turbidity

Site preparation, constructing a temporary access ramp, constructing temporary berms to decrease turbidity (during the April 1 to June 30 period), excavating river alluvium, placement of cobble into the bed of the excavated channel, and site clean-up and demobilization would have the potential to increase turbidity and introduce suspended sediment into lower Yuba River. The suspended sediments could contain remnant sources of mercury, copper, or other contaminants of concern and result in a temporary release of these contaminants into the water column. BMPs (AMM 3) and turbidity control measures (AMM 4) would reduce the potential for runoff, soil, and other construction debris to enter the lower Yuba River, and turbidity control measures (AMM 4) would reduce potential downstream transport of suspend sediment-associated contaminants. Nevertheless, these activities could cause construction materials, including soil and other particulates to enter into the lower Yuba River during the maintenance work. The degree of sediment resuspension associated with any of the components of the Proposed Project is determined by multiple factors including sediment properties, water depth, velocity, impediments, and operational factors.

In-water construction that has the potential to increase suspended sediment and turbidity is anticipated to occur annually over an estimated 1 to 10-day period.

The lower Yuba River immediately adjacent to the South Canal Diversion facility consists of three channels separated by sand and gravel bars. The south channel, where in-water construction activities would occur, has the lowest flow, relative to the middle and north channels. The channel adjacent to the north bank of lower Yuba River (north channel) conveys most of the river flow. The middle channel, which was formed in 2017 when the river cut through an area that was previously a large island in the middle of the channel, is wider than the north channel, but does not convey as much flow. However, combined the middle and north channels currently convey the vast majority of the river flow in the Proposed Project area.

Due to the location of the Proposed Project, the vast majority of the suspended sediment and turbidity generated from in-river construction would flow into the south channel and then into the South Canal Diversion facility and ultimately into the YCWA canal system. Thus, most of the construction generated suspended sediment and turbidity would not

occur in the middle or north channels, and much of this turbidity would not exit the Proposed Project area, but rather would be transported with diversions through the South Canal Diversion.

Temporary water quality impairment could affect special status fishes if the magnitude and duration of impairment results in direct or indirect effects to fish or their habitat. Increased turbidity is of concern to fish because, at sufficiently high levels, they can cause species to avoid turbid waters. At very high and sustained levels, TSS/turbidity can reduce feeding and growth, displace juveniles, cause physiological stress and respiratory impairment and gill damage, reduce tolerance to disease and toxicants, reduce survival, and cause direct mortality (Sigler et al. 1984, Stern 1988, Newcombe and Jensen 1996, Bash et al. 2001, Madej 2004).

Bash et al. (2001) reported that the primary effect of increased turbidity on juvenile salmonids was irritation of the gills, and that direct lethality was unlikely. Salmonids may alter their migratory behavior by moving laterally or downstream to avoid turbid areas (Sigler et al. 1984). Larger fish tend to be more tolerant of high concentrations of suspended sediment than smaller fish although migrating adult salmonids may avoid areas with high silt loads (Bjorn and Resier 1991). Salmonids would generally utilize the middle and north channels. If salmonids were present from the July to August period in the south channel the fish would seek to move away from working construction equipment because of underwater noise and elevated turbidity levels.

Like salmonids, the other special status fish (i.e., juvenile and adult Hardhead, juvenile and adult Pacific Lamprey, and juvenile adult Riffle Sculpin) that could be residing in or moving through the maintenance area the majority of fish would utilize the north and middle channels. If fish were present from the July to August period in the south channel the fish would seek to move away from working construction equipment because of underwater noise and elevated turbidity levels.

Additional potential indirect effects of removal of river alluvium or other in-river construction activities on special status fish species include localized losses of benthic macroinvertebrates and potential displacement of BMIs resulting from sediment deposition. These effects are expected to be short-lived due to the rapid re-colonization rates typically observed for BMI communities following temporary disturbances (Barbour et al. 1999). Moreover, the relative proportion of the BMI community affected within the Proposed Project area would be negligible.

From an exposure perspective, all special status fish using the north and middle channels within the lower Yuba River would be exposed to at most only small amounts of increased turbidity and suspended sediment levels, because the vast majority of the re-suspended sediment, and thus increased turbidity, would occur in the south channel, immediately downstream of the work activity. As stated above, much of the suspended sediment and turbidity that would be generated downstream of the equipment work area would be diverted into the South Canal Diversion, with only a very small portion of the flow (e.g., approximately 10%) passing through the bypass channel and back into the

south channel of the river. Consequently, only a small portion of the Proposed Project site could potentially experience elevated turbidity and suspended sediment levels.

The greatest increase in water column suspended sediment and turbidity levels would be confined to the south channel. During the entire work period (April 1 to August 31) a turbidity curtain (AMM 4) would be placed in the south channel (see Figure 6 above for an example of where the turbidity curtain would be placed). Flow would be carefully balanced through the rock barrier according to residual seepage in the diversion channel downstream of the work area so that any residual flow is diverted through the rockfill barrier and head pond into the canal system rather travelling downstream over Daguerre Point Dam. During the April 1 to June 30 period temporary gravel berms would be established to isolate maintenance work from the river which would further decrease potential turbidity exposure to special status fish.

As described above, work is planned to occur annually over a period of 1 to 10 days. Any elevated suspended sediment and turbidity levels would occur only during construction activity, and would decrease back to baseline levels daily during the nighttime non-construction period. The implementation of appropriate erosion control and pollution prevention BMPs (AMM 3 and AMM 4), including active water quality monitoring, and use of a turbidity curtain, would ensure construction-related erosion and TSS and turbidity generated from the construction activities does not affect water quality outside of the immediate vicinity of the work area.

Based on the levels of suspended sediment levels anticipated to occur, the localized nature of effect, daily reduction in levels each night, and the overall short duration of exposure (i.e., 1 to 10 days), temporary suspended sediment, turbidity, and suspended sediment-associated contaminants generated by the Proposed Project have a **less than significant impact** to special status fish species in the lower Yuba River.

Effects to Water Quality: Contaminants Entering the River from Construction Equipment

Potential sources of contaminant discharges would be from heavy equipment operating near the edge of the river channel or during excavation while equipment is operating in the south channel. An accidental spill or inadvertent discharge of contaminants into the Proposed Project area associated with project activities could affect water quality.

The use of motorized equipment, and storage and handling of fuels and equipment lubricants and fluids may result in petroleum product discharges that could be harmful to water quality if they directly enter the river or are spilled on the ground where they may be mobilized and transported in stormwater runoff into surface waters following construction. Other potential construction related contaminants associated with the equipment used, contained in products used to construct project facilities, or inadvertently discharged by construction workers may include trash, cleaners, solvents, and human sanitary wastes.

The magnitude of effects to special status fishes and their prey organisms resulting from accidental or unintentional contaminant spills would depend on several factors related to a spill, including the proximity to the water body, the type, amount, concentration, and

solubility of the contaminant, and the timing and duration of the discharge. The severity of the effect also depends on species and life stage sensitivity, duration of exposure, condition or health of individuals (e.g., nutritional status), and physical or chemical properties of the water (e.g., temperature, dissolved oxygen). Potential effects can range from no effects to mortality of aquatic organisms.

Contaminants entering the Proposed Project area in sufficient amounts could affect survival and growth rates of special status fish using the waterbody and other aquatic organisms including prey sources. Petroleum products can cause oily films to form on the water surface that can reduce DO levels available to aquatic organisms. The severity of the effect depends on species and life stage sensitivity, duration and frequency of exposure, condition or health of individuals (e.g., nutritional status), and physical or chemical properties of the water (e.g., temperature, DO).

Potential effects can range from avoidance behavior to mortality, which could result from exposure to acutely lethal concentrations of contaminants or exposure to sub-lethal levels that cause physiological stress and increase susceptibility to other sources of mortality (e.g., predation, disease).

Any incidental "wash-off" of construction equipment-related contaminants that could occur from operating the equipment in the wet would be sufficiently low in volume that concentrations of such contaminants in the river would be well below levels that would adversely affect aquatic resources. Construction activities would not occur at night (AMM 1: Timing of In-water Work), leaving a daily period of approximately 14 hours or more with no construction activity and no potential for inadvertent spills to occur. Additionally, the project description includes implementation of construction BMPs (AMM 3) and worker training (AMM 2) to avoid and minimize the potential for any discharge of contaminants into the lower Yuba River. These AMMs contain measures that are intended to reduce the probability for the release of toxic materials to the Lower Yuba River and establish measures to contain any accidental spills quickly.

Based on the assessment provided above, the Proposed Project would have a **less than significant** impact to special status fish in regard to construction equipment-related contaminants entering the lower Yuba River at levels that would cause substantial adverse effects to their prey organisms and other aquatic life.

Effect on Channel Flows

It is not possible to predict if a blockage of the south channel would occur in any given year, or if a blockage does occur how much material would need to be excavated to maintain sufficient flow in the south channel. Annual assessments of the south channel would be required prior to the irrigation season to determine impacts of river erosion and sedimentation processes in the south channel. In years when excavation is necessary to alleviate blockages, the Proposed Project would increase water flow through the south channel. The increase in flows through the south channel would correspond to the size and extent of the blockage that was removed. An increased proportion of the total flow entering the south channel would result in a proportional decrease in the total flow entering the north and middle channels. Although flows would be reduced in the north

and middle channels after removing any blockages, the majority of water would continue to flow through the north channel.

As of 2022, the diversion channel between the main river channel along the north bank of the river and the south diversion is 900 feet long including the 450 feet long entrance to the south channel. The entrance to the south channel is 450 feet long, 40 feet wide trapezoidal cross section shallow channel which is lined with river cobble to reduce flow velocity for upstream fish passage and to resist scour. Increased flow in the south channel would enhance flow to the South Canal Diversion and improve fish passage through the south channel for spring-run Chinook Salmon and steelhead.

If a blockage was present, it would not allow fish to utilize the south channel. Thus, removing the blockage would enable adult salmonids to immigrate through the south channel to upstream spawning habitats under the Proposed Project. Corresponding flow reductions that would occur in the north and middle channels, would not be sufficient to reduce passage opportunities for adult spring-run Chinook Salmon and steelhead migrating through those channels to spawning areas. This is because the north and middle channels would continue to convey 90% of the river after the blockage in the south channel was removed. Increased flow in the south channel would also add a migratory pathway for outmigrating juveniles and improved connectivity with the river below Daguerre Point Dam for Hardhead, Riffle Sculpin, and Pacific Lamprey.

Removing the blockage would also increase velocities through the south channel which could affect adult salmonid migration. To address velocity related issues, NMFS has developed transport velocity[1] criteria between 1.5 and 4.0 ft/s that must be met: (1) between a fishway entrance and the first fishway weir, and (2) in fishway channels (NMFS 2011). Although these criteria were developed as fishway design criteria, they are useful as guidelines for identifying potential velocity barriers in engineered river channels. Additionally, NMFS (2011b) identified a range of velocities as suitable for adult Chinook Salmon and steelhead passage when these velocities occur in culverts for specific distances (**Table 7**). Because the excavated channel upon completion of the Proposed Project would not be as confined as a culvert and would have greater hydraulic roughness, these NMFS culvert criteria are considered protective of fish passage in the Proposed Project area.

Table 7. NMFS maximum allowable average culvert velocity for Chinook salmon and steelhead.

Culvert Length (feet)	Maximum Average Velocity (feet per second)
<60	6.0
60–100	5.0
100–200	4.0
200–300	3.0
>300	2.0
Source: NMFS 2011	

[1] Transport Velocity is defined by NMFS (2011) as the velocity of flow within the migration corridor of a fishway, excluding areas with hydraulic drops greater than 0.1 feet.

A 2D hydraulic model (HEC RAS 5.0.3.) was used to model peak velocities that would occur during the emergency work in the south channel in 2018. Although it is not known how large a blockage would be in a given year, the same design and construction approach that was used for excavating alluvium in 2018 would be utilized each year that a blockage formed. Importantly, the design approach each year would ensure that the slope of the south channel remains the same as the slope (i.e., bottom slope of 0.29%) that was established and modeled in 2018. Thus, the modeled velocities from 2018 are applicable to the Proposed Project regardless of the size and extent of the blockage.

Modeled approximate peak velocities that would occur after implementing the Proposed Project would range from almost 4 feet per second (ft/s) to just above 5 ft/s (**Table 8**). Under the Environmental Baseline (i.e., when a blockage is present) and the Proposed Project (i.e., when the blockage is removed), velocities greater than 4 ft/s occur in the highest modeled inflow case (2,500 cfs; see Table 8). Modeled velocities greater than 4 ft/s also occur under the 1,500 cfs and 2,000 cfs inflow cases for the Proposed Project (Table 8). However, modeled velocities remain below 6.0 ft/s at all modeled inflows.

Table 8. Approximate peak velocities, distance of peak velocities, and distance over which velocities greater than 4 ft/s occur in the south channel when a blockage is present (i.e., Environmental Baseline) for the Proposed Project (i.e., removal of the blockage) for the four modeled river flows.

Inflow Case[4] (cfs)	Peak Velocity[1,2] (ft/s)		Distance of Peak Velocity[1,2] (ft)		Maximum Continuous Linear Distance at which Velocity Exceeds 4 ft/s (ft)		Linear Distance at which Velocity Exceeds 6 ft/s (ft)	
	Environmental Baseline	Proposed Project	Environmental Baseline	Proposed Project	Environmental Baseline	Proposed Project	Environmental Baseline	Proposed Project
2,500	5	>5	<5	20	40	460	0	0
2,000	N/A[3]	<5	<5	60	20	280	20	0
1,500	<4	<5	20	40	0	60	0	0
1,100	<2	<4	20	20	0	0	0	0

All velocities and distances are based off visual estimations from graphical model outputs

[1] Greater than symbols indicate velocity is greater than the value in the table, but is less than the next integer. Less than symbols indicate velocity is less than the value in the table, but greater than the next lower integer.

[2] Less than symbols indicate distance is less than five ft. Based on the graphical representations it is not possible to determine distances less than five feet.

[3] A small cascade created a vertical drop at some flows. Velocities in the vertically dropping water were not able to be modeled by the 2D hydraulic model used in this assessment.

[4] Inflow is defined as flow in the river channel entering the Proposed Project site from upstream

Although velocities above 4 ft/s would occur under the Proposed Project, these modeled velocities do not account for velocity changes near the three root wad fish refuges on the east bank of the channel (i.e., large woody debris) that were placed in the channel in 2018. Although velocity refugia in the form of large woody debris cannot be accurately modeled, it is assumed that presence of large woody debris causes actual velocities in the excavated channel to be considerably less than the modeled velocities shown in Table 8. Modeling also does not consider the hydraulic roughness of the south channel which would further decrease any potential velocity impacts. Based on these considerations,

velocities that range from almost 4 feet per second (ft/s) to just above 5 ft/s in the south channel would not be sufficient to alter adult salmonid migration.

Increased flows would generally benefit migrating juvenile salmonids and other special status species by creating a migration corridor/improved fish passage through the south channel. However, an increase in south channel flows could create a potential for entrainment of juvenile salmonids and other special status fish in the South Canal Diversion. As flow increases to the South Canal Diversion channel from removal of the blockage, it could cause emigrating juvenile salmonids and other special status fish to enter the diversion channel. However, because the South Canal Diversion and rock gabion fish barrier were reconstructed in 2017, the rock gabion and its new fabric screen are currently functioning as an effective barrier to entrainment with no "hot spots". Together, the south channel acting as a fully functioning migration corridor with more flow than the diversion channel, and the rehabilitated rock gabion barrier functioning as a fish screen, would result in little to no potential for juvenile salmonids or special status fish to enter the South Canal Diversion channel.

Based on the above discussion, the Proposed Project effects on lower Yuba River channel flows and velocities would have a **less than significant impact** on special status fishes.

Effects of Underwater Noise

In-river construction activities associated with the Proposed Project would involve the use of heavy equipment which could result in temporary periods of elevated underwater noise levels in the lower Yuba River. A long-arm excavator would be used to excavate river alluvium which would produce sounds emanating from the equipment and from the excavator making direct contact with the sediment.

Anthropogenic noise can induce startle and alarm responses in fish. (Scholik and Yan 2002) causing fish to flee an area (Boussard 1981). Thus, increased noise can temporarily disrupt essential behavior patterns such as feeding and predator escapement. However, such transient startle responses are unlikely to result in adverse impacts as fish are likely to quickly respond to normal behaviors (Popper et al. 2019). Abiotic and biotic sounds are important to fish and many use acoustic signals to communicate. Noise emanating from construction activities can temporarily reduce auditory sensitivity of some fish species (Scholik and Yan 2002) and interfere with signals that affect communication, behavior, and fitness (Popper and Hastings 2009, Purser and Radford 2011).

The type and severity of noise impacts would depend on several factors, including the intensity and characteristic of the sound, the distance of the fish from the source, and the frequency and duration of the noise-generating activities. The Fisheries Hydroacoustic Working Group, which included representatives from California Department of Transportation, the Federal Highways Administration, Washington State Department of Transportation, Oregon Department of Transportation, Regions 1 and 8 of the USFWS, and NMFS, developed an Agreement in Principal for Interim Criteria for Injury to Fish from Impact Pile Driving Activities. Although these interim criteria were designed to address sound exposure thresholds associated with pile driving activities, the criteria can also be applied to any anthropogenic, intense, and relatively long-duration sound such as

that generated from heavy construction equipment (U.S. Bureau of Ocean Energy Management 2012). The interim criteria used to determine the onset of physiological effects on fishes are presented in **Table 9**.

While the criteria in Table 9 are the accepted noise criteria for assessing noise impacts to fish, the information used to determine the criteria was based on very limited experimental data and incomplete studies of the effects of pile driving (U.S. Bureau of Ocean Energy Management 2012). More recent research shows that onset of physiological response to noise by salmonids does not occur until noise levels are substantially higher than the criteria in Table 9 (U.S. Bureau of Ocean Energy Management 2012).

Table 9. Underwater noise criteria for injury to fish from pile driving activities.

Effect	Metric	Fish Mass	Threshold
Onset of physical injury	Peak pressure	N/A	206 dB (re: 1 µPa)
	Accumulated Sound Exposure Level	≥ 2 grams	187 dB (re: 1 µPa)
		< 2 grams	183 dB (re: 1 µPa)
Adverse behavioral effects	Root Mean Square Pressure	N/A	150 dB (re: 1 µPa)
dB = decibels; µPa = micropascal; N/A = not applicable Source: Fisheries Hydroacoustic Working Group 2008			

Popper et al. (2019) suggests there are major issues with threshold used for adverse behavioral effects described in Table 9 since the origin for this threshold is unknown and no scientific basis for it has been documented. The authors suggest the sound pressures to which fish schools actually respond are closer 163dB (re: 1 µPa). However, further studies on wild fishes in their natural environment are necessary before a behavioral threshold can be developed (Popper et al. 2019).

Another issue with the thresholds described in Table 9 is that most species of interest, including salmonids and Riffle Sculpin, are primarily detectors of particle motion, not sound pressure (Lovell et al. 2005, Meyer et al. 2012, Popper et al. 2019). Salmonids, like other fish with swimbladders far removed from the ear, are unlikely to hear anthropogenic sounds unless they are very close to the sound source. Riffle Sculpin lack a swimbladder. It is unknown what level of particle motion would lead to behavioral effects of these species, but it is assumed that it would take a very high level of signal to prompt behavioral changes (Popper et al. 2019). It is likely that noise affects lamprey similarly to salmonids as both have nothing within the structure of the ear or associated structures to suggest any specializations that make them more than a hearing generalist (Popper 2005, California Department of Transportation 2015). It is unknown how Hardhead perceive sound (California Department of Transportation 2015).

Hydraulic dredging equipment is much louder than the excavation equipment that would be used for the Proposed Project. However, since information on hydraulic dredging is

more widely available in the literature, evaluation of hydraulic dredging was used as a surrogate worst-case scenario to analyze the noise that would be associated with excavation of alluvium and other in-water construction work. Typical background underwater noise levels are approximately 60–65 dB re 1µPa @ 1 meter. In contrast, sound pressure levels that result from hydraulic dredging equipment may reach 180 dB re 1µPa @ 1 meter (Hildebrand 2004), but these levels are typically attenuated in an underwater environment to approximately 145 dB at a distance of 10 meters in water that is one meter deep. These values are below the thresholds for underwater noise levels cited in Table 9 for onset of physical injury to fishes. Moreover, it is expected that underwater noise levels that would be produced by the construction equipment and activities for the Proposed Project would be significantly lower than those cited above for hydraulic dredging equipment.

The Proposed Project site contains three channels—the north channel, the middle channel, and the south channel. The north and middle channel convey approximately 90 percent of the river flow currently, with the other 10 percent being conveyed through the south channel. Based on these flow splits, the vast majority of special status fish moving through the Proposed Project area utilize the middle and north channels. From April 1 to June 30, fish avoidance measures as described in AMM 5 would ensure that no fish utilize the south channel while equipment is actively operating. It is possible that small numbers of adult and juvenile special status fish may be present in the south channel in July and August. Although there would not be fish avoidance measures in place in July and August, most, if not all, of the fish would continue to utilize the north and middle channels during this period since the majority of flow would continue to occur in those locations.

Use of construction equipment adjacent to and within the river channel may result in temporary periods of elevated noise levels in the south, middle, and north channels of the lower Yuba River in the Proposed Project area. However, the loudest noises would occur in the south channel where the equipment was operating. Due to the distance separating the equipment from the north and middle channels the noise would be unlikely to reach a level that would affect the fish. Thus, from April 1 to June 30 noise associated with the Proposed Project would not be expected to cause any substantial impacts to special status fish passing through the north and middle channels.

In July and August special status fish would also generally be in the north and middle channels. If a fish were present in the south channel they would be exposed to noise that would be temporary and localized and would not reach levels that would cause substantial impacts. Specifically, noise levels generated using a long-arm excavator for other construction activities would not reach levels that would cause physical injury or lethality, and any behavioral startle or avoidance responses that may occur would be brief and would not have biologically significant consequences to special status fish. Instead, during July and August these noises would aid fish in avoiding direct contact with the equipment. Further, construction would not occur at night (AMM 1: Timing of In-water Work), leaving a daily period of approximately 14 hours or more with no noise generated from construction activity. Based on these considerations, potential noise effects

associated with the use of heavy equipment in the south channel would result in a **less than significant impact** to special status fish.

Direct Effects from Implementing Fish Avoidance Measures

This assessment considers the April 1 to June 30 period of work when fish avoidance measures would be implemented. Fish avoidance measures (AMM 5) are in place to ensure that no special status fishes are present in the immediate vicinity of the maintenance work. These measures include isolating the upstream of the work area using block nets to prevent fish from entering the work area from upstream, seine sweeps to facilitate fish movement from the immediate work area, and installation of a temporary berm at the upstream end of the work area.

Prior to any work being conducted, site conditions and fish occupancy surveys would be completed to determine if any fish are present in the south channel. Block nets would be installed at the upstream end of the excavation area to temporarily prevent movements of upstream fish into the south channel. Then, downstream sweeps with a seine that covers the width and depth of the channel, would serve to gradually facilitate fish movement from the immediate work area. Once the first seine sweep is complete, the seine would be secured in place at the downstream end of the work area, and a second seine sweep would be completed to herd any remaining fish from the area. Upon completion of the second sweep, the first net would be removed, while the one used to complete the second sweep would be secured in place to prevent fish from entering the site during maintenance activities.

Finally, after the successive seine sweeps are complete a gravel berm would be placed immediately downstream of the upstream block net. The berm would be sufficiently large to redirect flow to the river channels that bypass the work area and minimize or eliminate surface water flow through the work area and prevent fish from entering this part of the channel from an upstream direction.

There could be potential for fish injury if a fish were to be caught in the seine during the seine sweeps. However, the seines would only be used to “herd” or “sweep” the fish out of the channel and the potential for direct contract with the seines is considered to be very low. Further, presence of a blockage would prevent many, if any, fish to be present in the south channel while implementing the measures described above to isolate the work area. As such, few, if any fish would be herded out with the seines. As described above, the majority of fish would continue using the north and middle channels.

The purpose of the fish avoidance measures is to decrease potential effects to special status fish that may be present in the vicinity of the during the Proposed Project. Use of the fish avoidance measures would overall decrease the potential for any affect to special status fish moving through the Proposed Project area.

Throughout the duration of the in-channel work, a qualified fish biologist would be on-site to ensure that work is being conducted in accordance with all required avoidance

measures, permit conditions, and mitigation measures, and to document any potential adverse effects to the aquatic community including fish stranding or excessive sedimentation.

Based on the above considerations, direct injury or mortality to adult and juvenile special status fishes is extremely unlikely to occur and, therefore, this is determined to result in a **less than significant impact** to special status fish.

Direct Effects from Equipment Operation

Construction activities that could result in direct effects include any activities using heavy equipment (e.g., small excavator) in the water. In-water construction activities would occur during alluvium excavation from the south channel. Annual in-water construction would last from 1 to 10 days. Any work that occurs prior to July 1 would occur under a fish avoidance plan that would limit the potential for fishes to occur in the work area. Any work that occurs after July 1 would assume that there is very limited potential for salmonids to be present; however, Hardhead, Pacific Lamprey, and Riffle Sculpin could be present at the Proposed Project site in July and August.

Adult and juvenile salmonids could be present in at the Proposed Project site during annual maintenance activities. However, based on the timing of the Proposed Project, few, if any, adult Chinook Salmon are expected to be present. Likewise, low numbers, if any, of juvenile Chinook Salmon are expected to be in the vicinity of the maintenance activities, as Chinook Salmon spawning and rearing occurs mostly upstream of the Proposed Project site and, if present they are large enough to readily avoid construction activity. It is possible that low numbers of adult steelhead could be present in August. Low numbers, if any, of juvenile steelhead are expected to be present, as steelhead spawning, and rearing occurs upstream of the Proposed Project site. If juvenile steelhead are present, they would be large enough to readily avoid construction equipment. Similarly, if other special status fish species are present, they would be large enough to avoid the construction equipment. Importantly, any work that occurs prior to July 1 would occur under a fish avoidance plan that would significantly reduce the potential for special status fish species to be present at the Proposed Project site.

As described above most fish utilize the north and middle channel, not the south channel where construction equipment would be operating. If a fish were present in the south channel during the maintenance activities, then underwater noise, turbidity, and flow pattern disruption (i.e., disruption of laminar flow vectors immediately adjacent to the equipment itself), would cause special status fish that could be present in the work area to likely avoid the equipment, thereby causing fish to avoid direct contact with the equipment.

As discussed above in the potential effects from noise section, when salmonids and Riffle Sculpin detect sounds, they respond with startle and avoidance responses, which would be brief and biologically insignificant (Knudson et al. 1994, NMFS 2013), but sufficient to avoid the equipment. Pacific Lamprey and Hardhead would also be expected to respond with startle and avoidance responses if in the immediate area of loud noises. Avoidance may cause fishes to change their pathway through the Proposed Project area.

The energetic effects of short-term alterations to avoid areas where construction activities are occurring would be negligible due to the small construction area and, thus, the avoidance would not rise to the level of disturbance, and has no realistic potential to lead to significant effects to salmonids or other special status fish.

Additionally, construction activities would not occur at night (AMM 1: Timing of In-water Work), leaving a daily period of approximately 14 hours or more with no construction activity and thus no potential for direct effects from operation of construction equipment in the river channel to occur. Further, AMM 3 (Construction BMPs) would be implemented to reduce potential direct injuries to special status fish.

The fact that only about 10 percent or less of the river's total flow into the Proposed Project area passes through the in-water work site, that low numbers, if any salmonids would be present, the short duration of the Proposed Project (i.e., 1 to 10 days), small construction area, utilization of s fish avoidance plan for all work conducted prior to July 1, and expected behavioral responses that are not considered to be biologically significant, direct injury or mortality to adult and juvenile special status fish is extremely unlikely to occur and, therefore, this is determined to be a **less than significant impact**.

Temporary Channel Modification

Excavation of river alluvium would restore the hydraulic flow capacity of the south channel. The quantity of river alluvium to be excavated annually from the south channel would vary depending on runoff conditions but is expected to range between 500 and 1,500 cubic yards. Alluvium in the south channel is comprised of mostly gravel and cobble, with subsurface (2 to 4 inches below the surface) composition including a substantial proportion of course sand (up to 50 percent). **Figure 8** shows the results of the examination of substrate during a 2018 site visit.

If needed, cobble lining in the channel would be repaired using cobble from a small stockpile near the rock barrier. Up to 500 cubic yards of cobble could be used annually to maintain the cobble lining that prevents erosion. The three root wads on the east bank of the channel would also be cleared of alluvium.

As described above in the background section (Section 2.2) it is typical for the entrance of the south channel to become blocked each year regardless of if it is a wet or dry year. As such, annual maintenance work is expected to be necessary each year to maintain flows through the south channel. Because conditions would change from year-to-year channel modification is considered to be a temporary effect.

Excavating blockages at the entrance to the south channel would restore flow capacity to the South Canal Diversion and reopen the channel to improve fish-passage opportunities for immigrating and emigrating salmonids and for other special status fish. This modification of the channel would result in an increase in migration opportunities for immigrating and emigrating salmonids and special status fish through the south channel. Because both the north and south fish ladders provide adequate access to the river upstream of Daguerre Point Dam, restoring and increasing physical connectivity via the south channel would improve adult salmonid migration pathways in the lower Yuba

River, and likely would result in greater passage opportunity and use of the south channel by all special status fish.

The entrance to the south channel offers little value for juvenile salmonid rearing. Therefore, removal of alluvium at the entrance of the south channel would not alter juvenile salmonid use of the area. Instead, removal of the blockage would improve downstream migration through the south channel by improving juvenile passage opportunities through the Proposed Project site. Removing the blockage would also improve passage opportunities for the other special status fish species.

(Picture from 2018)

Figure 8. Subsurface (approximately 2 to 4 inches below the surface) substrate composition within the area of excavation in the south channel of the lower Yuba River in the Proposed Project area.

Clearing the root wads would also be beneficial to both juveniles and adult salmonids. Root wads provide velocity refugia that create hydraulic breaks for adult spring-run Chinook Salmon and, to a lesser extent, steelhead immigrating through the south river channel when velocities can approach 5 ft/s. Although many downstream migrating juvenile salmonids travel rapidly through the main channels of large rivers (Friesen et al.

2007, Melnychuk 2010), some smolts hold for several hours to days and in that time utilize nearshore habitats (Friesen et al. 2007, Burau et al. 2007). Thus, clearing the root wads of sediments would increase the habitat value for juvenile salmonids in the south channel.

Based on the above considerations, modification of the channel would be temporary and localized, channel modification would result in beneficial effects to salmonids and other special status fish using the Proposed Project Site. Therefore, it is concluded that relative to temporary channel modification, the Proposed Project would have a **less than significant impact** on special status fish.

Permanent Impacts

Placement of Excavated Alluvium on Upstream Gravel Bar

Excavation of alluvium from south channel of the lower Yuba River is necessary to provide enough hydraulic flow capacity to supply the South Canal Diversion. Approximately 500 to 1,500 cubic yards of river alluvium would be removed from the channel.

Trucks would carry excavated river alluvium across the gravel bar on the east side of the channel to an existing fill area located on a flood plain terrace near the south riverbank. The excavated alluvium is very similar to alluvium on the upstream gravel bar. Figure 8 above shows a handful of river substrates obtained during a site visit on May 18, 2018. This is similar to the type of alluvium that would be extracted. **Figure 9** shows the substrates on the upstream gravel bar. Comparison of the two figures shows that the excavated alluvium is very similar to the alluvium on the gravel bar.

Figure 9. Alluvium on the existing gravel bar where excavated alluvium would be placed after excavation of the south channel.

Excavation of alluvium during construction and the temporary existence of the excavated channel, including increased flows to the south channel, are evaluated above. Because placement of river alluvium on the upstream gravel bar would occur in dry areas, no additional construction-related effects associated with placement of alluvium on the excavated gravel bar would occur. Therefore, placement of alluvium on the upstream gravel bar would only result in potential effects to special status fish when the gravel bar is inundated, which occurs when total river flows are above approximately 3,500 cfs (at Smarstville). During these times, the gravel bar currently serves as substrate for immigrating adult and emigrating juvenile salmonids.

Due to the relatively small amount of alluvium that would be placed on the gravel bar, placement of excavated alluvium would not alter the inundation frequency or hydraulic characteristics of the gravel bar. Additionally, because the excavated and placed alluvium is very similar in composition to the alluvium in the gravel bar, no changes in function or habitat value would occur.

For the reasons discussed above, the placement of a very small amount of similar alluvium, relative to the size, volume, and composition of the gravel bar is considered

insignificant. It is concluded that the placement of a very small amount of alluvium on the gravel bar would have a **less than significant impact** on special status fish.

b) The Proposed Project would not involve any clearing or grubbing of vegetation. The maintenance work would be within the wetted channel of the river and would not affect any riparian habitat. Access to the Proposed Project site and staging areas would also be in areas that have previously been used for maintenance-related activities.

   In regard to other sensitive natural communities the Proposed Project would reconfigure the river channel through the removal of alluvium to improve flow conditions through the south channel. Reconfiguration of jurisdictional waters of the U.S. requires a permit from USACE under the Clean Water Act Section 404. The Proposed Project would also include securing a Streambed Alteration Agreement under Sections 1600–1616 of the California Fish and Game Code, which would provide for the protection of fish, wildlife, and native plant resources. Based on these findings, the Proposed Project would have a **less than significant impact** to riparian habitat or other sensitive natural communities.

c) There are no state or federally protected wetlands at the Proposed Project site as defined by Section 404 of the Clean Water Act. Implementation of the Proposed Project would not involve any impact to wetlands. Thus, the Proposed Project would have **no impact** on state or federally protected wetlands.

d) Although the Yuba River may serve as a migratory corridor for some terrestrial wildlife species, project implementation would be limited to the channel of the lower Yuba River channel. Therefore, the Proposed Project would not include any structures or barriers that would substantially interfere with the movement of any wildlife species or established native resident or migratory wildlife corridors. Also, there are no native wildlife nursery sites within the project vicinity.

   Temporary effects from construction-related noise and disturbance associated with the Proposed Project have the potential to temporarily affect migrations and movements of special status anadromous and resident fish near the active construction site. However, most fish would move past the construction area unimpeded in a portion of the main river channel that is a sufficient distance from the area of disturbance and all work would be limited to daylight hours during the week, leaving extensive periods of undisrupted passage for migrating fishes in the evenings, daily, and on weekends, when little to no construction would occur. As such, maintenance-related activities would not interfere substantially with the movement of any special status resident or migratory fish species.

   Excavation of the south channel to alleviate potential blockages would allow for additional flow to be conveyed by the south channel. The primary effect of these projected flow changes is that sufficient flow would be conveyed through the south channel to enable adult anadromous fish to immigrate through the south channel to upstream spawning habitats during the summer/fall low-flow period of the year, which would not be possible under existing conditions because of inadequate flow through the south channel. Corresponding flow reductions also would occur in the north and middle channels; however, these reductions likely would not reduce passage opportunities for

adult anadromous special status fish migrating to spawning areas. Thus, the Proposed Project would benefit anadromous adult special status fish by enhancing migration opportunities via the south channel. Additionally, the increased flow in the south channel would add a migratory pathway for outmigrating juveniles, while the corresponding reductions in flow in the north and middle channels also would not reduce migratory pathways for outmigrating juveniles. Increased flow would also increase passage opportunities for resident special status fish.

Increased flows would generally benefit migrating juvenile salmonids by creating a migration corridor through the south channel; however, an increase in south channel flows could create a potential for entrainment of juvenile salmonids in the South Canal Diversion. As flow increases to the South Canal Diversion channel from removal of the blockage, it could cause emigrating juvenile salmonids to enter the diversion channel. However, because the South Canal Diversion and rock gabion fish barrier were reconstructed in 2017, the rock gabion and its new fabric screen are currently functioning as an effective barrier to entrainment with no "hot spots". Together, the south channel acting as a fully functioning migration corridor with more flow than the diversion channel, and the rehabilitated rock gabion barrier functioning as a fish screen, would result in little to no potential for juvenile fish to enter the South Canal Diversion channel.

Based on the assessments provided above, the Proposed Project would have a **less than significant impact** on the movement of any native or migratory fish or wildlife species, established native resident of migratory wildlife corridors, or on native wildlife nursery sites.

e) The Proposed Project would not result in removal of any vegetation. Therefore, the Proposed Project would have **no impact** in regard to conflicting with local policies or ordinances protecting trees.

f) Although a regional conservation plan is currently under development and is intended to serve as a combined federal Habitat Conservation Plan and state Natural Communities Conservation Plan for Yuba and Sutter counties, this plan has not been adopted and is not expected to be adopted before project implementation. Therefore, the Proposed Project would have **no impact** on consistency with an applicable habitat conservation plan or natural community conservation plan.

3.5 Cultural Resources

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☑	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?	☐	☑	☐	☐

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☑	☐	☐

3.5.1 Setting

Setting information and impact conclusions are derived from the *Cultural Resources Inventory for the South Canal Diversion Fish Screen Project* prepared by Natural Investigations Company (2016).

Prehistoric Setting

The project is situated on the eastern edge of the Sacramento Valley near the base of the Sierra Nevada foothills. The prehistoric timeframes in California's north-central Sierra Nevada region include Paleoindian (13,500–8500 B.P. [before present]), Archaic (8500–1000 B.P.), and Late Prehistoric (1000 B.P.–Historic Contact) periods. There is little archaeological evidence of the Paleoindian and Lower Archaic periods, which predate 5,000 years ago. Excavations of a number of archaeological sites in the subsequent periods show changes in distinct artifact types, subsistence orientation, and settlement patterns, and of an established trans-Sierran trade network, that lasted until historic contact in the early 1800s (Natural Investigations Company 2016).

Ethnographic Setting

The Proposed Project is located within the lands historically occupied by the Nisenan (also known as the southern Maidu) (Kroeber 1925, Wilson, and Towne 1978 as cited in Natural Investigations Company 2016). Prior to Euro-American contact, Nisenan territory included the southern extent of the Sacramento Valley, east of the Sacramento River between the North Fork Yuba River and Cosumnes River on the north and south, respectively, and extended east to the crest of the Sierra Nevada Range. The Proposed Project is within the eastern extent of Valley Nisenan territory, with Hill Nisenan lands to the east. In this lower Sacramento Valley region, there are a numerous archaeological sites and prehistoric burials.

The traditional culture and lifeways of the Nisenan were disrupted in the 1830s with disease epidemics that swept through the densely populated region and decimated native populations. The discovery in 1848 of gold in the heart of Nisenan territory and the ensuing Gold Rush had a devastating impact on the surviving Nisenan who retreated to the foothills and mountains or labored for the growing ranching, farming, and mining industries.

Historic Setting

The history of this region is deeply tied to the Gold Rush era. Located in one of the most gold-rich areas in the Sierra Nevada, Yuba County has a long history of mineral extraction and mining that remains an important part of the county's economy and identity. At the confluence of the

Yuba and Feather rivers, the town of Marysville became the commercial center for the mines of the Northern Mother Lode. Starting approximately 10 miles northeast of Marysville, the Yuba Goldfields (Goldfields) encompass approximately 9,700 acres along both sides of the lower Yuba River. The Goldfields were formed by the dredging, beginning in the early 1900s, of hydraulic mining debris from the river's floodplain (Clark 1970 as cited in Natural Investigations Company 2016).

Commonly referred to as the Goldfields, the Hammonton Mining District on the lower Yuba River was one of the two greatest gold dredging fields in California. The Hammonton dredge field (Goldfields) extends for about 8 miles along the lower Yuba River and is 3 miles wide, mostly on the south side of the present channel of the river. Dredging activity during the 1950s and 1960s rerouted the historic braided (anastomosing) lower river channels to the north. The debris, consisting of sands, gravels, and cobbles, was deposited along the active riverbank and interior floodplain, generating irregular gravel/cobble mounds and an undulating terrain interspersed with ponds. Most of the district has been dredged at least twice and some areas three or four times, each time to a greater depth with more-efficient equipment for recovery.

Digging depths of the dredges ranged from 60 to 80 feet on the eastern end of the Goldfields to 100 to 125 feet in the vicinity of Hammonton (Clark 1970 as cited in Natural Investigations Company 2016). As much as 45 feet of the upper gravels were from hydraulic mining. Gold dredging resumed on a small scale in 1981, although the extensive tailings piles have become increasingly important as sources of aggregate. Present-day ownership of the Goldfields is split among the U.S. Army Corps of Engineers (USACE), Bureau of Land Management, and private interests, of whom Western Aggregates LLC is a major landowner (3,900 acres; Western Aggregates 2014 as cited in Natural Investigations Company 2016).

Daguerre Point Dam was authorized for construction by the Rivers and Harbor Act of 1902. The California Debris Commission built the original dam in 1906 as a component of the Yuba River Debris Control Project, although the river was not diverted over the dam until 1910. The dam was built to prevent hydraulic mining debris from washing downstream into the Feather and Sacramento rivers, was fully reconstructed in 1964, and currently provides hydraulic head for upstream water diversions. Upstream fish passage over the dam is provided by two fish ladders last modified in 1965, one each on the north and south ends of the dam. In 1986, administration and operation of the dam was assumed by USACE; the cost of operations and maintenance are shared with the California Department of Water Resources (CDWR).

YCWA was established as an independent special district in 1959 by an act of the State Legislature to provide wholesale water and flood control services to Yuba County. YCWA operates the South Canal Diversion under a long-term easement from USACE. Completed in 1985 by the South Yuba Water District, as part of a 1984 agreement with the California Department of Fish and Wildlife (CDFW; then the California Department of Fish and Game), the South Canal Diversion and associated rock gabion fish barrier are located approximately 1,000 feet upstream of the Daguerre Point Dam on the south side of the river.

Results of Project Site Research and Survey

Cultural resources include archaeological sites, districts, buildings, structures, and objects generally older than 50 years and considered to be important to a culture, subculture, or

community for scientific, traditional, religious, or other reasons. Significant cultural resources are generally defined as those that are listed or have been determined eligible for listing in the National Register of Historic Places or the California Register of Historical Resources. Historical resources may also include sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe. Section 3.18 of this Initial Study addresses Tribal Cultural Resources.

Efforts to identify cultural resources within the Proposed Project site consisted of record searches by the North Central Information Center at California State University, Sacramento, archival research, review of historic maps and aerial photographs, Native American outreach and consultation, and the conducting of a survey within the project site.

The records searches by the North Central Information Center revealed one prior cultural resource inventory that included the entirety of the Proposed Project site, although the study did not include a survey of the Proposed Project site (**Table 10**). One additional study has been completed within a quarter mile of, but outside, the Proposed Project site.

The records search by the North Central Information Center indicates one previously recorded historic-era resource is mapped within the project site, while three additional archaeological resources have been recorded within a quarter-mile radius (**Table 11**). The resource mapped as being within the Proposed Project site was recorded in 1975 as the rock foundation of a residence and a vandalized dump area on the side of a ridge near Daguerre Point Dam. Of the three resources outside the project site, one is a prehistoric bedrock mortar and two are mining areas.

Table 10. Previous cultural resources studies within 0.25 miles of project site.

NCIC Report #	Year of Study	Title of Study	Study Author	Within Project Site
08344	1990	Cultural Resource Assessment of Three Land Parcels for the Yuba County Project, Part I: Text	Peak & Associates	No
11681	2015	Cultural Resources Assessment, Yuba Goldfields 200-Year Flood Protection Project, Yuba County, California	AECOM	Yes
Source: Natural Investigations Company 2016				

Table 11. Cultural resources previously recorded within 0.25 miles of project site.

Primary #	Trinomial	Year Recorded	Description	Within Project Site
P-58-000332	CA-YUB-314	1975	Prehistoric: bedrock mortar site	No
P-58-000582	CA-YUB-564H	1975	Historic: house foundation with basement and vandalized dump area	Yes
P-58-000595	CA-YUB-577H	1975	Historic: mining area, possible placer depressions	No
P-58-000596	CA-YUB-578H	1975	Historic: mining area, dredging	No
Source: Natural Investigations Company 2016				

Archaeologists conducted a pedestrian survey of the project site in July 2016. Survey transects on non-ponded, dry land were spaced apart at intervals no greater than 15 meters. Ground

visibility varied from poor to moderate depending on density of vegetation coverage. One previously recorded cultural resource (P-58-000582) mapped by North Central Information Center as being within the project site was not found during the survey and appears to have been mis-plotted; one archaeological site (P-58-000596) was updated to record a concentration of historic-era dredge mining features identified within the project site; and one prehistoric bedrock milling station was newly recorded as being within the project site. **Table 12** summarizes the cultural resources within the project site.

Two cultural properties identified within the project site—dredge mining features (P-58-000596) and bedrock milling station (NIC-2016-YCWA-1)—are not eligible for listing in the National Historic Preservation Act and California Register of Historical Resources, and thus do not qualify as significant historical or archaeological resources under CEQA. One house foundation and dump area (P-58-000582) was found to have been mis-plotted and is located outside the project site.

Table 12. Summary of cultural resources within project site.

Primary No. or Field No. (Trinomial)	Description	Eligibility Status
P-58-000582 (CA-YUB-564H)	Historic: house foundation and vandalized dump area; mis-plotted by NCIC; not present in project site	Not evaluated; located outside of project site
P-58-000596 (CA-YUB-578H)	Historic: dredge mining features; features within project site disturbed in 1985 by construction of South Canal Diversion and associated rock gabion barrier	Features within project site not eligible for National or California Registers individually or as contributing elements to larger mining district; not a unique archaeological resource
NIC-2016-YCWA-1	Prehistoric: bedrock milling station; no artifacts	Not eligible for national or California historical registers; not a unique archaeological resource
Source: Natural Investigations Company 2016		

Paleontological resources include fossilized remains, traces, or imprints of organisms, preserved in or on the earth's crust, that are of paleontological interest and that provide information about the history of life on earth. The project site is covered with the remains of dredge mining, extending 60 to 125 feet below the ground surface which, because of the nature of mining operations, would not contain fossils. No documented paleontological resources have been identified within the project site and based on the prior disturbance in the project site by dredge mining activities, the potential of encountering paleontological resources within the project site is considered extremely unlikely.

Native American Outreach

Natural Investigations staff contacted the Native American Heritage Commission (NAHC) to request a database search for sacred lands or other cultural properties of significance within or adjacent to the project site. The response from the NAHC dated July 18, 2016, states the sacred lands file search did not identify the presence of tribal cultural resources in the project site. The NAHC provided a list of Native American contacts that might have further knowledge of the project area with respect to cultural resources. Each person or tribe identified by the NAHC was

contacted by letter and subsequent phone calls. Natural Investigations received two responses, and several messages have been left on voice mail.

On July 21, 2016, Dennis Ramirez, Chairperson of the Mechoopda Indian Tribe of Chico Rancheria, stated the Tribe has no concerns regarding the project and are deferring to tribes in closer proximity to the project area. On August 2, 2016, Gary Archuleta, Chairperson of the Mooretown Rancheria of Maidu Indians, stated the Tribe has no concerns or questions regarding the project. No response to the letter or follow-up telephone calls was received from representatives on the NAHC contact list for the KonKow Valley Band of Maidu, Round Valley Reservation/Covelo Indian Community, or T-si Akim Maidu,

For more information regarding Native American outreach, please see Section 3.18, *Tribal Cultural Resources*.

3.5.2 Discussion

a) As described above, two cultural properties identified within the project site—dredge mining features (P-58-000596) and bedrock milling station (NIC-2016-YCWA-1)—do not qualify as significant historical or archaeological resources under CEQA. Based on the negative results of the California Historic Resources Information System search and Native American outreach efforts, as well as the negative findings of the field survey, there is no indication that the Proposed Project would impact any historical resources as defined under CEQA Section 15064.5, unique archaeological resources as defined under CEQA Section 21083.2(g), or known Native American resources. Further, excavations would occur in an area where there have been numerous disturbances and previous excavations. As such, the potential for finding historical or archaeological resources is low. Inadvertent discovery or damage to historical or archaeological resources would be a significant impact. Implementation of **Mitigation Measure CULT-1** would ensure that the Proposed Project would not result in adverse changes to historical or archaeological resources, by requiring cessation of work, evaluation of significance, and implementation of proper data recovery and/or preservation procedures upon discovery of previously unknown resources. As such, implementation of **Mitigation Measure CULT-1** would reduce this impact to a **less than significant** level.

Mitigation Measure CULT-1. Inadvertent discovery of historical and archaeological resources.

In the unlikely event that buried cultural deposits (e.g., prehistoric stone tools, milling stones, historic glass bottles, foundations, cellars, privy pits) are encountered during project implementation, all ground-disturbing activity within 100 feet of the resources shall be halted and a qualified professional archaeologist (36 CFR 61) shall be notified immediately and retained to assess the significance of the find. Construction activities could continue in other areas. If the find is determined to be significant by the qualified archaeologist (i.e., because it is determined to constitute either a historical resource or a unique archaeological resource), the archaeologist shall develop appropriate procedures to protect the integrity of the resource and ensure that no additional resources are affected. Procedures could include but would not necessarily be limited to preservation in place, archival research, subsurface testing, or contiguous block unit excavation and data recovery.

b) No prehistoric or historic-era archaeological sites or ethnographic sites were identified during survey of the project site (Natural Investigations Company 2016). However, it is possible that buried or concealed archaeological resources could be present that may be discovered during ground-disturbing and other construction activities associated with the project. Inadvertent discovery or damage to archaeological resources would be a significant impact. Implementation of **Mitigation Measure CULT-1** would ensure that the project would not result in adverse change to archaeological resources, by requiring cessation of work evaluation of significance, and implementation of proper data recovery and/or preservation procedures upon discovery of previously unknown resources. Therefore, this impact would be reduced to a **less than significant** level.

c) Based on the documentary research described above, no evidence suggests that any prehistoric or historic-era marked or unmarked human interments are present within or in the immediate vicinity of the project site (Natural Investigations Company 2016). However, there is the potential for unmarked, previously unknown Native American or other graves to be present and be uncovered during construction activities. California law recognizes the need to protect historic-era and Native American human burials, skeletal remains, and grave-associated items from vandalism and inadvertent destruction and any substantial change to or destruction of these resources would be a significant impact. Implementation of the **Mitigation Measure CULT-2** would reduce this impact to a **less than significant** level.

Mitigation Measure CULT-2. Inadvertent discovery of human remains.

In accordance with the California Health and Safety Code, Section 7050.5, and the Public Resources Code 5097.98, regarding the discovery of human remains, if any such finds are encountered during project construction, all work within the vicinity of the find shall cease immediately, a 100-foot-wide buffer surrounding the discovery shall be established, and the YCWA shall be immediately notified. The County Coroner shall be contacted immediately to examine and evaluate the find. If the coroner determines that the remains are not recent and are of Native American descent, the Coroner will notify the Native American Heritage Commission, which will determine and notify a Most Likely Descendent. The Most Likely Descendent shall complete the inspection of the site within 48 hours of notification and may recommend scientific removal and nondestructive analysis of human remains and items associated with Native American burials.

3.6 Energy

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☑	☐

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☑	☐

3.6.1 Setting

The location of the Proposed Project site has no existing power source.

Given the nature of the Proposed Project, the source of energy that would be most relevant is fuel for vehicle trips associated with construction of the Proposed Project at both sites. As described above in Section 3.3, Air Quality, CARB regulates mobile air pollution sources such as those from motor vehicles. These regulations also ensure that wasteful, inefficient, or unnecessary consumption of energy resources does not occur by off-road diesel vehicles, such as construction equipment.

3.6.2 Discussion

a, b) Proposed Project construction would involve consumption of energy resources related to use of oil, gasoline, and diesel fuel to operate equipment to complete the maintenance activity. Construction would not require the use of natural gas appliances or equipment. Diesel-powered construction equipment includes a small excavator, small bulldozer, off road haul trucks, water truck and pump, service truck, and pick-up trucks for transport. The use of off-road heavy-duty diesel equipment would be limited to the construction period, which would be over a course of approximately 1 to 10 days each year for a period of ten years.

The operation of all construction equipment would be regulated by the FRAQMD Regulation III, Rule 3.0, "Visible Emissions Limitations" (40 percent opacity or Ringelmann 2.0) and the State of California idling rule (see Mitigation Measure AQ-1). These regulations are intended to reduce emissions from in-use off-road, heavy-duty diesel vehicles by limiting idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into construction fleets, requiring emissions by retiring, replacing, or repowering older engines. These regulations would result in the use of fuel-efficient construction vehicles.

Based on FRAQMD's Indirect Source Review Guidelines, the Proposed Project is a "Type 2" project, which is a non-land use project that has no operational phase. In other words, once the project is complete, it would not utilize energy resources.

Based on the above, the Proposed Project would not result in wasteful, inefficient, or unnecessary consumption of energy resources during project construction or operation. Further, the Proposed Project would not conflict with or obstruct a State or local plan for renewable energy and energy efficiency. As such, the Proposed Project would have a **less than significant** impact on energy.

3.7 Geology/Soils

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Expose people or structures to 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 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 sifte or unique geologic feature?	☐	☐	☐	☑

3.7.1 Setting

The Proposed Project site is located on the south bank of the lower Yuba River, entirely within the Yuba Goldfields. Soils in the project area are thickly-bedded quaternary alluvial deposits. The south bank of the lower Yuba River in the vicinity of the project area is composed entirely of gravel mine tailings. The north bank of the river is a composite of various alluvial deposits

composed of chiefly of gravelly loam, with minor components of clay and sand (Natural Resources Conservation Service 2016)

The U.S. Geological Survey carried out investigations upstream of Daguerre Point, immediately adjacent to the Proposed Project area, which suggested that the Yuba River is a losing stream along the stretch upstream of Daguerre Point Dam. This suggestion supports the conclusion that the mine tails have a high hydraulic conductivity. On the north bank of the Yuba River, across from the Proposed Project area, the Redding Gravelly Loam has a very low hydraulic conductivity that contrasts with the south bank at the Proposed Project site. This suggests that the main transmission of subsurface flow occurs below the Proposed Project site and within the mine tailings themselves.

The Proposed Project area is located within a region of California that has relatively low seismic activity and corresponding seismic hazard. The gentle western flank of the Sierra Nevada does not exhibit very active fault zones, contrasting with the sharp eastern flank that is marked by many active, normal-type basin and range faults. The nearest fault system to the project site is the expansive Foothills Fault System of the Sierra Nevada which, in the vicinity of the project area, is comprised of a series of smaller fault zones and individual faults, the nearest of which is the Prairie Creek Fault Zone, an inactive expanse of faults beginning in the west roughly beneath the project area. To the immediate east of the project area is the Swain Ravine Fault Zone, which has exhibited movement during the Quaternary. The Swain Ravine Fault Zone extends northward and becomes the Cleveland Hill Fault Zone about 13 miles north of the project area. The Cleveland Hill Fault is the most active fault in the vicinity of the project area, with movement as recently as 1975; however, it is not currently covered by the Alquist-Priolo Act.

Paleontological Resources

Project plans, geologic maps of the Proposed Project site, and relevant geological and paleontological literature were reviewed to determine which geologic units are present within the project site and whether fossils have been recovered within the project site or from those or similar geologic units elsewhere in the region. A search for known fossil localities was also conducted by Natural Investigations Company in 2016 through the online collections database of the University of California Museum of Paleontology in order to determine the status and extent of previously recorded paleontological resources within and surrounding the project site.

The University of California Museum of Paleontology database indicates there are no vertebrate localities, one invertebrate locality, and two fossil plant localities in Yuba County, none of which are in the project vicinity (University of California Museum of Paleontology 2016 as cited in Natural Investigations Company 2016). The invertebrate locality, which is Recent in age, and the Tertiary-age marine plant localities have no specimens listed in the database.

None of the rock units listed in the University of California Museum of Paleontology database for Yuba County are present within the Proposed Project site, which is underlain by Jurassic and Triassic-aged (251.9 to 145 million years ago) metavolcanic rocks (Jrv and Mzv).

Paleontological Sensitivity

Holocene-age deposits (less than 11,700 years old), like the alluvial deposits most likely underlying the pre-Goldfields landscape at the project site, are considered to have a low paleontological potential because they are geologically immature and are unlikely to have fossilized the remains of organisms (fossilization processes take place over millions of years). The volcanic bedrock outcrops in the Daguerre Point area also have no potential to contain significant paleontological resources. Thus, based on the Society for Vertebrate Paleontology the paleontological resource sensitivity within the Proposed Project area is estimated to be low (Natural Investigations Company 2016). Additionally, the Proposed Project site contains no unique geologic features (Natural Investigations Company 2016).

3.7.2 Discussion

a-i−iii) The Proposed Project site is located a considerable distance (13 miles) from the nearest fault that is considered active. Although there is a low probability for earthquake hazards, there is potential for some ground shaking to occur if an earthquake were to occur The Proposed Project does not involve the construction of new structures or other major modifications that would be affected by seismic ground shaking or seismic-related ground failure. The Proposed Project site is relatively flat, thus would not be subject to landslides. Therefore, the Proposed Project would have **no impact** on the exposure of people or structures to adverse effects involving fault lines or seismic-related ground shaking and failure.

a-iv) The Proposed Project occurs in the channel of the Yuba River. The Proposed Project does not include any tree, root, or vegetation removal. The Proposed Project does not include any activities that would create or exacerbate slope failure. As such there would be **no impact** related to landslides.

b) Construction of the Proposed Project involves excavation within the channel of the lower Yuba River. An excavator would carefully remove accumulated river alluvium which shall be loaded into off-road haul trucks. The trucks would carry the sand and gravel material across the gravel bar on the east side of the channel to an existing fill area located on a flood plain terrace near the south riverbank. Due to the relatively small amount of alluvium that would be placed on the gravel bar, placement of excavated alluvium would not alter the inundation frequency or hydraulic characteristics of the gravel bar. Additionally, because the excavated and placed alluvium is very similar in composition to the alluvium in the gravel bar, no changes in function or habitat value would occur.

   The Proposed Project would involve increased travel activity along the construction access route to and from the Proposed Project site, which could loosen road fill, making it more susceptible to erosion. Construction activities would be of temporary and short duration. Further, AMM 4 (Turbidity Control Measures) would be implemented to minimize short-term and long-term erosion. Therefore, the Proposed Project would have a **less than significant impact** on soil erosion and loss of topsoil.

c) The Proposed Project site is not located in an area of unstable geological materials. Furthermore, the Proposed Project would not affect the stability of the underlying materials. Therefore, the Proposed Project would have a **less than significant** impact on

the potential for on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse.

d) The Proposed Project is not in an area containing expansive soils. Therefore, the Proposed Project would have **no impact** on the risk to life or property from expansive soils.

e) The Proposed Project would not involve the construction of septic tanks or alternative wastewater disposal systems. Therefore, the Proposed Project would have **no impact** on soils utilized for septic tanks or alternative wastewater disposal systems.

f) No paleontological resources or unique geologic features are known to exist within or near the project site. As noted, the project site is underlain by Holocene-age deposits (less than 11,700 years old), like the alluvial deposits most likely underlying the pre-Goldfields which have a low sensitivity for paleontological resources. No mitigation measures for paleontological resources are required. Therefore, the Proposed Project would have **no impact** on a unique paleontological resource or site or unique geologic feature.

3.8 Greenhouse Gas Emissions

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☑	☐
b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☑	☐

3.8.1 Setting

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. Prominent GHGs contributing to the greenhouse effect are carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming.

In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation. Emissions of carbon dioxide are byproducts of fossil fuel combustion. Methane is a highly potent GHG that primarily results from escaped emissions of natural gas and from anaerobic decomposition of organic substances in agricultural practices and landfills. Nitrous oxide is also largely attributable to agricultural practices and soil management. Carbon dioxide

sinks, or reservoirs, include vegetation and the ocean, which absorb carbon dioxide through sequestration and dissolution (dissolving into the water), respectively.

In December 2017, the California Air Resources Board (CARB) adopted its Climate Change Scoping Plan Update, which contains the main strategies California will use to reduce GHGs in order to reach the State's 2030 GHG emissions reduction target (California Air Resources Board 2017). CARB has drafted the 2022 Scoping Plan, however it has not been formally adopted as of the date of this report. The 2017 Scoping Plan strategies include a low carbon fuel standard; cleaner technologies and fuels; energy sector efficiencies; freight efficiencies; and a cap and trade program.

FRAQMD has not established quantitative significance thresholds for evaluating GHG emissions in CEQA analyses. Instead, FRAQMD, in its *Indirect Source Review Guidelines*, recommends using the California Air Pollution Control Officers Association CEQA and Climate Change white paper and other resources when developing GHG evaluations (Feather River Air Quality Management District 2010). The CEQA and Climate Change paper provides a common platform of information and tools to support local governments and was prepared as a resource, not as a guidance document. However, CEQA Guidelines Section 15064.4 expressly provides that a "lead agency shall have discretion to determine, in the context of a particular project," whether to "[u]se a model or methodology to quantify greenhouse gas emissions resulting from a project, and which model or methodology to use." A lead agency also has discretion under the CEQA Guidelines to "[r]ely on a qualitative analysis or [quantitative] performance-based standards."

The *Yuba County 2030 General Plan* includes the following applicable policies related to reducing GHG emissions in Yuba County (Yuba County 2011b):

- **Policy HS6:** New developments shall implement emission control measures recommended by the Feather River Air Quality Management District for construction, grading, excavation, and demolition, to the maximum extent feasible.

In light of the lack of a specific GHG threshold from FRAQMD, it is considered appropriate to refer to guidance from other agencies when discussing GHG emissions. Thus, for the purposes of this analysis, thresholds developed by the Sacramento Metropolitan Air Quality Management District are considered to determine the significance of GHG emissions. These thresholds are intended to evaluate a project for consistency with GHG targets established in Assembly Bill 32. For the evaluation of construction-related emissions for development projects, Sacramento Metropolitan Air Quality Management District recommends using the mass emission threshold of 1,100 metric tons of carbon dioxide-equivalent per year (MT CO_2e/year) (Sacramento Metropolitan Air Quality Management District 2020).

3.8.2 Discussion

a) GHG emissions generated by the project predominantly would be in the form of carbon dioxide from the exhaust associated with worker commute trips, haul truck trips, and equipment used on-site. As described in Section 3.3, Air Quality, modeling was conducted to estimate the emissions that would occur during the construction period. Modeling assumed CalEEMod's default values for the haul trips and trip lengths. This was a conservative approach as the number of haul trips would be substantially lower and

the trip lengths would be substantially shorter than the default values. The modeled carbon dioxide emission is 2.7 MT CO_2e per day, or up to 27 MT CO_2e for the annual construction period, which would be well below the threshold of significance of 1,100 MT CO_2e/year. Therefore, the project would have a **less than significant impact** on generation of greenhouse gas emissions.

b) Although the project would result in a net increase in GHG emissions, as discussed above under criterion "a," the annual GHG emissions associated with this project would be substantially less than the threshold of 1,100 MT CO_2e/year. The FRAQMD has not developed a threshold for GHG emissions while the Yuba County General Plan GHG emission policy is focused on new developments. The small amount of emissions also would not conflict with the 2017 Climate Change Scoping Plan, which identifies scenarios for reducing GHG generation within California to meet the 2030 and 2045 GHG targets. Therefore, the project would have a **less than significant impact** relative to conflicts with plans, policies and regulations adopted for the purpose of reducing the emissions of greenhouse gases.

3.9 Hazards & Hazardous Materials

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 two 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?	☐	☐	☐	☑

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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?	☐	☐	☑	☐

3.9.1 Setting

Hazardous materials and wastes are regulated by federal and state laws and are required to be recycled or properly disposed. Based on a search of the State of California EnviroStor database, the Proposed Project site is not located on, or near, any federal-, state-, or local-designated hazardous wastes site (California Department of Toxic Substances Control 2022). The potential severity of a hazardous material incident depends on the type, location, and quantity of the material released. The potential for hazardous material or waste spills during transport generally reflects the greatest risk of public exposure given residences that are typically close to transportation corridors.

The Proposed Project site is located in an area identified by the California Department of Forestry and Fire Protection with moderate fire hazard severity (California Department of Forestry and Fire Protection 2022), which is the lowest fire hazard rating. The Proposed Project site is located within the Smartsville Fire Protection District of the Yuba County Foothills Wildfire Protection Plan. The Proposed Project site is located within the "threat" zone of the Smartsville Fire Protection District, which is the lowest level of risk, aside from unrated lands. A number of wildfires have ignited in the vicinity of the project area (within a 10-mile radius), and are documented in the Wildfire Protection Plan (Yuba County 2014). However, the primary source of fuel in the area is grassland, which poses a reduced risk relative to nearby woodland areas. Moreover, no ignitable structures are located at the project site or in the immediate vicinity. Altogether, the results of the Wildfire Protection Plan assessment place the project area in an area of low wildland fire hazard.

One military base (Beale Air Force Base) is located three miles south of the project site; two general-aviation airports (Yuba County Airport and Sutter County Airport) are located approximately 11 miles southwest and 11 miles west of the site, respectively; and a small private airstrip (Hammonton Airstrip) is located approximately 1.5 miles south of the Proposed Project site.

3.9.2 Discussion

a-b) Hazardous materials such as fuel, and potentially other construction materials, would be present on the project site for the Proposed Project. During the construction period, vehicle

and maintenance fluids would be stored at the construction staging areas and no acutely hazardous materials would be used. All potentially hazardous materials would be used in accordance with applicable federal, state, and local laws, including Cal-OSHA requirements and manufacturer's instructions. The Proposed Project does not involve any other hazardous materials or affect or generate hazardous wastes. Therefore, the Proposed Project would have **a less than significant impact** on the creation of a significant hazard to the public or environment through the routine transport of disposal materials.

c) There is no existing or proposed school located within one-quarter mile of the Proposed Project site. Therefore, the Proposed Project would have **no impact** on a school as related to the emission of hazardous materials, substances, or waste.

d) The Proposed Project site is not located on, or near, any federal-, state-, or local-designated hazardous wastes site (California Department of Toxic Substances Control 2022). Therefore, the Proposed Project would have **no impact** on the creation of a significant hazard to the public or environment.

e) The Proposed Project is not located within an airport land use plan or within two miles of a public airport. There is a small private airstrip (Hammonton Airstrip) is located approximately 1.5 miles south of the Proposed Project site. The Proposed Project operating construction equipment for a period of 1 to 10 days in the lower Yuba River would not create noise that would be heard at the airport 1.5 miles away. Therefore, the Proposed Project would have **no impact** on safety hazards or excessive noise for people residing or working in an airport land use plan area or within two miles of a public or public use airport.

f) The Proposed Project construction work would be primarily within the lower Yuba River channel. To access the Proposed Project site there would be limited trips by the construction vehicles on county- and state-maintained roads. The exact number of trips would be determined based on the severity of the blockage of the south channel in any given year. However, a few trips by construction workers to access the Proposed Project site would not impact use of the county or state roads by emergency vehicles. Thus, the Proposed Project would have **no impact** on an emergency response plan or emergency evacuation plan.

g) The Proposed Project site is located in an area of moderate fire hazard severity based on the California Department of Forestry and Fire Protection Fire Hazard Severity Zone map and an area of low fire hazard assessment based on local planning by Yuba County. Fuels within the project area are limited primarily to grasses and mixed oak woodland with open space between tree stands. The Yuba Goldfields itself is largely un-vegetated, except in the areas immediately bounding waterbodies. The construction access route would be maintained in good condition for regular access to and from the site. In the event of a wildland fire at the project site, workers would be evacuated, and project work would be suspended or cease until the threat has passed. No habitable structures are located within the project site or immediate vicinity, nor would any be constructed as part of the project. Therefore, the Proposed Project would have a **less than significant impact** on the exposure of people or structures involving wildland fires.

3.10 Hydrology/Water Quality

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 to project inundation.	☐	☐	☐	☑
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.	☐	☐	☐	☑

3.10.1 Setting

The Proposed Project site is located in the Lower Yuba Watershed (Hydrologic Unit Code #18020107) within the greater Sacramento River hydrologic region. The Sacramento River hydrologic region covers approximately 17.4 million acres (27,200 square miles). The Yuba River has three forks: North, Middle, and South Yuba. The North and Middle Yuba Rivers converge below New Bullards Bar Reservoir and form the mainstem Yuba River. Englebright Dam marks the division between the Upper and Lower Yuba River.

Site Hydrology

The lower Yuba River flows 24 miles from Englebright Dam to the Feather River, southwest of Marysville, with flows comprising runoff from the approximately 1,340-square-mile watershed (Sacramento River Watershed Program 2015). Flows reaching at Daguerre Point Dam are regulated by upstream releases from Englebright Reservoir and New Bullards Bar Reservoir. New Bullards Bar Reservoir is the principal storage facility of the Yuba River Development Project and is operated by YCWA for water supply and flood control. Englebright Reservoir is located downstream of New Bullards Bar Reservoir, and primarily attenuates power peaking releases from New Colgate Powerhouse and provides recreation opportunities. A portion of New Bullards Bar Reservoir capacity, up to 170,000 acre-feet, normally must be held empty from September 15 through May 31 for flood control. This flood control storage space is utilized to maintain Yuba River instream flows below the river's flood channel capacity. Peak flows in the Yuba River for specified recurrence intervals near the South Canal Diversion are provided in **Table 13**. Storm drainage in the area is provided through natural drainage.

Table 13. Lower Yuba River flows near the YCWA South Canal Diversion.

Recurrence Interval	Flow (cfs)
2-year	19,000
50-year	125,000
100-year	155,000
Notes: cfs = cubic feet per second Source: R2 Resource Consultants, Inc. 2014	

Prior to the high-flow events in January and February 2017, the south channel was the primary river flow channel upstream of Daguerre Point Dam, because the north channel was partially blocked by a gravel bar constriction at its upstream end. During the early 2017 high flow events, the north channel constriction was scoured away, allowing more water to flow through the north channel. In addition, the entrance to the south channel became constricted due to extensive deposition of river alluvium. This resulted in a redistribution of flows with most of the flow in the Proposed Project area flowing through the north channel. Spring 2018 high flows events further redistributed some river flows to the middle channel. Since that time the majority of water has continued to flow through the north channel. This distribution of flows is considered existing conditions for the Proposed Project.

Groundwater

The Proposed Project site is under the Basin Plan for the Sacramento River Basin and San Joaquin River Basin (Central Valley Regional Board 2018). The California Department of Water Resources, which oversees the Sustainable Groundwater Management Act, formally approved the Groundwater Sustainability Plan for the North and South Yuba groundwater subbasins in Yuba County in 2021.

For at least the last 70 years groundwater levels have been stable in in the North Yuba Subbasin. In the South Yuba Subbasin groundwater levels generally were declining from the 1940s through the early 1980s. However, since the introduction of surface water deliveries to the subbasin in 1983 the groundwater levels have stabilized. Regional groundwater quality in the Yuba Subbasins is considered good to excellent for municipal, domestic, and agricultural uses and does not have a significant adverse impact on the beneficial uses of groundwater in the subbasins.

Regulatory Framework and Water Quality

The federal Clean Water Act (CWA) establishes the basic structure for regulating discharges of pollutants to surface waters within the United States. The CWA authorizes the U.S. EPA to delegate many permitting, administrative, and enforcement aspects of the law to state governments. In such cases, however, U.S. EPA still retains oversight responsibilities. Such responsibility has been delegated to the State of California, which administers the CWA through the State Board and nine regional water quality control boards (Regional Boards).

The preparation and adoption of water quality control plans (Basin Plans) is required by the California Water Code (Section 13240) and supported by Section 303 of the federal CWA to establish water quality standards (i.e., water quality objectives, beneficial uses, and anti-degradation policies) for the protection of navigable waters (Central Valley Regional Board 2018). The Proposed Project site is under the Basin Plan for the Sacramento River Basin and San Joaquin River Basin (Central Valley Regional Board 2018). The Central Valley Regional Board designates beneficial uses and water quality objectives for the Yuba River.

The lower Yuba River provides water for several beneficial uses designated in the Central Valley Basin Plan, including: irrigation and stock watering, power supply, contact and non-contact recreation, warm and cold freshwater habitat, warm and cold migration, warm and cold spawning habitat, and wildlife habitat (Central Valley Regional Water Quality Control Board 2019). Lower Yuba River water quality generally is acceptable for these designated beneficial uses (Sacramento River Watershed Program 2015). Levels of key water quality parameters are summarized in **Table 14**.

Table 14. Levels of key water quality in the lower Yuba River below Daguerre Point Dam.

Water Quality Parameter	Units	Spring 2012	Summer 2012
pH	Standard units	7.5	7.4
Dissolved oxygen	mg/L	11	10.9
Turbidity	NTU	2.6	0.4
Total suspended solids	mg/L	ND (<1)	ND (<1)
Mercury (total)	ng/L	0.92	0.79
Methyl mercury (total)	ng/L	0.039 (J)	ND (<0.05)

ng/L = nanograms per liter; NTU = Nephelometric *Turbidity* Unit; mg/L = milligram/liter; J = Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit, reported value is estimated; ND = Analyte not detected at or above the reporting limit.
Source: YCWA 2013c

The lower Yuba River is on the State's Clean Water Act Section 303(d) list for impairments associated with copper and mercury (State Water Resources Control Board 2021).

Mercury is present in the bottoms of rivers and reservoirs. It is transported by erosion processes and can be converted into methylmercury by bacteria within the sediments. Mercury is a constituent of concern in aquatic environments for its ability to bioaccumulate in the food chain. Methylmercury bioaccumulates through the trophic levels of the food chain such that the top trophic levels (i.e., larger predatory fishes) have greater concentrations of methylmercury in their tissues than do the lower trophic levels (e.g., algae and invertebrates). The national recommended water quality criteria for total mercury for the protection of freshwater aquatic life from acute and chronic toxicity. The acute (1-hour) criterion is 1.4 µg/L and the chronic (4-day average) criterion is 0.77 µg/L, expressed as the dissolved fraction. Mercury concentrations in the lower Yuba River in the Proposed Project area are well below reported no observed effect levels and the national recommended water quality criteria.

Copper is a constituent of concern in the aquatic environment because excessive amounts of bioavailable copper can cause direct toxicity to aquatic organisms. Copper in the dissolved form is more bioavailable to aquatic organisms than the total recoverable form. The most bioavailable form of copper in the aquatic environment is the free copper ion (Cu^{2+}).

Although the Proposed Project is more than one acre it "includes regular maintenance activities performed to restore the original line, grade, or capacity of the facility". As such it would not be required to obtain NPDES coverage under Orders 2010-0014-DWQ and 2012-0006-DWQ (General Construction Permit).

3.10.2 Discussion

a) Site preparation, constructing a temporary access ramp, constructing temporary berms to decrease turbidity (during the April 1 to June 30 period), excavating river alluvium, placement of cobble into the bed of the excavated channel, and site clean-up and demobilization would have the potential to affect water quality. Construction is planned to occur a period of 1 to 10 days.

   Construction-related eroded soil and runoff can contain organic matter, plant nutrients (nitrogen and phosphorus), and other contaminants such as pesticides, or animal-related pathogens. However, the rural nature of the project site and location within the lower Yuba River dominated by dredged coarse mineral rock and sediment substrate would result in a low risk of disturbance or runoff of organic soils, or typical urban contaminants such as organic matter, nutrients, pesticides, and pathogens from pet wastes. Consequently, project-related effects on runoff of organic matter, nutrients, pesticides, and pathogens from pet wastes into the river would be negligible and thus are not assessed further.

   The above-described maintenance activities do have the potential to result in temporary increases in turbidity and introduce suspended sediment into lower Yuba River and contaminants that may wash off equipment. Suspended sediments could also contain remnant sources of mercury, copper, or other contaminants of concern and result in a temporary release of these contaminants into the water column. The following discussion

addresses effects from 1) TSS and turbidity and associated potential for release of remnant contaminants and 2) petroleum hydrocarbons and other construction equipment related contaminants.

Total Suspended Solids and Turbidity

Maintenance activities could increase turbidity and introduce suspended sediment into lower Yuba River. The suspended sediments could contain remnant sources of mercury, copper, or other contaminants of concern and result in a temporary release of these contaminants into the water column. BMPs (AMM 3) and turbidity control measures (AMM 4) would reduce the potential for runoff, soil, and other construction debris to enter the lower Yuba River, and turbidity control measures (AMM 4) would reduce potential downstream transport of suspend sediment-associated contaminants. Nevertheless, soil and other particulates could enter into the lower Yuba River during the maintenance work. The degree of sediment resuspension associated with any of the components of the Proposed Project is determined by multiple factors including sediment properties, water depth, velocity, impediments, and operational factors.

The lower Yuba River immediately adjacent to the South Canal Diversion facility consists of three channels separated by sand and gravel bars. The south channel, where in-water construction activities would occur, has the lowest flow, relative to the middle and north channels. The channel adjacent to the north bank of lower Yuba River (north channel) conveys most of the river flow. The middle channel, which was formed in 2017 when the river cut through an area that was previously a large island in the middle of the channel, is wider than the north channel, but does not convey as much flow. However, combined the middle and north channels currently convey the vast majority of the river flow in the Proposed Project area.

Due to the location of the Proposed Project, the vast majority of the suspended sediment and turbidity generated from in-river construction would flow into the south channel and then into the South Canal Diversion facility and ultimately into the YCWA canal system. Thus, most of the construction generated suspended sediment and turbidity would not occur in the middle or north channels, and much of this turbidity would not exit the immediate project vicinity, but rather would be transported with diversions through the South Canal Diversion. Hence, from an exposure perspective, all aquatic life using the north and middle channels within the project area (where most of the river flow is conveyed) would be exposed to low level increases, if any increases, in TSS and turbidity.

The greatest increase in water column suspended sediment and turbidity levels would be confined to the south channel. During the entire work period (April 1 to August 31) a turbidity curtain (AMM 4) would be placed in the south channel (see Figure 6 above for an example of where the turbidity curtain would be placed). Flow would be carefully balanced through the rock barrier according to residual seepage in the diversion channel downstream of the work area so that any residual flow is diverted through the rockfill barrier and head pond into the canal system rather travelling downstream over Daguerre Point Dam.

As described above, work is planned to occur annually over a period of 1 to 10 days. Any elevated suspended sediment and turbidity levels would occur only during construction activity, and would decrease back to baseline levels daily during the nighttime non-construction period. The implementation of appropriate erosion control and pollution prevention BMPs (AMM 3 and AMM 4), including active water quality monitoring, and use of a turbidity curtain, would ensure construction-related erosion and TSS and turbidity generated from the construction activities does not affect water quality outside of the immediate vicinity of the work area.

Based on the levels of suspended sediment levels anticipated to occur, the localized nature of effect, daily reduction in levels each night, and the overall short duration of exposure (i.e., 1 to 10 days), temporary suspended sediment, turbidity, and suspended sediment-associated contaminants generated by the Proposed project would not cause exceedance of the Basin Plan turbidity objectives when averaging periods are applied. Likewise, the elevated TSS and turbidity levels expected to occur in the river would not be of duration, magnitude or geographic extent that would adversely affect the river's beneficial uses. Further, the project would not contribute to any long-term changes in TSS and turbidity levels in the lower Yuba River.

Petroleum Hydrocarbons and Other Construction-Related Contaminants

The use of motorized equipment, and storage and handling of fuels and equipment lubricants and fluids, may result in petroleum product discharges that could be harmful to water quality if they directly enter the river or are spilled on the ground where they may enter the groundwater, or be mobilized and transported in stormwater runoff following construction. Other potential construction-related contaminants associated with the equipment used or inadvertently discharged by construction workers may include trash, cleaners, solvents, and human sanitary wastes.

Any incidental "wash-off" of construction equipment-related contaminants that could occur from operating the equipment in the wet would be sufficiently low in volume that concentrations of such contaminants in the river would be well below levels that would adversely affect aquatic resources. Construction activities would not occur at night (AMM 1: Timing of In-water Work), leaving a daily period of approximately 14 hours or more with no construction activity and no potential for inadvertent spills to occur. Additionally, the project description includes implementation of construction BMPs (AMM 3) and worker training (AMM 2) to avoid and minimize the potential for any discharge of contaminants into the lower Yuba River. These AMMs contain measures that are intended to reduce the probability for the release of toxic materials to the Lower Yuba River and establish measures to contain any accidental spills quickly.

Summary

In summary, the risk of direct discharges of construction-related contaminants to water would be very low. Implementation of AMMs would further avoid and minimize potential adverse maintenance-related effects. Additionally, because maintenance-related disturbances and potential contaminant discharges would be temporary, maintenance

activities would not cause any substantial increase in any bioaccumulative pollutants that would result in measurably higher body burdens of a pollutant in aquatic organisms or wildlife, nor contribute to long-term water quality degradation from mercury by measurable levels such that the Clean Water Act Section 303(d)-designated beneficial use impairment for the lower Yuba River would be made discernibly worse. Furthermore, the project would not cause constituent discharges of sufficient frequency and magnitude to result in a substantial increase of exceedances of water quality objectives/criteria, nor substantially degrade water quality with respect to constituents of concern, and thus would not adversely affect any beneficial uses in the Yuba River. In summary, the Proposed Project would have a **less than significant impact** on water quality.

b) The Proposed Project would not involve extraction of groundwater or a change in surface water diversion capacity or impervious surface area that would impede groundwater recharge. Therefore, the Proposed Project would have **no impact** on groundwater supplies or recharge or the sustainable groundwater management of the underlying basin.

c) The purpose of the Proposed Project is to improve the flow through the south channel of the lower Yuba River. Increased flows through the south channel would correspond to the size and extent of the alluvium blockage that was removed. An increased proportion of the total flow entering the south channel would result in a proportional decrease in the total flow entering the north and middle channels. Although flows would be reduced in the north and middle channels after removing any blockages, the majority of water would continue to flow through the north channel.

After excavation cobbles would be placed back into the channel to serve as a channel lining and to prevent erosion. Excavated alluvium would be spread out uniformly on an adjacent gravel bar, so as to be re-entrained into the river bedload during future high flow events. No impervious materials would be utilized for the Proposed Project.

c-i) As described above in "a," the Proposed Project would not result in substantial erosion or siltation on-or off site. If needed, cobble lining in the channel would be repaired using cobble from a small stockpile near the rock barrier. Up to 500 cubic yards of cobble could be used annually to maintain the cobble lining that prevents erosion and resists scour. Thus, the Proposed Project would make the river's south channel more stable and decrease potential for erosion. As such, the Proposed Project would have a **less than significant** impact on erosion or siltation on or off-site.

c-ii) Flows at the Proposed Project site are regulated by upstream releases from Englebright Reservoir and New Bullards Bar Reservoir. New Bullards Bar Reservoir is the principal storage facility of the Yuba River Development Project and is operated by YCWA for water supply and flood control purposes. Thus, reservoir operations are typically controlled by flood control releases and releases to meet the lower Yuba River Accord flow requirements. However, due to natural precipitation extreme floods affect conditions in the lower Yuba River. The Proposed Project is designed to improve flows through the lower Yuba River by removing blockages of the south channel that occur from these flood events. Specifically, the Proposed Project would restore flow through the south channel. Although flows would be improved in the south channel after implementation of the

Proposed Project, naturally occurring floods would continue to affect the hydrology of the lower Yuba River as they do under existing conditions. The Proposed Project would not affect the rate or amount of surface runoff in a manner which would result in flooding on- or offsite.

The Proposed Project also is not located in a developed area where runoff could enter a stormwater drainage system. Further, as described above in "a," the Proposed Project would not result in substantial sources of polluted runoff. Based on the above discussion, the Proposed Project would have a **less than significant** impact on the amount of surface runoff from the site and on- or off-site flooding.

c-iii) As described above in paragraph "a," the Proposed Project would not result in substantial contributions of pollutants to adjacent waters. There are no existing or planned stormwater drainage systems at the Proposed Project site as the site is located in a rural area of Yuba County. No exceedances in the capacity of the existing or planned storm water drainage systems would occur since there are no such systems in the vicinity of the Proposed Project. Based on the above considerations the Proposed Project's contribution of runoff water would have a **less than significant impact** on the capacity of existing or planned stormwater drainage systems or additional sources of polluted runoff.

c-iv) As described above in c-ii the Proposed Project is designed to improve flows in the south channel by removing the blockages that occur during the winter and spring season. Thus, the south channel would be able to convey additional flows after the blockage was removed. The same amount of water would continue to drain downstream over Daguerre Point Dam. However, the south channel would be able to accommodate additional flow during periods of flood unless a blockage formed again. Considering the purpose of the Proposed Project is to ensure the south channel would not impede flood flows the Proposed Project would have a **less than significant impact** on flood flows.

d) The Proposed Project is not located in a region subject to seiche, tsunami, or mudflow. Therefore, the Proposed Project would have **no impact** on inundation by seiche, tsunami, or mudflow

e) As described above in paragraph "b" the Proposed Project would not result in depletion of groundwater or impeded groundwater recharge in the project area. As such, it would not conflict with or obstruct the sustainable Groundwater Management Plan utilized by YCWA. Therefore, the Proposed Project would have **no impact** with regard to conflicting with or obstructing the implementation of a water quality control plan or sustainable groundwater management plan.

3.11 Land Use/Planning

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☑

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑

3.11.1 Setting

The Proposed Project is located in an unincorporated area of Yuba County. The Proposed Project would be located within the lower Yuba River channel and staging, and vehicle access would be via adjacent land, which, as described in Section 3.1.1, is located in a rural setting. Several unpaved access roads lead to the site, and riparian and oak woodland vegetation grow adjacent to the river channel.

3.11.2 Discussion

a) There is no residential community within or near vicinity of the Proposed Project. Therefore, the Proposed Project would have **no impact** on an established community.

b) The Proposed Project does not include changes to existing land uses at the Proposed Project site. Therefore, the Proposed Project would have **no impact** on consistency with applicable land use plans, policies, or regulations.

3.12 Mineral Resources

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑

3.12.1 Setting

The project site is located on the south bank of the Lower Yuba River, entirely within the Yuba Goldfields. The Yuba Goldfields are located within the Yuba City-Marysville Production-Consumption Region for aggregate resources (Habel and Campion 1988). The dredge tailings that comprise the Yuba Goldfields are classified as Mineral Resource Zone-2 for both aggregate and gold resources. Zone-2 means adequate information indicates that significant mineral deposits are present, or it is judged that a high likelihood exists for their presence (Habel and

Campion 1988). Mineral Resource Zone-2 zones are eligible for designation as mineralogical areas of regional or statewide significance.

The area is actively mined by Western Aggregates for high-grade Portland cement-concrete-grade aggregate. Aggregate mining is geographically variable, but generally consists of extracting aggregate from one location for a defined period of time, until either the mineral is spent, or conditions become untenable for continued mining. As a result, mining is planned ahead of time, and company resources are scheduled and allocated to the appropriate area for extraction activities.

3.12.2 Discussion

a-b) The Proposed Project would involve a relatively minor amount of temporary construction activity to build a temporary access ramp, add fish avoidance measures during the April 1 to June 30 period, remove alluvium within the south channel of the lower Yuba River, and place the removed alluvium on an adjacent gravel bar. The construction activity would not result in the removal of any mineral resources potentially underlying the Proposed Project area, nor preclude any future mineral extraction activities that might arise. Therefore, the Proposed Project would have **no impact** on the availability of mineral resources.

3.13 Noise

Would the project result in:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 two 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?	☐	☐	☐	☑

3.13.1 Setting

Sound is mechanical energy transmitted in the form of a pressure wave from a disturbance or vibration. Sound that is loud, disagreeable, unexpected, or unwanted is generally defined as noise. Sound levels are measured using the decibel scale, developed to relate to the range of human hearing. A decibel (dB) is logarithmic; it does not follow normal algebraic methods and cannot be directly summed. For example, a 65 dB source of sound, such as a truck, when joined by another 65 dB source results in a noise level of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound by 3 dB). A sound level increase of 10 dB corresponds to 10 times

the acoustical energy, and an increase of 20 dB equates to a 100-fold increase in acoustical energy. As sound travels through the atmosphere from the source to the receiver, noise levels attenuate (i.e., decrease) depending on distance, ground absorption characteristics, atmospheric conditions, and the presence of physical barriers. Noise generated from mobile sources (e.g., construction equipment) generally attenuates at a rate of 4.5 dB per doubling of distance from the source. Noise from stationary sources spread with more spherical dispersion patterns that attenuate at a rate of 6 to 7.5 dB per doubling of distance from the source.

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Vibration amplitudes are commonly expressed in peak particle velocity or root-mean-square vibration velocity. Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 vibration decibels, which is the typical background vibration-velocity level, to 100 vibration decibels, which is the general threshold where minor damage can occur in fragile buildings. Construction activities can generate ground vibrations, which can pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants. The Federal Transit Administration (2018) identifies the maximum acceptable vibration standard as 80 vibration decibels with respect to human response for residential uses (e.g., annoyance, sleep disturbance) at nearby vibration-sensitive land uses.

The following is a policy the *Yuba County 2030 General Plan Public Health & Safety Element* (Yuba County 2011b):

- **Policy HS10-4:** If existing noise levels exceed the maximum allowable levels listed in Table Public Health & Safety-2 [**Table 15**], projects are required to incorporate mitigation to reduce noise exposure in outdoor activities areas to the maximum extent feasible and include mitigation to achieve acceptable interior levels, as defined in Table Public Health & Safety-1.

Table 15. Maximum allowable noise exposure from non-transportation noise sources at noise-sensitive land uses.

Noise Descriptor	Daytime (7 a.m. – 10 p.m.)	Nighttime (10 p.m. – 7 a.m.)
Hourly Energy-Equivalent Noise Level (Leq)	60 dBA	45 dBA
Maximum Noise Level (Lmax)	75 dBA	65 dBA

Notes:
dBA=A-weighted decibel
Each of the noise levels specific shall be lowered by 5 dBA for simple tone noises, noises consisting primarily of speech, music or for recurring impulsive noises. These noise-level standards do not apply to residential units established in conjunction with industrial or commercial uses (e.g., caretaker dwellings). Noise-sensitive land uses include schools, hospitals, rest homes, long-term care facilities, mental care facilities, residences, and other similar land uses.
Source: Yuba County 2011

Section 8.20.310 of the Yuba County Code identifies noise limits for construction activities. Noise limits under the code prohibit the use of construction devices between the hours of 10:00 p.m. and 7:00 a. m. in such a manner that a reasonable person of normal sensitiveness residing the area is caused discomfort or annoyance unless a permit has been granted.

Typical noise levels generated by the types of construction equipment anticipated are identified in **Table 16**. Representative ground vibration and noise levels for construction equipment are identified in **Table 17**.

Table 16. Typical equipment noise levels.

Type of Equipment	Maximum Instantaneous Noise Level (dB) at 50 feet
Backhoe	80
Dozer	85
Construction Trucks	84

Notes:
Assumes all equipment is fitted with a properly maintained and operational noise control device, per manufacturer specifications. Noise levels listed are manufacture-specified noise levels for each piece of heavy construction equipment.
Source: Federal Transit Administration 2018

Table 17. Representative ground vibration and noise levels for construction equipment.

Equipment	PPV at 25 feet (in/sec)	Approximate Lv (VdB) at 25 feet
Large Dozer	0.089	87
Loaded Trucks	0.076	86
Small Dozer	0.003	58

Notes:
PPV = peak particle velocity
Lv = the root mean square velocity expressed in vibration decibels (VdB), assuming a crest factor of 4
Source: Federal Transit Administration 2018:184

Noise-sensitive land uses in the project vicinity include numerous rural residences located along the north side of the Yuba River. The project would be located along the southern bank of the Yuba River, upstream from the Daguerre Point Dam, more than 0.5 mile from any existing sensitive receptor. Noise sources in the area are primarily natural, including birds, wind, and water. Human-made noise sources include vehicles in the distance and the occasional aircraft flyover.

3.13.2 Discussion

a) The effects of construction noise largely depend on the type of construction activities occurring on any given day; noise levels generated by those activities; distances to noise-sensitive receptors; potential noise attenuating features such as topography, vegetation, and existing structures; and the existing ambient noise environment in the receptor's vicinity. Variations in the operational characteristics of the equipment change the effect they have on the noise environment of the project site and in the surrounding area for the duration of the construction period.

   Short-term construction noise levels in the vicinity of the project site would fluctuate depending on the particular type, number, and duration of usage for the varying equipment. Based on the information provided in Table 16 and accounting for typical usage factors of individual pieces of equipment and activity types, on-site construction-

related activities could result in a maximum instantaneous noise level as high as 88 dB at a distance of 50 feet. Through distance alone, this noise level would attenuate to less than the 75 dB daytime noise standard established by Yuba County for daytime construction generated noise at a distance of 160 feet, whereas the nearest residence is approximately 3,000 feet away. Thus, the project would not expose any off-site noise-sensitive receptors to noise levels that exceed applicable standards established by Yuba County. Therefore, the project would have a **less than significant impact** on the exposure of persons to noise levels in excess of standards.

b) Depending on the specific construction equipment used and activities involved, construction activities may result in varying degrees of temporary ground vibration and noise. There are no sensitive receptors located within 3,000 feet of the project site where vibration from construction equipment could cause human disturbance. Therefore, the project would have a **less than significant impact** on the exposure of persons to excessive groundborne vibration or noise levels.

c) The project site is not located within an airport land use plan, within two miles of a public airport or public use airport, or in the vicinity of a private air strip. Beale Air Force Base is located approximately 3 miles south of the project site. The private Hammonton Air Strip is located approximately 1.5 miles southeast of the project site. The nearest residence is located approximately 0.5 mile north of the site. Therefore, the project would have **no impact** on the exposure of people residing or working in close proximity to airports to excessive noise levels.

3.14 Population/Housing

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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 people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

3.14.1 Setting

The Proposed Project is located in a rural area of unincorporated Yuba County. The closest residences to the project site are located approximately 0.5 mile to the north and west; there are no major developments in this area or within a one-mile radius.

3.14.2 Discussion

a-b) The Proposed Project would not include construction of new housing or commercial businesses. Maintenance activities would be short-term and would not result in construction employees relocating to the project vicinity. No additional permanent staff

would be needed for the . The project would not remove any homes or result in displacement of people. Therefore, the Proposed Project would have **no impact** on population growth, displacement of existing housing, or displacement of people.

3.15 Public Services

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑

3.15.1 Setting

The Proposed Project is located in a rural area of unincorporated Yuba County. The provision of public services in the Proposed Project area is the responsibility of Yuba County (e.g., police) and other local and regional agencies (e.g., fire protection, schools, parks).

3.15.2 Discussion

a) The Proposed Project would involve temporary construction-related activities. The Proposed Project would not involve or require any changes in public services. Therefore, the Proposed Project would have **no impact** on fire and police protection services, schools, parks, or other public facilities.

3.16 Recreation

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) 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) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☑	☐

3.16.1 Setting

Yuba County offers a variety of outdoor recreational opportunities, including boating, swimming, fishing, hunting, and wildlife viewing. Regional recreational resources include New Bullards Bar Reservoir, the North Yuba River between New Bullards Bar Reservoir and Englebright Reservoir, Englebright Reservoir, the lower Yuba River from below Englebright Dam to the confluence with the Feather River, and numerous county parks.

The area surrounding the Proposed Project site is rural and is used primarily for mining and agriculture. The closest residences to the project site are located approximately 0.5 mile to the north and west; there are no major developments in this area or within a one-mile radius. Nearby residents may use the Proposed Project site and surrounding area for fishing, boating, or passive recreation, but it is not specifically designated for such users.

The closest recreational facilities to the project site are Sycamore Ranch and Hammon Grove Park, which are located approximately two miles northeast of the project site in Browns Valley, California. These facilities offer camping, picnicking, and access to the Yuba River and Dry Creek.

Thirty-nine miles of the south Yuba River between Lake Spaulding and Englebright Reservoir are designated as a California Wild and Scenic River and federally recommended as a Wild and Scenic River; this area is used heavily for recreational purposes (Sacramento River Watershed Program 2015). The project site is located approximately 10 miles southwest of Englebright Reservoir, and not located within the portion designated Wild and Scenic.

3.16.2 Discussion

a, b) The Proposed Project involves temporary maintenance activity on a relatively small area of the lower Yuba River. The Proposed Project does not include any housing and would not otherwise increase population levels, and would therefore not increase use of recreational facilities. While some recreationists may choose to use Sycamore Ranch and Hammon Grove Park in lieu of areas near to the project site to avoid construction activities, such uses would be for a short period of time. Furthermore, anglers, boaters, and other recreationists who currently use the Proposed Project site would be more likely

to go up- or down-river to find similar types of rural and undeveloped qualities that are similar to the project site. Once the maintenance activities were complete recreationists would be able to utilize the south channel as a flowing body of water. The Proposed Project would have a **less than significant impact** on the physical deterioration of existing neighborhood or regional parks or other recreational facilities, or the need for the construction or expansion of recreational facilities.

3.17 Transportation

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☑	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines section 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?	☐	☐	☐	☑

3.17.1 Setting

The project site is located within the area covered by the Yuba County 2030 General Plan (Yuba County 2011a). Traffic and transportation are discussed in the Community Development Element of the General Plan, which includes the following policies that are relevant to the project:

- **Policy CD16.4:** On County roads in rural areas, Level of Service "D" shall be maintained, as feasible, during the PM Peak Hour.

- **Policy CD16.11:** The County will analyze and mitigate transportation impacts in CEQA documents according to their relative increase in vehicular travel demand.

Several unpaved access roads lead to the Proposed Project site via access though the Yuba Goldfields. Major roadways within the project vicinity include the following facilities:

- State Route 20 is a regional east-west highway extending west from Marysville through the Yuba County foothills and into Nevada County. In the project vicinity, State Route 20 provides one travel lane in each direction. Average daily traffic volumes on State Route 20 are approximately 39,400 vehicles at the Yuba/Nevada County line (California Department of Transportation 2017).

- State Route 70 is a two- and four-lane highway that extends from State Route 99 in Sutter County to the Butte County line through Yuba County. State Route 70 runs north-south, linking Marysville and other northern regions with the Sacramento metropolitan area. In the project vicinity, State Route 70 provides two travel lanes in each direction. Average daily traffic volumes on SR 70 are approximately 51,000 vehicles at Feather River Boulevard and 62,500 at the North Beale Road interchange (California Department of Transportation 2017).

- Hammonton-Smartville Road is a paved two-lane road, generally providing one travel lane in each direction. The General Plan states that the average daily traffic volume between Smartville Road and North Erle Road is 5,736 vehicles (Yuba County 2011a).

The nearest bicycle facility is a Class II bicycle lane located along Hammonton-Smartville Road, east of Simpson Lane, more than 10 miles from the project site. The nearest bus route is Route 6, the Linda Shuttle, which is more than 9 miles from the project site (Yuba County 2011a).

One military base (Beale Air Force Base) is located three miles south of the project site; two general-aviation airports (Yuba County Airport and Sutter County Airport) are located approximately 11 miles southwest and 11 miles west of the site, respectively; and a small private airstrip (Hammonton Airstrip) is located approximately 1.5 miles south of the Proposed Project site.

3.17.2 Discussion

a) During construction of the Proposed Project, there would be a minor temporary increase in construction-related traffic from materials delivery and construction workers traveling to and from the Proposed Project site. Most of the materials needed for construction (i.e., cobble) would be sourced from the Proposed Project site and would not require haul trips off-site. Off-site trips would be temporary and limited to initial construction staging and demobilization at the end of construction.

   The primary roadways that would be used to access the project site would be access roads internal to the Goldfields, Hammonton Road, Hammonton-Smartville Road, and State Route 20. Construction-related trips would disperse from there to SR 70 and other surface streets depending on the direction the vehicles are traveling. The primary roadways that would be affected by construction traffic are operating (as of 2011) at acceptable levels of service and the addition of construction-related vehicle trips would not cause any level of service thresholds to be exceeded nor result in a substantial increase in overall traffic volumes. State Route 70 was not operating at an acceptable level of service as of 2011; however, very few vehicle trips would be added to State Route 70 as a result of the Proposed Project, and they would be limited to workers commuting from Marysville or other areas west of the site. Consequently, the temporary construction-related trips for the Proposed Project would not substantially affect the capacity or congestion patterns on affected roads.

   The Proposed Project is not located near public transit, bicycle, or pedestrian facilities. As such, the Proposed Project would not affect public transit, bicycle, or pedestrian facilities, or the performance or safety of such facilities.

Therefore, the Proposed Project would have a **less than significant impact** on the performance of the local and regional circulation system, including transit, roadway, bicycle, and pedestrian facilities.

b) Section 15064.3 of the State CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Per Section 15064.3, generally analysis of vehicle miles traveled (VMT) attributable to a project is the most appropriate measure of transportation impacts. The VMT refers to the amount of distance of automobile travel attributable to a specific project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in Section 15064.3(b)(2) regarding roadway capacity, a project's effect on automobile delay does not constitute a significant environmental impact under CEQA. Based on the conservative approach taken for the CalEEMod which relied on default trips the total VMT attributable to the Proposed Project is estimated to be 3,978.4 miles all from project construction activities (Appendix A). Because this is a very conservative estimate and the number of trips for the Proposed Project are expected to be lower the VMT is likely substantially less than that calculated through the CalEEMod model.

   The Proposed Project would not create new developments or other infrastructure that would result in additional VMTs relative to existing conditions. Although the construction component of the Proposed Project would cause additional VMTs for 10 days or less, these VMTs would be temporary. Further, the temporary additional VMTs would not substantially affect transit and non-motorized vehicle travel or regional VMTs. As such, the Proposed Project would have a **less than significant impact** on the potential to conflict with or be inconsistent with State CEQA Guidelines Section 15064.3, subdivision(b).

c) The Proposed Project would not make any permanent changes to the roads in the vicinity of the Proposed Project site. Existing access roads within the Goldfields have the potential to be narrow, with steep grades and curves, and limited sight distance. However, the existing access roads are designed for use by aggregate trucks and heavy equipment associated with mining operations. Thus, it is expected that the roads are adequately designed and constructed to accommodate construction and maintenance trucks associated with the Proposed Project.

   Access to the gravel bar adjacent to the entrance to the south channel is via a temporary ramp that would extend from the turnaround on the south bank at the upstream end of the South Diversion facility to the large gravel bar on the South Bank upstream of the facility. A temporary gravel covered riprap berm separates the turnaround from the river and acts a safety barrier for traffic. This berm would be removed, and a temporary ramp would be constructed down the south bank to the gravel bar. The contractor would grade off (as-needed) approximately 550 feet of temporary access road on the gravel bar parallel to the entrance channel. Although this would present a temporary change in the design feature, it would ensure that there is safe vehicular access to the Proposed Project site.

Therefore, the Proposed Project would have a **less than significant impact** on increased transportation hazards due to a geometric design feature or incompatible uses.

d) Construction, operation, and maintenance activities would occur within the channel of the lower Yuba River. This area is not open to the public. Emergency access for construction and maintenance workers would continue to be provided via Hammonton Road and the existing access roads within the Goldfields. Further, as described above in "a," the temporary construction traffic associated with the Proposed Project would not substantially affect the capacity or congestion patterns on affected roads, as the number of vehicle trips would be small compared to the overall traffic volumes. Therefore, the Proposed Project would have **no impact** on emergency access.

3.18 Tribal Cultural Resources

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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?	☐	☑	☐	☐

3.18.1 Setting

Overview of Tribal use of the Proposed Project site

The Proposed Project site is located within the lands historically occupied by the Nisenan (also known as the southern Maidu). Prior to Euro-American contact, Nisenan territory included the southern extent of the Sacramento Valley, east of the Sacramento River between the North Fork

Yuba River and Cosumnes River on the north and south, respectively, and extended east to the crest of the Sierra Nevada Range. The Proposed Project site is within the eastern extent of Valley Nisenan territory, with Hill Nisenan lands to the east.

Like the majority of Native Californians, the Nisenan relied on acorns as a staple food, which were collected in the fall and then stored before processing with bedrock or portable mortars and pestles. In terms of seasonal resources, the drainage systems in the project region would have been very productive environments during prehistoric and ethnohistoric times. Ethnographic Nisenan established central villages and smaller satellite villages along the main watercourses in their territory. Nisenan villages near the project included Chiemvie, Onopuma, and Panpakan along the Yuba River and Yupu at the Yuba-Feather river confluence. In this lower Sacramento Valley region, there are a numerous archaeological sites and prehistoric burials identified within Nisenan territory.

The traditional culture and lifeways of the Nisenan, who inhabited the fertile plains between Sacramento and the Sierra foothills, were disrupted beginning in the early 1800s. During the Mexican period, native peoples were affected by land grant settlements and decimated by foreign disease epidemics that swept through the densely populated Central Valley. An epidemic that swept the Sacramento Valley in 1833 caused the death of an estimated 75 percent of the Valley Nisenan population, wiping out entire villages. The discovery of gold in 1848 in the heart of Nisenan territory had a devastating impact on the remaining Nisenan. By 1850, with their lands, resources and way of life being overrun by the steady influx of non-native people during the Gold Rush, surviving Nisenan retreated to the foothills and mountains or labored for the growing ranching, farming, and mining industries. Nisenan descendants reside on the Auburn, Berry Creek, Chico, Enterprise, Greenville, Mooretown, Shingle Springs, and Susanville rancherias, as well as on the Round Valley Reservation.

Overview of Assembly Bill 52

As of July 1, 2015, California Assembly Bill 52 of 2014 (AB 52) was enacted and expands CEQA by defining a new resource category, “tribal cultural resources.” Assembly Bill 52 establishes that, “A project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment” (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

To initiate the AB 52 consultation process, tribes must submit a written request to a lead agency to be informed through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe (PRC Section 21080.3.1[b]). YCWA is thus responsible for notifying and responding to any requests received in writing from geographically affiliated tribes for consultation regarding the potential of the project to impact tribal cultural resources.

Pursuant to the requirements of Assembly Bill 52 (AB 52) that established tribal consultation procedures for evaluation of potential effects to tribal cultural resources, to initiate the AB 52 consultation process, tribes must submit a written request to a lead agency to be informed

through formal notification of proposed projects in the geographic area that is traditionally and culturally affiliated with the tribe (PRC Section 21080.3.1[b]). YCWA is thus responsible for notifying and responding to any requests received in writing from geographically affiliated tribes for consultation regarding the potential of the project to impact tribal cultural resources.

On September 15, 2022, YCWA sent AB 52 notification letters via certified mail describing the project with maps depicting the project location and requesting information or concerns regarding tribal cultural resources that may be present in the project area to the two tribes who have submitted a written request to YCWA to be informed through formal notification of proposed projects. These tribal contacts included: Shingle Springs Band of Miwok Indians and United Auburn Indian Community of the Auburn Rancheria (UAIC). Correspondence with each tribe is summarized below:

- **Shingle Springs Band of Miwok Indians:** No response has been received from the Tribe to date.

- **UAIC:** Anna M. Starkey, M.A., RPA, Cultural Regulatory Specialist notified YCWA on September 20, 2022, that based on the project description consulting on the project would not be warranted.

10 other tribes were notified via email as a courtesy notification about the Proposed Project. No response has been received from these informal notifications to date.

3.18.2 Discussion

a) Based on the negative results of the California Historic Resources Information System search and Native American outreach efforts, as well as the negative findings of the field survey, there is no indication that the Proposed Project contain any Native American resources eligible for listing in the California Register of Historical Resources or local register nor does it contain any resources determined by the lead agency to be significant tribal cultural resources. Nevertheless, it is possible that maintenance activities have the potential to encounter buried archaeological resources that could be considered tribal cultural resources if they are of Native American origin. Buried tribal cultural resources may include but are not limited to deposits of stone, bone and shell artifacts, dark gray "midden" sediments, or cemeteries. Therefore, the impact is considered potentially significant. Implementation of **Mitigation Measure TCR-1** would reduce impacts to tribal cultural resources to a **less than significant impact**.

Mitigation Measure TCR-1. Incidental Discovery of Tribal Cultural Resources

If any resources of Native American origin are discovered once ground-disturbing activities are underway, the YCWA shall contact local Native Americans to consult on the find. If the find is determined to be a tribal cultural resource, contingency funding, and a time allotment to allow for implementation of avoidance measures or appropriate mitigation determined in consultation with local Native Americans shall be made available. Work may continue on other parts of the Proposed Project site while tribal cultural resource mitigation takes place on-site.

3.19 Utilities/Service Systems

Would the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunication 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 providers 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?	☐	☐	☐	☑

3.19.1 Setting

As described in Section 3.1.1, the Proposed Project site is located in a rural setting on the lower Yuba River. Several unpaved access roads lead to the site, and riparian and oak woodland vegetation grow adjacent to the river channel.

The nearest solid waste disposal transfer station is the Recology Yuba-Sutter facility near Marysville approximately eight miles to the west of the Proposed Project site.

3.19.2 Discussion

a) The Proposed Project does not involve any changes to wastewater, storm water drainage, electrical power, natural gas, or telecommunication services in the Proposed Project area, or involve any changes in wastewater disposal activities. Further, the Proposed Project would not generate wastewater that would require a wastewater treatment facility or involve any changes in wastewater disposal activities. Therefore, the Proposed Project would have **no impact** on the need for new or expanded water or wastewater treatment plant, storm water drainage, electrical power, natural gas, or telecommunication facilities.

b) The Proposed Project would not create the need for an increased water supply. Therefore, the Proposed Project would have **no impact** on the need for new or expanded water supplies to serve the Proposed Project.

c) As described above in "b," the Proposed Project does require water service, thus the project would not involve any changes to wastewater services in the Proposed Project area. Therefore, there would be **no impact** on wastewater treatment plant capacity.

d, e) The Proposed Project is a water supply and fisheries enhancement project, and does not require capacity be allocated by a solid waste disposal provider. The Proposed Project would not result in a new, permanent waste stream requiring disposal that would affect available landfill capacity. The only waste that may be temporarily generated by the Proposed Project is trash or refuse produced by construction personnel. This waste would be disposed of in compliance with applicable federal, state, or local regulations for solid waste disposal. Due to the very minimal amount of temporary waste that may be constructed by construction works, and no potential for long-term wase, the Proposed Project would not impair the attainment of solid waste reduction goals. Therefore, the Proposed Project would have a **no impact** on compliance with statutes and regulations related to solid waste.

3.20 Wildfire

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project …	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
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?	☐	☐	☐	☑

3.20.1 Setting

To prepare the County for future wildland fires the Yuba Watershed Protection & Firesafe Council developed the *Yuba Foothills Community Wildfire Protection Plan* (Yuba County 2014). A component of this document is designed to assist public agencies in making valid and timely decisions for wildfires and evacuation. YCWA also prepared a Fire Prevention and Response Plan as part of its application for FERC relicensing of its Yuba River Development Project (Fire Plan) (YCWA 2017). This Fire Plan provides fire prevention procedures, reporting, and safe fire practices for YCWA personnel and contractors responsible for operating and maintaining the Yuba River Development Project.

As described above in Section 3.9, Hazards and Hazardous Materials, the Proposed Project site is in an area identified by the California Department of Forestry and Fire Protection with moderate severity (CalFire 2019), which is the highest fire hazard rating. A number of wildfires have ignited in the vicinity of the project area (within a 10-mile radius), and are documented in the *Yuba Foothills Community Wildfire Protection Plan* (Yuba County 2014). However, the primary source of fuel in the area is grassland, which poses a reduced risk relative to nearby woodland areas. Moreover, no ignitable structures are located at the project site or in the immediate vicinity. Altogether, the results of the Wildfire Protection Plan assessment place the project area in an area of low wildland fire hazard.

YCWA does not own fire suppression equipment suitable for combating wildland fires. The only fire suppression equipment in the vicinity of the Proposed Project would be fire extinguishers located in employee vehicles.

3.20.2 Discussion

a) As described above in Section 3.17, *Transportation*, the temporary construction-related trips for the Proposed Project would not substantially affect the capacity or congestion patterns on affected roads. Emergency access for construction and maintenance workers would continue to be provided via Hammonton Road and the existing access roads within the Goldfields during the entire Proposed Project. As such the Proposed Project would not interfere with *The Yuba Foothills Community Wildfire Protection Plan*, or any other emergency response or emergency evacuation plan. Therefore, there would be a **less than significant** impact on an adopted emergency response plan or emergency evacuation plan.

b) Maintenance activities would occur in the river channel of the lower Yuba River. Risk for wildfire would be very low during the maintenance work since excavation would occur within the wetted portion of the channel. Construction equipment would only utilize existing roadways and not travel on grass or other flammable vegetation. There is a possibility for construction equipment that runs on fossil fuels to potentially generate sparks. However, due to where the equipment would operate (i.e., on established roads in the goldfields) it is unlikely that sparks would reach vegetation. Further, construction and maintenance vehicles would be equipped with fire extinguishers to address any possibility of a small fire that could be ignited by construction activities.

Based on the above considerations, the Proposed Project would have a **less than significant** impact on exacerbating wildfire risks and thereby, creating pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire.

c) As described in detail above in paragraph "b" measures are in place to ensure that the Proposed Project would not exacerbate fire risk or cause temporary or ongoing impacts to the environment associated with wildfire. Therefore, the Proposed Project would have a **less than significant** impact on exacerbating fire risk or other temporary or ongoing impacts to the environment.

d) As discussed above in section 3.7, *Geology and Soils*, the Proposed Project sites are located on soils that are generally considered stable. The Proposed Project would not involve construction of structures or changes to site drainage. As such, the Proposed Project would have **no impact** on risks to people or structures as a result of runoff, post-fire slope instability, or drainage changes.

3.21 Mandatory Findings of Significance

Does the project…	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No 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	☐	☐	☑	☐
c) Does the project have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

3.21.1 Discussion

a) Based on the information provided in this Initial Study, including the mitigation measures, the Proposed Project would not substantially degrade the overall quality of the environment in the Proposed Project area.

With respect to terrestrial wildlife and aquatic life resources in the project area, as discussed in Section 3.4, *Biological Resources*, implementation of the Proposed Project has the potential primarily to result in temporary construction-related disturbance to potential habitats in the Proposed Project area, and wildlife and aquatic life species, if present during the time of construction. However, feasible project-specific mitigation measures and a fish avoidance plan are identified to minimize and avoid the potential adverse effects.

The only permanent effects of the Proposed Project are the spreading of excavated river alluvium on the adjacent gravel bar, if allowed by the regulatory permits. This would not have any adverse impact on special status wildlife or aquatic life species that may occur within the affected environment.

The majority of the impact determinations are either no impact or less than significant. For those impacts where the potential for significant impacts exists, the implementation of mitigation measures would ensure that the Proposed Project would not 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, 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. Consequently, this impact is considered **less than significant**.

b) Cumulative environmental effects are multiple individual affects that, when considered together, would be considerable or compound or increase other environmental impacts. Individual effects may result from a single project or a number of separate projects and may occur at the same place and point in time or at different locations and over extended periods of time.

   The Proposed Project would result in a significant cumulative effect if:

   - the cumulative effects of related projects (past, current, and probable future projects) are not significant and the incremental impact of implementing the Proposed Project is substantial enough, when added to the cumulative effects of related projects, to result in a new cumulatively significant impact; or

   - the cumulative effects of related projects (past, current, and probable future projects) are already significant, and implementation of the Proposed Project would make a considerable contribution to the effect. The standards used herein to determine a considerable contribution are that either the impact must be substantial or must exceed an established threshold of significance.

   The Proposed Project would have no impact on Agricultural/Forestry Resources, Land Use/Planning, Mineral Resources, Population/Housing, Public Services, or Utilities/Service Systems. As such, there would be no cumulative effects to these resource categories.

Temporary maintenance activities of the Proposed Project would cause less than significant impacts to Aesthetics, Air Quality (with mitigation), Biological Resources (with mitigation), Cultural Resources (with mitigation), Geology/Soils, Green House Gas Emissions, Hazards/Hazardous Materials, Hydrology/Water Quality, Noise, Recreation, Transportation/Traffic, Tribal Cultural Resources (with mitigation), and Wildfire. Since construction activities are short-term and localized, construction activities would not combine in such a way that a significant cumulative effect could occur to these resource categories. In addition, as described in Section 2.3.9, the Proposed Project includes avoidance and minimization measures that would avoid or minimize potential contributions to cumulative environmental impacts. The permanent impact of adding excavated alluvium to the adjacent gravel bar would also not contribute to significant cumulative impacts.

Consequently, the Proposed Project would not have impacts that are individually limited, but cumulatively considerable and this impact would be **less than significant**.

c) Based on the nature and scope of the project (i.e., temporary construction activity) and the analysis herein, the Proposed Project would not result in any direct or indirect substantial adverse effects on human beings. All the identified potential impacts to human beings would be temporary and have a low potential for occurring, as the nearest residence to the project site is over 0.5 mile away. Each of the impacts that may cause adverse effects on human beings have been evaluated and found to be less than significant. No substantial adverse effects on human beings would occur; the impact would be **less than significant**.

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Appendix A

CalEEMod Results

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Yuba Water Agency South Canal Diversion

Sacramento Valley Air Basin, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Recreational	1.00	User Defined Unit	0.00	0.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	65
Climate Zone	2			**Operational Year**	2032
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use -

Construction Phase - Annual maintenance work estimate of 10 days maximum.

Off-road Equipment - Equipment information from Project Description

Trips and VMT -

Grading -

Vehicle Emission Factors -

Vehicle Emission Factors -

Vehicle Emission Factors -

Area Coating - Assumed no architectural coatings for maintenance work.

Area Mitigation - Assumed no architectural coatings for maintenance work.

Energy Mitigation -

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Fleet Mix -

Vehicle Trips -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_EF_Nonresidential_Exterior	100	0
tblAreaCoating	Area_EF_Nonresidential_Interior	100	0
tblAreaCoating	Area_EF_Parking	100	0
tblAreaCoating	Area_EF_Residential_Exterior	100	0
tblAreaCoating	Area_EF_Residential_Interior	100	0
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	0.00	10.00
tblGrading	MaterialExported	0.00	1,500.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural

2.0 Emissions Summary

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0115	0.1062	0.0884	3.0000e-004	0.0353	4.0700e-003	0.0394	0.0175	3.8000e-003	0.0213	0.0000	26.5926	26.5926	5.9100e-003	8.8000e-004	27.0031
Maximum	**0.0115**	**0.1062**	**0.0884**	**3.0000e-004**	**0.0353**	**4.0700e-003**	**0.0394**	**0.0175**	**3.8000e-003**	**0.0213**	**0.0000**	**26.5926**	**26.5926**	**5.9100e-003**	**8.8000e-004**	**27.0031**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0115	0.1062	0.0884	3.0000e-004	0.0353	4.0700e-003	0.0394	0.0175	3.8000e-003	0.0213	0.0000	26.5926	26.5926	5.9100e-003	8.8000e-004	27.0031
Maximum	**0.0115**	**0.1062**	**0.0884**	**3.0000e-004**	**0.0353**	**4.0700e-003**	**0.0394**	**0.0175**	**3.8000e-003**	**0.0213**	**0.0000**	**26.5926**	**26.5926**	**5.9100e-003**	**8.8000e-004**	**27.0031**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	4-1-2023	6-30-2023	0.1170	0.1170
		Highest	0.1170	0.1170

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**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**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	4/1/2023	4/14/2023	5	10	

Acres of Grading (Site Preparation Phase): 5

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Excavators	1	8.00	158	0.38
Site Preparation	Off-Highway Trucks	2	8.00	402	0.38
Site Preparation	Pumps	1	8.00	84	0.74
Site Preparation	Rubber Tired Dozers	1	8.00	247	0.40

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Site Preparation	5	13.00	0.00	188.00	16.80	6.60	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0329	0.0000	0.0329	0.0169	0.0000	0.0169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0110	0.0928	0.0833	2.3000e-004		3.9500e-003	3.9500e-003		3.6900e-003	3.6900e-003	0.0000	20.4566	20.4566	5.8300e-003	0.0000	20.6024
Total	**0.0110**	**0.0928**	**0.0833**	**2.3000e-004**	**0.0329**	**3.9500e-003**	**0.0369**	**0.0169**	**3.6900e-003**	**0.0206**	**0.0000**	**20.4566**	**20.4566**	**5.8300e-003**	**0.0000**	**20.6024**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	0.0132	2.7400e-003	6.0000e-005	1.5900e-003	1.1000e-004	1.7000e-003	4.4000e-004	1.1000e-004	5.5000e-004	0.0000	5.4971	5.4971	6.0000e-005	8.7000e-004	5.7566
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.8000e-004	2.3000e-003	1.0000e-005	8.0000e-004	0.0000	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6389	0.6389	2.0000e-005	2.0000e-005	0.6441
Total	**4.9000e-004**	**0.0134**	**5.0400e-003**	**7.0000e-005**	**2.3900e-003**	**1.1000e-004**	**2.5000e-003**	**6.5000e-004**	**1.1000e-004**	**7.7000e-004**	**0.0000**	**6.1359**	**6.1359**	**8.0000e-005**	**8.9000e-004**	**6.4007**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0329	0.0000	0.0329	0.0169	0.0000	0.0169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0110	0.0928	0.0833	2.3000e-004		3.9500e-003	3.9500e-003		3.6900e-003	3.6900e-003	0.0000	20.4566	20.4566	5.8300e-003	0.0000	20.6024
Total	**0.0110**	**0.0928**	**0.0833**	**2.3000e-004**	**0.0329**	**3.9500e-003**	**0.0369**	**0.0169**	**3.6900e-003**	**0.0206**	**0.0000**	**20.4566**	**20.4566**	**5.8300e-003**	**0.0000**	**20.6024**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	2.3000e-004	0.0132	2.7400e-003	6.0000e-005	1.5900e-003	1.1000e-004	1.7000e-003	4.4000e-004	1.1000e-004	5.5000e-004	0.0000	5.4971	5.4971	6.0000e-005	8.7000e-004	5.7566
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.6000e-004	1.8000e-004	2.3000e-003	1.0000e-005	8.0000e-004	0.0000	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6389	0.6389	2.0000e-005	2.0000e-005	0.6441
Total	**4.9000e-004**	**0.0134**	**5.0400e-003**	**7.0000e-005**	**2.3900e-003**	**1.1000e-004**	**2.5000e-003**	**6.5000e-004**	**1.1000e-004**	**7.7000e-004**	**0.0000**	**6.1359**	**6.1359**	**8.0000e-005**	**8.9000e-004**	**6.4007**

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
User Defined Recreational	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
User Defined Recreational	14.70	6.60	6.60	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
User Defined Recreational	0.546847	0.056257	0.182482	0.124560	0.023783	0.006169	0.014965	0.013668	0.000634	0.000563	0.026264	0.000909	0.002900

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Unmitigated	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	2.0000e-005
Total	**0.0000**	**0.0000**	**1.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.0000**	**2.0000e-005**

7.0 Water Detail

7.1 Mitigation Measures Water

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Yuba Water Agency South Canal Diversion - Sacramento Valley Air Basin, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
User Defined Recreational	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
User Defined Recreational	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix B

USFWS Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: October 06, 2022
Project Code: 2023-0000883
Project Name: YCWA SOUTH CANAL DIVERSION WATER SUPPLY AND FISH PASSAGE ENHANCEMENT PROJECT: Annual Maintenance

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of

this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

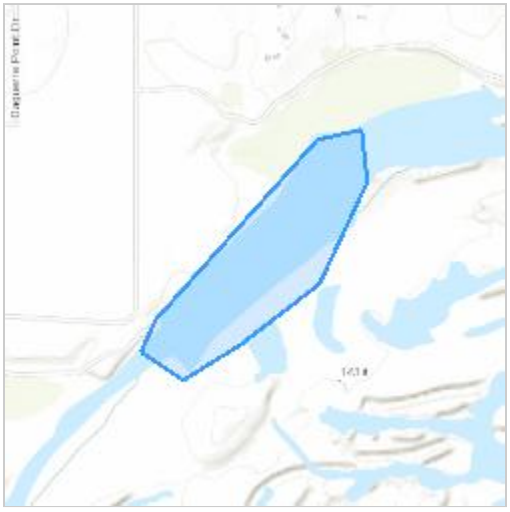
This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Project Code: 2023-0000883
Project Name: YCWA SOUTH CANAL DIVERSION WATER SUPPLY AND FISH PASSAGE ENHANCEMENT PROJECT: Annual Maintenance
Project Type: Modification Stream or Waterbody
Project Description: Annual Maintenance
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.21140735,-121.44016373104478,14z



Counties: Yuba County, California

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate
Valley Elderberry Longhorn Beetle *Desmocerus californicus dimorphus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7850	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened
Vernal Pool Tadpole Shrimp *Lepidurus packardi* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2246	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency: Robertson-Bryan, Inc
Name: Ellen Preece
Address: 3100 Zinfandel Drive
City: Rancho Cordova
State: CA
Zip: 95670
Email ellen@robertson-bryan.com
Phone: 3605613630

Lead Agency Contact Information

Lead Agency: Army Corps of Engineers