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Initial Study/Mitigated Negative Declaration
Lake Isabella Hydroelectric Project License Amendment

April 2023

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Prepared for:
California State Water Resources Control Board, Division of Water Rights, Sacramento, CA

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PROJECT SUMMARY

Lake Isabella Hydroelectric Project License Amendment	
CEQA lead agency name and address	State Water Resources Control Board 1001 I Street Sacramento, CA 95814
Contact person and phone number	Andrea Sellers (916) 327-8449
Project location	Lake Isabella Hydroelectric Project at the downstream toe of Lake Isabella main dam in Kern County, California.
Project sponsor's name and address	Isabella Partners PO Box 1136 Bozeman, MT 59771
Zoning	Restoration Forestry
Description of Project	Install a 5-megawatt Francis turbine unit, connected to an existing water distribution pipeline via a short extension, housed in a new 40- by 45-foot reinforced concrete structure.
Surrounding land uses and setting	The immediate area is an existing hydroelectric facility at the downstream base of the Lake Isabella main dam. Project access is via a United States Forest Service (USFS) campground that has been permanently closed to public use.

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
BACT	best available control technology
BMP	Best Management Practice
BLM	Bureau of Land Management
BP	before present
BTU	British thermal units
CAL FIRE	California Department of Forestry and Fire Prevention
CalRecycle	California Department of Resources Recycling and
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CDTSC	California Department of Toxic Substances Control
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
CGS	California Geological Survey
CHSC	California Health and Safety Code
CNDDB	California Natural Diversity Database
CNPPA	California Native Plant Protection Act
CNPS	California Native Plant Society
CO	carbon monoxide
CO2	carbon dioxide
CO2e	carbon dioxide equivalent
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranks
CWA	Clean Water Act
cy	cubic yards
dB	decibels
DTSC	Department of Toxic Substances Control
EAP	Emergency Action Plan
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EKAPCD	Eastern Kern Air Pollution Control District
ESA	Endangered Species Act
FCAA	Federal Clean Air Act

Acronym	Definition
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FGC	Fish and Game Code
FHWA	Federal Highway Administration
FMMP	California Farmland Mapping and Monitoring Program
FRA	Federal Responsibility Area
FTA	Federal Transit Authority
GHG	greenhouse gas
GWh	gigawatt hours
HSC	Health and Safety Code
IPaC	Information for Planning and Conservation
IS/MND	Initial Study/Mitigated Negative Declaration (IS/MND)
kW	kilowatt
kV	kilovolt
MDAB	Mojave Desert Air Basin
MLD	Most Likely Descendent
MOA	memorandum of agreement
MSDS	material safety data sheets
MVA	mega volt ampere
MW	megawatt
NAHC	Native American Heritage Commission
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NPL	National Priorities List
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
O_3	ozone
Pb	lead
PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
ppt	parts per thousand water
PRC	Public Resources Code
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
SAA	Superfund Alternative Approach
SO_2	sulfur dioxide
SR	State Route

Acronym	Definition
SRMA	Special Recreation Management Area
State Water Board	State Water Resources Control Board
SWP	State Water Project
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration decibels

1 INTRODUCTION

Isabella Partners operates the Lake Isabella Hydroelectric Project (Federal Energy Regulatory Commission [FERC] Project No. 8377) with facilities located on the downstream toe of the Lake Isabella main dam, which generates energy from dam releases into the Kern River, in Kern County, California. The United States Government is the owner of the Lake Isabella Dam, and the U.S. Army Corps of Engineers (USACE) has responsibility for maintenance of the dam and maintaining bypass flows from Lake Isabella. Isabella Partners intends to add a fourth generating unit and thereby increase renewable energy output from the existing facility, by harnessing the power of newly available bypass flows from the soon to be decommissioned Borel Hydroelectric Project (FERC No. 382).

FERC is the federal agency that licenses the construction, operation, and decommissioning of most non-federal hydroelectric dams in the United States. Under section 401 of the federal Clean Water Act, Isabella Partners must apply to the State Water Resources Control Board (State Water Board) for certification of whether—and under what conditions—the construction and operation of the proposed fourth generating unit can comply with California's water quality standards. FERC incorporates the terms of any water quality certification into the licenses or orders it issues.

This Initial Study/Mitigated Negative Declaration (IS/MND) has been prepared in compliance with the California Environmental Quality Act (CEQA) to address the potential environmental effects of the State Water Board's issuance of certification that will be incorporated into the Project's FERC license and authorize construction and operation of a fourth generating unit at the end of the existing manifold and penstock (Proposed Project). The CEQA process is specifically designed to evaluate and disclose the potentially significant direct, indirect, and cumulative effects of the Proposed Project, and to describe reasonable alternatives to the Proposed Project that could avoid or reduce those effects. With the implementation of mitigation measures described in this IS/MND, any potential impacts associated with this Proposed Project are anticipated to be less than significant.

2 PROJECT DESCRIPTION

2.1 Existing Project

The existing Lake Isabella Hydroelectric Project is located at the base of the United States Army Corps of Engineers (USACE) Lake Isabella main dam, which impounds the Kern River, on land owned by the United States and administered by the USACE. The license for the existing Lake Isabella Hydroelectric Project was issued to the Isabella Partners on May 31, 1988, for hydroelectric power generation from flows released to the Kern River by USACE. The Isabella Hydroelectric Project directly diverts its water within the dam outlet works and is operated under a memorandum of agreement (MOA) between Isabella Partners and USACE (USACE 1993). All flows that pass through the Lake Isabella Hydroelectric Project are discharged back into the Kern River.

Under the original 1988 FERC license, authorized facilities included: (a) a 13.5-foot-diameter steel liner installed in the existing USACE tunnel through the Lake Isabella main dam; (b) a bifurcated 210-foot-long penstock that varies between 10.5 feet and 8.5 feet in diameter; (c) a powerhouse containing two generating units rated at 5,975-kilowatt (kW) each; (d) a tailrace channel; (e) the 6.9-kilovolt (kV) generator leads, a 6.9/66-kV, 23-mega volt ampere (MVA) transformer, and a 1,300-foot-long, 66-kV transmission line; and (f) appurtenant facilities. The hydraulic capacity of the two original generating units is 800 cubic feet per second (cfs) each, depending on reservoir elevation.

On August 12, 2008, and supplemented January 7, 2010, Isabella Partners filed an application with FERC to amend the license for installation and operation of a third generating unit on the existing 30-inch-diameter bypass piping. With a maximum hydraulic capacity of 100 cfs, the third generating unit was proposed to allow energy recovery of releases below the minimum operating limits of the existing turbines. The 2010 Energy Recovery Aerator Project was installed on the existing powerhouse platform using a wye on the existing 30-inch-diameter small bypass pipeline, approximately 30 feet of pipeline leading to an 850-kW cross flow turbine located in a 25-foot-wide by 35-foot-long by 18-foot-high reinforced concrete structure. Water from the third generating unit is discharged through the tailrace of the original generating units into the existing dam outlet channel.

In 2016, the USACE identified the Borel Canal conduit, which ran through the auxiliary dam and delivered water to the Borel Hydroelectric Project, as a

significant safety risk due to seepage and corrosion concerns. In September 2018, the USACE acquired the Borel easement from Southern California Edison. The easement is the portion of the Borel Canal that runs immediately upstream, through, and immediately downstream of the auxiliary dam. By February 2019, the USACE sealed the conduit through the auxiliary dam, permanently cutting off water supply to the Borel Hydroelectric Project (USACE 2019). Water previously diverted to the Borel Hydroelectric Project (up to approximately 600 cfs) is now discharged through the main dam tunnel and existing Lake Isabella Hydroelectric Project facilities.

2.2 Project Location

The Proposed Project is located on the Kern River in Kern County, California, at the base of the Lake Isabella main dam on lands administered by the USACE (Figure 2-1). It is approximately 36 miles northeast of Bakersfield, California, within Section 30, Township 26, Range 33, Lake Isabella North U.S. Geological Survey 7.5-minute topographic map. Figures 2-1 and 2-2 show the Lake Isabella Hydroelectric Project's FERC boundary (Project Area) and the location of the proposed addition to the existing generating facilities (Construction Area). The Project Area, including access roads, is located on lands owned and operated by the USACE.

Figure 2-1. Project location.

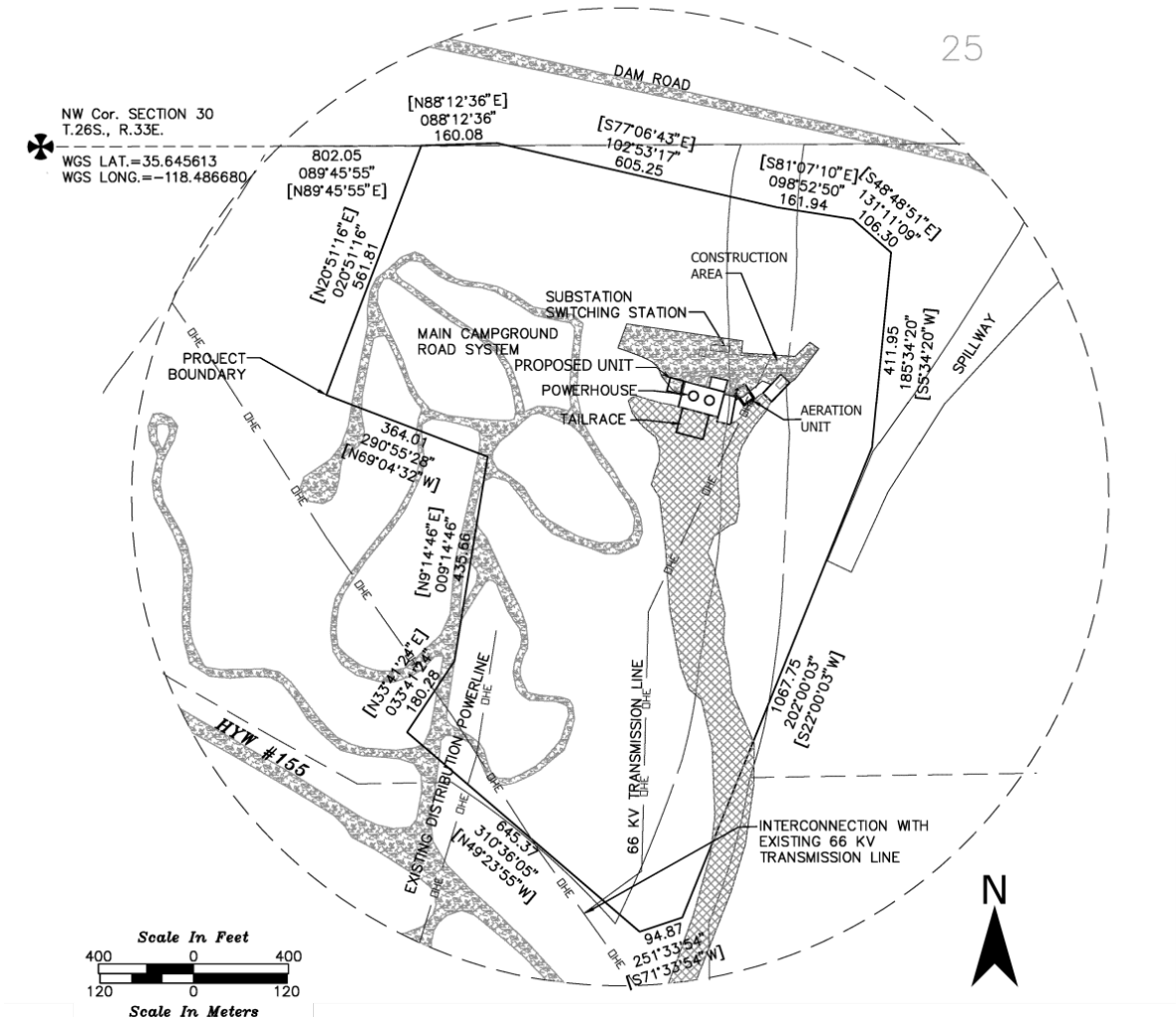

Figure 2-2. Isabella Project Area showing existing generating facilities, proposed generating unit, and Construction Area.

2.3 Proposed Project

Under the Proposed Project, Isabella Partners would install a fourth generating unit at the end of the existing manifold and penstock. Currently, flows in excess of the 100 cfs capacity of the crossflow aerator/turbine (Unit 3) but below the 500 cfs minimum operating range of either of the two original turbines (Units 1 and 2) are discharged through the existing bypass channel. The fourth generating unit would allow for energy recovery from discharged flows between 100 and 500 cfs. Although discharges through the Proposed Project will continue to be limited to 1,632 cfs under Water Rights Permits 20047 and 21134, the estimated average

annual generation would increase by 27 gigawatt hours (GWh) under the Proposed Project.

The Proposed Project involves installation of an additional 5-megawatt (MW) Francis turbine unit at the existing Lake Isabella Hydroelectric Project, which includes an extension of the existing penstock manifold and construction of an additional structure to house the unit. The extension piping would be 7 feet in diameter and approximately 40 feet long. The new turbine, related switchgear, and controls would be housed in a new approximately 40-foot by 45-foot concrete structure adjacent to the existing powerhouse structure. The location, dimensions, and elevation of the new equipment are shown in Figures 2-3, 2-4, and 2-5, respectively. The Proposed Project would not include any new transformers, substations, or transmission lines and all work would be confined to the Construction Area within previously developed portions of the Project Area (Figure 2-3).

The existing Lake Isabella Hydroelectric Project would continue to be operated in the same manner with the addition of the new turbine. Water not routed through the bypass channel would run through the existing penstock and extension to the new turbine unit, and would be discharged above the water surface immediately north of the proposed powerhouse and east of the existing tailrace shown in Figure 2-3. The tailrace discharges to the outlet channel that was excavated from bedrock during construction of the Lake Isabella main dam (pre-1955). The Isabella Hydroelectric Project would continue to be operated under the USACE MOA (USACE 1993) and there would be no changes in water releases to the Kern River as a result of the Proposed Project.

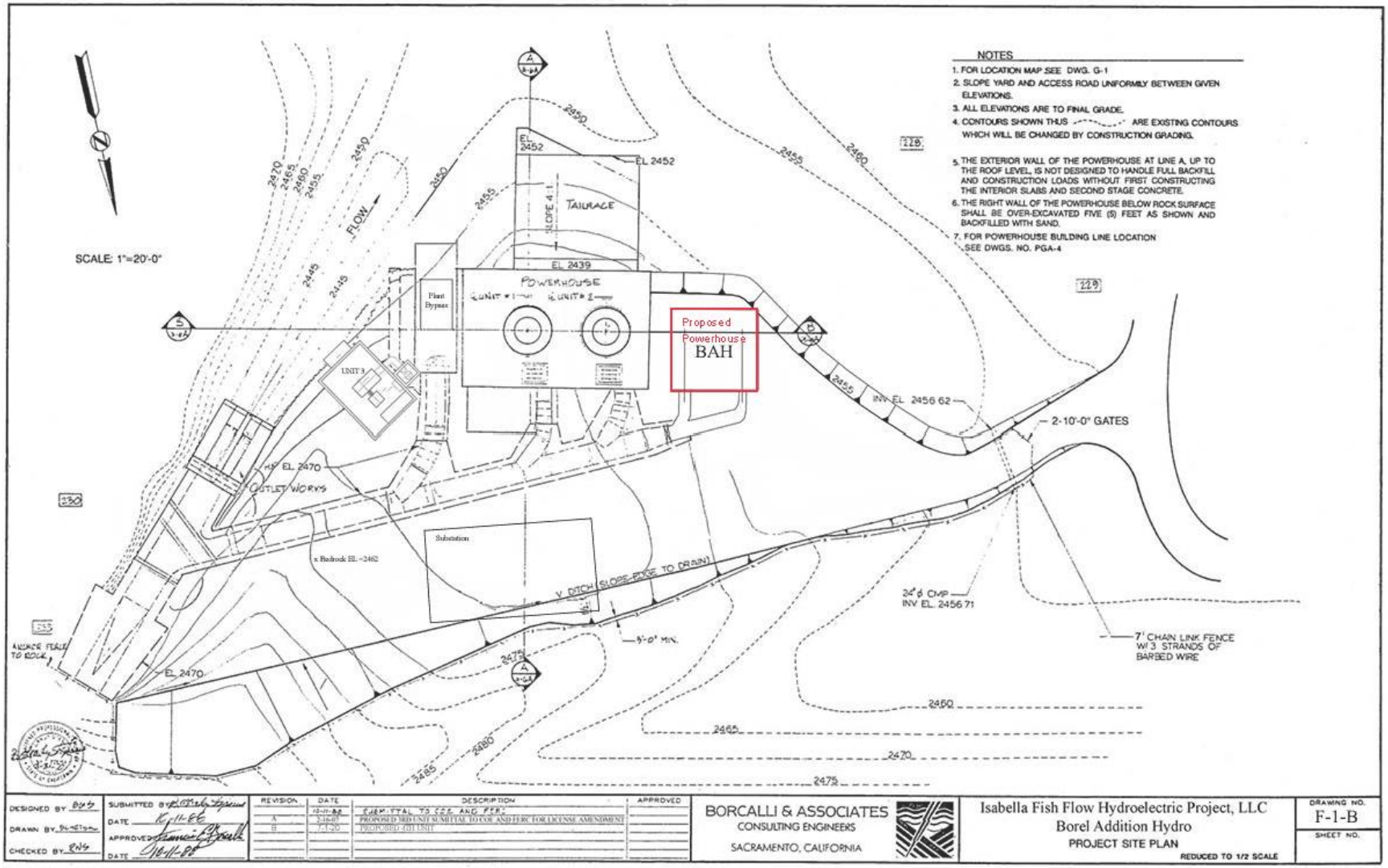

Figure 2-3. Site plan with location of the Proposed Project.

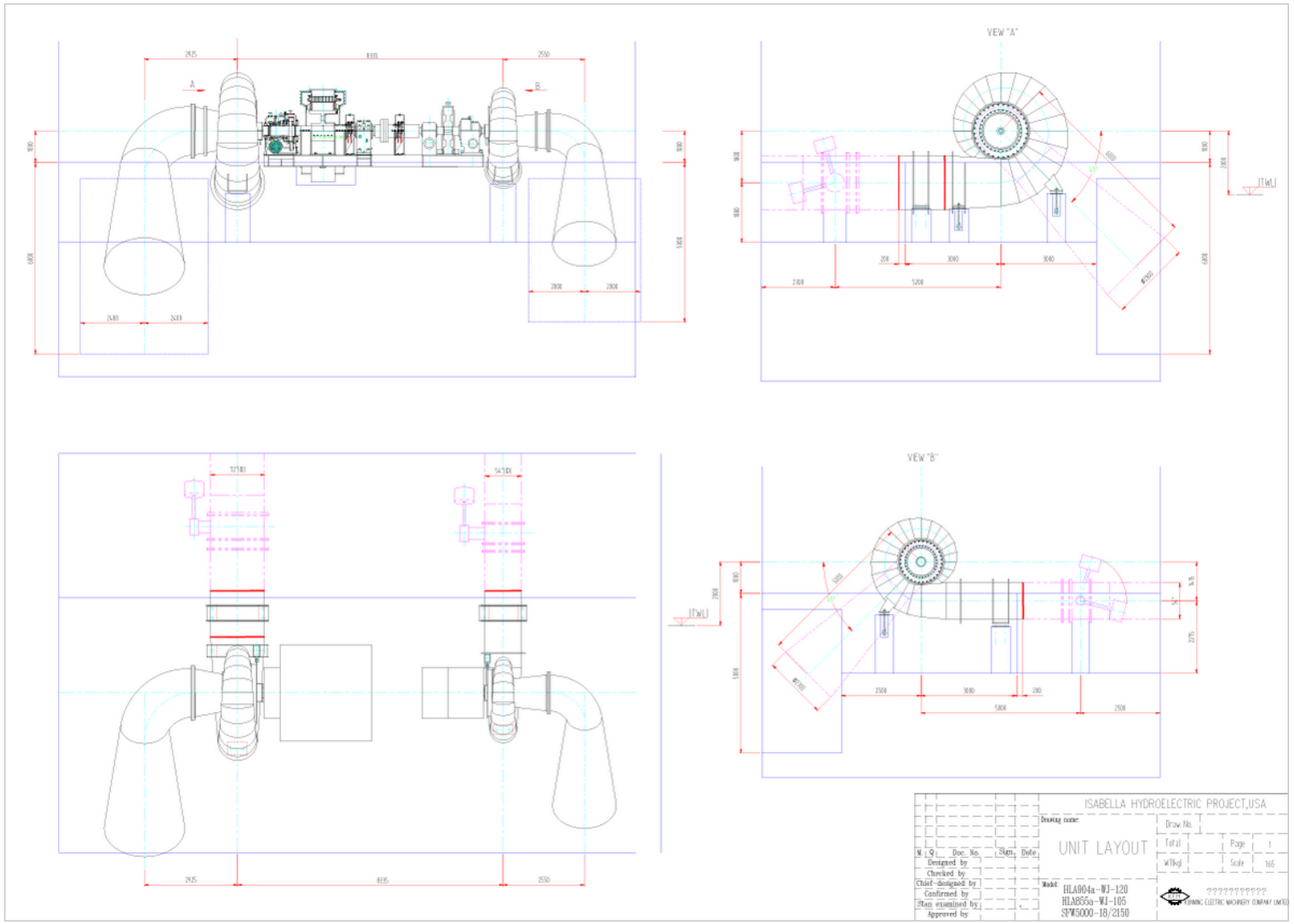

Figure 2-4. Proposed Project equipment layout.

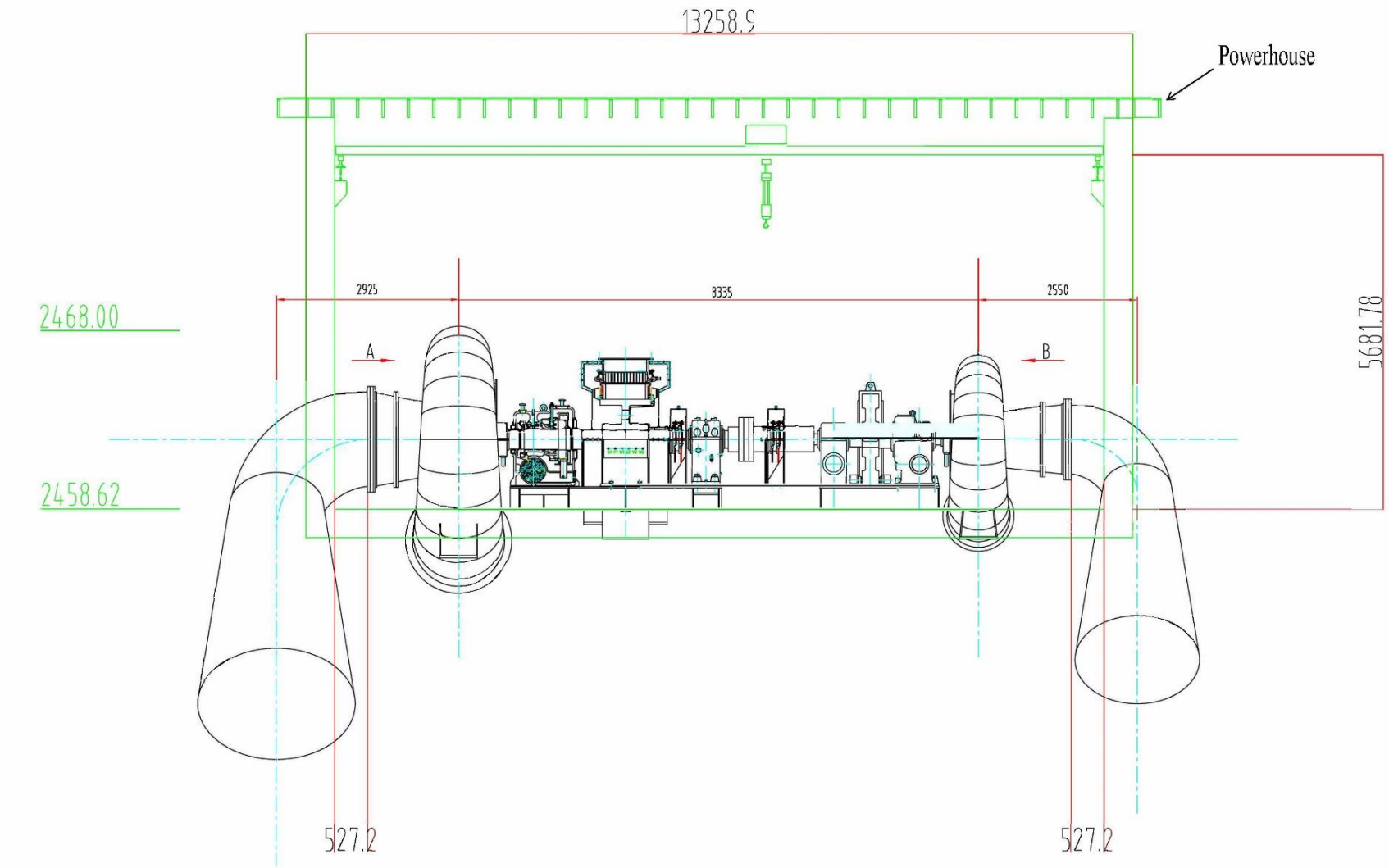

Figure 2-5. Powerhouse and equipment elevation.

2.4 Construction

As indicated in Section 2.3 *Proposed Project*, construction of the Proposed Project would occur entirely within previously developed portions of the existing Lake Isabella Hydroelectric Project, referred to and shown in Figure 2-2 as the Construction Area. Construction is planned to occur in 2023 and would take approximately nine months to complete. All work would be performed adjacent to the existing tailrace and outlet channel, above the ordinary high-water mark and groundwater elevation. There would be no discharges associated with construction, and because all work in connection with the existing penstock would be completed while the project is not operating, there would be no hydrological interruption associated with construction.

2.4.1 Installation of penstock extension

The penstock extension would be fabricated off-site, transported by truck, and installed when the existing project is not operating. All work would be performed adjacent to the existing penstock manifold within the Construction Area.

2.4.2 Construction of concrete housing structure

The equipment supports, building foundation, walls and roof of the concrete housing structure would be formed and poured on site using a local supplier of ready-mixed concrete. Pre-washed gravel from a local supplier would be used for sub-base material before the foundation is poured. Some of the original excavated material would be used to fill voids between the excavated pit and powerhouse walls. However, for the purposes of conservative assumptions to inform potential impacts in this IS/NMD, it is assumed that all excavated material would be hauled off-site.

2.4.3 Installation of turbine unit

The turbine unit would be transported from the manufacturer by truck, with final assembly using mobile cranes and small equipment. The turbines would be connected to the existing penstock via the penstock extension when the existing project is not operating.

2.4.4 Disposal areas

Approximately 300 cubic yards (cy) would need to be excavated for turbine footings and foundation for the housing structure. Excavated material would either be reused on-site (e.g., roadways or parking areas) or disposed of off-site at the Kern Valley Transfer Station, located at 6092 Wulstein Way in Kernville, approximately 20 miles north of the Proposed Project.

2.4.5 Construction equipment, staging, and access

Heavy construction equipment that would be used throughout the construction process includes a crane, front-end loaders, hydraulic excavator, 10-wheeler or end dump truck(s), concrete truck(s), bulldozers, compactor, dozer, and smaller excavation and materials handling equipment. Each dump truck would be able to haul approximately 10 to 16 cy of material per trip. Up to 130 cy of concrete would be delivered from local suppliers, with an estimated 17 truck trips at approximately 8 cy of material each.

Construction access to the site would be via internal access roads within the Project Area, State Route (SR) 178 and SR 155 (Figure 2-1). Construction worker parking and equipment staging area would occur within the Construction Area on the parking lot of the existing site (Figures 2-2 and 2-3).

2.5 Discretionary Approvals, Regulatory Permits, and Agreements

Issuance of certification or certification amendment is a discretionary approval that triggers CEQA environmental review by the State Water Board. A FERC license amendment would be required as part of the Proposed Project. In addition, an Encroachment Permit would be needed from USACE as the project is located on land owned by the United States and administered by the USACE.

3 ENVIRONMENTAL EVALUATION AND CHECKLIST

3.1 Environmental Factors Potentially Affected

Each of the following resource sections includes a completed checklist (from Appendix G of the CEQA Guidelines) of environmental factors potentially affected and identifies potential impacts by significance level (i.e., no impact, less than significant impact, less than significant impact with mitigation incorporated, and potentially significant impact). The environmental factors checked in Table 3-1 would potentially be affected by this Proposed Project, and, where noted, mitigation measures will be implemented to ensure any potential impacts are reduced to less than significant levels.

Table 3-1. Summary of environmental factors potentially affected by the Proposed Project.

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

This section describes the potential impacts associated with the Proposed Project, as described in Section 2 *Project Description*. Based on the analysis in this section, the Proposed Project would not result in any significant and unavoidable impacts.

ENVIRONMENTAL DETERMINATION

On the basis of this evaluation, the State Water Resources Control Board finds:

I find that the Project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.	☐
I find that although the Project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the Project have been made by or agreed to by the Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.	☑
I find that the Project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.	☐
I find that the Project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect (1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and (2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.	☐
I find that although the Project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the Project, nothing further is required.	☐

Parker Thaler
Signature
State Water Board

04/14/2023
Date

Environmental Program Manager I
Title

Parker Thaler
Printed Name

3.2 Introduction

This section contains the Environmental Checklist as included in Appendix G of the State CEQA Guidelines. Each resource section includes a description of the environmental and regulatory setting and an evaluation of potential impacts associated with the Proposed Project based on checklist questions.

In addition, each section discusses the implementation of Mitigation Measures, which are intended to minimize impacts identified as potentially significant.

3.3 Evaluation of Environmental Impacts

Each resource area is evaluated based on the significance criteria provided in Appendix G of the State CEQA Guidelines and each impact is assigned a level of significance. The varying levels of significance are defined as follows:

- No Impact: This finding is made when the analysis concludes that the Proposed Project would not affect a particular environmental resource or issue.
- Less than Significant: This finding is made when the analysis concludes that the Proposed Project would have no substantial adverse environmental impact and no mitigation is needed.
- Less than Significant with Mitigation Incorporated: This finding is made when the analysis shows that the Proposed Project would have no substantial adverse environmental impact with inclusion of the mitigation measure described, thereby reducing an otherwise potentially significant impact to less than significant.
- Potentially Significant: This finding is made when the analysis concludes that the Proposed Project could have a substantial adverse effect on the environment.
- Mitigation: Mitigation refers to specific measures or activities to avoid or reduce the severity of potentially significant impacts or compensate for potentially significant impacts associated with implementation of the Proposed Project.
- Cumulative Impact: Cumulative impacts are impacts that potentially could result when a change in the environment results from the incremental impact of a Proposed Project when added to other related past, present, or reasonably foreseeable future projects. Cumulative impacts may be significant even if the impacts of individual projects are less than significant.

3.4 Aesthetics

Issues	Potentially significant impact	Less Than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project have a substantial adverse effect on a scenic vista?	☐	☐	☐	☑
b) Would the Proposed Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?	☐	☐	☐	☑
c) Would the Proposed Project, in non-urbanized areas, substantially degrade the existing visual character or quality of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point). If the project is in an urbanized area, would the Proposed Project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☑	☐
d) Would the Proposed Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☑	☐

3.4.1 Environmental setting

The term “aesthetics” typically refers to the perceived visual character of an area, such as of a scenic view, open space, or architectural facade. The aesthetic value of an area is a measure of its visual character and visual quality combined with viewer response (FHA 1983). This combination may be affected by the

components of a project (e.g., buildings constructed at heights that obstruct views, hillsides cut and graded, open space changed to an urban setting), as well as the length and frequency of viewer exposure to the setting. Aesthetic impacts are changes in viewer response as a result of project construction and operation.

There are no designated scenic highways in the Project Vicinity. The Project Area is at the downstream base of the Lake Isabella main dam and is not visible to boaters and other users from the lakeside or from the vista point on SR 155. The Proposed Project is within an existing hydroelectric facility, which is not visible from SR 155 or nearby, publicly accessible roads and its addition would not detract from the existing visual aesthetic of the area.

3.4.2 Discussion

a) Would the Proposed Project have a substantially adverse effect on a scenic vista?

Impact: The Project Area is not within a designated scenic vista. SR 155, which follows the western shoreline of Lake Isabella, has a vista point approximately 0.14 miles upstream of the Lake Isabella main dam. There would be a slight increase in traffic from work force commutes as well as haul trucks traveling between the Project Area and off-site commercial sources. Approximately 300 cy of material is to be excavated for the turbine footings and 130 cy of concrete is to be delivered. This would result in approximately 35 truck trips during excavation and construction. Increased truck traffic on SR 155 would not affect the existing value of the scenic vista. There would be no impact.

Mitigation Measures: No mitigation measure required.

Significance Determination: No Impact

b) Would the Proposed Project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Impact: There are no state scenic highways immediately adjacent to the project site. Wofford Heights Boulevard (i.e., SR 155), which is the closest state highway to the project site, is not designated as a scenic highway. Therefore, there would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

c) Would the Proposed Project, 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 Proposed Project is in an urbanized area, would the Proposed Project conflict with applicable zoning and other regulations governing scenic quality?

Impact: The Proposed Project is in a non-urbanized area. Construction activities would temporarily disrupt the visual character within the Construction Area. The Construction Area encompasses previously developed areas the existing hydroelectric facility, with very little vegetation. Construction equipment would be visible to existing plant operators as well as a limited number of USACE staff. While in transit to and from the Project Area, some equipment would be visible to recreators and motorists along SR 155. Such equipment would be present for a short period of time. After completion of the Proposed Project, the construction equipment would be removed. A new concrete structure would be placed to house the new generating unit but would look very similar to the current structures and conditions in the area. Since potential effects would be temporary, relatively small, similar to current conditions, and seen by very few people, potential impacts would be less than significant.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

d) Would the Proposed Project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Impact: Additional outdoor lighting may be included as part of the Proposed Project. However, new outdoor lighting would be directed downward and would not create a new source of substantial light that would adversely affect day or nighttime views in the area, given the existing outdoor lighting already present on site. Therefore, impact would be less than significant.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

3.5 Agricultural and Forest Resources

Issues	Potentially significant impact	Less Than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☑
b) Would the Proposed Project conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c) Would the Proposed Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☑
d) Would the Proposed Project result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑
e) Would the Proposed Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or	☐	☐	☐	☑

Issues	Potentially significant impact	Less Than significant with mitigation incorporated	Less than significant impact	No impact
conversion of forest land to non-forest use?				

3.5.1 Environmental setting

The California Farmland Mapping and Monitoring Program (FMMP), administered by the State Division of Land Resource Protection, is responsible for producing agricultural resource maps based on soil quality and land use. The purpose of the FMMP is to provide information to be used in planning for current and future use of the state's agricultural lands. The FMMP designates land into the following categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, Farmland of Local Importance, Grazing Land, Urban and Built-up Land, and Other Land, which includes Rural Residential Land, Semi-Agricultural and Rural Commercial Land, Vacant or Disturbed Land, Confined Animal Agriculture, Nonagricultural or Natural Vegetation, and Water. Descriptions of these categories are detailed in the FMMP (California DOC 2021).

3.5.2 Discussion

a) Would the Proposed Project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Impact: The Project Area is designated by the California Department of Conservation as Vacant or Disturbed Land and surrounded by Urban and Built-up Land and Nonagricultural and Natural Vegetation (Kern County 2017). Therefore, the Proposed Project would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) and there would be no impact.

Mitigation Measures: No mitigation measures required.

☐ ☐ ☐ ☑

Significance Determination: No impact.

b) Would the Proposed Project conflict with existing zoning for agricultural use, or a Williamson Act contract?

Impact: Lands in Kern County are under or are eligible to enter Williamson Act contracts, but the Project Area does not include any such parcels (Data Basin 2021). The Project Area is on land zoned for Recreation Forestry District (Kern County 2021a). Therefore, the Proposed Project does not conflict with existing zoning for agricultural use, or a Williamson Act contract, and there would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

c) Would the Proposed Project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

Impact: The Project Area is within parcel number 485-090-05, which is zoned by Kern County as Recreation Forestry District and Exclusive Agriculture. The section of the parcel where the Construction Area is located is zoned as Recreation Forestry District. Under Section 19.42.010 of the Kern County Zoning Ordinance (2021a), utility substations are listed as a permitted use. Therefore, the Proposed Project would not conflict with the existing zoning and no impact would occur.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

d) Would the Proposed Project result in the loss of forest land or conversion of forest land to non-forest use?

Impact: The Proposed Project would be part of an existing hydroelectric facility, on previously developed land with no vegetation. There would be no loss of forest land or conversion of forest land to non-forest use. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

e) Would the Proposed Project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

Impact: The Proposed Project involves adding an additional generating unit to an existing hydroelectric facility. All construction staging would be within the Construction Area and access would be via existing roads. The Proposed Project would not involve other changes to the existing environment that could result in additional conversion of Farmland to non-agricultural use or any conversion of forest land to non-forest use. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.6 Air Quality

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project conflict with or obstruct implementation of the applicable air quality plan?	☐	☑	☐	☐
b) Would the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard?	☐	☐	☑	☐
c) Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations?	☐	☑	☐	☐
d) Would the Proposed Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☑

Are significance criteria established by the applicable air district available to rely on for significance determinations?

☒Yes ☐No

3.6.1 Environmental setting

The Proposed Project is in the western region of the Mojave Desert Air Basin (MDAB), which includes portions of Kern, Los Angeles, San Bernardino, and Riverside counties (CARB 2021a), and is administered by the Eastern Kern Air Pollution Control District (EKAPCD 2021). The MDAB's proximity to the Los Angeles region and San Bernardino valley affects its air quality, as prevailing southwest winds often transport pollutants (e.g., ozone, particulate matter) from these highly polluted areas into the MDAB (MDAQMD 2021).

3.6.1.1 Criteria Air Pollutants

The Federal Clean Air Act of 1970 and the California Air Resources Board (CARB) have established air quality standards for several common pollutants: carbon monoxide; lead; nitrogen dioxide; ozone; particulate matter; sulfur dioxide; sulfates; and hydrogen sulfide (CARB 2021b). Air quality data for some criteria air pollutants in the MDAB from 2016 to 2020 are summarized in Table 3-2.

Table 3-2. Summary statistics for air quality data in the Mojave Desert Air Basin from 2016 to 2020 (Source: CARB 2021c).

Year	Pollutant (averaging time)	Maximum concentration	No. of days exceeding federal standards	No. of days exceeding state standards
2016	Ozone (1-hour)	0.132 ppm	n/a	34
	Ozone (8-hour)	0.109 ppm	98	103
	$PM_{2.5}$ (daily)	64.8 µg/m^3	2	n/a
	PM_{10} (daily)	203.5 µg/m^3	2	19
2017	Ozone (1-hour)	0.156 ppm	n/a	47
	Ozone (8-hour)	0.118 ppm	99	103
	$PM_{2.5}$ (daily)	29.3 µg/m^3	0	n/a
	PM_{10} (daily)	85.7 µg/m^3	n/a	0
2018	Ozone (1-hour)	0.126 ppm	n/a	39
	Ozone (8-hour)	0.107 ppm	123	129
	$PM_{2.5}$ (daily)	40.4 µg/m^3	2	n/a
	PM_{10} (daily)	103.2 µg/m^3	1	n/a
2019	Ozone (1-hour)	0.119 ppm	n/a	21
	Ozone (8-hour)	0.090 ppm	72	75
	$PM_{2.5}$ (daily)	34.1 µg/m^3	0	n/a
	PM_{10} (daily)	240.8 µg/m^3	2	15
2020	Ozone (1-hour)	0.130 ppm	n/a	28
	Ozone (8-hour)	0.100 ppm	85	89
	$PM_{2.5}$ (daily)	125.4 µg/m^3	15	n/a
	PM_{10} (daily)	360.9 µg/m^3	1	29

n/a = not applicable
$PM_{2.5}$ = respirable particulate matter less than 2.5 microns in diameter
PM_{10} = respirable particulate matter less than 10 microns in diameter
ppm = parts per million
µg/m^3 = micrograms per cubic meter

The MDAB does not consistently meet all applicable air quality standards (CARB 2021d, USEPA 2021). The MDAB is currently designated as nonattainment for state ozone standards, standards for particulate matter less than 10 microns in

diameter (PM_{10}) (CARB 2021d), as well as for federal ozone standards (USEPA 2021). Otherwise, the MDAB is designated as attainment for carbon monoxide; lead; nitrogen dioxide; $PM_{2.5}$; and sulfur dioxide standards.

Emission thresholds for criteria pollutants developed by EKAPCD, which are more stringent than U.S. Environmental Protection Agency (USEPA) thresholds, were used in determining the significance of potential air quality effects of the Proposed Project (EKAPCD 2000). Emissions would be considered significant if they exceeded the following EKAPCD thresholds:

- 25 tons per year of nitrogen oxides
- 15 tons per year of PM_{10}
- 25 tons per year of reactive organic gases
- 27 tons per year of sulfur oxides

EKAPCD also developed Rule 402 to prevent and reduce fugitive dust emissions during construction activities (EKAPCD 2015). Rule 402 requires implementation of measures to reduce ambient concentrations of fugitive dust (e.g., on-site water truck, covering material stockpiles) and submittal of a Fugitive Dust Emission Control Plan prior to construction as well as records showing compliance with the plan following construction.

3.6.1.2 Sensitive receptors

Some individuals have heightened health risks associated with exposure to air pollution, and for some air quality constituents, impacts are determined based on the distance to the closest sensitive receptor. Potentially sensitive receptors include, but are not limited to, individuals within residential areas, schools, and hospitals. The nearest potentially sensitive receptors to the Proposed Project are residences on Ponderosa Drive, which are approximately 0.5 miles away.

3.6.2 Discussion

This section describes the potential air quality effects of the Proposed Project, including exhaust emissions from construction equipment, fugitive dust generated by construction activities, and construction vehicle traffic over unpaved roads. There would be no change in operational emissions following construction of the Proposed Project because hydropower generators do not directly emit any criteria pollutants (EIA 2020), and the frequency of vehicle travel to the site for routine operations and maintenance activities would be unchanged.

To estimate emissions generated from construction activities, the Road Construction Emissions Model Version 9.0.0 was run using the anticipated

duration, timing, and equipment used for construction of the Proposed Project. This model estimates exhaust emissions (i.e., from construction equipment, haul trucks, worker commutes) and fugitive dust produced during construction activities and was originally developed to assess road and levee construction projects.

The modeling was based on the material quantities and construction equipment estimates described in Table 3-3, as well as the following assumptions: (1) a 45-acre work site (construction area shown in Figure 2-1); (2) a 5.0-acre maximum daily disturbance; and (3) an equipment operational estimate of 5-day work weeks with 10 hours per day over the course of 9 months. Additional model assumptions include use of best available control technology (BACT) and application of air quality BMPs (e.g., limited vehicle idling times, on-site water truck, well-maintained equipment).

Table 3-3. Proposed Project construction emission sources and assumptions.

Emission source	Project assumptions
Exported material	300 cubic yards
Imported material used for cement work	136 cubic yards
Fuel-fired construction equipment	Crane (1) Excavator (1) Bulldozer (2) Front-end loader (2) Compactor (1) Water truck (1) Material handling equipment (3)
Haul trucks	3 haul trips per day over 11 total days
Cement trucks	2 loads per day over 11 total days
Employee commute trips	5 employee trips per day 45 miles one way

Model results for total anticipated emissions from the Proposed Project are shown in Table 3-4.

Table 3-4. Proposed Project construction emission estimates (tons per year).

	NO_X	**PM_{10}**	**ROG**	**SO_X**
Project emissions	5.44	1.35	0.54	0.01
EKAPCD annual threshold	25	15	25	27

Notes:
NO_x = nitrogen oxides
PM_{10} = respirable particulate matter less than 10 microns in diameter
ROG = reactive organic gases
SO_x = sulfur oxides

a) Would the Proposed Project conflict with or obstruct implementation of the applicable air quality plan?

Impact: Based on the air quality modeling, construction of the Proposed Project is expected to result in temporary emissions that are well below EKAPCD thresholds. Additionally, the Proposed Project would comply with EKAPCD Rule 402 measures to limit fugitive dust emissions during construction activities. There would be no change in long-term operational emissions and the Proposed Project would therefore not conflict with or obstruct implementation of any applicable air quality plan. With implementation of Mitigation Measure AQ-1, potential impacts of the Proposed would be less than significant.

Mitigation Measures:

AQ-1: The following Best Management Practices (BMPs) shall be implemented during construction of the Proposed Project to avoid and minimize potential air quality effects:

1. All construction equipment shall be properly tuned and maintained prior to and for the duration of on-site operation.
2. Diesel-powered construction equipment idling time shall be limited to less than five minutes.
3. An operational water truck shall be available at all times. Water shall be applied as needed to control dust and to prevent visible emissions violations and off-site dust impacts.
4. On-site dirt piles or stockpiled materials shall be covered, and water or soil stabilizers will be employed to reduce wind-blown dust emissions.
5. Traffic speeds on all unpaved surfaces shall be reduced to 20 miles per hour or less. Appropriate training, enforcement, and signage will be provided.

Significance Determination: Less than significant impact with mitigation incorporated.

b) Would the Proposed Project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is

nonattainment under an applicable federal or state ambient air quality standard?

Impact: Model results show that emissions during construction of the Proposed Project are not expected to exceed annual thresholds for criteria air pollutants for which the MDAB is currently designated as nonattainment (including PM_{10} and ozone precursors [e.g., nitrogen oxides, reactive organic gases, carbon monoxide]). As indicated in (a), above, there would be no change in long-term operational emissions for any criteria air pollutants. Although construction of the Proposed Project would result in some emissions for which the MDAB is not in attainment, the minimal amount and temporary nature of these emissions would not result in a cumulatively considerable net increase of these pollutants. Therefore, the potential impact would be less than significant.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

c) Would the Proposed Project expose sensitive receptors to substantial pollutant concentrations?

Impact: The nearest sensitive receptors to the Proposed Project are residences on Ponderosa Drive, which are approximately 0.5 miles away.

The Proposed Project would not result in substantial diesel particulate or fugitive dust pollution. Maximum exhaust and fugitive dust emissions would be 4.3 and 50 pounds per day PM_{10}, respectively, which would be well below EKAPCD thresholds. Implementation of BMPs to reduce diesel exhaust (e.g., limited idling time, vehicle speed limits) and adherence to fugitive dust reduction measures (e.g., on-site water truck, haul truck load limits) required by EKAPCD Rule 402 would ensure these pollutant emissions are minimized. Additionally, construction activities would be temporary, only resulting in increased emissions for nine months, and the increased hydropower generation following construction of the Proposed Project would not produce any emissions so would not result in any long-term increases in pollutant concentrations.

For these reasons, the Proposed Project would not expose potentially sensitive receptors to substantial pollutant concentrations. Therefore, with implementation of Mitigation Measure AQ-1 the potential impact would be less than significant.

Mitigation Measures: AQ-1 as described above in section 3.6.2 a.

Significance Determination: Less than significant impact with mitigation incorporated.

d) Would the Proposed Project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact: Construction of the Proposed Project is not expected to result in other emissions, such as those leading to objectionable odors, that would adversely affect a substantial number of people. Post-construction, operation of the new turbine would not result in any additional emissions, including those leading to objectionable odors. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.7 Biological Resources

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
b) Would the Proposed Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☑
c) Would the Proposed Project have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☑

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
d) Would the Proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☑
e) Would the Proposed Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☑
f) Would the Proposed Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan?	☐	☐	☐	☑

3.7.1 Environmental setting

The Project Area is located within the Southern Sierra Nevada Foothills subregion of the California Floristic Province (Jepson Flora Project 2021) at an elevation of approximately 2,500 feet. A short stretch of the Kern River passes through the Project Area, flowing southward from the base of the Lake Isabella main dam. Narrow bands of riparian woodland are present along this stretch of the Kern River but no adjacent wetlands, and the surrounding upland habitat is dominated by foothill pine woodland (USACE 2012a). Some portions of the Project Area, including all of the Construction Area, are developed and used for hydroelectric operations.

Developed areas

The developed portion of the Project Area, which encompasses the entire Construction Area, includes the hydroelectric facilities at the base of the Lake

Isabella main dam as well as associated infrastructure and access roads. Additional roads associated with a currently closed campground also cross the Project Area. No waters or wetlands are present in these developed areas. No vegetation is present in these developed areas, although human disturbance associated with development has resulted in the introduction and establishment of several non-native species (e.g., Aleppo pine [*Pinus halepensis*], tree of heaven [*Ailanthus altissima*], cheat grass [*Bromus tectorum*]) in adjacent habitats.

Foothill pine woodland (*Pinus sabiniana* Woodland Alliance)

Foothill pine woodland is the predominant vegetation type in the Project Area, occurring throughout the uplands flanking the Kern River (USACE 2012a). This vegetation type has intermittent tree cover dominated by gray pine (*Pinus sabiniana*), although occasional oak (*Quercus* spp.), California buckeye (*Aesculus californica*), juniper (*Juniperus* spp.), or other tree species may also be present (CNPS 2021a). Shrubs are infrequent to common, and the herbaceous layer is sparse or grassy (CNPS 2021a).

Riparian woodland (*Salix gooddingii*, *Populus fremontii*, and *Salix laevigata* Woodland Alliances)

Riparian woodland along the Kern River is dominated by Goodding's black willow (*Salix gooddingii*), Fremont Cottonwood (*Populus fremontii*), and red willow (*Salix laevigata*) (USACE 2012a). Other willow species (*Salix* spp.), box elder (*Acer negundo*), California buckeye, and white alder (*Alnus rhombifolia*) can also be common in some areas within this vegetation type (Sawyer et al. 2009). The understory commonly includes shrubs such as mule fat (*Baccharis salicifolia*), coyote brush (*Baccharis pilularis*), and American dogwood (*Cornus sericea*) as well as an herbaceous layer composed of early colonizers such as cocklebur (*Xanthium strumarium*), stinging nettle (*Urtica dioica*), and soft rush (*Juncus effusus*) (Sawyer et al. 2009).

3.7.1.1 Methodology

Definitions

Special-status species are defined in this IS/MND as those that are:

- listed as endangered or threatened, rare, or proposed/candidate for listing under the Endangered Species Act (ESA) and/or California Endangered Species Act (CESA);
- designated by the California Department of Fish and Wildlife (CDFW) as a Species of Special Concern;

- designated by CDFW as Fully Protected under the California Fish and Game Code (Sections 3511, 4700, 5050, and 5515);
- designated as rare under the California Native Plant Protection Act (CNPPA);
- included on CDFW's Special Vascular Plants, Bryophytes, and Lichens List with a California Rare Plant Rank (CRPR) of 1, 2, 3, or 4 (CDFW 2021a);
- designated by the U.S. Forest Service (USFS) as a sensitive species (USFS 2013); and/or
- listed as a species of conservation concern for the Sequoia National Forest (USFS 2019).

Sensitive natural communities (i.e., legacy natural communities in CDFW's California Natural Diversity Database [CNDDB] and vegetation alliances or associations as described in the online version of A Manual of California Vegetation [CNPS 2021a]) are defined as vegetation types with a state ranking of S1 (critically imperiled), S2 (imperiled), or S3 (vulnerable) on CDFW's California Sensitive Natural Communities List (CDFW 2021b).

Desktop review

The special-status species and sensitive natural communities with the potential to occur on or near the Construction Area were identified through a query of the following sources:

- CDFW's CNDDB (CDFW 2021c);
- The U.S. Fish and Wildlife Service's (USFWS) Information for Planning and Conservation (IPaC) portal (USFWS 2021);
- California Native Plant Society's (CNPS) online Inventory of Rare and Endangered Vascular Plants of California (CNPS 2021b);
- The most current Pacific Southwest Region's (Region 5) Regional Forester's Sensitive Plant Species List (USFS 2013) for the Sequoia National Forest; and
- USFS Sequoia National Forest Species of Conservation Concern List (USFS 2019).

These database queries were based on a search of the Project Vicinity, which includes the U.S. Geological Survey (USGS) 7.5-minute quadrangle in which the Construction Area is located (Lake Isabella North), and the surrounding eight quadrangles (Tobias Peak, Kernville, Cannell Peak, Weldon, Woolstalf, Lake Isabella South, Miracle Hot Springs, and Alta Sierra)

The habitat preferences and distributional range of each species from the database queries were compared with existing information (e.g., land cover and vegetation types) to determine the potential for each species to occur in or adjacent to the Construction Area[1], resulting in a refined list of species that may be impacted by the Proposed Project. If a species' required habitat was not present in the Construction Area or if the Construction Area is outside the species' known distribution or elevation range, the species was considered not likely to occur. Key findings from desktop evaluations were used to inform the impacts determinations in Section 3.7.3 *Discussion* and are detailed in subsequent sections.

3.7.1.2 Results

Special-status wildlife species

Forty-two special-status wildlife species were identified from the database queries as potentially occurring in the Project Area. Twenty-eight species were determined to have no or low potential to occur in or near the Project Area, based on no or only marginally suitable habitat present, and/or the Project Area is outside of the species' known range; these species are not discussed further. The following 14 remaining species were determined to have moderate or high potential to occur within or near the Project Area:

- Crotch's bumble bee (*Bombus crotchii*)
- San Emigdio blue butterfly (*Plebulina emigdionis*)
- Kern Canyon slender salamander (*Batrachoseps bramei*)
- Western pond turtle (*Actinemys marmorata*)
- California legless lizard (*Aniella* spp.[2])
- Bald eagle (*Haliaeetus leucocephalus*)
- Yellow warbler (*Setophaga petechia*)
- Kern red-winged blackbird (*Agelaius phoeniceus aciculatus*)
- Tricolored blackbird (*Agelaius tricolor*)

[1] For special-status plants the analysis was restricted to the Construction Area only.

[2] Legless lizards of California were once considered a single species (*Anniella pulchra*) but are now separated into five distinct species. Where an occurrence of a legless lizard is not known to the species level, CNDDB applies the general concept California legless lizard (*Anniella* spp.) until further evidence is available. The Proposed Project is in an area where *Anniella* spp. are present, but the species has not yet been determined.

- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Western mastiff bat (*Eumops perotis californicus*)
- Townsend's western big-eared bat (*Corynorhinus townsendii*)
- Pallid bat (*Antrozous pallidus*)
- Yuma myotis (*Myotis yumanensis*)

Proposed Project activities would be confined to the Construction Area, located in a previously developed portion of the Project Area. Of the 14 species with moderate or high potential to occur in the larger Project Area, the following 6 species do not have suitable habitat in or near the Construction Area and would not be impacted by Proposed Project activities:

- San Emigdio blue butterfly
- Kern Canyon slender salamander
- California legless lizard
- Bald eagle
- Kern red-winged blackbird
- Tricolored blackbird

The remaining eight species have potential to occur in or near the Construction Area and could be impacted by Proposed Project activities; the following includes life history details and habitat requirements for these species.

Crotch's bumble bee. Crotch's bumble bee, a State Candidate Endangered species, occurs throughout most of California, including the Mediterranean region, Pacific Coast, Western Desert, Great Valley, and adjacent foothills through most of southwestern California (Williams et al. 2014). Crotch's bumble bee inhabits grasslands and shrublands, preferring certain plant species to accommodate their short tongues (including milkweeds [*Asclepias* spp.], dusty maidens [*Chaenactis douglasii*], lupines [*Lupinus* spp.], medics [*Medicago* spp.], phacelias [*Phacelia* spp.], sages [*Salvia* spp.], clarkias [*Clarkia* spp.], poppies [*Eschscholzia* spp.], and wild buckwheat [*Eriogonum* spp.]). Crotch's bumble bees are social insects that commonly nest underground in abandoned rodent nests, but occasionally nest above ground in tufts of grass, old bird nests, rock piles, or cavities in dead trees. Crotch's bumblebee may occur in the Construction Area in underground burrows, abandoned rodent burrows, or rock piles.

Western pond turtle. Western pond turtle, a CDFW Species of Special Concern and a USFS Sensitive species, is found from the Oregon border along the Pacific Coast Ranges to the Mexican border, and west of the crest of the Cascades and

Sierras. Western pond turtles inhabit fresh or brackish water characterized by areas of deep water, low flow velocities, moderate amounts of riparian vegetation, warm water and/or ample basking sites, and underwater cover elements, such as large woody debris and rocks (Jennings and Hayes 1994). Along major rivers, western pond turtles are often concentrated in side channel and backwater areas. Turtles may move to off-channel habitats, such as oxbows, during periods of high flows (Holland 1994). Although adults are habitat generalists, hatchlings and juveniles require specialized habitat for survival through their first few years. Hatchlings spend much of their time feeding in shallow water with dense submerged or short emergent vegetation (Jennings and Hayes 1994). Although an aquatic reptile, western pond turtles require upland habitats for basking, overwintering, and nesting, typically within 0.6 miles (1 kilometer) from aquatic habitats (Holland 1994). While there are no suitable aquatic habitats for western pond turtle in the Construction Area, this species may traverse through the Construction Area and/or use adjacent suitable uplands for nesting.

Western mastiff bat. Western mastiff bats, a CDFW Species of Special Concern, range from the San Francisco Bay area south throughout California, typically roosting below 5,000 feet but potentially foraging up to 8,850 feet (Pierson and Siders 2005). A crevice- and cliff-roosting species, western mastiff bats prefer rock features, often steep slopes or rocky outcrops associated with river drainages, or slabs of exfoliating granite or basaltic columns. Colonies range from 35 to 200 individuals. Western mastiff bats forage in open-air environments (such as reservoirs) over ranges up 18 miles (Peirson and Siders 2005). Western mastiff bats may roost in rocky outcrop crevices in the Project Area, or in cement structures associated with the existing hydroelectric facility (e.g., the dam).

Townsend's western big-eared bat. Townsend's big-eared bats, a CDFW Species of Special Concern and a USFS Sensitive species, have been documented from sea level to 10,800 feet; however, in California maternity roosts appear to be confined to elevations below 5,900 feet (Pierson and Fellers 1998, Sherwin and Piaggio 2005). This cavity-dwelling species roosts and hibernates in caves (commonly limestone or basaltic lava), mines, buildings, bridges (with a cave-like understructure), rock crevices, tunnels, basal hollows in large trees, and cave-like attics (Pierson and Fellers 1998, Pierson and Rainey 2007, Pierson et al. 2001, Pierson and Rainey 1996, Sherwin et al. 2000, Sherwin and Piaggio 2005). Foraging has been observed in a variety of habitats (e.g., oak woodlands, desert scrub, alfalfa fields). Townsend's big-eared bats have been observed feeding in the air along forest edges (Kunz and Martin 1982) and capturing

insects in proximity to vegetation (Fellers and Pierson 2002). Maternal colonies form between March and June and consist of 25 to 300 adult females. Townsend's big-eared bats may roost in rocky outcrop crevices in the Project Area, or in cement structures associated with the existing hydroelectric facility (e.g., the dam).

Pallid bat. Pallid bat, a CDFW Species of Special Concern and a USFS Sensitive species, is fairly widespread in California. Pallid bats occupy a variety of habitats, from arid deserts to grasslands, conifer forests, and riparian areas. Roosts (including day, night, and maternity roosts) are typically located in rock crevices and cliffs; day roosts can also be found in tree hollows and caves (Hermanson and O'Shea 1983, Lewis 1994, Pierson et al. 1996, Pierson et al. 2001). In more urban settings, roosts are frequently associated with human structures, such as abandoned buildings, abandoned mines, and bridges (Pierson et al. 1996, Pierson et al. 2001). Overwintering roosts require relatively cool and stable temperatures out of direct sunlight. Pallid bats typically glean prey from the ground and may forage 1 to 3 miles (2 to 5 kilometers) from their day roosts (Zeiner et al. 1990a). The pallid bat is a colonial species, with a typical maternal colony size of 50 to 300 individuals (Hermanson and O'Shea 1983, Lewis 1994, Pierson et al. 1996). Breeding occurs from late October to February. With an average litter size of two, the young are born between April and July, and are typically weaned in August (Sherwin and Rambaldini 2005). Pallid bats may roost in rocky outcrop crevices in the Project Area, or in buildings or structures associated with the existing hydroelectric facility (e.g., the dam).

Yuma myotis. Yuma myotis, a USFS Sensitive species, is a small bat found throughout California in habitats ranging from humid forests to deserts, but always near ponds, lakes, or rivers. This species occurs in habitats ranging from sea level up to 8,000 feet (it is uncommon or rare from 8,000 through 11,000 feet) (Zeiner et al. 1990a). Yuma myotis emerges at dusk to forage over the water surface, feeding mainly on moths and flies. Large groups roost in buildings, under bridges, or in vertical cracks in cliffs (Reid 2006). This species is thought to hibernate in caves or mines in the winter; maternity colonies are found to occupy caves and structures with higher temperatures. Yuma myotis may roost in rocky outcrop crevices in the Project Area, or in buildings or structures associated with the existing hydroelectric facility (e.g., the dam).

Yellow warbler. Yellow warbler, a CDFW Species of Special Concern, is a summer resident that breeds throughout much of California, except the Central Valley, southern Californian deserts, and high Sierra Nevada (Zeiner et al. 1990b; Heath 1998, 2008). The largest concentrations of breeding pairs occur in

northeastern California, in Modoc National Forest and Shasta County, as well as in the Cascade Range and Sierra Nevada (Heath 2008). The preferred habitat of yellow warbler includes open canopy or deciduous riparian vegetation, often along streams or wet meadows (Heath 2008). This species frequently nests in small willows and alders, and is also associated with cottonwoods, Oregon ash (*Fraxinus latifolia*), and other riparian shrubs and trees, depending upon the geographic region (Zeiner et al. 1990b, Heath 2008). This species also occasionally nests in montane chaparral in open coniferous forests (Heath 2008). Breeding occurs from mid-April through early August, with peak activity in June (Zeiner et al. 1990b). Yellow warblers nest between 2 to 16 feet above ground, at the bases of branches (branch forks) in small deciduous trees and shrubs, often in willow thickets (Zeiner et al. 1990b, Lowther et al. 1999). Birds forage for insects within the shrub and tree canopy, occasionally feeding on the wing or eating fruit (Zeiner et al. 1990b, Lowther et al. 1999). Yellow warbler may nest in the fragmented riparian vegetation in the Project Area.

Southwestern willow flycatcher. Southwestern willow flycatcher is a state-listed endangered and USFS Sensitive species. Willow flycatchers require dense riparian shrubland, often thickets of willows or alder, near permanent standing water for foraging and roosting; however, areas with dense tree cover are not suitable. In addition, low, exposed branches are used during foraging (Zeiner et al. 1990b). Water is always present in willow flycatcher territories in California (Sedgwick 2000). Deciduous shrubs and small trees at least 6.6 feet tall are required for nesting (Craig and Williams 1998). Willow flycatcher nests are frequently parasitized by brown-headed cowbirds (*Molothrus ater*) (Craig and Williams 1998). According to Truan et al. (2010), there is little or no probability of restoring successfully breeding willow flycatchers to the Central Valley because of this brood parasitism. Southwestern willow flycatcher may nest in the fragmented riparian vegetation in the Project Area.

Other migratory bird and raptors. Non-special-status migratory birds or raptors could establish nests in suitable trees or other nesting habitat in the Project Vicinity. The nesting season for migratory birds and raptors is generally between February 15 and August 31. Migratory bird or raptor species may occasionally forage in or near the Construction Area during construction.

Special-status fish species

The Construction Area does not contain any flowing or standing water; therefore, no special-status fish would be present. Furthermore, all special-status fish species from database queries have ranges that are not inclusive of the Project Area.

Special-status plant species and sensitive natural communities
The Construction Area is limited to developed areas; therefore, there is no suitable habitat for any special-status plant species or sensitive natural communities.

3.7.2 Discussion

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

Impact:
Special-status wildlife and fish species
While the Construction Area is restricted to previously developed areas with marginally suitable habitat, the Proposed Project includes excavation and ground-moving that may impact Crotch's bumble bees. This species could nest in the Construction Area in abandoned burrows, holes, or vegetation. Groundwork, including excavation, has low potential to unearth a bumble bee nest. Because the area of excavation is relatively small, potential impacts would be less than significant. Mitigation Measures BIO-1 and BIO-2 would be incorporated to further reduce potential impacts on Crotch's bumble bee.

There is a small chance that western pond turtles could be injured or killed by construction equipment. Compact soils and gravel in the Construction Area are unsuitable for western pond turtle nesting, though turtles may disperse through the area to more suitable upland nesting habitats. The chain link fence around the current hydroelectric facilities likely restricts movement of turtles into the Construction Area. As such, potential impacts would be less than significant. Mitigation Measures BIO-1 and BIO-2 would be incorporated to further reduce potential impacts to transient or basking turtles.

The Project Area contains multiple man-made structures and rocky outcrops that provide potential roosting habitat for special-status bat species, including western mastiff batt, Townsend's big-eared bat, Pallid bat, and Yuma myotis. There is no overwintering or maternity roost habitat (e.g., caves, mines, abandoned structures) within or near the Construction Area; as such, special-status bats would not be impacted during their vulnerable maternity roosting or hibernation periods. The Proposed Project does not include demolition of potential roosting habitat (e.g., buildings, bridges, culverts, or other structures), so no direct effects on bats are expected. Project-related noise, vibration, and visual disturbance

(e.g., heavy equipment, vehicles, artificial light sources, etc.) may indirectly disturb roosting bats; however, the noise generated from construction is anticipated to be comparable to existing activities associated with the Lake Isabella Hydroelectric Project operations. As a result, potential impacts would be less than significant. Mitigation Measures BIO-1 and BIO-2 would be incorporated to further reduce potential effects on special-status bats.

Construction activities and future operations related to the Proposed Project would be limited to previously developed areas with no suitable nesting habitat for special-status or other migratory birds. The Construction Area may be used by birds for foraging, which can easily disperse from project-related noise and vibration. There is fragmented riparian habitat adjacent to the Construction Area that is marginally suitable for nesting yellow warbler, southwestern willow flycatcher, and other nesting migratory birds and raptors. Potential indirect impacts may include nest abandonment or premature fledging resulting from construction-related noise and vibration (e.g., heavy equipment, vehicles, and generators) during the breeding season. Because the amount of nearby suitable nesting habitat is minimal and project-related effects are temporary, potential impacts would be less than significant. Mitigation Measure BIO-3 would be incorporated to further reduce any potential effects on nesting migratory birds or raptors in the Project Area.

Construction activities and future operations of the Proposed Project would be confined to the Construction Area at upland locations within previously developed portions of the existing Project Area. Therefore, the Proposed Project would have no impact on special-status fish species.

Special-status plant species
The Construction Area is limited to areas that are developed and does not include suitable habitat for any special-status plant species. Therefore, there would be no impact to special-status plants during Proposed Project activities.

Mitigation Measures:

- **BIO-1.** All contractors and equipment operators shall be provided worker environmental awareness training to educate them on the environmental resources of the Project Area and the required protection measures. Training shall include information about environmental permits for the projects and the consequences of noncompliance. Workers shall be informed about the presence, life history, and habitat requirements of all special-status species that may be affected in the Project Area. Training shall also include information on state and federal laws protecting nesting birds and water resources. This training shall be conducted prior to construction and shall be provided to any new staff/contractors added during implementation of the Proposed Project.
- **BIO-2.** A preconstruction wildlife survey shall be conducted within 14 days of initiation of construction activities by biologist(s) with appropriate knowledge and experience in the biology, life history, and identification characteristics of special-status species that have the potential to be encountered during Proposed Project activities. Any species, nests, roosts, dens, or sensitive habitat encountered in the Project Area shall be noted and buffered for avoidance.
- **BIO-3.** For Proposed Project activities conducted during the raptor and passerine breeding season (February 1–September 15), a pre-construction survey for nesting birds shall be conducted in suitable nesting habitat within 500 feet of the Project Area within 72 hours of initiation of construction activities. If active nests (nests containing eggs or young) are identified, a no-disturbance buffer zone shall be established. No construction activities shall occur within the buffer zone until a qualified biologist has determined that the young have fledged or that construction activities within the buffer zone are not disturbing the nesting birds. The width of the buffer zone shall be determined by a qualified biologist in coordination with CDFW; recommended buffers are 500 feet for raptors and 100 feet for other birds.

Significance Determination: Less than significant with mitigation incorporated.

b) Would the Proposed Project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local

or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service?

Impact: Although riparian habitat occurs along the Kern River within the Project Area, the Construction Area is confined to upland habitat; therefore, there would be no impact to the riparian habitat during Proposed Project activities.

Similarly, there is no suitable habitat for sensitive natural communities within the Construction Area. Therefore, there would be no impact to sensitive natural communities during Proposed Project activities.

Mitigation Measures: No mitigations measures required.

Significance Determination: No impact.

c) Would the Proposed Project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact: Construction activities under the Proposed Project would be confined to upland habitats. Therefore, there would be no impact to state or federally protected wetlands.

Mitigation Measures: No mitigations measures required.

Significance Determination: No impact.

d) Would the Proposed Project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Impact: Construction activities and future operations of the Proposed Project would be confined to the Construction Area at upland locations within previously developed portions of the existing Project Area. There would be no impact to migratory fish or wildlife species, established native resident or migratory corridors, or native wildlife nursery sites.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

e) Would the Proposed Project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact: The Kern County General Plan includes policies to protect oak woodlands and large oak trees (Kern County 2009); however, construction of the Proposed Project would not require the removal or trimming of oak woodlands and large oak trees given that Proposed Project activities would be confined to the Construction Area within developed portions of the Project Area. Therefore, there would be no impact to protect oak woodlands and large oak trees.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

f) Would the Proposed Project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Impact: No Habitat Conservation Plans or Natural Community Conservation Plans include the Project Area. Therefore, there would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.8 Cultural Resources

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☑	☐	☐
b) Would the Proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☑	☐	☐
c) Would the Proposed Project disturb any human remains, including those interred outside of formal cemeteries?	☐	☑	☐	☐

3.8.1 Environmental setting

Information regarding the environmental setting is summarized from the Isabella Lake Dam Safety Modification Project Draft EIS (USACE 2012a).

The earliest known human occupation in the western Sierra Nevada date from 10,000 and 4,000 years before present (BP), as indicated by the presence of Lake Mojave type large-stemmed projectile points, crescents, and at least one fluted point encountered a few miles southwest of Lake Isabella (USACE 2012a). Refer to Section 3.21 *Tribal Cultural Resources* for a summary of tribal cultural history and resources in the Lake Isabella area.

The first recorded contact between Native Americans in the Kern River Valley and Europeans occurred in 1776 with the arrival of the Spanish Padre Francisco Garcés. More intensive European occupation of the area began in the 1850s, following the discovery of gold on Greenhorn Creek, a tributary of the Kern River, in 1851. Miners working on placer deposits near the confluence of the North and South forks of the Kern River formed the community of Keyesville, named for Colonel Richard M. Keyes, who located the Keyes Mine in 1852 (USACE 2012a).

The Keyes Mine and Mammoth Mine were the most productive mines in the area through the 1850s. The Keyes Mine followed quartz veins in Mesozoic quartz diorite deposits over several thousand feet of underground workings. The mine ceased production by 1860. The Mammoth Mine continued production through the turn of the century, producing approximately $500,000 of gold and silver between 1855 and 1941.

Agriculture and ranching activities along the Kern River began with the mining industry. Sheep were introduced to the area in the 1850s and the first cotton crop was planted in 1862. Agricultural production in the Bakersfield area intensified in the late 1880s, and the agricultural industry gradually displaced mining in economic importance (USACE 2012a).

The Flood Control Act of 1944 authorized construction of Isabella Dam and Lake. Construction took place between 1948 and 1953 and required relocation of the settlement of Isabella on the South Fork Kern River and the town of Kernville on the North Fork (USACE 2012a).

The 2012 Isabella Lake Dam Safety Modification Project Draft EIS identified historical and archaeological resources in the Isabella Lake Dam Safety Modification (DSM) Project area. None of these resources are located in the Project Area.

3.8.2 Discussion

a) Would the Proposed Project cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?

Impact: As indicated above, the 2012 Isabella Lake Dam Safety Modification Project Draft EIS identified historical and archaeological resources in the Isabella Lake DSM Project area. None of these resources are located in the Project Area. In addition, the Construction Area has been previously disturbed during construction of the Isabella Dam and the existing Isabella Hydroelectric Project. No historical resources have been found to exist in the Construction Area. Therefore, the Proposed Project would not cause a substantial adverse change in the significance of a historical resource. Nonetheless, because the Proposed Project would necessitate excavation and related ground-disturbing activities, project implementation could result in potentially significant impacts to previously undiscovered historic resources that may exist within the Construction Area. Incorporation of mitigation measure CUL-1 would mitigate any potential impacts to previously unidentified historic or prehistoric archeological and paleontological resources to less than significant.

Mitigation Measures: Mitigation Measure CUL-1 describes the process to mitigate damage to an archaeological and paleontological resources in the unlikely event one is found.

CUL-1: In the event that an archaeological/paleontological resource or tribal cultural resource is inadvertently discovered during construction activities, work must be halted within 30 feet of the find and a qualified archaeologist (36 Code of Federal Regulations Part 61) notified immediately so that an assessment of its potential significance can be undertaken. Construction activities may continue in other areas but may not resume in the area of the find until the significance of the archaeological/paleontological resource is assessed. If the discovery proves to be significant, additional work, such as data recovery excavation, may be warranted and shall be discussed in consultation with the State Water Board, affiliated tribal organizations, and any other relevant regulatory agencies or invested parties, as appropriate.

Significance Determination: Less than significant with mitigation incorporated.

b) Would the Proposed Project cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5?

Impact: As indicated above, the 2012 Isabella Lake Dam Safety Modification Project Draft EIS identified historical and archaeological resources in the Isabella Lake DSM Project area. None of these resources are located in the Project Area. In addition, the Construction Area has been previously disturbed during construction of the Isabella Dam and the existing Isabella Hydroelectric Project. No archaeological resources have been found to exist in the Construction Area. Nonetheless, because the Proposed Project would necessitate excavation and related ground-disturbing activities, project implementation could result in potentially significant impacts to potential archaeological and/or paleontological resources that may exist within the Construction Area. Incorporation of mitigation measure CUL-1 would mitigate any potential impacts to previously unidentified historic or prehistoric archeological and paleontological resources to less than significant.

Mitigation Measures: Mitigation Measure CUL-1 as described in section 3.8.2 a.

Significance Determination: Less than significant with mitigation incorporated.

c) Would the Proposed Project disturb any human remains, including those interred outside of dedicated cemeteries?

Impact: As indicated above, the 2012 Isabella Lake Dam Safety Modification Project Draft EIS identified historical and archaeological resources in the Isabella Lake DSM Project area. None of these resources are located in the Project Area. In addition, the Construction Area has been previously disturbed during construction of the Isabella Dam and the existing Isabella Hydroelectric Project. No human remains have been found to exist in the Construction Area. In addition, there is no known grave site within the Project Area. Therefore, the potential for the Proposed Project to disturb any human remains is extremely low. Potential impacts due to disturbance of human remains, including those interred outside of dedicated cemeteries, would be less than significant with the incorporation of mitigation measure CUL-2.

Mitigation Measures: Mitigation Measure CUL-1 as described in section 3.8.2 a.

Significance Determination: Less than significant with mitigation incorporated.

3.9 Energy

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☑	☐
b) Would the Proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☑

3.9.1 Environmental setting

Energy sources are either renewable (e.g., solar, wind) or nonrenewable (e.g., fossil fuels) and can be combusted to power vehicles and equipment or converted to electricity as a secondary energy source.

In 2017, California consumed more energy than all other states except Texas, but its per capita consumption of 200 million British thermal units (Btu) was the fourth lowest in the nation (EIA 2020). The California Energy Commission (CEC), established by the Warren-Alquist Act in 1975, has been instrumental in limiting California's energy consumption, particularly via energy efficiency standards that are updated every three years in Title 24 (CEC 2020).

3.9.2 Discussion

a) Would the Proposed Project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact: Project construction equipment would use fossil fuels for power. The use of such equipment is necessary for material transport, for construction of footings and housing for installation of the additional generating unit, and to

construct the extension to the end of the existing penstock manifold. Construction equipment would be used as efficiently as feasible (e.g., by reducing idling). Therefore, potential impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during construction would be less than significant.

The Proposed Project involves installation of a fourth generating unit at the end of the existing manifold and penstock. The proposed addition would allow for energy recovery from discharged flows up to 500 cfs and more efficient use of increased releases formerly discharged by the former Borel Hydroelectric Project. With the addition of the new generation unit, the estimated average annual generation would increase by 27 GWh under the Proposed Project. Therefore, operation of the Proposed Project would generate a beneficial net increase in energy. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

b) Would the Proposed Project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact: As described in Section 2.3 *Proposed Project*, the additional generating unit would result in an increase in renewable energy production, an estimated average of 27 GWh per year. The Proposed Project aligns with the goals and policies under Section 5.4.6 *Future Hydroelectric Development* in the Kern County General Plan (2009). The Proposed Project also aligns with the state's goals to convert all electricity retail sales be from renewable sources by 2045 (State of California 2018). There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.10 Geology and Soils

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project 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?	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☐	☑
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☑
iv) Landslides?	☐	☐	☐	☑
b) Would the Proposed Project result in substantial soil erosion or the loss of topsoil?	☐	☑	☐	☐
c) Would the Proposed Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☑
d) Would the Proposed Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code	☐	☐	☐	☑

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
(1994), creating substantial risks to life or property?				
e) Would the Proposed Project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑
f) Would the Proposed Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐

3.10.1 Environmental setting

The following description of the Proposed Project Environmental Setting is summarized from the Isabella Lake Dam Safety Modification Project Draft EIS (USACE 2012a) unless otherwise noted.

The Project Area is in the Sierra Nevada geomorphic province. The Sierra Nevada batholiths, igneous intrusions primarily of Jurassic to early Cretaceous age, form a mountain range more than 400 miles long and 60 miles wide. The Project Area and Kern River Valley are within the Sierra Nevada range (USACE 2012a).

The mountain range and adjacent Central Valley comprise the Sierran tectonic microplate, which is bounded to the west by the San Andreas Fault and to the east by the Eastern California Shear Zone and Walker Lane trough. In the Proposed Project Area, the Kern Canyon Fault Zone defines the boundary of the Sierran microplate and the Basin and Range extensional province to the east (USACE 2012a).

The rocks in the Isabella Lake area are part of the Sierra Nevada basement complex and consist of sedimentary rocks that were metamorphosed during the emplacement of the Serra Nevada batholiths. Igneous rocks are present in the

Kernville area, northeast of Isabella Lake, and include the Isabella granodiorite, Sacater quartz diorite, and Summit gabbro. The Kern Canyon Fault forms the contact between Kern River Granite to the east and Alta Sierra Granodiorite to the west. The Lake Isabella main dam overlies granite that has been intruded by numerous dikes and veins of quartz, pegmatite, aplite, and calcite (USACE 2012a).

Several active fault systems extend through the southern Sierra Nevada. Major active faults in the vicinity include the White Wolf Fault Zone (25 miles southwest of the Proposed Project), the Garlock Fault (35 miles south), the San Andreas Fault (65 miles west), and the Owens Valley Fault (40 miles northeast). The Kern Canyon fault runs through the right abutment of the Isabella Lake Auxiliary Dam. Three surface rupture events have occurred within the last 11,000 years, with magnitudes up to M7.5 (Kelson et al. 2010). Slip on the fault is estimated to be approximately 0.3 millimeters per year. Displacement is almost entirely normal. The fault's uplifted footwall forms a ridge that divides the Kern River Canyon from Hot Springs Valley and projects northeast into Isabella Lake (Engineers Point). At the Lake Isabella main dam, numerous joints and faults exist in the foundation transverse to the dam's axis. These faults are not believed to be active seismogenic sources, but whether a major earthquake on the Kern Canyon Fault would result in movement on these faults is unknown (USACE 2012a). In 2006, the USACE began a dam safety modification study to address seismic, hydrologic, and seepage hazards at the dams. In 2016, the USACE identified the Borel Canal conduit, which ran through the auxiliary dam and delivered water to the Borel Hydroelectric Project, as a significant safety risk due to seepage and corrosion concerns. By February 2019, the USACE sealed the conduit through the auxiliary dam, permanently cutting off water supply to the Borel Hydroelectric Project (USACE 2019). The Phase II dams and spillways modifications are expected to be complete in 2023.

Soils in the Project Area belong to the Kernville-Hogeye-Rock outcrop complex (NRCS and UC Davis 2019). These soils form in material weathered from granitic rocks, are well to excessively drained, and occur on 15 to 30 percent slopes. Kernville series soils are gravelly loamy coarse sands formed in material weathered from granitic rocks. Depth to weathered granite is typically 9 to 19 inches. Hogeye series soils are coarse sandy loams.

3.10.2 Discussion

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

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

Impact: The nearest delineated Alquist-Priolo fault zone to the Proposed Project is the White Wolf Fault Zone, located approximately 25 miles south-southwest (CGS 2021). The Kern Canyon Fault runs through the right abutment of the Lake Isabella Auxiliary Dam, within 0.5 miles of the Construction Area. This fault has been active within the last 11,000 years.

The 2012 Isabella Lake Dam Safety Modification Project Draft EIS identified cracking due to displacement on the Kern Canyon Fault as a potential failure mode for both the Main and Auxiliary dams, resulting in seepage and erosion of the embankment. The USACE has almost completed construction of the main safety modifications to the dams. In addition, the USACE and the USFS have prepared an Emergency Action Plan (EAP) to reduce the risk of human life loss and injury and to minimize property damage during an emergency event in the Project Area. The EAP defines responsibilities and provides procedures to identify conditions that may endanger Isabella Dam and to specify planned actions to minimize property damage and loss of life in the event of dam failure. After the emergency level has been determined, the people on the corresponding emergency level notification chart included in the EAP are notified immediately (USACE 2012a).

Though the Proposed Project is in an area at risk of potential impacts from rupture on the Kern Canyon Fault, the Proposed Project involves installation of a fourth generating unit and would not result in operational or land use changes that would cause substantial adverse effects due to rupture on any of these faults. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

ii) Strong seismic ground shaking?

Impact: Though the Project Area is influenced by several active seismic zones, the Proposed Project involves installation of a fourth generating unit and would not result in operational or land use changes that would cause substantial adverse effects due to strong seismic ground shaking. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

iii) Seismic-related ground failure, including liquefaction?

Impact: Liquefaction occurs in saturated soils, where pore space is filled with water. The Proposed Project would overlie Kernville-Hogeye-Rock outcrop complex soils, which are well to excessively drained (NRCS and UC Davis 2019) and therefore unlikely to be susceptible to liquefaction. A 2010 study by USACE identified recent alluvium under the downstream shell of the Lake Isabella main dam, just upstream of the Project Area, but found that this material is dense and unlikely to be susceptible to liquefaction (USACE 2012a). The Proposed Project involves installation of a fourth generating unit and would not result in operational or land use changes that would cause substantial adverse effects due to seismic-related ground failure, including liquefaction. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

iv) Landslides?

Impact: The Project Area lies in the Kern River Gorge, which has steep slopes that are considered naturally unstable (USACE 2012a). Per the Kern River Specific Plan, the Project Area is not in an area of steep slopes constraints, where landslides are especially likely to occur (Kern County 2011). All Proposed Project work would be confined to the Construction Area within previously developed portions of the Project Area. Proposed Project construction and implementation involves installation of a fourth generating unit and would not result in operational or land use changes that would cause substantial adverse effects due to landslides. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

b) Would the Proposed Project result in substantial soil erosion or the loss of topsoil?

Impact: During excavation, there would be potential for stormwater-related erosion of surficial soil. Implementation of Mitigation Measure HYD-1 would minimize the risk of soil erosion during construction. Construction would only occur during dry periods. Some of the original excavated material would be used

to fill voids between the excavated pit and powerhouse walls. With implementation of Mitigation Measure HYD-1, potential impacts of the Proposed Project on soil erosion and loss of topsoil would be less than significant.

Mitigation Measures:

HYD-1: The Stormwater Pollution Prevention Plan (SWPPP) developed for the Proposed Project shall include, but not be limited to, the following BMPs to avoid and minimize potential impacts on waters from erosion:

1. Construction shall occur only during dry periods.
2. Prior to storm events, all construction activities shall cease, and appropriate erosion control measures shall be implemented.
3. Soil, silt, or other organic materials shall not be placed, stockpiled, or stored where such materials could pass into surface water or surface water drainage courses during unexpected rain events.
4. All areas disturbed by Proposed Project activities shall be protected from washout or erosion prior to the onset of the rainy season.
5. All temporarily affected areas shall be restored to pre-construction contours and conditions upon completion of construction activities.
6. Prior to initiation of any waterside work, erosion control measures shall be used throughout all phases of operation where silt and/or earthen fill threaten to enter waters of the U.S. and/or the state.

Significance Determination: Less than significant impact with mitigation incorporated.

c) Would the Proposed Project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Impact: All Proposed Project work would be confined to the Construction Area within previously developed and flat areas of the Project Area. The existing site is not known to be susceptible to landslides, lateral spreading, subsidence, liquefaction, or collapse. Pre-washed gravel would be used for sub-base material before the concrete foundation of the housing structure is poured. The Proposed Project would not result in instability of an underlying geologic unit or soil. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

d) Would the Proposed Project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994, as updated), creating substantial direct or indirect risks to life or property?

Impact: Expansive soils are characterized by the ability to undergo significant volume change because of varying soil-moisture content. The 2010 California Building Code, title 24, part 2, section 1803.5.3: Geotechnical Investigations defines an expansive soil as meeting the following provisions: (1) plasticity index of >15; (2) >10 percent soil particles pass a No. 200 sieve (0.075 millimeters); (3) >10 percent soil particles are <0.005 millimeters; and (4) expansion index of >20. The soils in the Project Area are formed from granitic bedrock and are coarse and well drained, so excavation for the Proposed Project would not encounter expansive soil. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

e) Would the Proposed Project 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?

Impact: The Proposed Project would not include installation of or disturbance to any existing septic tanks or alternative wastewater disposal system. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

f) Would the Proposed Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact: All Proposed Project work would be confined to the Construction Area within previously developed portions of the Project Area. There are no paleontological resources or sites or unique geologic features documented in this area. Nonetheless, because the Proposed Project would necessitate excavation and related ground-disturbing activities, Proposed Project implementation could result in potentially significant impacts to potential paleontological resources or unique geologic features that may exist within the project site and vicinity. Mitigation Measure CUL-1 would serve to mitigate any potential impacts to

previously unidentified paleontological resources or unique geologic features. With incorporation of mitigation measure CUL-1 and CUL-2, potential impacts would be less than significant.

Mitigation Measures:

CUL-1: In the event that an archaeological/paleontological resource or tribal cultural resource is inadvertently discovered during construction activities, work must be halted within 30 feet of the find and a qualified archaeologist (36 CFR Part 61) notified immediately so that an assessment of its potential significance can be undertaken. Construction activities may continue in other areas but may not resume in the area of the find until the significance of the archaeological/paleontological resource is assessed. If the discovery proves to be significant, additional work, such as data recovery excavation, may be warranted and shall be discussed in consultation with the State Water Board, affiliated tribal organizations, and any other relevant regulatory agencies or invested parties, as appropriate.

CUL-2: If human remains are inadvertently discovered during Proposed Project activities, no further disturbance may occur until the Kern County Coroner has made a determination of origin and disposition of the remains pursuant to the California Health and Safety Code (CHSC), Section 7050.5, and Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately upon discovery. If the human remains are determined to be of Native American origin, the County Coroner shall notify the Native American Heritage Commission (NAHC), which would determine and notify a Most Likely Descendent (MLD). The MLD must complete an 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.

Significance Determination: Less than significant with mitigation incorporated.

3.11 Greenhouse Gas Emissions

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a	☐	☐	☑	☐

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
significant impact on the environment?				
b) Would the Proposed Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☑

3.11.1 Environmental setting

Greenhouse gases (GHGs) can absorb and emit infrared radiation, trapping energy in the atmosphere and causing it to warm. GHGs have impacts that are more global than regional and are different from air pollutants that impact the general area near where they are released. GHGs can occur naturally or as a direct result of human activities. State law defines GHGs to include the following emissions: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride (Health and Saf. Code, § 38505, sub. (g)). The most common GHG resulting from human activity is carbon dioxide, followed by methane and nitrous oxide.

California GHG emissions decreased 15 percent from their 2004 peak to 418.2 million metric tons of carbon dioxide equivalent (CO2e)[3] in 2019, while statewide per capita emissions decreased by 25 percent from their peak in 2001 to 2019 (14 metric tons per person to 10.5 metric tons per person) (CARB 2021e). The transportation sector consistently emits more GHGs than any other sector, accounting for 40 percent of state GHG emissions in 2019. The electricity sector accounts for 14 percent of statewide GHG emissions and decreased by 4.3 million metric tons of CO2e in 2019 (CARB 2021e).

In January 2008, California Assembly Bill (AB) 32 (AB 32), the Global Warming Solutions Act of 2006, went into effect. This bill required CARB to develop regulations to address global climate change due to GHG emissions. It also

[3] Carbon dioxide equivalent is used to compare the global warming potential of emissions from various GHGs by converting amounts of other GHGs to an amount of carbon dioxide with an equal global warming potential.

requires a statewide GHG emissions limit, equal to the 1990 level, as a limit to be achieved by December 31, 2020. The 2020 GHG emissions limit is 431 million metric tons of CO2e (CARB 2018), and, as of 2019, statewide GHG emissions were 418 million metric tons of CO2e (CARB 2021d). Signed into law in 2016, Senate Bill (SB) 32 expanded upon AB 32 by specifying an emissions limit which further requires California to reduce statewide GHG emissions to 40 percent below the 1990 level by the year 2030 (CARB 2018).

The EKAPCD has developed an emissions threshold of 25,000 tons per year of GHGs for new or modified stationary source GHG emission impacts (EKAPCD 2012). Projects with emission totals less than this threshold are considered to have less than significant impacts on GHG emissions.

3.11.2 Discussion

a) Would the Proposed Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact: Using estimates of material and equipment quantities associated with the Proposed Project, construction activities were modeled to result in 1,003 tons of CO2e generated over the course of nine months in 2023. Although the EKAPCD has not established an emissions threshold for construction projects, modeled emissions from construction of the Proposed Project would be well below the threshold of 25,000 tons per year of GHGs for stationary sources. There would be no change in operational emissions following construction of the Proposed Project because hydropower generators do not directly emit any criteria pollutants (EIA 2020), and the frequency of vehicle travel to the site for routine operations and maintenance activities would be unchanged. As a result, there would be no long-term increase in GHG emissions following construction of the Proposed Project. Therefore, potential impacts from the generation of GHG emissions would be less than significant.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

b) Would the Proposed Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Impact: Kern County does not currently have a Climate Action Plan, and the Kern County General Plan does not include measures related to reducing

emissions of GHGs (Kern County 2009). The State of California has already met emissions limits enacted as part of AB 32, and the minimal and temporary GHG emissions during construction of the Proposed Project would not impede achievement of emission limits specified in SB 32. Moreover, the increased hydropower generation resulting from construction of the Proposed Project would likely contribute to a further reduction in long-term reliance on other energy sources that produce GHG emissions. The Proposed Project would therefore not conflict with any applicable plans, policies, or regulations adopted for the purpose of reducing the emissions of greenhouse gases. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.12 Hazards and Hazardous Materials

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☑	☐	☐
b) Would the Proposed Project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☑	☐	☐
c) Would the Proposed Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☑	☐	☐
d) Would the Proposed Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Proposed Project result in a	☐	☐	☐	☑

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
safety hazard for people residing or working in the Project area?				
f) Would the Proposed Project **i**mpair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☑	☐	☐
g) Would the Proposed Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?	☐	☑	☐	☐

3.12.1 Environmental setting

Land uses surrounding the Project Area are predominantly agricultural and open space, along with some residences. The lands surrounding the Project Area have the potential to contain hazardous substances. Petroleum products and pesticides are the most likely materials that may have been stored or released into the surrounding environment. Older gas wells, underground storage tanks used to store petroleum products, and septic systems may develop leaks. These leaks can lead to the contamination of soils and groundwater. Queries of the California Department of Toxic Substances Control's (CDTSC's) and the USEPA Superfund's National Priorities List (NPL) and Superfund Alternative Approach (SAA) Sites databases reveal that there are no known sites within or adjacent to the Project Area having cleanup, permitted, other hazardous materials status; proposed to, currently on, and deleted from Superfund's NPL; or being addressed under the SAA (CDTSC 2021, USEPA 2021).

In 2006, the USACE began a dam safety modification study to address seismic, hydrologic, and seepage hazards at the dams. In 2016, the USACE identified the Borel Canal conduit, which ran through the auxiliary dam and delivered water to the Borel Hydroelectric Project, as a significant safety risk due to seepage and corrosion concerns. By February 2019, the USACE sealed the conduit through the auxiliary dam, permanently cutting off water supply to the Borel Hydroelectric

Project (USACE 2019). The Phase II dams and spillways modifications are expected to be complete in 2023.

The USACE and the USFS have prepared an Emergency Action Plan (EAP) to reduce the risk of human life loss and injury and to minimize property damage during an emergency event in the Project Area. The EAP defines responsibilities and provides procedures to identify conditions that may endanger Isabella Dam and to specify planned actions to minimize property damage and loss of life in the event of dam failure. After the emergency level has been determined, the people on the corresponding emergency level notification chart included in the EAP are notified immediately (USACE 2012a).

3.12.2 Discussion

a) Would the Proposed Project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Impact: During construction, there is a risk of inadvertent spills when using diesel fuel or other hazardous material with construction equipment. Implementation of hazardous material BMPs as outlined in Mitigation Measures HAZ-1 and HAZ-2 will minimize this risk. All fuels and other hazardous materials would be handled and stored according to the manufacturer's specifications. A containment area would be established for construction equipment staging, and the ground would be protected from potential contamination within the containment area. In the event of a spill, crew personnel would stop the spillage at its source, contain the spilled material, and notify Proposed Project supervisors and appropriate agency representatives. With implementation of Mitigation Measures HAZ-1 and HAZ-2, potential impacts related to the transport, use, or disposal of hazardous materials would therefore be less than significant.

Mitigation Measures:

HAZ-1: Following is a list of Best Management Practices (BMPs) that shall be used during construction of the Proposed Project to avoid and minimize potential effects from hazards and hazardous materials:

1. No potentially hazardous materials shall be stored in a location where there is potential to enter any waterway and/or contaminate aquatic resources.
2. All construction materials with the potential to pollute runoff shall be handled with care and stored under cover and/or surrounded by berms at the end of the work day, or during rain events that are predicted to produce 0.5 inch or more of precipitation.

3. An effort shall be made to store only the amount of a potentially hazardous product necessary to complete the job.
4. Materials, fuels, liquids and lubricants, and equipment supplies stored on site shall be stored in a neat, orderly manner, in their appropriate containers, with the original manufacturer's label, and, if possible, in an enclosure.
5. Any hazardous materials shall be stored and labeled according to local, state, and federal regulations.
6. If drums must be stored without overhead cover, they shall be stored at a slight angle to reduce corrosion and ponding of rainwater on the lids.
7. Substances shall not be mixed with one another unless recommended by the manufacturer.
8. Manufacturer's recommendations for proper use and disposal of a product shall be followed.

HAZ-2: The following measures shall be used to prevent, control, and minimize potential impacts from a spill of a hazardous, toxic, or petroleum substance during construction of the Proposed Project:

1. Minor spills are those that can be controlled by on-site personnel. The following actions shall occur upon discovery of a minor spill:
    a. The spread of the spill will be contained.
    b. If the spill occurs on impermeable surfaces, such as any temporary surfaces installed for pollution prevention during construction, it will be cleaned up using "dry" methods (i.e., absorbent materials, cat litter, and/or rags).
    c. If the spill occurs in permeable substrate areas, it will be immediately contained by constructing an earthen dike. The contaminated soil will be excavated and properly disposed.
    d. If the spill occurs during rain, the impacted area will be covered to avoid runoff, and appropriate cleanup steps will be taken after precipitation has ceased.
    e. All steps taken to report and contain a spill will be recorded.
2. On-site personnel shall not attempt to control major spills until the appropriate and qualified emergency response staff has arrived at the site. Failure to report major spills can result in significant fines and penalties.
    a. If a major spill occurs, the Governor's Office of Emergency Services Warning Center shall be notified at (800) 852-7550 in addition to local authorities.

b. For spills of federal reportable quantities, the National Response Center shall also be notified at (800) 424-8802. The federal reportable spill quantity for petroleum products is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

c. A written report shall be sent to all notified authorities.

3. Diesel fuel, oil, gasoline, and lubricants are considered petroleum products. These materials shall be handled carefully to minimize their exposure to stormwater. The risks in using petroleum products would be reduced by following these steps:

   a. Waste oil and other petroleum products shall not be discharged into the ground or other water bodies.

   b. Petroleum products shall be stored in tightly sealed containers that are clearly labeled, in a covered area, within prefabricated spill containment devices, earthen berms, or similar secondary containment features.

   c. On-site vehicles shall be monitored for fluid leaks and receive regular preventative maintenance to reduce the chance of leakage (e.g., check for and fix fuel oil leaks in construction vehicles on a regular basis).

   d. Bulk storage tanks having a capacity of more than 55 gallons shall be provided with a secondary containment measure. Containment can be provided by a prefabricated temporary containment mat, a temporary earthen berm, or other measure.

   e. Bulk fuel or lubricating oil dispensers shall have a valve that must be held open to allow the flow of fuel into construction vehicles. During fueling operations, the contractor would have personnel present to detect and contain spills.

4. The following additional spill control and cleanup practices shall be followed:

   a. Spills shall be contained and cleaned up immediately after discovery.

   b. Manufacturer's methods for spill cleanup of a material shall be followed as described on the material safety data sheet (MSDS) sheets (kept with product containers).

   c. Materials and equipment needed for cleanup procedures shall be kept readily available on site, either at an equipment storage facility or in the

contractor's trucks. Equipment to be kept on site shall include, but not be limited to, brooms, dust pans, shovels, granular absorbents, sand, sawdust, absorbent pads and booms, plastic and metal trash containers, gloves, and goggles.

d. On-site personnel shall be made aware of cleanup procedures, the location of spill cleanup equipment, and proper disposal procedures.

e. Toxic, hazardous, or petroleum product spills required to be reported by regulations shall be documented and a record of the spills shall be kept with project-related documents.

f. If a spill occurs that is reportable to the federal, state, or local agencies, the contractor is responsible for making and recording the reports.

Significance Determination: Less than significant impact with mitigation incorporated.

b) Would the Proposed Project create a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment?

Impact: Implementation of hazardous materials management BMPs as outlined in Mitigation Measures HAZ-1 and HAZ-2 would occur during construction. Therefore, potential impacts related to creation of a significant hazard to the public or the environment through reasonably foreseeable upset and/or accident conditions involving the release of hazardous materials into the environment would be less than significant.

Mitigation Measures: Mitigation Measures HAZ-1 and HAZ-2 as described in section 3.12.2 a.

Significance Determination: Less than significant impact with mitigation incorporated.

c) Would the Proposed Project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

Impact: South Fork Elementary School and Lake Isabella Community School, located off SR 178, north of SR 155, are the closest schools to the Project Area. Construction vehicles would access the Project Area via SR 155 from SR 178

and haul trucks would follow the haul route via SR 155 to and from the Kern Valley Transfer Station. Haul trucks would not pass within one-quarter mile of the South Fork Elementary School or Lake Isabella Community School. Nonetheless, these haul trucks have the potential to spill diesel fuel, but implementation of the BMPs outlined in Mitigation Measures HAZ-1 and HAZ-2 would reduce the risks of spills and the potential impacts to less than significant.

Mitigation Measures: Mitigation Measures HAZ-1 and HAZ-2 as described in section 3.12.2 a.

Significance Determination: Less than significant impact with mitigation incorporated.

d) Would the Proposed Project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Impact: No portion of the Project Area is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

e) For a Proposed Project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Proposed Project result in a safety hazard or excessive noise for people residing or working in the project area?

Impact: There are no public-use airports within two miles of the Project Area. The closest public-use airport is Kern Valley Airport, which is about 6.7 miles to the northeast. The Proposed Project involves construction of a fourth generating unit and would not introduce new people residing or working in the Project Area. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

f) Would the Proposed Project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact: The haul route used during construction would include SR 155, which is a major area thoroughfare in Kernville. No roads would be closed during construction of the Proposed Project, and all roadway traffic supporting construction would adhere to applicable laws for motor vehicles and comply with Kern County Office of Emergency Services. Mitigation Measure TRA-1 includes development of a traffic control plan with specific actions to be taken, if necessary, to facilitate an emergency response or evacuation.

Because the Proposed Project would be part of an existing hydroelectric facility, on previously developed land with no vegetation, continued operations would not impair implementation or interfere with the Kern County Emergency Plan, Kern River Valley Specific Plan, Public Safety Element, or the Lake Isabella Dam Failure Evacuation Plan. Operations staff of the existing hydroelectric facility would continue to comply with local fire, policy, and medical responders during any emergency.

With implementation of traffic control plan under Mitigation Measure TRA-1 during construction, potential impacts related to impairment or interference with an adopted emergency response plan or emergency evacuation plan would be less than significant.

Mitigation Measures:

TRA-1: The following measures shall be implemented to mitigate potential impacts related to transportation:

1. The construction contractor shall develop a traffic control plan for implementation during hauling operations. This plan shall identify actions that would be taken to reduce potential impacts to traffic circulation and maximize safety. Potential actions include speed limits, worker training, construction signage, emergency procedures, and coordination with Kern County and the USACE regarding other projects with potential effects on traffic circulation.

Significance Determination: Less than significant impact with mitigation incorporated.

g) Would the Proposed Project expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Impact: The Proposed Project is not located in lands classified as moderate, high, or very high fire hazard severity zones (CalFire 2021). However, per the Wildland Fire Areas map of the Kern County Specific Plan, Public Safety Element, the Project Area is designated as a High Hazard (Zone 2) fire area. The Proposed Project would be part of an existing hydroelectric facility, on previously developed land with no vegetation, and would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. In addition, implementation of Mitigation Measure HAZ-3 would reduce the potential for a grass fire. Therefore, potential impacts related to exposing people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires would be less than significant.

Mitigation Measures:

HAZ-3: The following measures shall be implemented during construction to reduce the potential for fire:

1. Smoking shall be permitted only in designated smoking areas or within the cabs of vehicles or equipment.
2. Every fuel truck shall carry a large fire extinguisher with a minimum rating of 40 B:C, and all flammable materials would be removed from equipment parking and storage areas.

Significance Determination: Less than significant impact with mitigation incorporated.

3.13 Hydrology/Water Quality

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☑	☐	☐
b) Would the Proposed Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☑
c) Would the Proposed Project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:				
i) Result in substantial on- or off-site erosion or siltation;	☐	☑	☐	☐
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on or off-site;	☐	☑	☐	☐
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;	☐	☑	☐	☐
iv) impede or redirect flows?	☐	☐	☐	☑

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☑	☐	☐
b) Would the Proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☑

3.13.1 Environmental setting

The following description of the Proposed Project Environmental Setting is summarized from the Isabella Lake Dam Safety Modification Project Draft EIS (USACE 2012a) unless otherwise noted.

The Proposed Project is located downstream of Lake Isabella, in the Kern River Valley Basin and the Tulare Lake Hydrologic Region. The North and South forks of the Kern River originate in Inyo and Sequoia National Forests and Sequoia National Park and flow south into Lake Isabella. Downstream of Isabella Dam, the river flows southwest toward Bakersfield. At Isabella Dam, the drainage area of the Kern River is 2,074 square miles.

The North Fork of the Kern River supplies approximately 85 percent of total flow into Lake Isabella (USACE 2012a). Upstream of Lake Isabella, on the North Fork Kern River at USGS Gage 11186001 (Combined Flow of Kern R and Kern R No 3 CA), mean annual discharge during water years 2012 through 2022 ranged from 166 cfs (Water Year 2015) to 1,986 cfs (Water Year 2017). Peak streamflow during the same period was 6,910 cfs (June 5, 2017). Downstream of Isabella Dam, on the Kern River at USGS Gage 11192501 (Kern R NR Democrat Springs [Total Flow] CA), mean annual discharge during water years 2012 through 2022 ranged from 188 cfs (Water Year 2015) to 2,400 cfs (Water Year 2017). Peak streamflow during the same period was 5,410 cfs (June 12, 2019).

Isabella Lake and the vicinity are subject to flooding from heavy rainstorms. Areas where flood hazards may occur include SRs 178 and 155, areas in Lake Isabella along Erskine Creek, the communities of Weldon, Kelso Valley, and Onyx, and portions of Mountain Mesa (USACE 2012a).

Lake Isabella is operated to store inflow during the spring snowmelt season (April through July) and make releases from storage through summer and fall. Management is primarily for flood reduction, but the lake is also used to meet water supply demands of agricultural users downstream and accommodate recreation. Lake levels typically increase each year from May to June and gradually decrease through the rest of the year. Lake Isabella has a gross capacity of 568,000 acre-feet (elevation 2,609.26 feet) (USACE 2012a). As of April 2022, the lake pool resides at 322,700 acre-feet, 57 percent of total capacity. During flood season (Nov. 1 to Jan. 31), the flood conservation pool is restricted to 170,000 acre-feet (elevation 2,560.4 feet) (USACE 2021).

The USACE has a formal notification process whereby the Kern River Water Master contacts any known entity likely to be affected by flood inflow to the Kern River Valley. Storms and greater than normal flood flows can be forecast with enough lead time to clear recreation areas in the event of flood hazards. During a flood event, the rise of lake pool surface elevation would be slow enough that individuals occupying recreation areas could walk to safety at higher elevations. Kern County would ensure that the public use of Isabella Lake and downstream areas during a flood would be curtailed by erecting roadway barriers and signs and redirecting traffic (USACE 2012a)

The existing Lake Isabella Hydroelectric Project is located at the base of the Lake Isabella main dam and is operated on a run-of-the-river basis. Releases through the existing project are maintained while the lake level is above 2,536.76 feet. Once the lake level drops below this elevation, Unit 1 and 2 turbines are taken offline and all releases are passed through the appropriate bypass valves (USACE 1993). In 2016, the USACE identified the Borel Canal conduit, which ran through the auxiliary dam and delivered water to the Borel Hydroelectric Project, as a significant safety risk due to seepage and corrosion concerns. By February 2019, the USACE sealed the conduit through the auxiliary dam, permanently cutting off water supply to the Borel Hydroelectric Project (USACE 2019). Annual discharge volumes formerly discharged to the Borel Project (up to an additional ~600 cfs) are now discharged through the Isabella main dam outlet tunnel upstream of the existing project facilities.

Groundwater in the Kern River Valley occurs predominantly in alluvial aquifers, which are recharged through direct precipitation and infiltration along valley margins, the north and south forks of the Kern River, and tributaries. Groundwater typically flows northeast to southwest.

Water quality objectives and beneficial uses for surface water and groundwater are provided in the Water Quality Control Plan for the Tulare Lake Basin (Central Valley Region RWQCB 2018). The water quality objectives apply to all surface waters in the Tulare Lake Basin, which comprises the drainage area of the San Joaquin Valley south of the San Joaquin River, including the Kern River and Lake Isabella. Existing and potential beneficial uses for the Kern River downstream of the Lake Isabella main dam include hydropower generation, water contact recreation, non-water contact recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, and rare, threatened, or endangered species. Existing and potential beneficial uses for Lake Isabella include hydropower generation, water contact recreation, non-water contact recreation, warm freshwater habitat, cold freshwater habitat, and freshwater replenishment.

In accordance with Section 303(d) of the Clean Water Act, Lake Isabella has been classified as impaired by the State Water Board (State Water Board 2022). This designation is assigned to waterbodies where established water quality objectives as specified in the Basin Plan are not being met or where beneficial uses are not protected. The State Water Board has classified Lake Isabella as impaired for dissolved oxygen, pH, and mercury (State Water Board 2022). Placement of a waterbody on the 303(d) list triggers the development of a Total Maximum Daily Load (TMDL), for each water body and associated pollutant/stressor on the list. The TMDL serves as the means to attain and maintain water quality standards for the impaired water body.

3.13.2 Discussion

a) Would the Proposed Project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?

Impact: The Proposed Project would not affect water quality once construction is complete. The existing Lake Isabella Hydroelectric Project would continue to be operated in the same manner with the addition of the new turbine. A fourth generating unit would be constructed at the end of the existing manifold and penstock. Water would run through the penstock extension to the new turbine unit and be discharged immediately upstream of the existing tailrace. The tailrace discharges to the outlet channel that was excavated from bedrock during

construction of the Lake Isabella main dam (pre-1955). During excavation, however, there would be potential for stormwater erosion of surficial soil. To minimize the risk of potential impacts to water quality during construction, a SWPPP will be implemented as part of Mitigation Measure HYD-1, which will include BMPs to avoid and minimize potential impacts on waters from erosion. Therefore, potential impacts of the Proposed Project on soil erosion and loss of topsoil would be less than significant.

Mitigation Measures:

HYD-1: The Stormwater Pollution Prevention Plan (SWPPP) developed for the Proposed Project shall include, but not be limited to, the following BMPs to avoid and minimize potential impacts on waters from erosion:

1. Construction shall occur only during dry periods.
2. Prior to storm events, all construction activities shall cease, and appropriate erosion control measures shall be implemented.
3. Soil, silt, or other organic materials shall not be placed, stockpiled, or stored where such materials could pass into surface water or surface water drainage courses during unexpected rain events.
4. All areas disturbed by Proposed Project activities shall be protected from washout or erosion prior to the onset of the rainy season.
5. All temporarily affected areas shall be restored to pre-construction contours and conditions upon completion of construction activities.
6. Prior to initiation of any waterside work, erosion control measures shall be used throughout all phases of operation where silt and/or earthen fill threaten to enter waters of the U.S. and/or the state.

Significance Determination: Less than significant impact with mitigation incorporated.

b) Would the Proposed Project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact: The Proposed Project would continue to be operated in the same manner as the existing hydroelectric project. Isabella Partners would install a fourth generating unit at the end of the existing manifold and penstock. The proposed addition would allow for energy recovery from discharged flows up to 500 cfs and for more efficient use of increased releases formerly discharged by the Borel Hydroelectric Project. Water would run through the penstock extension

to the new turbine unit and be discharged immediately upstream of the existing tailrace. The Lake Isabella Hydroelectric Project would continue to be operated under the USACE MOA (USACE 1993) and there would be no changes in water releases to the Kern River as a result of the Proposed Project. Therefore, the Proposed Project would have no impact on groundwater supply, recharge, or management.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

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

i) Result in substantial on- or off-site erosion or siltation;

Impact: The Proposed Project would not result in erosion or siltation once construction is complete. During excavation, however, there would be potential for stormwater erosion of surficial soil. To minimize the risk of erosion and siltation during construction, a SWPPP will be implemented as part of Mitigation Measure HYD-1, which will include BMPs to avoid and minimize potential impacts on waters from erosion. Therefore, potential impacts of the Proposed Project on soil erosion or siltation would be less than significant.

Mitigation Measures: Mitigation Measure HYD-1 as described in section 3.12.2 a.

Significance Determination: Less than significant impact with mitigation incorporated.

ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;

Impact: The Proposed Project would not result in changes to runoff once construction is complete. During excavation, however, there would be potential for changes to surface runoff during storms. To minimize changes to surface runoff during storms, a SWPPP will be implemented as part of Mitigation Measure HYD-1, which will include BMPs to avoid and minimize potential impacts on waters from erosion. Therefore, potential impacts related to increasing the rate or amount of surface runoff in a manner which would result in flooding on or off-site would be less than significant.

Mitigation Measures: Mitigation Measure HYD-1 as described in section 3.12.2 a.

Significance Determination: Less than significant impact with mitigation incorporated.

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;

Impact: The Proposed Project would not result in changes to runoff or additional sources of pollution once construction is complete. During construction, however, there would be a risk of inadvertent spills when using diesel fuel or other hazardous material with construction equipment. To minimize this risk, BMPs will be implemented as part of Mitigation Measures HAZ-1 and HAZ-2 that will be used during construction to avoid and minimize potential effects from hazards and hazardous materials and measures to prevent, control, and minimize potential impacts from a spill of a hazardous, toxic, or petroleum substance during construction. Therefore, potential impacts related to creating or contributing runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff would be less than significant.

Mitigation Measures:

HAZ-1: Following is a list of Best Management Practices (BMPs) that shall be used during construction of the Proposed Project to avoid and minimize potential effects from hazards and hazardous materials:

1. No potentially hazardous materials shall be stored in a location where there is potential to enter any waterway and/or contaminate aquatic resources.
2. All construction materials with the potential to pollute runoff shall be handled with care and stored under cover and/or surrounded by berms at the end of the work day, or during rain events that are predicted to produce 0.5 inch or more of precipitation.
3. An effort shall be made to store only the amount of a potentially hazardous product necessary to complete the job.
4. Materials, fuels, liquids and lubricants, and equipment supplies stored on site shall be stored in a neat, orderly manner, in their appropriate containers, with the original manufacturer’s label, and, if possible, in an enclosure.

5. Any hazardous materials shall be stored and labeled according to local, state, and federal regulations.
6. If drums must be stored without overhead cover, they shall be stored at a slight angle to reduce corrosion and ponding of rainwater on the lids.
7. Substances shall not be mixed with one another unless recommended by the manufacturer.
8. Manufacturer's recommendations for proper use and disposal of a product shall be followed.
9. Whenever possible, all of a product shall be used up before disposal of its container.
10. If surplus product must be disposed of, the manufacturers or the local and state recommended methods for proper disposal shall be followed.

HAZ-2: The following measures shall be used to prevent, control, and minimize potential impacts from a spill of a hazardous, toxic, or petroleum substance during construction of the Proposed Project:

1. Minor spills are those that can be controlled by on-site personnel. The following actions shall occur upon discovery of a minor spill:
    a. The spread of the spill will be contained.
    b. If the spill occurs on impermeable surfaces, such as any temporary surfaces installed for pollution prevention during construction, it will be cleaned up using “dry” methods (i.e., absorbent materials, cat litter, and/or rags).
    c. If the spill occurs in permeable substrate areas, it will be immediately contained by constructing an earthen dike. The contaminated soil will be excavated and properly disposed.
    d. If the spill occurs during rain, the impacted area will be covered to avoid runoff, and appropriate cleanup steps will be taken after precipitation has ceased.
    e. All steps taken to report and contain a spill will be recorded.
2. On-site personnel shall not attempt to control major spills until the appropriate and qualified emergency response staff has arrived at the site. Failure to report major spills can result in significant fines and penalties.
    a. If a major spill occurs, the Governor's Office of Emergency Services Warning Center shall be notified at (800) 852-7550 in addition to local authorities.

b. For spills of federal reportable quantities, the National Response Center shall also be notified at (800) 424-8802. The federal reportable spill quantity for petroleum products is any oil spill that (1) violates applicable water quality standards, (2) causes a film or sheen upon or discoloration of the water surface or adjoining shoreline, or (3) causes a sludge or emulsion to be deposited beneath the surface of the water or adjoining shorelines.

c. A written report shall be sent to all notified authorities.

3. Diesel fuel, oil, gasoline, and lubricants are considered petroleum products. These materials shall be handled carefully to minimize their exposure to stormwater. The risks in using petroleum products would be reduced by following these steps:

   a. Waste oil and other petroleum products shall not be discharged into the ground or other water bodies.

   b. Petroleum products shall be stored in tightly sealed containers that are clearly labeled, in a covered area, within prefabricated spill containment devices, earthen berms, or similar secondary containment features.

   c. On-site vehicles shall be monitored for fluid leaks and receive regular preventative maintenance to reduce the chance of leakage (e.g., check for and fix fuel oil leaks in construction vehicles on a regular basis).

   d. Bulk storage tanks having a capacity of more than 55 gallons shall be provided with a secondary containment measure. Containment can be provided by a prefabricated temporary containment mat, a temporary earthen berm, or other measure.

   e. Bulk fuel or lubricating oil dispensers shall have a valve that must be held open to allow the flow of fuel into construction vehicles. During fueling operations, the contractor would have personnel present to detect and contain spills.

4. The following additional spill control and cleanup practices shall be followed:

   a. Spills shall be contained and cleaned up immediately after discovery.

   b. Manufacturer's methods for spill cleanup of a material shall be followed as described on the material safety data sheet (MSDS) sheets (kept with product containers).

c. Materials and equipment needed for cleanup procedures shall be kept readily available on site, either at an equipment storage facility or in the contractor's trucks. Equipment to be kept on site shall include, but not be limited to, brooms, dust pans, shovels, granular absorbents, sand, sawdust, absorbent pads and booms, plastic and metal trash containers, gloves, and goggles.

d. On-site personnel shall be made aware of cleanup procedures, the location of spill cleanup equipment, and proper disposal procedures.

e. Toxic, hazardous, or petroleum product spills required to be reported by regulations shall be documented and a record of the spills shall be kept with project-related documents.

f. If a spill occurs that is reportable to the federal, state, or local agencies, the contractor is responsible for making and recording the reports.

Significance Determination: Less than significant impact with mitigation incorporated.

iv) Impede or redirect flood flows?

Impact: The Proposed Project would continue to be operated in the same manner as the existing hydroelectric project. Isabella Partners would install a fourth generating unit at the end of the existing manifold and penstock. The proposed addition would allow for energy recovery from discharged flows up to 500 cfs and more efficient use of increased releases formerly discharged by the former Borel Hydroelectric Project. Water would run through the penstock extension to the new turbine unit and be discharged immediately upstream of the existing tailrace. The Lake Isabella Hydroelectric Project would continue to be operated under the USACE MOA (USACE 1993) and there would be no changes in water releases to the Kern River as a result of the Proposed Project. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Impact: The Proposed Project would not be located in a tsunami or seiche hazard zone (USACE 2016). The Proposed Project would be located in a

Federal Emergency Management Agency (FEMA) Special Flood Hazard Area subject to inundation by the 1 percent annual chance flood (FEMA 2008). During construction, there would be a risk of inadvertent spills when using diesel fuel or other hazardous material with construction equipment. To minimize this risk, BMPs will be implemented as part of Mitigation Measures HAZ-1 and HAZ-2 that will be used during construction to avoid and minimize potential effects from hazards and hazardous materials and measures to prevent, control, and minimize potential impacts from a spill of a hazardous, toxic, or petroleum substance during. Therefore, impacts would be less than significant.

Mitigation Measures: Mitigation Measures HAZ-1 and HAZ-2 as described in section 3.13.2 c, iii.

Significance Determination: Less than significant impact with mitigation incorporated.

e) Would the Proposed Project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact: The Proposed Project would continue to be operated in the same manner as the existing hydroelectric project. The Lake Isabella Hydroelectric Project would continue to be operated under the USACE MOA (USACE 1993) and there would be no changes in water releases to the Kern River as a result of the Proposed Project. The Proposed Project would not result in any changes to water quality, surface water flows, groundwater recharge, or groundwater storage and would therefore not conflict with any water quality control or sustainable groundwater management plans. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.14 Land Use and Planning

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project physically divide an established community?	☐	☐	☐	☑

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
b) Would the Proposed Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☑

3.14.1 Environmental setting

The zone designation for the Project Area under the Kern County General Plan (Kern County 2009) is Recreation Forestry District. The Recreation Forestry District designation includes properties owned by public governmental agencies and identifies permitted uses for public utility facilities. The Project Area is located in the Kern River Valley Specific Plan (Kern County 2011) and zoned Non-jurisdictional Land, owned by state and federal agencies.

3.14.2 Discussion

a) Would the Proposed Project physically divide an established community?

Impact: The Project Area is at an existing hydroelectric facility adjacent to the Lake Isabella main dam, which has been in operation since 1953. The nearest established community is Lake Isabella, located along State Route 178 approximately one mile south of the Project Area. The Proposed Project would not physically divide Lake Isabella or any other nearby residences or communities. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

b) Would the Proposed Project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Impact: The Kern County General Plan (Kern County 2009) includes the following goal and policies regarding hydroelectric development:

Goal: To provide for the development of small hydroelectric projects which have minimal environmental impacts.
Policies:

1. *The County should promote the development of hydroelectric technologies with minimal environmental impacts at existing facilities, (e.g., irrigation canals and water treatment plants).*
2. *The County shall attempt to protect the Kern River from adverse effects due to new hydroelectric development.*

The Kern River Valley Specific Plan (Kern County 2011) includes the following policy regarding renewable energy:

Goal 11.1.2: Encourage development to use alternative renewable energy sources and energy conservation and efficient measures.

The Proposed Project would be part of an existing hydroelectric facility and allow for an increase in the average annual generation by 27 GWh without any changes to existing water diversions from or releases to the Kern River. The Proposed Project would not conflict with goals or policies of the Kern County General Plan (Kern County 2009), the Kern River Valley Specific Plan (Kern County 2011), or in the Kern County Zoning Ordinance (Kern County 2021a). There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.15 Mineral Resources

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☐	☑
b) Would the Proposed Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☑

3.15.1 Environmental setting

Mineral resources are important to the Kern County economy, including borax, cement, and construction aggregates (Kern County 2009). Mineral exploration is a permitted use under several of the County's zoning designations, including Restoration Forestry District (see Section 3.14 *Land Use Planning*). The Project Area does not fall within a Mineral Resource Zone (CGS 1999).

Kern County

The Kern County General Plan (Kern County 2009) includes the following goal and policy that are applicable to the Proposed Project as it pertains to mineral resources:

Goal Resource 1. To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which would not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County.

Goal Resource 2. Protect areas of important mineral, petroleum, and agricultural resource potential for future use.

3.15.2 Discussion

a) Would the Proposed Project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Impact: There are no known mineral resources that would be of value in the Project Area. As indicated in Section 3.15.2 *Environmental Setting*, the Project Area does not fall within a Mineral Resource Zone. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

b) Would the Proposed Project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?

Impact: There are no known mineral resources that would be of value in the Project Area. As indicated in Section 3.15.2, *Environmental Setting*, the Project Area does not fall within a Mineral Resource Zone. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.16 Noise

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project cause 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 in other applicable local, state, or federal standards?	☐	☐	☑	☐
b) Would the Proposed Project cause generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☑	☐
c) For a Proposed Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Proposed Project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☑

3.16.1 Environmental setting

3.16.1.1 Noise

Noise can be defined as unwanted sound. Pressure waves traveling through air exert a force registered by the human ear as sound, which is measured using monitoring instruments in units of decibels (dB). Zero dB corresponds to the threshold of human hearing, normal speaking corresponds to 60 dB, and 120 to 140 dB corresponds to the threshold of pain for human receptors (CDC 2019).

Noise generally decreases by 6 dB with every doubling of distance from the source (FHWA 2017a). Long-term exposure to noises exceeding a level of 70 dB can cause negative effects, including hearing loss (CDC 2019).

The Kern County General Plan established acceptable noise levels at sensitive receptors as measured by L_{dn} (i.e., the cumulative noise exposure over a 24-hour period) (Kern County 2009). Projects should be designed to reduce noise levels to 65 dB L_{dn} and 45 dB L_{dn} as measured in noise-sensitive outdoor and indoor spaces, respectively. Kern County also prohibits construction noise between 9:00 p.m. and 6:00 a.m. on weekdays, and 9:00 p.m. and 8:00 a.m. on weekends if the construction site is within 1,000 feet of an occupied residence (Kern County 2021b).

3.16.1.2 Vibration

Vibrations are periodic oscillations of a medium, including groundborne vibrations caused by machinery or construction equipment. Groundborne noise is noise produced by the vibration of other objects, such as room surfaces, resulting from groundborne vibrations. Vibrations are typically measured by their root mean squared velocity expressed as vibration decibels (VdB). Vibrations begin to be perceptible at approximately 65 VdB and become bothersome around 85 VdB (FTA 2018). Background vibration levels in residential areas are typically around 50 VdB (FTA 2018).

Kern County has not established vibration guidance, but the Federal Transit Authority (FTA) recommends residential vibration thresholds of 80 VdB for infrequent events and 72 VdB for frequent events (FTA 2018).

3.16.1.3 Sensitive Receptors

People living in or using residences, motels and hotels, schools, libraries, churches, hospitals, nursing homes, auditoriums, natural areas, parks, and outdoor recreation areas are generally more sensitive to noise than are workers in commercial and industrial settings. Consequently, the noise standards for sensitive land uses (sensitive receptors) are more stringent than for those at less sensitive uses.

Noise in the vicinity of the Proposed Project is primarily associated with transportation (e.g., traffic on State Routes 155 and 178, aircraft flyovers) as well as ongoing noise associated with reservoir releases and operations of the existing Lake Isabella Hydroelectric Project. The noise-sensitive receptors nearest to the Proposed Project are the residences on Ponderosa Drive, approximately 2,300 feet away. Existing ambient noise levels at these

residences are approximately 52 dB (J.C. Brennan & Associates 2010, as cited in USACE 2012a).

3.16.2 Discussion

a) Would the Proposed Project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or in other applicable local, state, or federal standards?

Impact: Typical construction equipment noise levels for the Proposed Project are estimated to be between 76 and 84 dB, 50 feet from the source (Table 3-5). Expected noise levels were also calculated at 2,300 feet from the Construction Area (i.e., the distance to the nearest noise-sensitive receptors) using the following formula:

$$L_{eq.equip} = L_{emission} + 10\log(Adj_{Usage}) - 20\log\left(\frac{D}{50}\right)$$

Where $L_{eq.equip}$ is the noise level at the sensitive receptors from the operation of a piece of equipment, $L_{emission}$ is the noise level of that piece of equipment at 50 feet, and D is the distance from the piece of equipment to the sensitive receptor (FTA 2018). Results are shown in Table 3-5. The maximum noise level of any piece of equipment 2,300 feet from the source would be 48 dB for the soil nail drill rig. If the two noisiest pieces of equipment (e.g., bulldozer, compactor) were running simultaneously, expected exterior noise levels 2,300 feet away would be 50 dB. The walls of the residences would decrease indoor noise levels by another approximately 20 dB from the expected exterior values provided in Table 3-5 (FHWA 2017a).

Table 3-5. Expected construction equipment noise levels and usage.

Equipment description	Typical noise level (dB) from 50 feet[1]	Acoustical usage factor (%)[2]	Expected noise level from 2,300 feet (dB)	Expected indoor noise level from 2,300 feet (dB)
Crane	83	16	42	22
Front-end loader	79	40	42	22
Hydraulic excavator	81	40	44	24
Dump truck	76	40	39	19
Concrete truck	79	40	42	22
Bulldozer	82	40	45	25
Compactor	83	20	43	23

[1] Source: USDOT (2006)

[2] Percentage of time equipment generates noise at the maximum level (Source: FHWA 2017b)

Additionally, a total of 17 haul truck trips would be expected to have minimal and temporary potential impacts on 24-hour noise levels at sensitive receptors near the major area thoroughfares, State Routes 155 and 178, resulting in no additional impact on noise levels. The daily construction schedule would also comply with Kern County noise ordinances.

Typical operational noise levels for Francis turbines range between 81 dB and 104 dB, immediately adjacent to the turbine (Kumar et al. 2016). The Francis turbine to be installed as part of the Proposed Project would be housed in a new concrete structure, which would reduce noise levels outside the structure by approximately 40 dB to between 41 dB and 64 dB (FHWA 2017a). In addition, there would be no change in water releases following installation of the new turbine unit, resulting in no additional impact on noise levels. Expected long-term noise levels from the new turbine at the nearest residences would be between 8 dB and 31 dB, which would not raise ambient noise levels at these residences beyond existing conditions (i.e., 52 dB).

As indicated in Table 3-5, maximum noise levels during and following construction of the Proposed Project would be below the Kern County 24-hour outdoor noise level standard of 65 dB and indoor standard of 45 dB at the nearest sensitive receptors. The Proposed Project would not result in generation of a substantial temporary or permanent increase in ambient noise levels in

excess of established standards. Therefore, potential impacts would be less than significant.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

b) Would the Proposed Project result in generation of excessive groundborne vibration or groundborne noise levels?

Impact: Typical construction equipment vibration levels for the Proposed Project are estimated to be between 58 and 87 VdB, 25 feet from the source (Table 3-6). (FTA 2018). Expected vibration levels were also calculated at 2,300 feet from the Construction Area (i.e., the distance to the nearest noise-sensitive receptors) using the following formula:

$$L_{v.distance} = L_{vref} - 30\log\left(\frac{D}{25}\right)$$

where $L_{v.distance}$ is the vibration level at the sensitive receptors from the operation of a piece of equipment, L_{vref} is the vibration level of that piece of equipment at 25 feet, and D is the distance from the piece of equipment to the sensitive receptor (FTA 2018). Results are shown in Table 3-6. The maximum vibration level of any piece of equipment, 2,300 feet from the source, would be 28 VdB.

Table 3-6. Expected construction equipment vibration levels (Source: FTA 2018).

Equipment description	Typical vibration level (VdB) from 25 feet[1]	Expected vibration level from 2,300 feet (VdB)
Large bulldozer	87	28
Drill rig	87	28
Loaded trucks	86	27
Small bulldozer	58	0

The 17 haul truck trips, during construction, would be expected to have minimal and temporary potential impacts on vibration levels at sensitive receptors near the major area thoroughfares, State Routes 155 and 178, resulting in no additional impact on vibration levels.

Typical operational vibration levels for Francis turbines range between 74 VdB and 104 VdB, immediately adjacent to the turbine (Kumar et al. 2016). Expected long-term vibration levels from the new turbine at the nearest residences would be between 15 VdB and 44 VdB. In addition, there would be no change in water releases following installation of the new turbine unit, resulting in no additional impact on vibration levels.

As indicated in Table 3-6, maximum vibration levels at the nearest sensitive receptors during and following construction of the Proposed Project would be well below the FTA residential recommendations of 80 VdB for infrequent events and 72 VdB for frequent events. Moreover, these vibration levels are expected to be imperceptible (i.e., less than 65 VdB) at the nearest residences. The Proposed Project would not result in generation of excessive groundborne vibration or groundborne noise levels. Therefore, potential impacts would be less than significant.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

c) For a Proposed Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Proposed Project expose people residing or working in the project area to excessive noise levels?

Impact: The Proposed Project is not located within the vicinity of a private airstrip or within two miles of a public airport or public use airport. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.17 Population and Housing

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project induce substantial 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) Would the Proposed Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

3.17.1 Environmental setting

The Proposed Project is located within Kern County in a rural area with a generally low population density (Figure 2-1). The Project Area is within Lake Isabella, which is an unincorporated community with a population of approximately 3,495 people. Areas surrounding the Proposed Project are primarily agricultural with a few domestic residences.

3.17.2 Discussion

a) Would the Proposed Project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Impact: The Proposed Project would be part of an existing hydroelectric facility, on previously developed land. The Proposed Project does not include new homes, businesses, roads, or other major infrastructure. Because existing operations staff are not expected to increase, the Proposed Project would not result in population growth. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

b) Would the Proposed Project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impact: The Proposed Project would be part of an existing hydroelectric facility, on previously developed land with no housing on site. No existing housing would be displaced. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.18 Public Services

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☑	☐	☐
Fire protection?	☐	☑	☐	☐
Police protection?	☐	☑	☐	☐
Schools?	☐	☐	☑	☐
Parks?	☐	☐	☑	☐
Other public facilities?	☐	☐	☑	☐

3.18.1 Environmental setting

The Project Area is immediately south of the Lake Isabella main dam (Figure 2-1) and approximately one mile northwest of the community of Lake Isabella. Kern County Sheriff's Department patrols are based out of the Kern Valley Substation, located at 7046 Lake Isabella Boulevard in Lake Isabella. The Kern Valley Substation serves an area of 804 square miles and approximately 22,000 people. During the summer months, a large influx of tourists can add as many as 50,000 people on a holiday weekend. Given the service area, there is very close cooperation between the personnel of the Kern County Sheriff's Office, the California Highway Patrol, Bureau of Land Management, and the USFS (KCSO 2021).

Fire protection in Kern County is provided by the Kern County Fire Department. The Kern County Fire Department provides service to approximately 839,631 people within an area encompassing 8,141 square miles. The Kern County Fire Department is equipped with seven battalions, 47 fire stations, 30 command vehicles, 58 engines, 6 ladder trucks, and 54 patrols along with other equipment and vehicles. Kern County Fire Station 72 provides service to the Project Area and is located at 4500 Lake Isabella Boulevard in Lake Isabella (KCFD 2021).

3.18.2 Discussion

a) Would the Proposed Project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the 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:

Impact: The Proposed Project would be accessed by contractors via State Route 155 and State Route 178, which are major thoroughfares for the area. No roads would be closed during construction of the Proposed Project. During excavation, three haul trucks per day would transport spoil to the Kern Valley Transfer Station, located on the north side of Lake Isabella, approximately 20 miles away via either SR 155 or SR 178. During construction of the concrete housing structure, two haul trucks per day would import cement from Bakersfield, approximately 45 miles away via SR 178 (see Section 2.4.5 *Construction Equipment, Staging, and Access*). Import and export of material along the haul route would increase traffic, possibly slowing emergency access for approximately four weeks during construction. However, Mitigation Measure TRA-1 includes development of a traffic control plan to maximize transportation safety and minimize the potential for effects to public services as a result of the Proposed Project.

The Proposed Project would be part of an existing hydroelectric facility, on previously developed land. The number of existing operations staff is expected to remain the same as a result of the Proposed Project. No individuals would reside on the site under the Proposed Project, nor would the presence of workers on the site necessitate new or physically altered government facilities. With implementation of Mitigation Measure TRA-1, potential impacts related to public services would be temporary and less than significant.

Mitigation Measures:

TRA-1: The following measures shall be implemented to mitigate potential impacts related to transportation:

1. The construction contractor shall develop a traffic control plan for implementation during hauling operations. This plan shall identify actions that would be taken to reduce potential impacts to traffic circulation and maximize safety. Potential actions include speed limits, worker training, construction signage, emergency procedures, and coordination with Kern County and the USACE regarding other projects with potential effects on traffic circulation.

Significance Determination: Less than significant impact with mitigation incorporated.

3.19 Recreation

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☑
b) Would the Proposed Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☑

3.19.1 Environmental setting

The Keysville Special Recreation Management Area (SRMA) is on land owned by the Bureau of Land Management (BLM) and is accessible from State Route 155 near the Proposed Project's access route. The Keysville SRMA is a recreational resource for hiking, biking, camping, fishing, and other activities. The Proposed Project would not include road closures.

3.19.2 Discussion

a) Would the Proposed Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Impact: The Proposed Project would be part of an existing hydroelectric facility, on previously developed land. No individuals would reside on the site under the Proposed Project such that an increase in the use of existing neighborhood, regional parks or other recreational facilities would occur. The number of existing operations staff is expected to remain the same as a result of the Proposed Project and would not result in a change in the current use of existing recreational facilities. The Proposed Project would not change the current use of

existing neighborhood and regional parks or recreational facilities within the town of Lake Isabella or surrounding areas. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

b) Would the Proposed Project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?

Impact: The Proposed Project would be part of an existing hydroelectric facility, on previously developed land, which does not include recreational facilities or require the construction or expansion of recreational facilities. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.20 Transportation

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☑	☐	☐
b) Would the Proposed Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☑
c) Would the Proposed Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
d) Would the Proposed Project result in inadequate emergency access?	☐	☐	☐	☑

3.20.1 Environmental setting

The Project Area and existing hydroelectric facility are accessible from State Route 155 via existing roads on a campground which has been permanently closed as part of the Isabella Lake Dam Safety Modification Project (USACE 2012a). During construction, vehicles would access the Project Area via SR 155 from SR 178, and haul trucks would follow the haul route via SR 155 to and from the Kern Valley Transfer Station. The Proposed Project would temporarily increase construction traffic primarily along the haul route but would result in no long-term changes in any traffic or transportation circulation system.

3.20.2 Discussion

a) Would the Proposed Project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?

Impact: While the Proposed Project would not directly conflict with a program plan, ordinance, or policy addressing the circulation system, Mitigation Measure TRA-1 includes development of a traffic control plan to maximize transportation safety and minimize the potential for effects to traffic circulation as a result of the Proposed Project. Potential impacts would therefore be less than significant.

Mitigation Measures:

TRA-1: The following measures shall be implemented to mitigate potential impacts related to transportation:

1. The construction contractor shall develop a traffic control plan for implementation during hauling operations. This plan shall identify actions that would be taken to reduce potential impacts to traffic circulation and maximize safety. Potential actions include speed limits, worker training, construction signage, emergency procedures, and coordination with Kern County and the USACE regarding other projects with potential effects on traffic circulation.

Significance Determination: Less than significant impact with mitigation incorporated.

b) Would the Proposed Project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

Impact: There would be a temporary and localized increase in truck traffic from haul trucks making trips to and from the Project Area to off-site commercial import material sources during each day of construction. Haul routes would be selected to avoid schools, parks, and high pedestrian use areas, which is feasible since the Project Area is in a rural, low-population-density area. Local automobile vehicle miles traveled are not expected to change due to the Proposed Project since no detours would be implemented during construction and no transportation systems would change permanently. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

c) Would the Proposed Project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

Impact: The Proposed Project would be part of an existing hydroelectric facility, located on previously developed land. The Proposed Project would not involve changes to the existing roads. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

d) Would the Proposed Project result in inadequate emergency access?

Impact: See Section 3.18 *Public Services*, item (a). There would be no change to emergency access to the Project Area or the surrounding areas. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.21 Tribal Cultural Resources

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
Would the Proposed 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: a) 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	☐	☑	☐	☐
b) 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?	☐	☑	☐	☐

Has a California Native American Tribe requested consultation in accordance with Public Resources Code section 21080.3.1(b)?
☐Yes ☒No

3.21.1 Environmental setting

The following description of the Proposed Project Environmental Setting is summarized from the Isabella Lake Dam Safety Modification Project Final EIS (USACE 2012b) unless otherwise noted.

The Lake Isabella area overlies lands traditionally used by two Uto-Aztecan speaking groups: the Tübatulabal and the Kawaiisu. The Project Area was occupied by the Tübatulabal, who lived primarily in the Kern River Valley, along the forks of the Kern, and in the now-inundated area below the former confluence of the North and South forks of the Kern River, the present-day Lake Isabella. The Kawaiisu were located to the south of the Project Area, primarily in the Walker Basin and Tehachapi Mountains. Both groups were hunter and gatherers (USACE 2012a).

The Tübatulabal lived most of the year in small villages composed of a few family groups, in semi-permanent dome-shaped houses made of willow and rabbitbrush plastered with clay and thatched with tule. In the fall months, they occupied more ephemeral wikiups at higher altitude pinyon camps. Tübatulabal trade networks spanned from the Mojave Desert to the Pacific Coast near present-day Ventura and reached northward as far as the former Tulare Lake in the San Joaquin Valley. The first recorded contact between the Tübatulabal and Europeans occurred with the arrival of the Spanish Padre Francisco Garcés in the Kern River Valley in 1776. Intensive European occupation began in the 1850s, when prospectors entered the area in search of gold. Frequent conflict between native groups and colonizing Europeans in the Kern River area occurred in the second half of the nineteenth century. Eleven tribes in the Kern River area entered into a peace treaty with the United States in 1851, but the treaty was never ratified by the U.S. Senate (USACE 2012a).

The Proposed Project is located in the US Bureau of Indian Affairs Pacific Region. There is no federally recognized tribal land in the Project Area (USBIA 2018). Consultation with tribal organizations and individuals for the Isabella Lake Dam Safety Modification Project EIS does not indicate the presence of traditional cultural properties in the Project Area (USACE 2012b).

With the passage of Assembly Bill 52 (AB 52) in 2015, CEQA was revised to include early consultation with California Native American Tribes and consideration of tribal cultural resources. “Tribal cultural resource” is defined in

Section 3.21.3 *Discussion*. Pursuant to AB 52, the State Water Board (the CEQA lead agency) initiated the consultation process by notifying the Tejon Indian Tribe of the opportunity for consultation regarding tribal cultural resources related to the Proposed Project on April 22, 2021, by sending a letter to Chairperson Octavio Escobedo. The State Water Board did not receive a request for consultation or any other response.

3.21.2 Discussion

Would the Proposed 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:

a) 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)?

Impact: The Project Area has been previously disturbed during construction of the Isabella Dam and the existing Lake Isabella Hydroelectric Project. No tribal cultural resource 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, subdivision (k) has been found to exist in the Proposed Project Area. Nonetheless, because the Proposed Project would necessitate excavation and related ground-disturbing activities, implementation of the Proposed Project could result in potentially significant impacts to potential tribal cultural resources that may exist within the Construction Area. Mitigation measure CUL-1 would mitigate any potential impacts to previously unidentified tribal cultural resources to less than significant.

Mitigation Measures: Mitigation measure CUL-1 describes the process to mitigate damage to a tribal cultural resource during Proposed Project construction in the unlikely event one is found.

CUL-1: In the event that an archaeological/paleontological resource or tribal cultural resource is inadvertently discovered during construction activities, work must be halted within 30 feet of the find and a qualified archaeologist (36 CFR Part 61) notified immediately so that an assessment of its potential significance can be undertaken. Construction activities may continue in other areas but may not resume in the area of the find until the significance of the archaeological/paleontological resource is assessed. If the discovery proves to

be significant, additional work, such as data recovery excavation, may be warranted and shall be discussed in consultation with the State Water Board, affiliated tribal organizations, and any other relevant regulatory agencies or invested parties, as appropriate.

Significance Determination: Less than significant with mitigation incorporated.

b) 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?

Impact: As stated in 3.21.3 *Discussion* item (a), the Project Area has been previously disturbed during construction of the Isabella Dam and the existing Lake Isabella Hydroelectric Project. Nonetheless, because the Proposed Project would necessitate excavation and related ground-disturbing activities, implementation of the Proposed Project could result in potentially significant impacts to potential tribal cultural resources that may exist within the Construction Area. Mitigation measure CUL-1 would mitigate any potential impacts to previously unidentified tribal cultural resources to less than significant.

Mitigation Measures: Mitigation measure CUL-1 as described in section 3.21.2 a.

Significance Determination: Less than significant with mitigation incorporated.

Has a California Native American Tribe requested consultation in accordance with Public Resources Code section 21080.3.1(b)?

No.
Assembly Bill 52 (AB 52), approved in September 2014 and effective July 1, 2015, established a formal consultation process with California Native American tribes to identify potential significant impacts on tribal cultural resources, as defined by CEQA (Pub. Resources Code, § 21074). AB 52 applies to projects that file a Notice of Preparation or Notice of Negative Declaration/Mitigated Negative Declaration on or after July 1, 2015. CEQA lead agencies for such projects must initiate the consultation process by providing notice to tribes traditionally and culturally affiliated with the geographic area of a project that have submitted written requests to be notified (Pub. Resources Code, § 21080.3.1, subd. (b)). The tribe must respond to the lead agency within 30 days of receipt of notification if it wishes to engage in consultation on the

proposed project (*Ibid*.). The lead agency must begin the consultation process within 30 days of receiving a tribe's request for consultation (*Id*. at subd. (e)).

Pursuant to AB 52, the State Water Board (the CEQA lead agency) initiated the consultation process by notifying the Tejon Indian Tribe of the opportunity for consultation regarding tribal cultural resources related to the Proposed Project on April 22, 2021 by sending a letter to Chairperson Octavio Escobedo. The State Water Board did not receive a request for consultation or any other response.

3.22 Utilities and Service Systems

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project 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) Would the Proposed Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☑
c) Would the Proposed Project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?	☐	☐	☐	☑
d) Would the Proposed Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☑

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
e) Would the Proposed Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☑

3.22.1 Environmental setting

Utilities available in the Project Area include electricity. The Kern River District of the California Water Service Company provides water services to residences and businesses in Kern River Valley (WAKC 2021a). Water sources in Kern County consist of groundwater, the State Water Project, the Kern River, federal sources (Friant-Kern Canal), and local streams and other sources (WAKC 2021b). The existing project is not served by public water supply or local surface or groundwater sources.

The Project Area is in a relatively low-population area that does not have a public wastewater treatment system. The majority of housing units and commercial buildings in the Kern River Valley are serviced by individual septic systems (Kern County 2011). On-site septage for the existing project is provided by portable toilets maintained under commercial contracts.

Kern Valley Transfer Station, located at 6092 Wulstein Way in Kernville, is the nearest waste disposal site to the Proposed Project Area. This transfer station takes hauler waste as well as self-haul and transfers to the Ridgecrest Sanitary Landfill for disposal. Ridgecrest Sanitary Landfill is located at 3301 Bowman Road, Ridgecrest. The Ridgecrest Sanitary Landfill capacity has a permitted capacity of 10,500,000 cy, with a remaining capacity of 5,037,428 cy, and is permitted to operate through year 2045 (CalRecycle 2021).

Assembly Bill 939 (AB 939), known as the California Integrated Waste Management Act, required California cities and counties to reduce the amount of garbage going to landfills by 50 percent by the year 2000. Kern County Public Works has implemented a variety of programs to increase waste recycling. Voluntary curbside recycling, community drop-off recycling, buy-back recycling,

and disposal site recycling programs are available to residents and businesses within Kern County (Kern County Public Works 2021a).

To reduce greenhouse gas emissions and reduce the effects of climate change, the State of California Green Building Code Requirements, known as CALGreen, took effect beginning January 2011. The new building code requires increased energy efficiency, water efficiency, and resource conservation measures for all newly constructed commercial and residential projects.

The CALGreen Code, adopted as part of Chapter 17.10, Green Building Standards Code of the Kern County Municipal Code, is a comprehensive and uniform regulatory code that applies to all residential, commercial, hospital, and school buildings to ensure that every new building in California is built using environmentally advanced construction practices, which includes construction waste diversion requirements as follows:

- Submit a Construction Waste Management Plan prior to construction for approval by the local Building Department.
- Recycle and/or reuse a minimum of 65 percent of construction and demolition waste.
- Recycle or Reuse 100 percent of tree stumps, rocks and associated vegetation and soils resulting from land clearing (Kern County Public Works 2021b).

3.22.2 Discussion

a) Would the Proposed Project 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?

Impact: The Proposed Project would not generate wastewater or require the use of a wastewater treatment facility. The Proposed Project would be constructed on an existing hydroelectric facility and would not require or result in any changes to the public water, stormwater, natural gas, or telecommunication facilities. The Proposed Project would include the addition of one generator, which would increase the electric power output from the facility. The existing substation and powerlines have capacity for this additional electricity and would not require any changes to the existing electrical facilities. There would be a less than significant impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

b) Would the Proposed Project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Impact: During construction, the Proposed Project would require minimal water for cement washout stations and water trucks used for dust abatement during construction. The Proposed Project would install an additional 5-MW Francis turbine unit at the existing Lake Isabella Hydroelectric Project and includes installation of an extension to the end of the existing penstock manifold and construction of an additional structure to house the unit. There would be no changes in water releases to the Kern River as a result of the Proposed Project. The Proposed Project is not related to any future development that would require additional water supplies. Therefore, there would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

c) Would the Proposed Project result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand, in addition to the provider's existing commitments?

Impact: The Proposed Project would be part of an existing hydroelectric facility and is served using portable toilets. Future operations of the would not generate wastewater or create the need for increased wastewater treatment capacity. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

d) Would the Proposed Project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

Impact: Construction debris generated during construction of the Proposed Project would be disposed of at the Kern Valley Transfer Station. As indicated in Section 3.22.2 *Environmental Setting*, the transfer station takes hauler waste as well as self-haul and transfers to the Ridgecrest Sanitary Landfill for disposal, which has a remaining capacity of 5,037,428 cy. Other than during construction,

the Proposed Project would be part of an existing hydroelectric facility and would not generate any additional solid waste. Construction debris would not be generated 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. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

e) Would the Proposed Project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Impact: Solid waste would be generated during construction of the Proposed Project. In accordance with CALGreen Code and Chapter 17.10 of the Kern County Municipal Code, a Construction Waste Management Plan would be prepared prior to construction for approval by the local Building Department, and 65 percent of construction and demolition waste would be recycled and/or reused on-site. As a result, construction of the Proposed Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

3.23 Wildfire

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed Project substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☑	☐	☐
b) Would the Proposed Project due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☑
c) Would the Proposed Project require the installation 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) Would the Proposed Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☑

Is the Proposed Project located in or near state responsibility areas or lands classified as high fire hazard severity zones?

☐Yes ☒No

3.23.1 Environmental setting

Within Kern County, the highest wildfire risk is represented by vegetated habitats within foothill or mountain areas in the Kern River Valley. The Project Area is at the base of the Lake Isabella main dam, directly adjacent to the Kern River where flows are released. The Project Area is located in a Federal Responsibility Area (FRA) and does not contain lands classified as moderate, high, or very high fire hazard severity zones per CalFire (CalFire 2021). Per the Wildland Fire Areas map of the Kern River Valley Specific Plan, Public Safety Element, the Project Area is designated as High Hazard (Zone 2) fire area. The Kern River Valley has a history of large, destructive wildfires, including the King (2000), Borel (2002; five residences lost), Deer (2002; 47 residences lost), Erskine (2016; 257 structures lost), and French (2021) fires (KCFD 2020; CalFire 2023). Fuel models in the Kern River Valley include grass, brush, and timber, with large areas of pinion and juniper (KCFD 2020). Kern County Fire Battalion 7 covers the Project Area.

3.23.2 Discussion

a) Would the Proposed Project substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact: The Proposed Project is not located in lands classified as very high fire hazard severity zones per CalFire; however, per the Kern River Valley Specific Plan, Public Safety Element, the Project Area is designated as High Hazard (Zone 2) fire area. No roads would be closed during construction of the Proposed Project, and all roadway traffic supporting construction would adhere to applicable laws for motor vehicles and comply with the Kern County Office of Emergency Services. Mitigation Measure TRA-1 includes development of a traffic control plan with specific actions to be taken, if necessary, to facilitate an emergency response or evacuation. The Project Manager would comply with local fire, policy, and medical responders during any emergency. For these reasons, potential impacts would be less than significant with this mitigation measure.

Mitigation Measures:

TRA-1: The following measures shall be implemented to mitigate potential impacts related to transportation:

1. The construction contractor shall develop a traffic control plan for implementation during hauling operations. This plan shall identify actions that would be taken to reduce potential impacts to traffic

circulation and maximize safety. Potential actions include speed limits, worker training, construction signage, emergency procedures, and coordination with Kern County and the USACE regarding other projects with potential effects on traffic circulation.

Significance Determination: Less than significant impact with mitigation incorporated.

b) Would the Proposed Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Impact: The Proposed Project would continue to be operated in the same manner as the existing hydroelectric project and, once operational, would not require additional staff relative to the existing Lake Isabella Hydroelectric Project. Therefore, the Proposed Project would not exacerbate wildfire risks. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

c) Would the Proposed Project require the installation 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?

Impact: The Proposed Project would be part of an existing hydroelectric facility, on developed land with existing roads and no vegetation. The Proposed Project would not require the installation or maintenance of infrastructure that would exacerbate fire risk. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

d) Would the Proposed Project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Impact: The Proposed Project would be part of an existing hydroelectric facility, on previously developed land with no vegetation. Therefore, the Proposed

Project would not expose people or structures to significant risks as a result of runoff, post-fire slope instability, or drainage changes. There would be no impact.

Mitigation Measures: No mitigation measures required.

Significance Determination: No impact.

Is the Proposed Project located in or near state responsibility areas or lands classified as high fire hazard severity zones?

No.

3.24 Mandatory Findings of Significance

Issues	Potentially significant impact	Less than significant with mitigation incorporated	Less than significant impact	No impact
a) Would the Proposed 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 an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☑	☐
b) Would the Proposed Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a Project are considerable when viewed in connection with the effects of past Projects, the effects of other current Projects, and the effects of probable future Projects)	☐	☑	☐	☐
c) Would the Proposed Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☑	☐

3.24.1 Discussion

a) Would the Proposed 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 an endangered, rare, or threatened species, or eliminate important examples of the major periods of California history or prehistory?

Impact: The Proposed Project would be part of an existing hydroelectric facility, on previously developed land with no vegetation. As discussed in Section 3.7 *Biological Resources*, the Proposed Project would have a potentially less than significant impact on species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS with incorporation of mitigation measures BIO-1 through BIO-3. The Proposed Project would have no impact on riparian habitat or other sensitive natural community or federally protected wetlands. Additionally, the Proposed Project would not substantially interfere with the movement of any native resident or migratory fish or wildlife species with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites; conflict with any local policies or ordinances protecting biological resources; or conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan. Therefore, the Proposed Project would not 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, or substantially reduce the number or restrict the range of an endangered, rare, or threatened species. Potential impacts would be less than significant.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

b) Would the Proposed Project have impacts that are individually limited, but cumulatively considerable?

Impact: The nearest related project to the Proposed Project is the Lake Isabella Dam Safety Modification Project located directly adjacent to the Project Area to the north. Isabella Lake Dam consists of a main dam, auxiliary dam, and service spillway, which is owned and operated by the United States Army Corps of

Engineers (USACE). The main dam is located near the confluence of the north and south forks of the Kern River, just north of the Project Area, and the auxiliary dam is located about half a mile east of the main dam. The main dam is a 185-foot-high earth-fill dam, and the auxiliary dam is a 100-foot-high earth-fill dam. The service spillway is located between the two dams (USACE 2021).

Improvements to the auxiliary dam have been completed and the embankment is now at new crest elevation 2,653 feet. The dams and spillway construction is currently underway, construction of the permanent operations facilities is scheduled for 2024, and construction of the U.S. Forest Service Visitor's Information Center is scheduled for 2025 (USACE 2023). The USFS Visitor Center site is located approximately 1.25 miles southeast of the Project Area, east of SR 178 and Kernville Road. The Permanent Operation Building would be located approximately 0.25 miles east of the Project Area between the Kern River and Ponderosa Drive.

An additional related project is the Southern California Edison Borel Hydroelectric Project decommissioning. In 2006, the USACE began a dam safety modification study and determined that the Lake Isabella auxiliary dam did not meet earthquake safety standards. In 2017, the USACE began seismic safety modifications to the auxiliary dam which resulted in the condemnation of a canal conduit that supplied water to Southern California Edison's Borel Hydroelectric Project. The condemnation of the canal rendered the Borel Hydroelectric Project nonfunctional, requiring Southern California Edison to file an application to surrender the Borel Hydroelectric Project License.

As part of the Borel Hydroelectric Project decommissioning, Southern California Edison has developed a decommissioning plan which currently is at 33% design. The decommissioning plan details the removal and decommissioning of Borel Project facilities. Decommissioning related construction is not expected to begin until 2025 at the earliest. Therefore, Borel decommissioning activities will not occur simultaneously with the Proposed Project, and do not contribute to potential cumulative construction impacts.

Potential cumulative construction impacts, such as traffic and noise impacts associated with haul trucks, could occur if construction schedules of the Proposed Project and construction of the USFS Visitor Center and Permanent Operation Building overlap. However, given that the Proposed Project is located on USACE owned land, the Project Applicant would coordinate with USACE regarding construction schedules and phasing. In addition, with Mitigation

Measure TRA-1, potential cumulative construction impacts associated with construction would be less than significant.

The Proposed Project would continue to be operated in the same manner as the existing hydroelectric project. In addition, existing operations staff are not expected to increase as a result of the Proposed Project. Therefore, the Proposed Project would not result in potential cumulative impacts associated with operation.

Mitigation Measures:

TRA-1: The following measures shall be implemented to mitigate potential impacts related to transportation:

1. The construction contractor shall develop a traffic control plan for implementation during hauling operations. This plan shall identify actions that would be taken to reduce potential impacts to traffic circulation and maximize safety. Potential actions include speed limits, worker training, construction signage, emergency procedures, and coordination with Kern County and the USACE regarding other projects with potential effects on traffic circulation.

Significance Determination: Less than significant impact with mitigation incorporated.

c) Would the Proposed Project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?

Impact: As discussed in this IS/NMD, the Proposed Project would not expose persons to potentially significant impacts related to visual quality, agriculture, air quality, energy, geologic hazards, GHG emissions, hazards or hazardous materials, hydrology or water quality, land use and planning, noise, population and housing, transportation/traffic hazards, recreation, or affect utilities and services or wildfire. The Proposed Project would not have potentially significant environmental impacts that would cause substantial adverse effects on humans, either directly or indirectly. Therefore, potential impacts would be less than significant.

Mitigation Measures: No mitigation measures required.

Significance Determination: Less than significant impact.

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