STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

FINAL CEQA SUPPLEMENT

SIX BIG CREEK HYDROELECTRIC PROJECTS
FRESNO AND MADERA COUNTIES

BIG CREEK NOS. 2A, 8, AND EASTWOOD HYDROELECTRIC PROJECT

BIG CREEK NO. 3 HYDROELECTRIC PROJECT

MAMMOTH POOL HYDROELECTRIC PROJECT

VERMILION VALLEY HYDROELECTRIC PROJECT

PORTAL HYDROELECTRIC PROJECT

BIG CREEK NOS. 1 AND 2 HYDROELECTRIC PROJECT

FEDERAL ENERGY REGULATORY COMMISSION
PROJECT NOS. 67, 120, 2085, 2086, 2174, AND 2175

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State Water Resources Control Board
Division of Water Rights – Water Quality Certification Program
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1.0 Introduction

The State Water Resources Control Board (State Water Board) prepared this document pursuant to the California Environmental Quality Act (CEQA), in support of the issuance of a Clean Water Act Section 401 (33 U.S.C. § 1341) water quality certification (401 Certification) to cover relicensing of six Federal Energy Regulatory Commission (Commission or FERC) licensed hydroelectric projects (FERC Nos. 67, 120, 2085, 2086, 2174, and 2175). The projects (collectively referred to as the "Six Big Creek Hydroelectric Projects") are located in the upper San Joaquin River watershed near the town of Big Creek. The Six Big Creek Hydroelectric Projects are owned and operated by the Southern California Edison Company (SCE). Prior to completion of the FERC relicensing process and issuance of new license(s) for continued operation of the Six Big Creek Hydroelectric Projects, compliance with the Clean Water Act must be demonstrated through issuance of a 401 Certification by the State Water Board.

This document is a supplement to the National Environmental Policy Act (NEPA) documents prepared by the Commission for relicensing the Six Big Creek Hydroelectric Projects, in compliance with CEQA as required for issuance of a 401 Certification by the State Water Board. This CEQA Supplement has been prepared in accordance with CEQA (Pub. Resources Code, §§ 21000 et seq.) and the CEQA Guidelines (Cal. Code Regs., tit. 14, §§ 15000 et seq.), consistent with Public Resources Code Section 21083.5 and California Code of Regulations, title 14, Section 15221.

The Six Big Creek Hydroelectric Projects are part of a system of seven hydroelectric projects (Big Creek Hydroelectric System) that operate in the upper San Joaquin watershed in Fresno and Madera counties (Figure 1). The seventh project in the Big Creek Hydroelectric System (Big Creek No. 4, FERC Project No. 2017), located downstream of Big Creek No. 3 on the San Joaquin River, obtained a new FERC license in 2004 and is not included in this analysis. Independent environmental analyses of the Six Big Creek Hydroelectric Projects addressed by this CEQA Supplement were undertaken by the Commission in the following three NEPA documents:

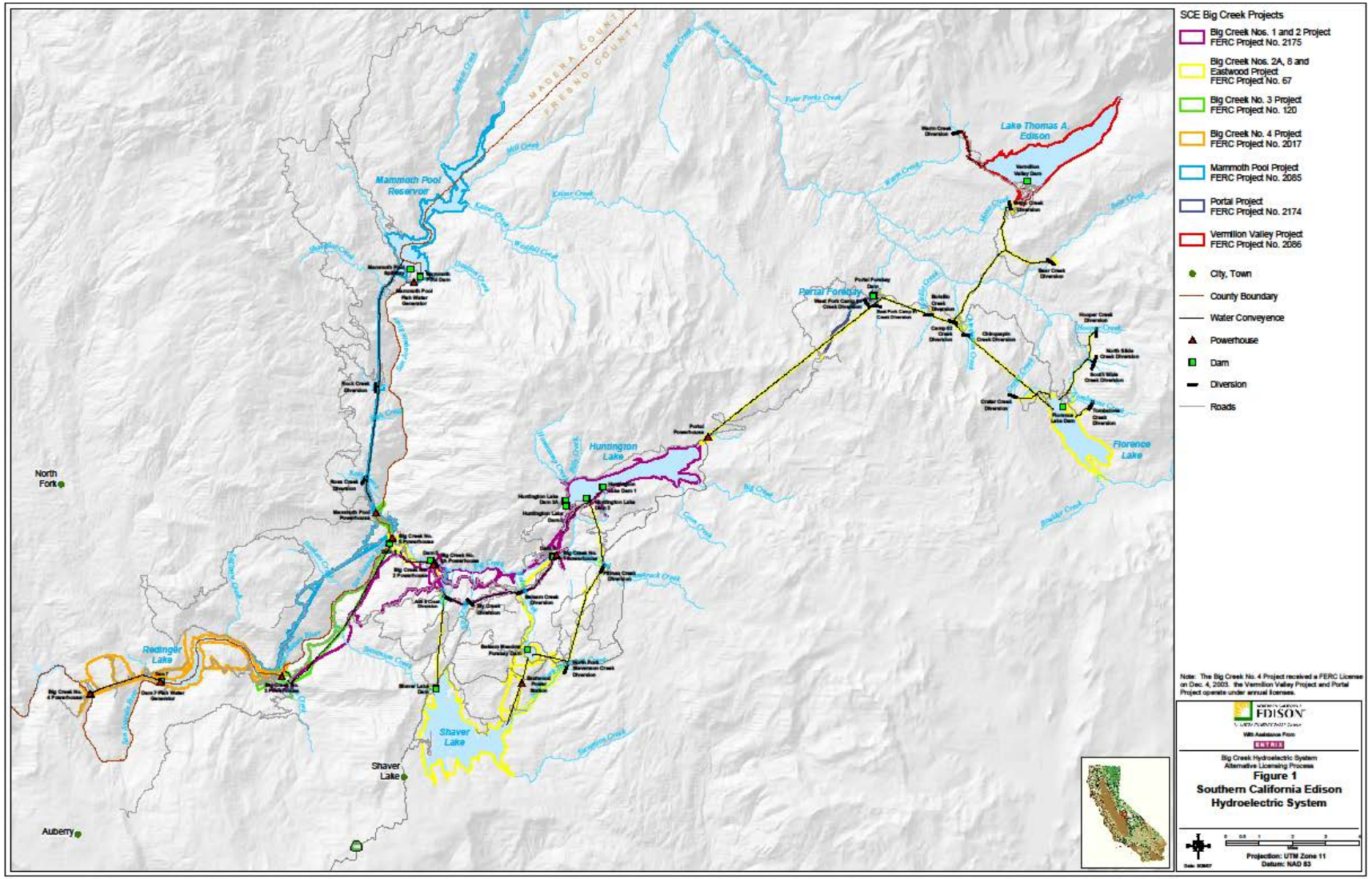
1) Final Environmental Impact Statement (FEIS) for the Big Creek Alternative Licensing Process (ALP) Projects[1] (Big Creek ALP Projects) (FERC 2009) for:
    - Mammoth Pool Project – FERC Project No. 2085;
    - Big Creek Nos. 1 and 2 Project – FERC Project No. 2175;
    - Big Creek Nos. 2A, 8, and Eastwood Project – FERC Project No. 67; and
    - Big Creek No. 3 Project – FERC Project No. 120.

2) Final Environmental Assessment (FEA) (FERC 2006) for:
    - Portal Hydroelectric Project (Portal Project) – FERC Project No. 2174.

3) Environmental Assessment (EA) (FERC 2004) for:
    - Vermilion Valley Hydroelectric Project (Vermilion Project) – FERC Project No. 2086.

[1]The FEIS also included environmental analysis of additional conditions proposed for the Portal Hydroelectric Project and Vermilion Valley Hydroelectric Project proposed subsequent to completion of the NEPA documents for those projects.

Figure 1. Overview of the Big Creek Hydroelectric System



These NEPA documents are part of the administrative record that supports the State Water Board's decision regarding issuance of a 401 Certification for the Six Big Creek Hydroelectric Projects.

The Commission's NEPA documents include detailed environmental analyses of the Six Big Creek Hydroelectric Projects, including protection, mitigation, and enhancement measures (PM&Es), recommended for inclusion in the new licenses, for continued operation of the Six Big Creek Hydroelectric Projects. During development of the Big Creek ALP Projects FEIS, State Water Board staff provided guidance to the Commission on expanding the NEPA analysis to fulfill CEQA requirements. In response, the Commission modified FEIS Appendix A, *Big Creek ALP Projects Mitigation and Monitoring Summary* (FERC 2009).

State Water Board staff reviewed the Commission's NEPA analyses for the Six Big Creek Hydroelectric Projects to determine whether CEQA requirements were fulfilled. For most resource areas, the NEPA documents satisfy CEQA requirements; however, the NEPA analyses did not make the following determinations required by CEQA: a) significance level of potential impacts; b) statement of mitigation measures that have been incorporated into the projects to offset or reduce impacts to less-than-significant levels; and c) whether additional mitigation measures are needed.

California Code of Regulations, tit. 14, Section 15221, subdivision (a) states: "When a project will require compliance with both CEQA and NEPA, state or local agencies should use the EIS or finding of no significant impact rather than preparing an EIR or negative declaration if the following two conditions occur:

(1) An EIS or finding of no significant impact will be prepared before an EIR or negative declaration would otherwise be completed for the project; and

(2) The EIS or finding of no significant impact complies with the provisions of these guidelines." [2]

Section 15221 subdivisions (b) states: "Because NEPA does not require separate discussion of mitigation measures or growth inducing impacts, these points of analysis will need to be added, supplemented, or identified before the EIS can be used as an EIR."

The environmental analysis provided in this CEQA Supplement completes the analysis of potential impacts of the Six Big Creek Hydroelectric Projects by fully analyzing those resource areas required by CEQA that were not analyzed under NEPA, and by identifying the level of significance of all potential impacts resulting from continued operation and maintenance of the Six Big Creek Hydroelectric Projects under a new FERC license(s), as required by CEQA.[3] Consistent with the requirements of CEQA, the baseline condition for analysis of the potential environmental impacts of the issuance of a new State Water Board 401 Certification for the Six Big Creek Hydroelectric

[2] If the NEPA document is prepared before the CEQA document and the NEPA document complies with the CEQA Guidelines.

[3] Tables 5, 6, and 7 provide identification, as required by CEQA, of the level-of-significance of impacts analyzed in the NEPA documents for all aspects of the Six Big Creek Hydroelectric Projects other than those discussed separately in this document.

Projects is operation of the existing Six Big Creek Hydroelectric Projects under the terms of the current FERC licenses.

Comments received on the draft CEQA Supplement are addressed and written responses are included in Appendix B. A Notice of Determination by the State Water Board will be submitted to the State Clearinghouse upon issuance of a final 401 Certification for the Six Big Creek Hydroelectric Projects.

2.0 Project

This CEQA Supplement, together with the analyses in the Commission's NEPA documents for the Six Big Creek Hydroelectric Projects, analyzes the potential environmental impacts of issuing a new 401 Certification for the Six Big Creek Hydroelectric Projects. For purposes of CEQA analysis, the Project being considered by the State Water Board is issuance of a 401 Certification for the re-licensing of the Six Big Creek Hydroelectric Projects, with appropriate conditions to ensure that the Six Big Creek Hydroelectric Projects are operated in a manner that is protective of water quality and the designated beneficial uses of water (Project). The Project includes: (a) SCE's Proposed Project as described in its applications to FERC; (b) conditions proposed by United States (U.S.) Forest Service pursuant to Section 4(e) of the Federal Power Act; (c) FERC's Staff Alternatives; (d) terms of the settlement agreement; and (e) conditions of the 401 Certification necessary to protect water quality. SCE's Proposed Project includes: (a) the FERC Staff Alternatives; (b) U.S. Forest Service's Section 4(e) conditions; and (c) the terms of the settlement agreement. SCE's Proposed Project is described in detail in the following sections of the referenced NEPA documents:

- FEIS for the Big Creek ALP Projects – Section 5.2, Comprehensive Development and Recommended Alternative (FERC 2009);
- FEA for the Portal Project – Section VII, Comprehensive Development and Recommended Alternative (FERC 2006); and
- EA for the Vermilion Project – Section VII, Comprehensive Development (FERC 2004).

SCE's proposed operation of the Big Creek ALP Projects is substantively based on a comprehensive Settlement Agreement[4], which was included in SCE's Application for New License(s) (SCE 2007a). State Water Board staff participated in settlement discussions to provide guidance concerning water quality requirements, however the State Water Board is not a signatory to the Settlement Agreement. The environmental measures incorporated into the Settlement Agreement include measures to avoid or reduce impacts, and to protect and enhance environmental resources potentially affected by ongoing operation and maintenance of the Big Creek ALP Projects. During development of the Settlement Agreement environmental measures, stakeholders recognized that implementation of measures to benefit one specific resource has the potential to adversely impact other resources. In such cases, the environmental measure adopted in the Settlement Agreement incorporated additional

[4] A Settlement Agreement was developed during relicensing of the Big Creek ALP Projects. It represents the culmination of substantial efforts between SCE and stakeholders (including state and federal agencies, non-governmental organizations, members of the public, and Native American Tribes) to develop an agreement addressing concerns associated with operation of the Big Creek ALP Projects.

conditions (i.e. avoidance, protection, or mitigation measures and/or monitoring requirements) to minimize potential secondary impacts from implementation of the measure. In the NEPA document for the Big Creek ALP Projects (FERC 2009), Commission staff recommended that new project licenses for the four ALP Projects include the measures described in the Settlement Agreement, with a few minor revisions.

The environmental measures associated with the Portal and Vermilion Projects[5] are based on measures recommended by Commission staff in the respective NEPA documents (FERC 2006 and FERC 2004). The Settlement Agreement for the Big Creek ALP Projects also included several revised measures for the Portal and Vermilion Projects. These revised measures were analyzed by the Commission in the NEPA document for the Big Creek ALP Projects.

3.0 Environmental Analysis

Pursuant to CEQA, the purpose of the environmental analysis for this CEQA Supplement is to identify potential impacts to environmental resources from implementation of the Project. Although many of the measures proposed by SCE, the Settlement Agreement, the FERC Staff Alternatives, and the U.S Forest Service pursuant to Section 4(e) are intended to benefit environmental resources, the measures themselves may have the potential to adversely impact certain resource areas while benefiting other resources. A potential impact is identified when implementation of any aspect of the Project, including measures intended to minimize environmental impacts of the Six Big Creek Hydroelectric Projects, may result in an adverse change in resource conditions compared to the baseline condition.

The CEQA environmental analysis uses the independent NEPA analyses completed by the Commission (included in project-specific NEPA documents listed in Section 1.0, Introduction) supplemented by the following:

- Evaluation of the resource areas where NEPA analyses were absent or inadequate to meet CEQA requirements;
- Analysis of additional measures identified by the State Water Board to protect water quality; and
- Determination of the level of significance for all impacts identified for CEQA resource areas.

3.1 Resource Areas Requiring Further Analysis to Meet California Environmental Quality Act Requirements

While the NEPA analyses of many of the resource areas met CEQA requirements, the following resource areas were insufficiently analyzed to meet the requirements of CEQA: Agriculture and Forest Resources; Greenhouse Gas Emissions; Hazards and Hazardous Materials; Transportation/Traffic; and Utilities and Service Systems. This CEQA Supplement provides the impact assessment

[5] The Portal and Vermilion Valley Projects are undergoing FERC's traditional licensing (TLP) process rather than the alternative licensing (ALP) process.

necessary to meet CEQA requirements for the Project. The following environmental analyses cover potential impacts from all Six Big Creek Hydroelectric Projects.

3.1.1 AGRICULTURE AND FOREST RESOURCES

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

Environmental Setting for Agriculture and Forest Resources

The Six Big Creek Hydroelectric Projects are located primarily on lands within the United States Department of Agriculture, Forest Service (USFS) — Sierra National Forest, with a small portion on private lands owned by SCE. Lands in the Project vicinity are generally rural forest and foothills in character. No agricultural land is located in the Project vicinity. The existing land uses include: small communities of private residences or seasonal vacation homes, hydroelectric power generation, rangeland, timber production, mining, research areas, wilderness areas, and recreation. Detailed descriptions of the existing land uses in the Project vicinity are provided in the Commission's: (i) FEIS for the Big Creek ALP Projects, Section 3.3.6, Land Use and Aesthetic Resources; (ii) FEA for the Portal Project, Section V.C. 6, Land Management and Aesthetic Resources; and (iii) EA for the Vermilion Project, Section III.A.1, Project Description; and V.C.6, Aesthetic Resources.

Water stored and released from the Project reservoirs is used for agricultural purposes by downstream irrigators in accordance with existing agreements that limit the amount and duration that SCE can store water in its Project reservoirs. SCE operates its reservoirs consistent with the Mammoth Pool Operating Agreement (MPOA). MPOA specifies water storage and release requirements for the Project reservoirs, all of which are upstream of Friant Dam (which impounds Millerton Reservoir). The Bureau of Reclamation operates Friant Dam and the associated Central Valley Project water distribution system that distributes water for agricultural use and other purposes.

Environmental Impacts for Agriculture and Forest Resources

No impacts to agriculture or forest resources would result from implementation of the Project. Further, implementation of Project measures would not result in the loss or conversion of prime farmland, unique farmland, farmland of statewide importance, or forest land to another land use. The measures do not conflict with any existing agricultural use, forest land (timberland) zoning or a Williamson Act contract. Further, the availability of irrigation water for agricultural use would not be affected by increases in instream flow releases or changes in Project operations associated with the measures. Under the Project measures, the timing and magnitude of flows leaving the Big Creek Hydroelectric System downstream of Big Creek No. 4 (FERC Project No. 2017) are slightly different from baseline conditions; however, under the proposed conditions in the 401 Certification, the Big Creek Hydroelectric System will continue to be operated in a manner consistent with the MPOA. Therefore, implementation of the Project would not result in impacts to agriculture or forestry resources.

3.1.2 GREENHOUSE GAS EMISSIONS

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

Environmental Setting for Greenhouse Gas Emissions

The existing project provides approximately 3,400,000 megawatt hours (MWh) per year of hydroelectric-generated energy under the baseline condition[6] (refer to Table 1 for detailed generation breakdown by project). The Vermilion Project (FERC No. 2086) is part of the overall Project

[6] The baseline condition for this CEQA analysis is the operation of the existing project under the terms of the current FERC licenses.

undergoing relicensing; however, it has no generation facilities. Energy from the Big Creek ALP Projects and Portal Project is used to partially meet southern California's energy demand. The electrical generation provided by hydroelectric projects is associated with minimal production of greenhouse gas (GHG) emissions.

Table 1. Estimated Decrease in Annual Power Generation from Implementation of the Environmental Measures under the Project (FERC 2009)

Facility Name (FERC Project No.)	Reduction in Generation from Implementation of the Project (MWh) [7]	Estimated Generation from Implementation of Measures under the Project (MWh)	Existing Generation Capacity (MWh)
Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67)	47,867	1,125,429	1,173,296
Big Creek Nos. 1 and 2 (FERC Project No. 2175)	108,411	657,072	765,483
Mammoth Pool (FERC Project No. 2085)	11,285	592,449	603,734
Big Creek No. 3 (FERC Project No. 120)	21,841	802,240	824,081
Portal (FERC Project No. 2174)	1,780	34,902	36,682
TOTAL:	**191,184**	**3,212,092**	**3,403,276**

SCE's 50,000 square-mile service area includes approximately 14 million people (4.9 million customer accounts). Electricity generated from the Project is used to meet demand for a portion of these customers. Currently, SCE itself generates about 15 percent of the electricity provided to its customer base from a variety of generating facilities, including the Six Big Creek Hydroelectric Projects, which account for approximately 25 percent of the power generated by SCE. SCE must procure 85 percent of its energy from other power producers (wholesalers of electricity). Any reduction in generation

[7] The decrease in annual hydroelectric generation was estimated using the Hydrobasin flow-routing model (Hydrobasin) that was designed to evaluate operating scenarios for the Big Creek Hydroelectric System. Hydrobasin accounts for all reservoirs, diversions, powerhouses, and river reaches. It allows for inflows, spills, reservoir storage, modified minimum flows, channel forming and riparian flows, recreational flow releases, ramping rates, modified reservoir elevations, and existing capacities. The model is based on representative water year types that occurred in the evaluation period (water years 1983-2002) for project hydrology agreed to by the stakeholders and used in project relicensing. The water year types included wet, above normal, dry, and critical types. Proposed alternative operations were modeled for each of these water year types. The results were then weighted by the frequency of occurrence of that water year type. The weighted generation contributions from each water year type were then totaled to represent an average year during the evaluation period. The net generation loss was calculated based on subtracting generation from the Big Creek Hydroelectric System under Project operations and flows from the generation that would occur under the existing licenses and flows.

resulting from implementation of the Project, including any environmental measures (i.e., higher minimum instream flows and channel riparian maintenance flows) would have to be replaced to meet demand (i.e., purchased from other energy producers).

The California Independent System Operator (CAISO) controls how energy is dispatched for SCE and other entities in a least-cost manner until system demand is met. Power plants with zero or low fuel and operational costs, including nuclear, hydroelectric, and renewable power plants, are dispatched first. Gas-fired plants and other fossil fuel–fired plants, which have higher fuel and operational costs, are then dispatched in order of their marginal costs. Power plants with the highest marginal costs are dispatched last and used only in times of very high demand. The cost of power from thermal power plants is largely determined by the thermal efficiency, which also determines the GHG emission rate of the units. This means that following a least-cost dispatch process results in a dispatch order from (roughly) lowest to highest GHG emissions intensity. The loss of power generation due to Project operations under a new FERC license will create an additional load requirement on the system. Because of the way energy generation sources are dispatched in California, analysis of potential additional GHG emissions attributable to additional loads must be considered on a system-wide basis.

When quantifying GHG emissions, the different global warming potentials of GHG pollutants are usually taken into account by normalizing their rates to an equivalent carbon dioxide emission rate (CO_2e). California emitted 459 million metric tons (tonnes) CO_2e in 2012 (CARB, 2012). Statewide, GHG emissions in 1990 were 427 million tonnes CO_2e (CARB, 2007).

The majority of SCE's total GHG emissions are associated with the procurement of fossil fuel generation needed to meet demand. In 2009, fossil fuel generation accounted for approximately 50 percent of the power generation that was provided to SCE's customer base (SCE personal communication). However, any replacement generation acquired by SCE must be consistent with California's legislative mandates requiring reductions in statewide GHG emissions from current levels. In accordance with California's statutes and regulations, SCE must monitor total GHG emissions from its power generation system; implement system-wide programs to reduce GHG emissions; increase the percentage of renewable generation in its generation portfolio; and develop energy efficiency programs.

The following list summarizes some of the above-referenced legislative mandates:

<u>GHG Emissions</u>

- **Executive Order S-3-05** which establishes the following GHG emissions reduction targets:
    - by 2010, reduce emissions to 2000 levels;
    - by 2020, reduce emissions to 1990 levels; and
    - by 2050, reduce emissions to 80 percent below 1990 levels.
- **California Global Warming Solutions Act of 2006 - Assembly Bill 32 (AB 32)** which requires the California Air Resources Board (CARB) to:
    - adopt early action measures to reduce GHG emissions;

- establish a statewide GHG emissions cap for 2020 based on 1990 emissions (by January 1, 2008);
- adopt mandatory reporting rules for significant GHG sources (by January 1, 2008);
- adopt a scoping plan indicating how emission reductions will be achieved via regulations**,** market mechanisms, and other actions (by January 1, 2009); and
- adopt regulations needed to achieve the maximum technologically feasible and cost-effective reductions in GHG emissions (by January 1, 2010).

Renewable Energy

- **Senate Bill X1-2** which was signed into legislation April 2011, requires California's electric utilities to increase their renewable generation to 33 percent by 2020. In addition to increasing the Renewables Portfolio Standards (RPS) to 33 percent by 2020, SBX1-2 makes a number of other significant changes to California RPS. SBX1-2 requires California's electric utilities, including publicly owned utilities, to reach 33 percent RPS in three compliance periods. By December 31, 2013, the utilities must procure renewable energy products to equal 20 percent of retail sales. By December 31, 2016, utilities must procure renewable energy products equal to 25 percent of retail sales, and by December 31, 2020, utilities must procure renewable energy products equal to 33 percent of retail sales and maintain the percentage in following years.

- **Senate Bill 1368 (SB 1368)** which was signed into law in 2006 and does not allow California electric utilities to enter into long-term commitments with base load power plants that exceed emission performance standards.

- **Senate Bill 1078 (SB 1078)** which was signed into legislation in 2002 and requires California's electric retailers (including SCE) to procure 20 percent of the retail customer load with renewable energy by the year 2017.

- **Senate Bill 107** which was signed into law in 2006 and accelerates the 20 percent renewable deadline (identified in SB 1078) to 2010 and requires the California Energy Commission (CEC) to study and report the feasibility of expanding the renewable goal to 33 percent by 2020.

Appendix A provides examples of wind, solar, and conservation programs and measures implemented by SCE to reduce overall GHG emissions in California. These programs include demand-side management and customer energy-efficiency programs that will reduce energy usage, and programs to increase renewable energy sources in SCE's generating portfolio that will reduce the need for fossil-fueled generation. One SCE report states that between 2010 and 2014, SCE partnered with their customers to save nearly 7.800 GWh - enough energy to power over 1.2 million homes in California for an entire year. These savings reduced GHG emissions by 3.3 million metric tons, the equivalent of removing 701,000 cars from the road (SCE 2014).

Environmental Impacts for Greenhouse Gas Emissions

Under the Project, higher instream flow releases result in an estimated overall decrease in annual hydroelectric generation of 191,184 MWh (Table 1). This loss of generation represents approximately

5.6 percent of existing project generation capacity (3,403,276 MWh). This loss of power may have to be replaced by SCE (purchased from the market) to meet demand. However, any replacement generation acquired by SCE must be consistent with the legislative mandates adopted by the State of California requiring reductions in overall GHG emissions. Loss of generation under the Project must be evaluated in the context of SCE's overall GHG emissions in the State of California, including consideration of comprehensive programs and measures implemented by SCE to comply with regulatory policies and regulations.

GHG Emissions Related to Operation and Maintenance

Operation of the Project will result in an energy production reduction of 191,184 MWh/yr. Depending on the resource used to cover this reduction, GHG emission would range from approximately no emissions (if replaced with renewable resources or not replaced) to approximately 83,536 tonnes CO_2e/yr based on calculating GHG emissions from *Unspecified Sources* (CARB 2014). However, the energy production reduction due to the Project only constitutes approximately 0.2 percent of SCE's total energy demand (92,721,000 MWh/yr. in 2017).

Implementation of the Project will result in a less-than-significant impact to GHG emissions. California's legislative mandates require SCE to continue to implement programs and measures to reduce overall GHG emissions (refer to Appendix A). These programs and measures will compensate for the loss of generation from implementation of the Project by incrementally increasing their effectiveness (i.e. no net overall increase in GHG emissions). The Project will continue to generate power with low GHG emissions and provide a valuable offset of GHGs. The Project's continued operation, even considering the small loss of generation, will support California's move toward a lower carbon footprint future, and the goals of AB 32 and Executive Order S-3-05. Therefore, the impact of the Project on GHG emissions when considering SCE's overall programs and measures is considered to be less-than-significant.

GHG Emissions Related to Project Construction

Implementation of the new FERC licenses for Big Creek, Portal, and Vermilion Valley includes several construction projects intended to improve operation and maintenance of the hydroelectric facilities, enhance environmental resources, and improve recreation facilities. Construction projects include modification of existing hydroelectric facilities, rehabilitation of existing recreation facilities, and development of new recreation facilities. These projects will be constructed over a several-year period, typically in the summer and early fall when the sites are accessible.

Project construction activities would result in a short-term, unavoidable increase in GHG emissions as a result of engine exhaust from the operation of fossil-fueled vehicles and equipment (Table 2). Table 2 summarizes the estimated GHG emissions for each project resulting from construction activities. GHG estimates in Table 2 were derived from emissions calculations for each construction project, where SCE identified the required construction equipment, construction schedule, construction-use hours or miles per day, and the number of days of anticipated use. Total estimated GHG emissions for all recreation and infrastructure projects combined is 1,841 tonnes CO_2e.

Table 2. Estimated Construction Greenhouse Gas Emissions by Recreation and Infrastructure Modification Project (SCE 2014)

Recreation Projects	**TOTAL GHGs (Tonnes CO_2e)**
Boat Ramp-Huntington Lake, West	13.05
Eastwood Overlook and Parking	13.33
Upper Billy Creek Campground	130.61
Jackass Meadow Campground (including South Fork San Joaquin River Universally Accessible Fishing Platform)	153.48
Boat Ramp-Florence Lake (including Florence Lake Universally Accessible Boat Loading Platform)	12.27
Florence Lake Day-Use Picnic Area	15.97
Angler Access Stairway at Mammoth Pool Powerhouse	1.88
Parking Area near Mammoth Pool Powerhouse Gate	1.62
Edison Lake Vista Overlook	11.12
Edison Lake Boat Launch	16.74
Mammoth Pool Campground	131.58
Portal Campground	130.92
Vermilion Campground	131.76
Boat Ramp-Mammoth Pool Boat Launch	20.20
Windy Point Boat Launch	7.78
Windy Point Day-Use Picnic Area	8.53
China Bar Boat Camp	49.93
Mono Creek Campground	85.40
Mono Creek Day-Use Picnic Area	85.40
Boat Ramp and Parking-Huntington Lake, East	16.94
Catavee Campground	85.95
Bear Cove Day-Use Picnic Area	24.62
Deer Creek Campground	85.26
Deer Creek Day-Use Picnic Area	85.26
Kinnikinnick Campground	85.95
Huntington Dam 3 Day-Use Area	61.76
Total GHGs - All Recreation Projects	**1,467**
Infrastructure Modification Projects	**TOTAL GHGs (Tonnes CO_2e)**
Balsam Creek Diversion	4.28
Bolsillo Creek Diversion	4.28
Chinquapin Creek Diversion	4.36
Ely Creek Diversion	4.36
Rock Creek Diversion	5.00
Ross Creek Diversion	7.74
Camp 62 Creek Diversion	2.52
Mono Creek Diversion	22.06
Mammoth Pool Dam	258.00
Dam 4	21.82
Dam 5	22.32
Dam 6	16.69
Total GHGs - All Infrastructure Modification Projects	**373**
Total GHGs – All Projects	**1,841**

There are no state-established thresholds for GHG emissions in California. As a benchmark, California's CO_2e emissions from fuel combustion activities in 2012 were 459,000,000 tonnes (CARB 2012). Short-term construction activities associated with the Big Creek, Portal, and Vermilion Valley construction projects will minimally contribute to this state total by adding 1,841 tonnes CO_2e for all construction projects combined (Table 2) which is approximately 0.0004 percent of the state's 2012 CO_2e emissions. In addition to being cumulatively minimal, since the construction aspects of the Project will occur over an 18-year period, not all in one year, the impact related to GHG emissions is even further reduced when considered on a year-to-year basis.

When project construction occurs, construction-related GHG emissions will be temporary and intermittent, and will cease upon completion of work. Overall, implementation of Big Creek, Portal, and Vermilion Valley construction activities will not generate GHG emissions that result in a significant environmental impact or conflict with an applicable plan, policy, or regulation adopted for the purposes of reducing emissions of GHGs; therefore, impacts are considered less than significant.

3.1.3 HAZARDS AND HAZARDOUS MATERIALS

Hazards and Hazardous Materials Would the project:	Potentially Significant Impact	Less-than-significant with Mitigation	Less-than-significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☑	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☑
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☑
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☑
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☑
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☑
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑

Environmental Setting for Hazards and Hazardous Materials

Hazardous materials are used at several Project facilities as a part of ongoing operations. Generally, hazardous waste materials, such as oil, herbicides, pesticides, and household cleaners are concentrated around Project powerhouses and dams. Oil is stored on-site in 55-gallon drums with secondary containment provided in the form of berms, containment pallets, or sumps. Project facilities are designed so that potential spills will not enter navigable waters. Operations and maintenance staff are trained to visually inspect all equipment for signs of leakage and notify the appropriate parties in the event of a spill. In addition, SCE maintains a cache of spill clean-up

equipment suitable to contain spills associated with each project. SCE implements a Spill Prevention Control and Countermeasure (SPCC) Plan, which provides guidelines and protocols for the prevention and containment of potential hazardous spills.

Hazardous material is present in the anti-corrosion felt wrapping that is used to cover and protect older (pre-1980) above-ground water conveyance piping used at Project facilities. The Tombstone Creek Diversion was constructed in 1945 and includes approximately 2,400 feet of 14-inch diameter above-ground steel pipe that is used to convey water to Florence Lake. The steel pipeline is covered with an older felt wrap that contains asbestos. Although not hazardous while wrapped around the pipe, the asbestos-bearing felt wrap can become hazardous if it is disturbed. The Tombstone Creek Diversion is not in service and the Project includes decommissioning of the diversion and removal of the water conveyance pipeline. During removal activities, the felt wrap will be disturbed when the pipe is cut and transported from the site. The felt-wrapped water conveyance pipeline will be considered and handled as a hazardous material during the decommissioning activities.

SCE also maintains a Hazardous Materials Release Response Plan (Business Plan) for each facility in accordance with the California Health and Safety Code for the storage of hazardous materials. These plans are reviewed and revised, if appropriate, once every three years. The Business Plan includes a chemical inventory of hazardous materials stored at each facility. The chemical inventory is reviewed and updated annually and submitted to the administering agency. SCE also maintains a Hazardous Substance Plan that is reviewed and updated every three years and submitted to the USFS for review and approval. This plan is subsequently filed with the Commission following USFS approval.

An Emergency Management Plan is also posted at every SCE facility and provides notification procedures and actions to be taken in the event of an emergency including hazardous spills. In addition, SCE maintains a Fire Prevention and Response Plan (Fire Plan) that outlines responsibilities for fire prevention and suppression during planned field activities. This plan contains provisions for fire prevention requirements and defines the level of preparedness to prevent or suppress fires resulting from project activities on USFS lands. The Fire Plan is reviewed annually by SCE in consultation with the USFS, and updated, as appropriate.

Environmental Impacts for Hazards and Hazardous Materials

The release of hazardous materials could potentially occur during decommissioning of the Tombstone Creek Diversion where asbestos is present in the felt wrapping surrounding the piping**.** SCE will procure the services of a California State Certified Industrial Hygienist to develop a work plan that outlines handling and disposal requirements to be followed when working with the conveyance pipe. Measures contained in the work plan will be designed to ensure worker and public health and safety.

On-going operation and maintenance activities associated with the Project are not likely to lead to hazards or the release of hazardous materials. SCE implements a variety of measures to assure that hazardous materials are not released into the environment, including; inspections, storage requirements, and the use of secondary containment facilities.

SCE will continue to manage the use, storage, and disposal of hazardous materials at Project facilities in accordance with the SPCC Plan, Business Plan, Hazardous Substance Plan, Emergency Management Plan, and Fire Plan.

Implementation of the Project will not create additional risks associated with the use of hazardous materials. Further, implementation of the Project would not emit hazardous materials, substances, or waste within one quarter mile of a school or in the vicinity of a private airstrip. The Project would not create a significant hazard to the public or interfere with an adopted emergency response plan or evacuation plan. Project activities are not implemented within an area covered by an airport land use plan or an area identified as a hazardous materials site. Lastly, implementation of the Project would not expose people or structures to significant risks of loss, injury, or death involving wildland fires.

3.1.4 TRANSPORTATION/TRAFFIC

Transportation/Traffic Would the project:	Potentially Significant Impact	Less-than-significant with Mitigation	Less-than-significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☐	☑	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☐	☑	☐
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	☐	☐	☑	☐
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☑	☐
e) Result in inadequate emergency access?	☐	☐	☑	☐
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	☐	☐	☑	☐

Environmental Setting for Transportation/ Traffic

The transportation system in the Project vicinity includes a state route, county roads, USFS open- and closed-access roads on public lands and closed-access roads on private lands. State Route 168 is a two-lane highway that serves as a main access route into the Big Creek and Kaiser basins from the Fresno metropolitan area and ends near the community of Lakeshore along the northeast shore of Huntington Lake. Huntington Lake Road (FRE 2710 in Fresno County) provides access from Shaver Lake to the communities of Big Creek, Huntington Lake, and the upper basin.

Other USFS access roads in the basin include: (1) Kaiser Pass Road (NFSR 5S80), which provides access from Huntington Lake over Kaiser Pass into the upper basin (Portal and Vermilion Project facilities) and ends near Thomas A. Edison Lake; (2) Florence Lake Road (NFSR 7S01), which provides access to Florence Lake from Kaiser Pass Road; (3) Railroad Grade Road (NFSR 8S08), which connects the community of Big Creek to the Jose Basin area; (4) Minarets Road (NFSR 4S81),

which provides access to the Mammoth Pool Road; (5) Mammoth Pool Road (NFSR 6S25), which connects Minarets Road to Mammoth Pool Reservoir; and (6) Mammoth Pool Powerhouse Road (NFSR 8S03), which provides access from Minarets Road to the Mammoth Pool Powerhouse.

SCE employees and the public use these routes when traveling through or within the Big Creek and Kaiser basins. Table 4 includes data regarding the current use of these roads. In addition to these primary roads, numerous other roads throughout the Sierra National Forest are open to the public and provide access to the Six Big Creek Hydroelectric Projects' operation and recreation facilities. Several roads within the Project are closed to public motor vehicle access and are used almost exclusively by SCE employees to access the Big Creek Project facilities. Canyon Road (NFSR 8S05) is one such road that originates off Huntington Lake Road near the community of Big Creek and ends near the Big Creek No. 3 Project facilities. The segment of the Mammoth Pool Powerhouse Road (NFSR 8S03) between Mammoth Pool Powerhouse and Canyon Road (NFSR 8S05) is also a Project road that is closed to public motor vehicle access. Both roads are integral components of the project transportation network that provides access to SCE hydroelectric project facilities in the Big Creek and San Joaquin River canyons.

Table 3. Estimated Vehicle Traffic Increase Resulting from Implementation of Protection, Mitigation, and Enhancement Measures Proposed to Be Included in the 401 Certification

Road Name	Annual No. of Vehicles using Road	Protection, Mitigation and Enhancement Measure		
		Small Diversion Decommissioning	Recreation Facility Rehabilitation	Infrastructure Modification
State Route 168	198,000[1]	A	B	C
Huntington Lake Road FRE2710), near Dam 3 at Huntington Lake	21,600[2]	A	B	NA
Kaiser Pass Road (NFSR 5S80), east of Portal Power Plant	36,000[2]	A	B	C
Kaiser Pass Road (NFSR 5S80), east of Stump Springs Road	24,000[2]	A	B	C
Kaiser Pass Road (NFSR 5S80), east of Mono Creek Campground	11,000[2]	NA	B	C
Florence Lake Road (NFSR 7S01), south of Ward Lake	6,200[2]	A	B	NA
Railroad Grade Road (NFSR 8S08), east of West Portal	1,000[2]	NA	NA	C
Minarets Road (NFSR 4S81), before Mammoth Pool Road	16,800[2]	NA	B	D
Mammoth Pool Road (NFSR 6S25), near Minarets Road	11,800[2]	NA	B	D
Mammoth Pool Powerhouse Road (NFSR 8S03), near the Powerhouse	1,600[2]	NA	B	D

[1] 2008 Caltrans Traffic Data: based on average daily traffic of 1,100 vehicles at the intersection of SR 168 with the Huntington Lake Road.
[2] Source: Amended Preliminary Draft Environmental Assessment Land 6, Traffic/Circulation Study (SCE 2007).
A - Estimated 200 vehicle trips (based on 20 work days and 5 vehicles/day for each small diversion decommissioning).
B - Estimated range of vehicle trips is 752 to 3,006 depending on size of recreation facility (based on 120 work days and 10 vehicles/day, and 606 truck trips for material delivery and removal for a large campground. The number of vehicle trips for medium and small campgrounds are estimated at 50% and 25% of the large campground vehicle trips, respectively).
C - Estimated range of vehicle trips is 88 to 496 depending on size of infrastructure modification (based on workdays ranging between 10 to 30 days, 5 to 8 vehicles/day, and 4 to 16 truck trips for material delivery and removal).
D - Estimated 2,644 vehicle trips (based on 44 trips for materials and 260 work days with 10 vehicles/day during construction at Mammoth Pool).
NA – Not applicable.

Environmental Impacts for Transportation/Traffic

Implementation of the Project will not exceed the capacity of the existing circulation system or conflict with an existing congestion management program. Further, implementation of the Project will not result in a change in air traffic patterns or conflict with adopted policies, plans, or programs supporting alternative transportation. The Transportation System Management Plan called for in the Settlement Agreement contains measures for maintenance of existing project roads and Project-related recreation facility roads over the term of the new license. No new roads would be constructed. Road hazards and emergency access would not be affected due to implementation of the Project compared to the baseline condition.

Implementation of several of the Project environmental measures, including infrastructure modifications, decommissioning of small diversions, rehabilitation/enhancement of recreation facilities, and construction of new recreation facilities, would result in a short-term change in traffic use patterns. During the first five years following license issuance, SCE will complete activities associated with 12 infrastructure modifications and the decommissioning of six small diversions. During these activities, there will be a short-term increase in Project-related traffic due to construction equipment and materials transport. Table 3 identifies the roads that will be used during infrastructure modifications and decommissioning and the associated increase in road use. This short-term change in traffic use and circulation would be authorized under a USFS Road Use Permit (RUP). The RUP would include site-specific measures to avoid impacts to the transportation/traffic system.

During the above-described activities, there will be a short-term increase in Project-related traffic and also a decrease in Project-related recreation traffic (because recreation facilities will be temporarily closed during construction). Table 3 identifies the roads that will be used during rehabilitation and enhancement of recreation facilities and the associated increase in road use.

Given the development of a RUP and the phased implementation of construction for Project recreation facilities and Project decommissioning activities, a less-than-significant impact to the existing transportation/traffic circulation system would occur.

3.1.5 UTILITIES AND SERVICE SYSTEMS

Utilities and Service Systems Would the project:	Potentially Significant Impact	Less-than-significant with Mitigation	Less-than-significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	☐	☐	☐	☑
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☑
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☐	☑
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☑

Environmental Setting for Utilities and Service Systems

SCE is currently permitted to discharge treated wastewater under two National Pollutant Discharge Elimination System (NPDES) permits administered by the Central Valley Regional Water Quality Control Board. NPDES Permit No. CA0079545 allows discharge from the Big Creek Powerhouse No. 1 Domestic Wastewater Treatment Plant. This treatment plant serves the community of Big Creek and discharges tertiary treated wastewater to Big Creek, a tributary to the San Joaquin River. NPDES Permit No. CA0081337 covers discharge of treated wastewater, untreated groundwater, and non-contact cooling water from the Eastwood Power Station Wastewater Treatment Facility to Shaver Lake.

Domestic wastewater generated at all powerhouses except Eastwood Power Station is collected and treated by a septic tank and leach field system. At the Eastwood Power Station, sewage from restrooms and sinks is collected in a holding tank, which is periodically emptied and disposed using a vacuum truck operated by a licensed sewage-disposal company.

SCE operates and maintains water supply systems and treatment plants that provide potable water to: 1) SCE's administrative offices, company housing, and public residences located in the town of Big Creek; 2) the Big Creek No. 3 community; 3) project powerhouses; and 4) the Florence Work Camp. The source of the water supply at all locations, with the exception of the Florence Work Camp, is the Project's powerhouse penstocks. The water supply for the Florence Work Camp is provided by a groundwater well. Prior to distribution for domestic use, the water is treated at a water-treatment plant operated by SCE. Water rights for the diversion, distribution, and consumptive use of this water are held by either SCE or the community of Big Creek. SCE does not sell any water associated with hydropower projects to other parties.

Solid waste at the SCE's facilities is collected by a local disposal service and transported to the county landfill. Solid waste generated by SCE work crews at field locations is packed out to the trash collection bins located at SCE facilities for collection by a local disposal service.

Environmental Impacts for Utilities and Service Systems

No impact to utilities and service systems would occur from implementation of the Project. Implementation of the Project would result in an increase of the number of full-time SCE employees by approximately 20 (SCE 2007b). The Project would not increase overall recreation use in the basin during the term of the license. The existing water and wastewater treatment facilities have sufficient capacity to accommodate the increase in SCE employees. No new water or wastewater treatment facilities would be required due to implementation of the Project. The Project does not require construction of new stormwater drainage facilities or expansion of existing facilities. The implementation of the Recreation Management Plan only requires rehabilitation and/or replacement of the existing stormwater facilities. The existing landfill has sufficient permitted capacity to accommodate the solid waste disposal requirements.

3.2 Level of Significance for Potential Environmental Impacts Analyzed Under the National Environmental Policy Act

The following section identifies the level of significance for each of the potential impacts associated with implementation of the Project. The level of significance is based largely on the analysis completed in the Commission's NEPA documents for all aspects of the Project that were analyzed pursuant to NEPA. The analysis contained in the NEPA documents provides an assessment of environmental impacts associated with the operation of the Project and short-term environmental impacts associated with implementation of the environmental measures stemming from the Settlement Agreement.

Table 4, Table 5, and Table 6 provide a determination of the level of significance of potential impacts associated with implementation of the Project for each resource area required by CEQA. Four types of potential significance-level determinations are identified in these tables: 1) no impact (NI); 2) less-than-significant (LTS) impact; 3) less-than-significant impact with mitigation incorporated (LTS w/MI); and 4) significant impact (SI). A "NI" determination was made when the Project has no possibility of resulting in an adverse change in resource condition, relative to the baseline condition. The "LTS" and "LTS w/MI" determinations were made after evaluating potential adverse impacts to

resource conditions (relative to the baseline) from the Project, associated PM&E's, and additional requirements of the 401 Certification. There were no instances of significant impacts.

In cases where infrastructure modification or construction/deconstruction activities would be required to implement the conditions in the 401 Certification, or to carry out the recreation improvements or other measures required under the Settlement Agreement, detailed project descriptions and construction plans were analyzed pursuant to NEPA or else are not available at this time. For those activities where there is no detailed project description, and therefore no analysis pursuant to NEPA, it would be speculative at this time to determine what kind of potential impacts those activities may have, therefore the conditions in the 401 Certification are written to require that the Licensee provide detailed construction plans together with a description of the measures to be employed to reduce adverse environmental impacts. In addition, some activities may require additional permits prior to initiation of those activities, and any appropriate additional environmental analyses will occur prior to discretionary approval of those activities.

Table 4. Level-of-Significance of the potential impacts of measures from SCE's Proposed Project that were analyzed in FERC's Final Environmental Impact Statement for the Big Creek ALP Projects (FERC Project No. 2175, 67, 120 and 2085). Table Key: "PSI" = Potentially Significant; "LTS w/ MI" = Less that Significant with Mitigation Incorporated; "LTS" = Less than Significant Impacts; and "NI" = No Impact.

Measures Under SCE's Proposed Project	CEQA Resource Areas																	
	Aesthetics	Agriculture and Forest Resources	Air Quality	Greenhouse Gas Emissions	Biological Resources-Aquatic	Biological Resources-Terrestrial	Cultural Resources	Geology and Soils	Hazards and Hazardous Materials	Hydrology and Water Quality	Land Use and Planning	Mineral Resources	Noise	Population/Housing	Public Services	Recreation	Transportation/Traffic	Utilities and Service Systems
Big Creek Alternative Licensing Process (Big Creek Nos. 2A, 8 & Eastwood; Big Creek Nos. 1 & 2; Mammoth Pool; and Big Creek No. 3)																		
Implement the MIF requirements in all bypass reaches	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Temperature Monitoring and Management Plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Flow Monitoring and Reservoir Level Measurement Plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Fish Monitoring Plan.	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Attend annual consultation meeting for water and aquatic resources.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the wildlife habitat enhancements.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Bald Eagle Management Plan but modify the plan to ensure that when investigating any raptor mortality that may be associated with a project transmission line, the most recent APLIC guidelines be used to assess potential corrective actions.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Vegetation and Integrated Pest Management Plan.	NI	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Implement environmental programs for environmental training, avian protection, noxious weeds, environmental compliance, the Endangered Species Alert Program, and Northern Hydro Special-Status Species Information Program.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Attend annual consultation meeting for terrestrial resources.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Prepare a report on recreational resources, including information on reservoir elevations, boat ramp accessibility, and parking and campsite capacity.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Attend annual consultation meeting for recreational resources.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the proposed project boundary changes detailed in Section 2.2.5, Proposed Project Boundary, and analyzed in Section 3.3.6.2, Project Boundary Revisions, with the exception of maintaining the Florence Lake day-use area within the project boundary and including portions of the recreational facilities that are partially outside of the existing project boundary inside the revised project boundary.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Transportation System Plan.	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop a Sign Plan.	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop a Fire Management Plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop a Spill Prevention and Countermeasure Plan.	NI	NI	NI	NI	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI
Attend annual meeting for land management resources.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Provide transportation system plan labor and equipment.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Finalize and implement one HPMP for the Big Creek ALP Projects.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement environmental programs for cultural resources awareness.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Attend annual consultation meeting for cultural resources.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Big Creek Nos. 2A, 8 & Eastwood Project (FERC Project No. 67)																		
Implement the Channel Riparian Maintenance Flow Plan in: South Fork San Joaquin River, Bear Creek, Bolsillo Creek, Camp 62 Creek , Chinquapin Creek, and Mono Creek	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Implement the Flow Monitoring and Reservoir Water Level Measurement Plan including:																		
Installation of gaging equipment at Dam 5 and Mono Creek Diversion	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Modifying MIF release facilities at Bolsillo Creek and Camp 62 diversions	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Implement temperature monitoring programs in the South Fork San Joaquin River, Big Creek, Florence Lake, and North Fork Stevenson Creek, including real-time telemetry monitoring of water temperatures in the South Fork San Joaquin River downstream of Florence Lake.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Small Diversions Decommissioning Plan at: Crater Creek, Tombstone Creek, North Slide Creek, and South Slide Creek	NI	NI	LTS	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	LTS	NI
Implement the Riparian Monitoring Plan at the South Fork San Joaquin River (Jackass Meadow complex) and Mono Creeks.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the sediment management prescriptions at small diversions on Balsam, Bolsillo, Camp 62, Chinquapin, Hooper, Mono, and Pitman creeks:																		
Sediment pass through	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Physical removal of sediment	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Implement the sediment management prescriptions at Dam 5, Portal, and Balsam Meadows forebays:																		
Sediment pass through	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Physical removal of sediment	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Monitor spawning gravel embeddedness after sediment pass-through at Dam 5.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the LWD Management License Article at the Bear Creek Diversion.	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the VELB Management Plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement proposed license articles for mule deer, special-status species, and bats.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Perform operation and maintenance of recreational facilities.	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	NI	
Construct new recreational facilities including an accessible fishing platform at Jackass Meadows and an accessible boat loading platform at Florence Lake.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	LTS	NI	
Provide maintenance of the accessible fishing platform.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
Manage reservoir water surface elevations at Florence Lake.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
Stock fish in project reservoirs and stream reaches.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
File an annual stocking report with the Commission.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
Disseminate to the public flow information for whitewater boating.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
Install interpretive signs.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
Big Creek Nos. 1 and 2 Project (FERC Project No. 2175)																			
Install minimum flow devices and gaging equipment at Ely Creek Diversion, Balsam Creek Diversion, and Dam 4.	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
Implement the sediment management prescriptions at Ely Creek Diversion:																			
Sediment pass through	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	
Physical removal of sediment	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	
Implement the sediment management prescriptions at Dam 4:																			
Sediment pass through	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	
Physical removal of sediment	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	
Remove Rancheria Creek from the Big Creek Nos. 1 and 2 Project license.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
Monitor spawning gravel embeddedness after sediment pass-through at Dam 4.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
Implement the Small Diversions Decommissioning Plan at Pitman Creek and Snow Slide Creek domestic diversions.	NI	NI	LTS	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	LTS	NI	
Implement proposed license articles for special-status species, bats, and bear-human interactions.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	

Implement rehabilitation of existing recreation facilities, but not including Upper Billy Creek, Catavee, and Kinnikinnick campgrounds located in the Sierra National Forest outside of the project boundary.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	NI
Construct new recreational facilities including a day-use area at Dam 3 and an accessible fishing platform.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	LTS	NI
Stock fish in project reservoirs and stream reaches.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
File an annual stocking report with the Commission.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Install interpretive signs.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Visual Resources Plan.	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Mammoth Pool Project (FERC Project No. 2085)																		
Implement fish-water turbine upgrade.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	LTS	NI
Install minimum flow devices and gaging equipment at Mammoth Pool Dam and the Ross and Rock Creek diversions.	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement temperature monitoring programs in the San Joaquin River and Mammoth Pool reservoir, including real-time telemetry monitoring of water temperatures in the Mammoth Pool reach.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the sediment management prescriptions at Ross and Rock creeks:																		
Sediment pass through	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Physical removal of sediment	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Implement the sediment management prescriptions at Mammoth Pool Reservoir:																		
Sediment pass through	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Conduct a feasibility assessment to evaluate the effects of gravel augmentation into, or immediately below, the Mammoth Pool Spillway channel on project facilities.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the VELB Management Plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement proposed license articles for mule deer, special-status species and bats.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement rehabilitation of existing recreation facilities, but not including Mammoth Pool Campground located in the Sierra National Forest outside of the project boundary.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	NI

Stock fish in project reservoirs and stream reaches.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
File an annual stocking report with the Commission.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Disseminate flow information for whitewater boating.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Provide pre-spill whitewater boating releases.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Provide interpretive signs.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Visual Resources Plan.	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Big Creek No. 3 Project (FERC Project No. 120)																		
Install minimum flow devices and gaging equipment at Dam 6.	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement temperature monitoring programs in the San Joaquin River, including real-time telemetry monitoring of water temperatures in the Stevenson reach.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement a supplemental fish, water temperature, and DO study in the San Joaquin River - Stevenson reach to evaluate use and importance of this reach for transitional zone fish species.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the sediment management prescriptions at Dam 6:																		
Sediment pass through	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Physical removal of sediment	NI	NI	NI	NI	LTS	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Monitor spawning gravel embeddedness after sediment pass-through at Dam 6.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the VELB Management Plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement proposed license articles for special-status species and bats.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Attend annual consultation meeting for terrestrial resources.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement rehabilitation of existing recreational facilities.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	NI
Disseminate flow information for whitewater boating.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Table 5. Level-of-Significance of the potential impacts of measures from SCE's Proposed Project that were analyzed in FERC's Final Environmental Assessment for the Big Creek Portal Project (FERC Project No. 2174). Table Key: "PSI" = Potentially

Significant; “LTS w/ MI” = Less that Significant with Mitigation Incorporated; “LTS” = Less than Significant Impacts; and “NI” = No Impact.

Measures under SCE’s Proposed Project **Portal Hydroelectric Project (FERC Project No. 2174)**	**CEQA Resources Areas**																	
	Aesthetics	**Agriculture and Forest Resources**	**Air Quality**	**Greenhouse Gas Emissions**	**Biological Resources-Aquatic**	**Biological Resources-Terrestrial**	**Cultural Resources**	**Geology and Soils**	**Hazards and Hazardous Materials**	**Hydrology and Water Quality**	**Land Use and Planning**	**Mineral Resources**	**Noise**	**Population/Housing**	**Public Services**	**Recreation**	**Transportation/Traffic**	**Utilities and Service Systems**
Implement the minimum instream flow requirement[8]	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Modify the existing catchment basin downstream of Portal Dam to increase the rate of aeration downstream of the catchment basin and better contain elevated iron concentrations.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Investigate the feasibility of conducting periodic iron residue removal from the catchment basin. This activity would be completed once per year using a vacuum truck to remove the iron residue.	LTS	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement a plan to monitor fish populations in Camp 61 Creek in years 5, 10, and 20 of a new license.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement a plan to monitor project-related sediment accumulation and spawning gravel in response to instream flow releases in Camp 61 Creek above and downstream of the confluence with the Adit 2 channel. Sediment monitoring would include baseline surveys plus three additional surveys in conjunction with the fish population monitoring.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

[8] *Camp 61 Creek instream flow measures proposed in the 2007 Big Creek ALP Settlement Agreement supersede these measures analyzed in FERC’s 2006 Portal FEA.

Develop a vegetation management plan that addresses special-status plant species, wetlands, and other sensitive habitats, including riparian communities. This plan would include a noxious weed management program that would address the use of herbicides.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Monitor bank stability and riparian vegetation in Camp 61 Creek in conjunction with baseline sediment survey, then again in years 10, 20, and 30.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Conduct recreation surveys and file a report on project-induced recreation every sixth year.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement, in consultation with FS, a recreation plan addressing the development and management of project-related recreation use and opportunities, including scheduling the implementation of several improvements at the Portal Forebay Campground.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	NI
Modify the existing project boundary by removing the Eastwood Overflow Campground, the segment of Rancheria Creek between Huntington Lake and the powerhouse, the Camp 61 Creek from the Portal dam to the confluence with SFSJR.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Modify the existing project boundary by adding the gaging stations on East Fork and West Fork Camp 61 Creeks; and the Adit 2 leakage weir.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop plans to address transportation and road management, fire management, signage, hazardous substances, and visual management.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement a comprehensive historic properties management plan (HPMP) which would include management provisions for PL-KAI-001.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement the Camp 61 Creek Channel Riparian Maintenance Flow Plan	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement an instream flow management plan that would describe existing or proposed provisions for the purposes of measuring and documenting compliance with the required minimum instream flows in the Camp 61 Creek bypass reach.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement a restriction on down-ramping rates to less than 6 inches per hour with channel and riparian	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

maintenance flows.																			
Develop, in consultation with the SWRCB, and implement a water temperature and DO monitoring plan to document the effectiveness of increasing DO through modification of the catchment basin.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement a plan in coordination with the FS and SWRCB to reduce the active channel and stream bank erosion that is occurring in Adit 2 Creek between RM 0.3 and RM 0.5.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Continue stocking rainbow trout from SCE's own trout-rearing facility in consultation with the CDFG to support recreational fishing in Portal forebay and provide 50 percent of the costs of fish production.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Prepare a BE for FS approval before constructing any new project features on NFS lands to evaluate potential effects on FSS species or MIS and monitor effectiveness of mitigation measures, if any are needed.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Monitor riparian vegetation along Camp 61 Creek as part of fish population and sediment monitoring.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Consult with FS to identify and implement measures to protect existing populations of subalpine fireweed growing near the distribution/communication line corridor.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement a fish and wildlife management plan to address stocking fish in Portal forebay, limited operating periods to protect special status birds, and monitoring for special status amphibians and bats.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Conduct systematic surveys for noxious weeds and non-native invasive plant occurrences at project facilities, roads, trailheads, and recreation features every five years through the term of any new license.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Monitor ground-disturbing activities annually for three years following implementation to detect and map new weed populations.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement a plan to monitor bald eagles as part of the fish and wildlife management plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Develop and implement a recreation report and recreation plan in consultation with the FS. The recreation plan should include scheduling the implementation of several improvements at the Portal Forebay Campground. The recreation report should include results from the recreation use survey and be filed every sixth year following the schedule of Form 80 filing. Recreation surveys should include specific questions about angler interactions with the power line crossing Portal forebay.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement a single comprehensive land management plan in consultation with the FS. This plan should include components to address transportation and access roads, fire prevention and response, signage requirements, and the management of hazardous substances.	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop SCE maintenance procedures to ensure that adverse effects on archaeological sites PL-KAI-001 and CA-FRE-369 are avoided.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Construct a new channel to re-route runoff from Adit Creek to Camp 61 Creek. This measure is intended to reduce the flow of water down Adit 2 Creek and prevent further erosion of the channel.	NI	NI	NI	NI	LTS	LTS	NI	LTS	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI
Install porous check dams in Adit 2 Creek to stabilize channel downcutting and establish vegetation to prevent ongoing erosion. This measure would be conducted after completion of a new channel to route flow away from Adit 2 Creek	NI	NI	NI	NI	LTS	LTS	NI	LTS	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI

Table 6. Level-of-Significance of the potential impacts of measures from SCE's Proposed Project that were analyzed in FERC's Environmental Assessment for the Big Creek Vermilion Valley Project (FERC Project No. 2086). Table Key: "PSI" = Potentially Significant; "LTS w/ MI" = Less that Significant with Mitigation Incorporated; "LTS" = Less than Significant Impacts; and "NI" = No Impact.

Measures under SCE's Proposed Project **Vermilion Valley Hydroelectric Project (FERC Project No. 2086)**	**CEQA Resources Areas**																	
	Aesthetics	**Agriculture and Forest Resources**	**Air Quality**	**Greenhouse Gas Emissions**	**Biological Resources-Aquatic**	**Biological Resources-Terrestrial**	**Cultural Resources**	**Geology and Soils**	**Hazards and Hazardous Materials**	**Hydrology and Water Quality**	**Land Use and Planning**	**Mineral Resources**	**Noise**	**Population/Housing**	**Public Services**	**Recreation**	**Transportation/Traffic**	**Utilities and Service Systems**
Consult with the appropriate agencies and, if needed, design and implement erosion control measures in the Warm Creek diversion channel.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Continue releasing a year-round minimum flow of 0.2 cfs or natural flow, whichever is less, downstream of the Warm Creek diversion dam.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Continue stocking rainbow trout from its own trout-rearing facility in consultation with the California Department of Fish and Game to support recreational fishing in the project area.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Take more water quality samples in Mono Creek to evaluate potential sources of increases in iron levels and assess any biological effects of this mineral. If further sampling and analysis determines that the Vermilion Valley Dam represents a point source of iron, SCE will work with the Regional Water Quality	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

Review Board to determine if SCE's operations can be altered to reduce the discharge of iron, or if a National Pollutant Discharge Elimination System permit is required.																		
Develop a mitigation and monitoring plan and treat the Vermilion Valley dam face in cooperation with the Sierra National Forest to control cheat grass, bull thistle, and woolly mullein in this area.	NI	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Consult with the FS on snow clearing activities on Kaiser Pass Road for emergency access to project works.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop a Vermilion Valley Project HPMP.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Remove the improved road between Vermilion Valley Dam and the Mono Creek Campground from the project boundary.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Provide a 7-day average release of 25 cfs to Mono Creek, from September 15th though December 15th, with instantaneous flows no lower than 20 cfs. From December 16th to April 30th, provide a 7-day average release of 18 cfs, with instantaneous flows no lower than 15 cfs. And, from May 1st through September 14th, provide a 7-day average flow release of 20 cfs, with instantaneous flows no lower than 16 cfs.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Monitor fish populations in the fifth, sixth, tenth and eleventh years of the new license term.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement recreational enhancement measures at the Vermilion Valley Campground, the Lake Edison Boat Launch site, and the Vista Overlook.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	NI
To provide high flow releases for channel maintenance, continue releasing flow from Warm Creek	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI

Diversion dam to the natural channel during wet years until July 1st.																		
To provide high flow releases for channel maintenance, release from Vermilion Valley dam to lower Mono Creek a variable flow that includes a release of 450 cfs for two consecutive days.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Provide funds for trout stocking in project stream reaches.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Expand water quality monitoring plan to examine both iron and manganese levels coming from Lake Edison dam leakage.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement a recreation plan that includes provisions to implement the staff recommended recreation facility enhancements; to develop suitable recreation facilities and public access to project recreation resources; to monitor recreation use and public needs, and the adequacy of project recreation facilities to meet such needs; and to share in the cost of constructing, operating, and maintaining project related recreation facilities and areas.	NI	NI	NI	NI	LTS	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	NI
Develop and implement a visual resources plan.	LTS	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Implement an erosion control plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	LTS	NI	NI	NI	NI	NI	NI	NI	NI
Develop an eagle management plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop and implement an instream flow monitoring plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
Develop a transportation system management plan.	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI

3.3 Potential Environmental Impacts from Measures Not Analyzed Under the National Environmental Policy Act

3.3.1 VERMILION VALLEY

Measure: Operational Release Limitations for Mono Creek from April 16 – June 15

Measure Source: U. S. Forest Service Final Section 4(e) Terms and Conditions, Vermilion Valley Hydroelectric Project No. 2086 (September 2, 2004), Condition No. 12(A)(1); and 401 Certification, Condition 5

Environmental Analysis: Condition 5 of the 401 Certification, and Condition No.12(A)(1) within the final USFS 4(e)s, requires SCE to limit operational releases to no more than 50 cfs during the period of April 16 – June 15 to protect brown trout fry. If SCE releases more than 50 cfs during the timeframe described, then SCE will notify and consult with State Water Board staff and USFS prior to making an operational release greater than 50 cfs. The operational release limitations for Mono Creek is within the historical range of operations for the Vermilion Valley Project and will protect aquatic wildlife from potential flow fluctuations caused by project operations. Therefore, the requirement to limit operational releases in Mono Creek from the Vermilion Valley Project will have less than significant impacts to the environment and will protect beneficial uses.

3.3.2 SIX BIG CREEK HYDROELECTRIC PROJECTS

Measure: Ramping Rates

Measure Source: 401 Certification, Condition 6

Environmental Analysis: Condition 6 of the 401 Certification requires SCE to develop ramping rates in consultation with resource agencies for all project-affected stream reaches. Potential flow fluctuations caused by project operations may adversely impact aquatic species and create hazardous conditions for recreationists. Ramping rates that would be developed for this Condition would be more protective of beneficial uses than current operations and would still be within the range of historical operations. Therefore, the development and implementation of ramping rates for project-affected stream reaches will have less than significant impacts on the environment and be protective of beneficial uses.

3.4 Mandatory Findings of Significance

Mandatory Findings of Significance Would the project:	Potentially Significant Impact	Less-than-significant with Mitigation	Less-than-significant Impact	No Impact
a) Does the Proposed Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☑	☐
b) Does 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) Does the Proposed Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☑

Environmental Impacts

The impacts associated with implementation of SCE's proposed project as described in their applications to FERC, along with the FERC Staff Alternatives, U.S. Forest Service's Section 4(e) conditions, terms of the settlement agreement, and conditions of the 401 Certification are less than significant. The new license conditions were developed to ensure that continued operation of the Six Big Creek Hydroelectric Projects, as licensed, would, in the judgment of the Commission, "be best adapted to a comprehensive plan for improving or developing waterways for all beneficial public uses." The Project is consistent with the beneficial uses defined in the State Water Board's *Water Quality Control Plan for the Sacramento River Basin and the San Joaquin River Basins* and, with all proposed conditions, the potential for the Project to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory is less-than-significant. Since this analysis covers the continued operation of the Six Big Creek Hydroelectric Projects, the potential for the Project to have impacts that are individually limited, but cumulatively considerable, is less-than-significant. With all conditions incorporated into the Project, the Project does not have the potential to cause substantial adverse impacts on the environment, either directly or indirectly.

3.5 Growth-Inducing Effects

CEQA Guidelines require an evaluation of a project's potential to cause growth-inducing impacts. A project can be considered to have a growth-inducing effect if it directly or indirectly fosters economic or population growth or removes obstacles to population growth, strains existing community service facilities to the extent that the construction of new facilities would be needed or encourages or facilitates other activities that cause significant environmental effects.

Recreational facility improvements and enhancements associated with the implementation of the Recreational Plan may foster some minor economic growth near the Project. However, this economic growth is expected to be small and is considered less than significant. Under new licenses, the Project would continue to operate essentially as it has in the past, continuing to provide electricity to meet existing regional power needs. The new license conditions will include new environmental programs, measures, and facilities that were specifically developed to promote resource protection. Any potential growth-inducing impacts of the new licenses for the Project as compared to baseline conditions would be negligible and less than significant.

3.6 Cumulative Impacts

CEQA Guidelines require cumulative impacts be evaluated. A cumulative impact consists of an impact that is the result of a combination of the project with other past, present, or reasonably foreseeable projects causing related impacts. FERC's NEPA documents associated with the Six Big Creek Hydroelectric Projects identified that aquatic, terrestrial, recreational, and cultural resources have the potential to be cumulatively affected by the operation of the facilities in combination with other past, present, and foreseeable future activities. However, FERC's analysis in the associated NEPA documents concluded that implementation of all new license conditions would reduce the cumulative effects associated with operation of the facilities. In addition, the five resource areas that were not analyzed by FERC and are addressed in this CEQA Supplement would not result in cumulative effects.

4.0 Summary of Unavoidable Significant Impacts

The State Water Board has not identified any unavoidable significant impacts associated with implementation of the Project.

5.0 References

California Environmental Quality Act (CEQA). 2007. California Code of Regulations, Title 14, Division 6, Chapter 3 - Guidelines for Implementation of the California Environmental Quality Act, Article 14, Section 15221, NEPA Document Ready Before CEQA Document. Guidelines as amended July 27, 2007. Available at: http://resources.ca.gov/ceqa/guidelines/

California Air Resources Board (CARB) 2014. California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 2, Subarticle 2, Section 95111(b)(1). Available at: http://www.oal.ca.gov/ccr.

CARB 2012. California Greenhouse Gas Inventory for 2000-2012 – by Category as Defined in the 2008 Scoping Plan. March 24, 2014. Available at: https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2012/ghg_inventory_scopingplan_00-12_2014-03-24.pdf or at: http://www.arb.ca.gov/cc/inventory/data/data.htm.

CARB 2007. California 1990 Greenhouse Gas Emissions Level and 2020 Emissions Limit. November. Available at: http://www.arb.ca.gov/cc/inventory/1990level/1990level.htm.

Federal Energy Regulatory Commission (FERC). 2004. Environmental Assessment (EA) for the Vermilion Valley Hydroelectric Project Issued May 4, 2004. Available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/big_creek/big_creek_2086.shtml

FERC. 2006. Final Environmental Assessment (FEA) for the Portal Hydroelectric Project (FERC Project No. 2174). Issued April 27, 2006. Available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/big_creek/big_creek_2174.shtml

FERC. 2009. Final Environmental Impact Statement (FEIS) for the Big Creek Projects, Mammoth Pool (FERC Project No. 2085); Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67); Big Creek Nos. 1 and 2 (FERC Project No. 2175); and Big Creek No. 3 (FERC Project No. 120). Issued March 13, 2009. Available at: https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/big_creek/big_creek_67.shtml

Southern California Edison Company (SCE). 2007a. Application for New License(s) for the Big Creek ALP; Mammoth Pool (FERC Project No. 2085), Big Creek Nos. 1 and 2 (FERC Project No. 2175), Big Creek Nos. 2A, 8 and Eastwood (FERC Project No. 67) and Big Creek No. 3 (FERC Project No. 120). February 2007 (Volumes 1 through 4; Books 1 through 27; and CDs 1 through 19). Available at: https://www.ferc.gov/docs-filing/elibrary.asp

SCE. 2007b. Section 5.2.10, Land Management and Socioeconomics, In Amended Preliminary Draft Environmental Assessment (APDEA), Application for New License(s) for the Big Creek ALP. February 2007 (Volume 4, Book No. 4; and CD No. 4). Available at: https://www.ferc.gov/docs-filing/elibrary.asp

SCE. 2014. 2014 Corporate Responsibility Report. Available online at: https://www.sce.com/wps/wcm/connect/c0fceef5-e04a-4287-8301-8e66e3e5fbac/2014_Corporate+Responsibility+Report_FINAL+single-page.pdf?MOD=AJPERES&ContentCache=NONE

SCE. 2014. Construction Project Greenhouse Emission Calculations (Appendix B), Attached in an email from SCE. December 2014.