

Summary

S.1 Introduction

The State Water Resources Control Board (SWRCB) is reviewing Sierra Pacific Power Company's (SPPC) application for water quality certification under Section 401 of the Clean Water Act (CWA) to replace a hydropower diversion structure on the Truckee River. This environmental impact report (EIR) analyzes the environmental impacts of the project, identifies ways to reduce or avoid adverse environmental impacts resulting from the project, identifies and assesses alternatives to the proposed project, and assesses cumulative impacts.

S.2 Project Background

SPPC, the applicant for the proposed project, maintains and operates a 2.6-megawatt hydroelectric power plant in Nevada County near Floriston, California. Historically, water has been diverted from the Truckee River at the Farad Diversion Dam, located approximately 1.8 miles upstream of the Farad Power Plant, and conveyed to the Farad Power Plant through an elevated wooden flume, which is approximately 10 feet high by 10 feet wide. The diversion structure was originally constructed in 1899 of wood and rock ballast. In the late 1950s, the Truckee River was realigned in the vicinity of Floriston and over the dam site to accommodate the new Interstate 80 (I-80). In 1963, the structure was moved and rebuilt with an entirely new wood crib and rock structure stepped dam. An inclined weir plate fish ladder was installed near the river-right (when facing downstream) abutment of the structure in the early 1980s. In 1996, a concrete abutment wall was added, connecting the west end of the dam to the concrete intake gate structure. An off-channel diversion canal conveys the diverted flow from the gate structure approximately 750 linear feet to the elevated wooden flume.

For nearly 100 years, the Farad diversion dam provided power to industrial customers, beginning with the Comstock silver mines; more recently, it has provided power to residential customers in the Truckee-Reno area. The 5-year average annual power generation between October 1971 and September 1976 was 13.3×10^6 kilowatt-hours (kWh) of electricity per year (Williams pers. comm.). During several drought years in the late 1970s and early 1990s, SPPC generated limited or no power.

On January 1, 1997, the Truckee River crested with a peak flow of approximately 15,000 cubic feet per second (cfs), corresponding roughly to a 50-year flood event. It appears that the concrete wall connecting the west end of the dam to the diversion structure washed downstream during that storm, resulting in failure of the west abutment wall and ultimately the dam. Following the storm, SPPC removed the remaining pieces of the dam within the river channel to minimize safety hazards to river users. The concrete control structure west of the channel and the concrete abutment east of the channel remain in place.

As described in chapter 2, “Description of Project Alternatives,” SPPC proposes to construct a new structure to divert water to the Farad Power Plant and replace the previous weir. The proposed project design was selected to restore water diversions to the Farad Power Plant and reduce the risk of structure failure under high-flow conditions while providing fish passage under variable flow conditions and accommodating recreational boat passage.

S.3 Water Rights

The project applicant possesses an 1899 water right for 325 cfs and a 1906 water right for 75 cfs (plus transportation losses) for delivery to the Farad Power Plant as affirmed in the 1944 final Orr Ditch Decree (*United States of America v. Orr Water Ditch Co. et al.*, Equity No. A-3 [D. Nev. 1944]).

S.4 Water Quality

Under Section 401 of the CWA, the SWRCB is authorized to protect state water quality standards, including beneficial uses. This EIR serves to disclose the potential environmental effects, including effects on water quality standards (i.e., beneficial uses and water quality objectives), that would result from granting a water quality certification for this project, and identifies ways to reduce or avoid adverse environmental impacts. Water quality certification is discussed in more detail in chapter 4, “Water Quality.”

S.5 Project Objectives

SPPC’s objective for the proposed project is to replace the diversion structure and restore flows to the Farad Power Plant, allowing for continued power generation. While meeting this objective, SPPC also wants to ensure adequate fish, recreational boat, and sediment passage; stabilize the river banks; maintain water quality; maintain a healthy ecosystem downstream of the dam; and keep maintenance and operation costs associated with the diversion and related structure low.

S.6 Project Area

The proposed project is located on the Truckee River in the town of Floriston, California, which is approximately 12 miles from Truckee and 20 miles from Reno (figure S-1). This segment of the Truckee River is characterized by a steep, predominantly north-south-trending canyon that cuts through intermixed volcanic flows and consolidated stream-terrace deposits. I-80 and a railroad line follow the course of the river and are adjacent to the project area.

The total project area is composed of a construction area and an operation area. The construction area is approximately 7 acres; it is bordered on the north and west by Old Highway 40 and the Toiyabe National Forest (hereafter this area is referred to as *river left* when facing downstream) and on the south and east by I-80 and a California Department of Transportation (Caltrans) right-of-way (hereafter this area is referred to as *river right* when facing downstream). The operation area is downstream of the construction area and includes an approximately 2-mile stretch of the Truckee River between the Farad Diversion Dam fish return and the Farad Power Plant. The majority of the land surrounding the 2-mile stretch of river below the diversion is in the Toiyabe National Forest.

S.7 Alternatives Screening Process

During the alternatives screening process the following alternatives were considered:

- in-kind replacement,
- upstream dam,
- downstream dam,
- downstream diversions,
- operational alternatives,
- power generation alternatives, and
- no project.

The downstream diversions, operational alternatives, and power-generation alternatives were eliminated from consideration because they would not meet the project objectives, and for the following reasons:

- Other downstream alternatives, such as diversions at a different location, were eliminated from consideration because they would not have provided adequate head pressure to move water into the existing flume grade to deliver water to the Farad Power Plant.

- Operational alternatives for the upstream reservoirs were eliminated from detailed evaluation because SPPC no longer has the direct ability to reoperate the reservoirs. Operational alternatives such as months without diversions were eliminated because they would not allow for continued power generation during some months and because they were considered cost prohibitive.
- Power-generation alternatives were not selected for detailed evaluation because they could result in substantial environmental effects elsewhere and would be cost prohibitive. For example, generating hydropower at another location would require purchasing new land, damming another river, constructing the infrastructure, and securing the water rights to deliver water. Alternatively, generating power with another fuel such as natural gas or fuel would not achieve the project objective of restoring flows to the Farad Power Plant for continued power generation; would result in other environmental effects, such as effects on air quality; and would result in costs associated with constructing, expanding, and operating another facility.

A no-project alternative does not meet the project objectives, but is required by the California Environmental Quality Act (CEQA) and is included and analyzed in this EIR.

Aware of the concerns expressed about this project by the public and state and federal agencies regarding recreational boat navigation and fish passage, the project applicant contracted with McLaughlin Water Engineers and Chinook Engineering for development of a series of alternatives that would fulfill the project objectives. The project applicant selected McLaughlin Water Engineers based on that company's experience designing boat chutes and whitewater facilities, including boat chutes throughout the United States and the 1996 Olympic whitewater course on the Ocoee River in Tennessee. In addition to being whitewater boaters, the company staff has experience with drainage master planning; drainage engineering; river restoration; closed conduit flow; design of pipelines and diversions, computer modeling, hydrology, hydraulics, and multi-use (recreational and drainage) facilities that could be applied to this project. The project applicant also selected Chinook Engineering for its qualifications and its staff's experience in designing anadromous fish passage facilities.

Three alternatives were designed and analyzed in detail in an alternative evaluation and design development report prepared for the project applicant (Sierra Pacific Power Company 1999a). Two of the 3 alternatives, an in-kind replacement and a new dam upstream of the old location, were retained for analysis in this EIR. A downstream dam alternative was eliminated from consideration because of the extensive work in the river and substantial river channel modifications that would have been required.

Further design work and refinements were added to the new upstream dam alternative. This work was accomplished largely in cooperation and early consultation with regulatory agencies, including the Lahontan Regional Water Quality Control Board (RWQCB), the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Game (DFG), and the U.S. Fish and

Wildlife Service (USFWS). A physical model was built at the U.S. Bureau of Reclamation (USBR) hydraulics laboratory in Denver, Colorado. Tests using the model prompted modifications to the upstream dam alternative design to improve hydraulic efficiency and distribute flows more evenly across the river; this alternative became the proposed project. Additional alternatives that were considered but not selected for detailed evaluation are described at the end of this chapter.

S.8 Description of Alternatives

The following 3 alternatives were selected for evaluation in this EIR:

- Alternative A: Proposed Project;
- Alternative B: In-Kind Replacement; and
- Alternative C: No Project.

S.8.1 Alternative A: Proposed Project

S.8.1.1 Design Features

The Proposed Project consists of the replacement of the previous diversion structure with an adjustable crest diversion structure and simulated natural channel for fish passage at a location upstream of its original site. The structure will use a natural pool on the Truckee River, and will include the following elements:

- adjustable-crest diversion structure and boat/debris chute,
- intake structure,
- diversion conduit,
- roughened channels for fish passage,
- fine-plate fish screen and return,
- access roads and recreational portage,
- slope stabilization, and
- restoration plantings.

The diversion structure is designed for recreational use and passage, as well as fish passage.

S.8.1.2 Construction Activities

Construction activities include temporary channelization of the Truckee River, removal of the old intake structure, construction of project facilities, and restoration of the site. Throughout this process the project applicant will implement a variety of techniques to minimize erosion and sedimentation.

S.8.1.3 Operation and Maintenance Activities

Operation activities include use of the diversion structure to provide water to the Farad Power Plant. Under this alternative, the project applicant will divert as much water as possible when it is available up to the amount allowed under their water right. Maintenance activities include periodic site access, sediment and debris removal, frazil ice removal, and fish-screen maintenance.

S.8.2 Alternative B: In-Kind Replacement

S.8.2.1 Design Features

Alternative B consists of the replacement of the previous diversion with a low-head dam structure in its original location. This type of structure could be made of numerous materials, including wood, roller-compacted concrete, grouted boulders, or conventional concrete; however, for the purposes of this report, a stepped, grouted-boulder dam will be evaluated (figure S-2).

Although this type of dam is not designed for recreational use or passage, it does reduce the formation of “keeper” hydraulics. Warning signs and a portage route on river right will be provided. As is typical with low-head dams, fish passage will be provided by a conventional fish ladder. This ladder will be similar to the slotted fish passage that previously existed and will be installed on river right.

Alternative B includes floodgates to allow for flushing of sediment from the upstream pool. However, because of the location, sediment will accumulate behind the dam and require annual dredging. No bank stabilization is proposed under this alternative.

S.8.2.2 Construction Activities

The construction access, staging, sequence, and methods to minimize adverse environmental impacts will be nearly identical to those under Alternative A. However, the temporary diversion structure likely will be an enclosed-box culvert that begins 150 feet upstream of the original diversion location. The temporary diversion will be capped over winter and reopened the following spring to allow construction over 2 seasons. A Bailey bridge or similar structure

will be used under this alternative; it will be placed just downstream of the temporary diversion. Two new footings will need to be constructed for the temporary bridge. The existing recreational boating play wave will be removed to accommodate the low-head dam. No blasting will be required.

S.8.2.3 Operational Activities

Project operations under Alternative B will be identical to operations under Alternative A.

S.8.2.4 Maintenance Activities

Maintenance activities under Alternative B include the removal of sediment and debris, frazil ice, and emergency maintenance. The site will be accessed by the existing access road. Sediment and debris will be removed by dredging and by operating the floodgates so that sediment and debris are flushed from the upstream pool. Frazil ice will be managed by operating the floodgates to inhibit the buildup of ice.

S.8.3 Alternative C: No Project

Alternative C is the No-Project Alternative. Under this alternative, the project applicant will not build the proposed dam or rebuild any dam. The 13.3×10^6 kWh of power per year the project applicant produced for its electric customers will have to be produced by other means.

S.9 Impacts and Comparison of Alternatives

Project impacts and a comparison of alternatives, including a summary of significant effects and mitigation, are provided in table S-1. Alternative A is designed to minimize environmental effects and results in fewer environmental effects than Alternative B. Specifically, Alternative A is an improvement over Alternative B with respect to erosion and sedimentation, recreational boat passage, and fish entrapment. Alternative C, No Project, results in the fewest environmental impacts, but does not achieve the project objectives.

S.10 Environmentally Superior Alternative

The State CEQA Guidelines require identification of an environmentally superior alternative that would minimize adverse impacts on the project site and surrounding environment. Based on the alternatives analysis, the No-Project

Alternative is the environmentally superior alternative. Although the No-Project Alternative would cause fewer direct environmental impacts, it would not achieve the project objective of restoring flows to the Farad Power Plant for continued power generation. Therefore, the next environmentally superior alternative is the Proposed Project. The Proposed Project is environmentally superior to the in-kind replacement of a low-head diversion dam because it does not entrain fish and provides passage for recreational boats and sediment.

S.11 Areas of Controversy

The reconstruction of a diversion dam on the Truckee River is a controversial project because of competing environmental, municipal, industrial, and recreational uses of water on the Truckee River. During the public scoping period, April 21–May 26, 2000, the SWRCB identified the following general areas of controversy:

- need for the project,
- instream flows,
- recreation,
- fish,
- hydrology, and
- water quality.

These topics and specific issues related to each of these topics are addressed in the EIR.

S.12 Approvals Required

This EIR describes the potential impacts associated with construction and operation of the proposed project or the in-kind replacement project, and mitigation required for these effects. However, before construction, mitigation, and operational activities can proceed, associated approvals must be received, permits issued, and analysis completed. These requirements include issuance of

- water quality certification under Section 401 of the CWA by the SWRCB,
- a permit to discharge dredged or fill materials into water of the United States under Section 404 of the CWA by USACE,
- a waste discharge permit (possibly including a National Pollutant Discharge Elimination System permit) from the Lahontan RWQCB,
- a biological opinion on Lahontan cutthroat trout from USFWS,
- a streambed alteration agreement from DFG,

Table S-1. Summary Comparison of Impacts and Mitigation Measures for the Farad Diversion Dam Replacement Project

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|--|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|--------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| Hydrology | | | | | | | | | |
| 3-1: Erosion and Siltation Resulting from Project Construction | | ✓ | | | ✓ | | ✓ | | |
| 3-2: Placement of Structures within the 100-Year Flood Hazard Area that Could Impede or Redirect Floodflows Mitigation Measure 3-1: Limit placement and construction of temporary structures in the 100-year floodplain | | | ✓ | | | ✓ | ✓ | | |
| 3-3: (14-1) No Effect on Erosion and Siltation Mitigation Measure 14-1: Monitor sediment accumulation and design removal activities for Alternative B | | ✓ | | | ✓ | | ✓ | | |
| 3-4: No Effect on the Rate or Amount of Surface Runoff | | ✓ | | | ✓ | | ✓ | | |
| 3-5: No Effect on Existing or Planned Stormwater Drainage Systems | | ✓ | | | ✓ | | ✓ | | |
| 3-6: Placement of Housing within the 100-Year Flood Hazard Zone | ✓ | | | ✓ | | | ✓ | | |
| 3-7: Reduction in Groundwater Levels Resulting From Project Implementation | | ✓ | | | ✓ | | ✓ | | |
| 3-8: Exposure of People and Property to Substantial Risk for Loss, Injury, or Death Involving Flooding Resulting from Project Implementation | | ✓ | | | ✓ | | ✓ | | |
| 3-9: No Exposure of People and Property to Substantial Risk of Loss Involving Seiches, Tsunamis, or Mudflows Resulting from Project Implementation | | ✓ | | | ✓ | | ✓ | | |
| 14-1: Erosion and Siltation from Project Operation | | | | | | ✓ | ✓ | | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

Table S-1. Continued

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|---|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|--------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| Water Quality | | | | | | | | | |
| 4-1: Degradation of Surface Water Quality during Project Construction | | ✓ | | | ✓ | | ✓ | | |
| 4-2: Degradation of Water Quality due to Inundation of Active Construction Area and Associated Equipment Mitigation Measure 4-1: Locate construction equipment and supplies outside the 100-year floodplain | | | ✓ | | | ✓ | ✓ | | |
| 4-3: (14-2) Violation of Water Quality Standards during Project Operation Mitigation Measure 6-4: Verify water temperature effects of the project and implement mitigation measures if warranted Mitigation Measure 14-1: Monitor sediment accumulation and design removal activities to minimize water quality degradation for Alternative B | | ✓ | | | | ✓ | ✓ | | |
| 4-4: Transportation Losses Adversely Affecting Beneficial Uses Mitigation Measure 4-2: Limit flume diversions during low-flow periods | | | ✓ | | | ✓ | ✓ | | |
| Geology, Seismicity, and Soils | | | | | | | | | |
| 5-1: Exposure of People or Structures to Surface Fault Rupture | | ✓ | | | ✓ | | ✓ | | |
| 5-2: Exposure of People or Structures to Strong Seismic Ground Shaking | | ✓ | | | ✓ | | ✓ | | |
| 5-3: Exposure of People or Structures to Liquefaction | ✓ | | | ✓ | | | ✓ | | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

Table S-1. Continued

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|--|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|--------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| 5-4: Creation of On- or Offsite Mass Movement, or Exposure of People or Property to Adverse Effects Resulting from an On- or Offsite Mass Movement | | ✓ | | | ✓ | | ✓ | | |
| 5-5: Location on an Expansive Soil that Would Create Substantial Risks to Life or Property | ✓ | | | ✓ | | | ✓ | | |
| 5-6: Increase in Erosion and Sedimentation Rates during the Project Construction Period | | ✓ | | | ✓ | | ✓ | | |
| 5-7: Increase in Short- and Long-Term Erosion and Sedimentation Rates | | ✓ | | | ✓ | | ✓ | | |
| Aquatic Resources | | | | | | | | | |
| 6-1: Increased Mortality of Aquatic Organisms and Habitat Degradation Resulting from Increased Suspended Sediment and Turbidity during Construction | | ✓ | | | ✓ | | ✓ | | |
| 6-2: Increased Mortality of Aquatic Organisms as a Result of Spills of Toxic Materials Used or Stored at Project Construction Area | | ✓ | | | ✓ | | ✓ | | |
| 6-3: Disruption of Movement of Adult and Juvenile Fish during Construction Mitigation Measure 6-1: Ensure that adequate fish passage conditions exist in the temporary diversion channel and main channel during construction | | | ✓ | | | ✓ | ✓ | | |
| 6-4: Temporary Loss of Aquatic Habitat and Displacement and/or Stranding of Fish and Other Aquatic Organisms during Construction | | ✓ | | | ✓ | | ✓ | | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

Table S-1. Continued

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|--|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|--------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| 6-5: Mortality, or Disruption of Movements, of Fish Caused by Project Operation Mitigation Measure 6-2: Prepare and implement a monitoring and evaluation program to ensure long-term fish protection | | | ✓ | | | ✓ | ✓ | | |
| 6-6: Reduction in Physical Habitat Availability in the Operation Area during Operation Mitigation Measure 6-3: Maintain a minimum flow of 150 cfs in the operation area at all times during project operation | | | ✓ | | | ✓ | ✓ | | |
| 6-7: Increases in the Magnitude and Frequency of Sublethal Water Temperatures Mitigation Measure 6-4: Verify water temperature effects of the project and implement mitigation measures if warranted | | ✓ | | | | ✓ | ✓ | | |
| 6-8: Stranding of Fish and Invertebrates as a Result of Flow Fluctuations during Project Operation Mitigation Measure 6-5: Limit the magnitude and rate of flow reductions that are under control of the operator | | | ✓ | | ✓ | | ✓ | | |
| 14-3: Entrapment of Fish in the Flume Mitigation Measure 14-2: Install a screen and fish return | | | | | | ✓ | ✓ | | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

Table S-1. Continued

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|--|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|--------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| Vegetation | | | | | | | | | |
| 7-1: Loss or Disturbance of Big Sagebrush Scrub Habitat as a Result of Construction of the Diversion Structure | | ✓ | | | ✓ | | ✓ | | |
| 7-2: Loss or Disturbance of 0.06 Acre of Woody Riparian Vegetation as a Result of Construction along the Banks of the Truckee River | | ✓ | | | ✓ | | ✓ | | |
| 7-3: Loss or Disturbance of Ruderal Habitat during Construction | | ✓ | | | ✓ | | ✓ | | |
| 7-4: Loss or Disturbance of Protected Trees Greater than 6 Inches in Diameter at Breast Height as a Result of Construction Activities | | ✓ | | | ✓ | | ✓ | | |
| 7-5: Introduction of New Noxious Weeds or Spread of Existing Noxious Weed Infestations Mitigation Measure 7-1: Avoid dispersing noxious weeds into the project area | | | ✓ | | | ✓ | ✓ | | |
| 7-6: Potential Long-Term Loss of Riparian Scrub as a Result of Changes in Instream Flow | | ✓ | | | ✓ | | ✓ | | |
| Wildlife | | | | | | | | | |
| 8-1: Temporary Disturbance and Loss of Breeding and Foraging Habitat for Special-Status Birds | | ✓ | | | ✓ | | ✓ | | |
| 8-2: Potential Long-Term Loss of Nesting and Foraging Habitat for Willow Flycatchers and Other Riparian Birds as a Result of Changes in Instream Flow | | ✓ | | | ✓ | | ✓ | | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

Table S-1. Continued

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|--|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|------------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| 8-3: Effect on Habitat Suitability for Mountain Yellow-Legged Frogs as a Result of Decreased Flow in Truckee River | | ✓ | | | ✓ | | ✓ | | |
| 8-4: Decrease in Suitable Foraging Habitat for Special-Status Bats | | ✓ | | | ✓ | | ✓ | | |
| 8-5: Disturbance to Special-Status Wildlife Species during Maintenance Activities | | ✓ | | | ✓ | | ✓ | | |
| Recreation | | | | | | | | | |
| 9-1: Change in Recreation Opportunities during Project Construction Mitigation Measure 9-1: Implement appropriate measures to ensure public safety during project construction | | | ✓ | | | ✓ | ✓ | | |
| 9-2: Change in Angling Success during Project Construction | | ✓ | | | ✓ | | ✓ | | |
| 9-3: (14-4) Change in Boat Passage Resulting from Project Implementation | | ✓ | | | | ✓ Unavoidable | ✓ | | |
| 9-4: Impairment of Flows Affecting Designated Beneficial Uses (Change in Recreational Boating Opportunities during Project Operation) Mitigation Measure 9-1: Maintain 1 weekend per month of recreational flows from April to September, when available Mitigation Measure 9-2: Create improved recreation access at the Farad powerhouse | | | ✓ | | | ✓ | ✓ | | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

Table S-1. Continued

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|---|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|--------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| 9-5: Change in Angling Opportunities and Success during Project Operation Mitigation Measure 6-2: Prepare and implement a monitoring and evaluation program to ensure long-term fish protection Mitigation Measure 6-3: Maintain a minimum flow of 150 cfs in the operation area at all times during project operations Mitigation Measure 6-4: Monitor and evaluate water temperature effects of the project and implement mitigation measures if warranted | | | ✓ | | | ✓ | ✓ | | |
| Cultural Resources | | | | | | | | | |
| 10-1: Change in Historical Resources Associated with the Farad Hydroelectric Power System Mitigation Measure 6-4: Implement measures to retain the historic character of the Farad hydroelectric power system. | | ✓ | | | ✓ | | | | ✓ |
| 10-2: Disturbance of Unique Paleontological Resources or Human Remains | | ✓ | | | ✓ | | ✓ | | |
| Noise | | | | | | | | | |
| 11-1: Temporary Increase in Noise Levels Resulting from General Construction Activities Mitigation Measure 11-1: Notify property owners of project construction before construction begins | | | ✓ | | | ✓ | ✓ | | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

Table S-1. Continued

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|--|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|--------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| Mitigation Measure 11-2: Use appropriate sound-control devices on construction equipment | | | | | | | | | |
| Mitigation Measure 11-3: Implement measures required by Nevada County grading permit | | | | | | | | | |
| 11-2: Temporary Increase in Noise Levels Resulting from Blasting Activities | | | ✓ | | | ✓ | ✓ | | |
| Mitigation Measure 11-1: Notify property owners of project construction before construction begins | | | | | | | | | |
| Mitigation Measure 11-4: Minimize effects of blasting on nearby residents | | | | | | | | | |
| Transportation | | | | | | | | | |
| 12-1: Temporary Construction-Related Increase in Traffic Volumes on Roadways | | ✓ | | | ✓ | | ✓ | | |
| 12-2: Increased Construction-Related Traffic Volume Delay, and Hazard on Local and Regional Roadways | | | ✓ | | | ✓ | ✓ | | |
| Mitigation Measure 12-1: Implement a traffic safety plan | | | | | | | | | |
| 12-3: Increase in the Demand for Parking Space at the Construction Site | | ✓ | | | ✓ | | ✓ | | |
| Aesthetics | | | | | | | | | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

Table S-1. Continued

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|--|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|--------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| 13-1: Short-Term Changes in Views of the Project Construction Area Resulting from Construction Activities Mitigation Measure 13-1: Implement screening and limit work hours to reduce visual construction impacts on Floriston residents and I-80 commuters | | ✓ | | | ✓ | | ✓ | | |
| 13-2: Changes in Views of the Project Construction Area Resulting from Project Implementation Mitigation Measure 3-1: Limit placement and construction of temporary structures in the 100-year floodplain | | ✓ | | | ✓ | | ✓ | | |
| 13-3: Changes in Light and Glare Resulting from Project Implementation | | ✓ | | | ✓ | | ✓ | | |
| 13-4: Consistency with Adopted Plans and Policies Related to Visual Resources | | ✓ | | | ✓ | | ✓ | | |
| Cumulative and Growth Inducing | | | | | | | | | |
| 15-1: Change in Flows in the Truckee River under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| 15-2: Increase in Water Temperature in the Truckee River under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| 15-3: Degradation of Surface Water Quality in the Construction Area under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| 15-4: Increase in Erosion and Sedimentation in the Truckee River under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| 15-5: Change in Riparian Vegetation as a Result of Changes in Instream Flows under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| 15-6: Mortality, or Disruptions of Movements of Fish under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

Table S-1. Continued

| Resource and Impact | Alternative A: Proposed Project | | | Alternative B: In-Kind Replacement | | | Alternative C: No Project | | |
|---|---------------------------------|-----------------------|--------------|------------------------------------|-----------------------|--------------|---------------------------|-----------------------|--------------|
| | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* | No Impact | Less than significant | Significant* |
| 15-7: Disturbance or Loss of Wildlife Habitat under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| 15-8: Change in Recreational Boating Opportunities under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| 15-9: Change in Angling Success under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| 15-10: Temporary Increase in Noise Levels from Construction under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| 15-11: Temporary Construction-Related Increase in Traffic Volumes on Roadways | | ✓ | | | ✓ | | | ✓ | |
| 15-12: Changes in Views along the Truckee River under Cumulative Conditions | | ✓ | | | ✓ | | | ✓ | |
| Growth Inducing | ✓ | | | ✓ | | | ✓ | | |

* All significant impacts are reduced to a less-than-significant level with mitigation unless indicated as “unavoidable.”

- a Caltrans encroachment permit, and
- a grading permit from Nevada County.

As part of the issuance of these permits, the specific details regarding final mitigation, restoration, ramping, and flows will be determined.