Draft

Chili Bar Hydroelectric Project FERC Project No. 2155, California Initial Study and Draft Negative Declaration

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Comments due by 12:00 PM on February 13, 2012 to:

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Prepared for

State Water Resources Control Board Division of Water Rights

January 2012

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Pacific Gas & Electric Company
Chili Bar Hydroelectric Project
FERC Project No. 2155, California

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Introduction

The Project consists of the continued operation of the Chili Bar Hydroelectric Project (Chili Bar Project), Federal Energy Regulatory Commission (FERC) Project No. 2155, owned and operated by the Pacific Gas and Electric Company (PG&E), under a new 30- to 50-year FERC license, as described under the terms of a Relicensing Settlement Agreement for the Upper American River Project and Chili Bar Hydroelectric Project (Settlement Agreement)[1]. The Chili Bar Project is located on the South Fork of the American River (SF American River) in El Dorado County, near Placerville, California. The purposes of the Project are to generate power, and provide minor flood control benefits, while meeting water quality standards in the SF American River. The Chili Bar Powerhouse has an installed capacity of 7 megawatts (MW) and an average annual generation of 32,291 megawatt hours (MWh) per year of energy.

To receive a new FERC operating license, PG&E is required to request and receive water quality certification (WQC) pursuant to Section 401 of the federal Clean Water Act from the State Water Resources Control Board (State Water Board). The State Water Board is the lead agency responsible for complying with the California Environmental Quality Act (CEQA). For the State Water Board to issue a WQC, an environmental analysis of the project that complies with CEQA must be prepared.

[1] A Relicensing Settlement Agreement for the Upper American River Project and Chili Bar Hydroelectric Project was finalized on January 29, 2007 by state and federal agencies and other interested stakeholders. The State Water Board is not a signatory to the agreement but State Water Board staff did provide guidance during the development of the settlement conditions. The Settlement Agreement is available on the State Water Board website at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/ceqa_projects.shtml#chili

Project Description

The Project is the continued operation of the Chili Bar Project pursuant to a new 30- to 50-year FERC license, as described in the terms of a Settlement Agreement. The Chili Bar Project was placed in operation in 1965 under its existing FERC license.

The Chili Bar Project facilities are located on the SF American River immediately downstream of the Sacramento Municipal Utility District's (SMUD's) Upper American River Project (UARP), near Placerville. The Chili Bar Project facilities consist of: (1) a concrete gravity dam that is 126 feet high and 380 feet long with a dam spillway that is 170 feet long with a crest elevation of 997.5 feet (National Geodetic Vertical Datum) located 31 feet below the crest of the dam; (2) a reservoir with a surface area of 110 acres and a useable storage capacity of 1,339 acre-feet at a normal operating minimum elevation 984 feet (National Geodetic Vertical Datum); and (3) a powerhouse that is 80 feet square containing a single turbine unit with a normal maximum gross head of 60 feet, a maximum hydraulic capacity of 1,979 cubic feet per second (cfs), and an installed capacity of 7 MW. There is no project transmission line because the 21-kilovolt (kV) switchyard connects directly to the local distribution grid. PG&E does not plan any changes to the existing Chili Bar Project facilities; the Project will be operated under the terms of the Settlement Agreement.

The existing FERC-license boundary for the Chili Bar Project ranges from approximately 50 to 250 feet on either side of the river, and starts approximately 320 feet downstream of Chili Bar Dam to approximately 3.2 miles upstream of the dam. Property bordering the Project is a mix of PG&E, BLM, SMUD's UARP and private ownership. PG&E proposes to revise the FERC Project boundary by reducing the acreage within the current boundary from 254.60 acres to 103.14 acres.

The Chili Bar Powerhouse has a semi-automatic operation and is operated from PG&E's Wise Switching Center located approximately 35 miles away, in Auburn, California. Because the Chili Bar Project has limited reservoir storage, PG&E operates the Project using the flow releases from SMUD's upstream White Rock powerhouse on a daily basis. Typically, the Chili Bar Project stores the releases from White Rock during off-peak hours, and generates electricity during peak load hours. Therefore, flows downstream of Chili Bar Dam often fluctuate daily. Given that White Rock powerhouse has a flow capacity of almost twice as much as Chili Bar Powerhouse, the Chili Bar Project also sometimes spills flow in excess of its generating capacity at Chili Bar Dam. Implementation of the coordination agreement with SMUD that is part of the Settlement Agreement is meant to reduce the occurrence of spills at Chili Bar Dam.

Operational Changes and Settlement Agreement Measures

PG&E proposes to implement the following Settlement Agreement measures at the Chili Bar Project:

- New minimum streamflows and ramping rates
- A Coordination Agreement with SMUD to implement new flow requirements and other Settlement Agreement conditions
- A plan to monitor streamflows and reservoir elevations

- An annual review of listed special-status plants and wildlife that could potentially be present on U.S. Bureau of Land Management (BLM) land, together with study requirements for newly listed species that includes identifying provisions for protecting listed species during any new construction or maintenance activities
- A monitoring program to determine the effects of new streamflow requirements and other Project effects on native fish populations, aquatic macroinvertebrates, amphibians and reptiles, riparian habitat, algal species, geomorphology, water temperature, and water quality in Chili Bar Reservoir and the downstream reach of the SF American River
- Monitoring for metals bioaccumulation in resident fish in Chili Bar Reservoir
- An adaptive management program
- A sediment management plan
- A vegetation and invasive weed management plan for the control of noxious weeds
- Public information services that include real-time streamflow and reservoir level
- Provision of specified recreational boating flows
- A visual resource protection plan
- An Historic Properties Management Plan to protect cultural resources

These measures are described in more detail in the Settlement Agreement available at the following State Water Board website:
http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/ceqa_projects.shtml#chili

Recreation

PG&E proposes, as Article 2-13 in the Settlement Agreement, to:

- Construct a gravel parking area for three to four vehicles off Rock Creek Road
- Develop the 36-inch-wide Sand Bar Trail that meets a grade of five percent or less from the parking area to Chili Bar Reservoir
- Install a kiosk sign along the trail near its beginning, explaining the rules of the area
- Install one picnic table of coated wire mesh material on a leveled out area that is outside of the floodplain

PG&E also has included in its proposed project measures to assure that potential impacts associated with construction of the recreation improvements are less than significant. These include measures to reduce air quality impacts associated with fugitive dust and impacts to cultural resources associated with the discovery of human remains during construction.

There are currently no formal recreational facilities within the Chili Bar Project boundary. PG&E currently manages an informal boat launch at the Chili Bar Dam. The boat launch is not accessible to the public; it is used by PG&E infrequently and exclusively for Project inspection and maintenance purposes.

FERC has conducted operational inspections of the Project throughout its period of operation, focusing on the continued safety of the structures, identification of unauthorized modifications, efficiency and safety of operations, compliance with the terms of the license, and proper maintenance. The Project has been inspected and evaluated every five years by an independent consultant, and a consultant's safety report has been filed with FERC for its review. These inspections will continue throughout the term of any new license issued by FERC.

The baseline for evaluating the potential significant environmental impacts of the Project includes the existing facilities and operations. Therefore, this Initial Study and Negative Declaration evaluate the potential impacts from the additional recreational facilities, from changes in Project operation, and from any current operations that will result in a more severe impact than currently occurs over the lifetime of the Project.

Findings and Determination

Revisions in the Project plans or proposals already made by, or agreed to, by PG&E will avoid or reduce any negative environmental impacts to a point where no significant impact on the environment will occur.

There is no substantial evidence in light of the whole record before the public agency that the Project may have a significant impact on the environment.

On the basis of this evaluation, the State Water Board concludes:

a. Implementation of the Project will not 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. Implementation of the Project will not have impacts that are individually limited, but cumulatively considerable.

c. Implementation of the Project will not have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

Once approved, this Negative Declaration will be filed pursuant to the CEQA Guidelines.

DRAFT

Barbara Evoy

Deputy Director for Water Rights

(Title)

(Date)

Acronyms and Abbreviations

APE	area of potential effect
BLM	U.S. Bureau of Land Management
BP	before present
Cal Fire	California Department of Forestry and Fire Protection
CARB	California Air Resources Board
CDFG	California Department of Fish and Game
CDPR	California Department of Parks and Recreation
CEQA	California Environmental Quality Act
CFC	chlorofluorocarbon
cfs	cubic feet per second
CGS	California Geological Survey
CH_4	methane
Chili Bar Project	Chili Bar Hydroelectric Project
Clean Water Act	Federal Water Pollution Control Act
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
Coordination Agreement	Coordination Agreement Between Sacramento Municipal Utility District and Pacific Gas and Electric Company Regarding UARP and Chili Bar Project, January 29, 2007
dBA	decibels, a-weighted
Draft EIS	Draft Environmental Impact Statement
EIM	Environmental Improvement Measure
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FERC	Federal Energy Regulatory Commission
Final EIS	Final Environmental Impact Statement
GHG	Greenhouse Gas

kV	kilovolt
L_{dn}	day-night sound level
L_{eq}	equivalent sound pressure level
mg/l	milligrams per liter
MW	megawatts
MWh	megawatt hours
National Register	National Register of Historic Places
NO_x	nitrous oxide
NR	Natural Resource
O_3	ozone
OS	Open Space
PG&E	Pacific Gas and Electric Company
PMSA	Primary Metropolitan Statistical Area
RES	Renewable Electricity Standard
RR	Rural Residential
Settlement Agreement	Relicensing Settlement Agreement for the Upper American River Project and Chili Bar Hydroelectric Project
SF American River	South Fork of the American River
SMUD	Sacramento Municipal Utility District
State Water Board	State Water Resources Control Board
UARP	Upper American River Project
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
WDRs	waste discharge requirements
WQC	water quality certification

CHAPTER 1

Project Overview and Background

1.1 Introduction

The Project consists of the continued operation of the Chili Bar Hydroelectric Project (Chili Bar Project), Federal Energy Regulatory Commission (FERC) Project No. 2155, pursuant to a new 30- to 50-year FERC license, as described under the terms of a Settlement Agreement. The Project is located on the South Fork of the American River (SF American River) in El Dorado County, near Placerville, California. Pacific Gas & Electric Company (PG&E) filed a license application with FERC for the Chili Bar Project on June 21, 2005. On February 1, 2007, PG&E, together with the Sacramento Municipal Utility District (SMUD), filed a comprehensive Relicensing Agreement for the Upper American River Project and Chili Bar Hydroelectric Project (Settlement Agreement) with FERC that modified the license application. It described existing and proposed operational and environmental measures for the Project. The Settlement Agreement addressed SMUD's Upper American River Project (UARP) in addition to the Chili Bar Hydroelectric Project. Settlement Agreement Articles 2-1 through 2-21 address the Chili Bar Project.

The existing Project license expired on July 31, 2007. On August 8, 2007, FERC authorized continued operation of the Project until action is taken on PG&E's application for a new license. In September 2007, FERC and the U.S. Forest Service issued the *Draft Environmental Impact Statement for Hydropower License, Upper American River Project, FERC Project No. 2101-084, California, and Chili Bar Hydroelectric Project, FERC Project No. 2155-024, California* (Draft EIS).

On March 14, 2008, FERC and the U.S. Forest Service issued the *Final Environmental Impact Statement for Hydropower License, Upper American River Project, FERC Project No. 2101-084, California, and Chili Bar Hydroelectric Project, FERC Project No. 2155-024, California* (Final EIS). Both the Draft EIS and Final EIS were prepared to comply with the National Environmental Policy Act of 1969, as amended. FERC and the U.S. Forest Service evaluated the two projects together in the EIS because the two projects have common stakeholders and issues, as well as operational and hydraulic interrelationships.

1.2 Project Overview

The Chili Bar Project is located approximately 2.4 miles north of Placerville, California in El Dorado County (Figure 1), on the SF American River. It is located immediately downstream of SMUD's UARP. The Chili Bar Project consists of a single hydroelectric development occupying 254.6 acres, of which 47.81 acres are federal land administered by BLM (FERC, 2008). The existing Chili Bar Project facilities consist of a dam with a dam spillway, a reservoir, and a powerhouse containing a single turbine unit with an installed capacity of 7 megawatts (MW).

PG&E does not plan any changes to the Chili Bar Project facilities; however, the Project will be operated under the terms of the Settlement Agreement[2]. PG&E proposes to revise the FERC Project boundary by reducing its acreage from its current 254.60 acres to 103.14 acres (Figure 2). The new boundary will be located at the Chili Bar Reservoir normal maximum water surface elevation of 997.5 feet mean sea level. The proposed Project boundary will enclose all Chili Bar Project works, including Chili Bar Dam and downstream tailrace, intake structure, powerhouse, switchyard, access roads, stream gage, and reservoir, and it will include a 12-foot-wide corridor for a new hiking trail (the Sand Bar Trail).

PG&E also proposes, as Article 2-13 in the Settlement Agreement to: (1) construct a gravel parking area for three to four vehicles off Rock Creek Road; (2) develop the 36-inch-wide Sand Bar Trail that meets a grade of five percent or less from the parking area to Chili Bar Reservoir; (3) install a kiosk sign along the trail near its beginning, explaining the rules of the area; and (4) install one picnic table of coated wire mesh material on a leveled out area that is outside of the floodplain. These recreation improvements are shown on Figure 2.

The purposes of the Project are to generate power and provide minor flood control benefits while meeting water quality standards in the SF American River. The Project currently provides an average annual generation of 32,291 megawatt hours (MWh) per year of energy to the California power grid, which encompasses most of California and a part of northern Mexico. Based on estimates in the Final EIS, the Project will provide an average annual generation of 31,291 MWh. It will continue to meet part of the existing load requirements within a system in need of generating resources: peak demand and annual energy requirements in the area are predicted to grow at annual compound rates of 2.4 and 2.6 percent, respectively, for the period from 2005 through 2014 (FERC, 2008).

1.3 Purpose of this Document

To receive a new FERC operating license, PG&E is required to request and obtain a water quality certification (WQC) pursuant to Section 401 of the federal Clean Water Act from the State Water Resources Control Board (State Water Board). The State Water Board is the lead agency responsible for complying with the California Environmental Quality Act (CEQA), as amended. For the State Water Board to issue a WQC, an environmental analysis of the Project that complies with CEQA must be prepared. The State Water Board is issuing this Negative Declaration/Initial Study to satisfy the CEQA requirement for environmental review.

The purpose of an Initial Study is to disclose environmental impacts that may occur as a result of the Project. This Initial Study assesses the environmental effects of the Project, as required by CEQA, and in compliance with State CEQA Guidelines (14 California Code of Regulations 1500 et seq.), which requires that all state and local government agencies consider the environmental consequences of projects over which they have discretionary authority, before acting on those projects.

[2] The Settlement Agreement can be found on the State Water Board's website at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/ceqa_projects.shtml#chili

As CEQA Lead Agency for the Project, the State Water Board prepared the attached Initial Study to determine whether a Negative Declaration, Mitigated Negative Declaration, or an Environmental Impact Report should be prepared.

The State Water Board has analyzed the potential environmental impacts created by this Project, determined that impacts of the Project are less-than-significant, and has prepared a Draft Negative Declaration.

1.4 Organization of the Initial Study/ Negative Declaration

This document is organized into the following chapters:

- **Chapter 1 – Project Overview and Background:** Provides summary information about the Project, describes the public review process, and includes the CEQA determination for the Project.
- **Chapter 2 – Project Description:** Contains a detailed description of the Project.
- **Chapter 3 – Environmental Checklist:** Provides an assessment of Project impacts by resource topic. The Environmental Checklist form, from Appendix G of the State CEQA Guidelines is used to make one of the following conclusions for impacts of the Project:
  - "No Impact:" identifies areas in which the Project will have no impact.
  - "Less Than Significant Impact:" identifies impacts that are considered less than significant and do not require the implementation of mitigation measures.
  - "Less Than Significant Impact with Mitigation:" identifies impacts that could be mitigated with the incorporation of additional mitigation measures.
  - "Potentially Significant Impact:" identifies impacts that need additional study and require analysis in an EIR.

  The Environmental Checklist concludes with a determination as to whether additional environmental documentation is required.
- **Chapter 4 – List of Preparers:** Identifies the individuals who contributed to the environmental document.
- **Chapter 5 – References Cited:** Identifies the information sources used in preparing this environmental document.

Technical Appendices are found at the end of this report.

1.5 General Project Information

This section gives a brief Project description and general Project information. A detailed Project description is provided in Chapter 2.

Project Title: Chili Bar Hydroelectric Project

Lead Agency: State Water Resources Control Board
Division of Water Rights
1001 I Street, 14th Floor
Sacramento, CA 95814

Contact Person: Jennifer Watts
Environmental Scientist/Project Manager
(916) 341-5397 or jwatts@waterboards.ca.gov

Mailing Address:
State Water Resources Control Board
Division of Water Rights, Attn: Jennifer Watts
P.O. Box 2000
Sacramento, CA 95812

Project Location: El Dorado County

Brief Project Description:

The Project consists of the continued operation of the Chili Bar Project, FERC Project No.2155, pursuant to a new 30- to 50-year FERC license, as described under the terms of a Settlement Agreement. The facilities are located on the SF American River in El Dorado County, near Placerville, California (See Figures 1 and 2 in Chapter 2).

The existing Chili Bar Project facilities consist of: (1) a concrete gravity dam that is 126 feet high and 380 feet long with a dam spillway that is 170 feet long with a crest elevation of 997.5 feet (National Geodetic Vertical Datum) located 31 feet below the crest of the dam; (2) a reservoir with a surface area of 110 acres and a useable storage capacity of 1,339 acre-feet at a normal operating minimum elevation of 984 feet (National Geodetic Vertical Datum); and (3) a powerhouse that is 80 feet square containing a single turbine unit with a normal maximum gross head of 60 feet, a maximum hydraulic capacity of 1,979 cubic feet per second (cfs), and an installed capacity of 7 MW. There is no transmission line associated with the Project because the 21-kilovolt (kV) switchyard connects directly to the local distribution grid.

The current Chili Bar Project boundary ranges from approximately 50 to 250 feet on either side of the river, and starts approximately 320 feet downstream of Chili Bar Dam extending to approximately 3.2 miles upstream of the dam. PG&E proposes to revise the FERC Project boundary by reducing it from its current 254.60 acres to 103.14 acres. The proposed Project boundary will be at the Chili Bar Reservoir normal maximum water surface elevation of 997.5 feet mean sea level. The proposed Project boundary will enclose all Chili Bar Project works including the Chili Bar Dam and downstream tailrace, intake structure, powerhouse, switchyard, access roads, stream gage, and reservoir. In addition, the proposed FERC Project boundary will include a 12-foot-wide corridor for a new hiking trail (Sand Bar Trail) to provide public access to the reservoir shoreline.

In its Settlement Agreement, PG&E proposes to implement a comprehensive set of environmental measures addressing a range of environmental resources in the SF American River watershed (Articles 2-1 through 2-21). These measures are described in Chapter 2

Project Description. Additional detail regarding these measures can be found in the Settlement Agreement posted on the State Water Board website at:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/ceqa_projects.shtml#chili.

One environmental measure (Article 2-13) includes recreation improvements:

- Construction of: (1) a gravel parking area for three to four vehicles off Rock Creek Road; (2) a 36-inch-wide trail (the San Bar Trail) that meets a grade of five percent or less from the parking area to Chili Bar Reservoir; (3) a kiosk sign along the trail near its beginning, explaining the rules of the area; and (4) one picnic table of coated wire mesh material on a leveled out area that is outside of the floodplain (SMUD and PG&E, 2007). PG&E has included measures in the Project to assure that impacts associated with construction of the recreation improvements are less than significant.

Construction of the new facilities will occur within three years after the license is issued by FERC. There are currently no formal recreational facilities within the Chili Bar Project boundary. PG&E manages an informal boat launch at the Chili Bar Dam that is used by PG&E infrequently and exclusively for Project inspection and maintenance purposes. The boat launch is inaccessible to the public (FERC, 2008).

1.6 Public Review Process

This Initial Study and Negative Declaration is being circulated for a 30-day public review period to all individuals who have requested a copy, the El Dorado County Library, El Dorado County Planning Department, El Dorado County Water Agency, El Dorado Irrigation District, and the Office of Planning and Research, State Clearinghouse for distribution to appropriate resource agencies. A Notice of Intent is also being distributed to all property owners of record identified by the El Dorado County Assessor's office within 500 feet of the Project boundaries. The Notice of Intent identifies locations where the document is available for public review and invites interested parties to provide written comments. A copy of the Notice of Intent is attached to this document.

Reviewers should focus on the sufficiency of the document in identifying and analyzing possible impacts on the environment and ways in which any impacts of the Project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that will provide better ways to avoid or mitigate significant environmental impacts.

1.7 Settlement Agreement

PG&E utilized a modified Traditional Licensing Process for the relicensing proceeding that involved public input and collaboration. Due to the existence of many overlapping issues that were common to the Chili Bar Project and the UARP proceedings, many studies and technical reports were developed and coordinated through PG&E's participation in the UARP's Alternative Licensing Process. PG&E filed an application for a new license with the Commission on July 15, 2005. Settlement negotiations between PG&E, SMUD, and state and

federal resources agencies and interested stakeholders began prior to submittal of PG&E's application; however, no settlement was reached prior to the statutory deadline for filing the license application with the Commission.

Following the filing of recommendations, prescriptions, terms, and conditions with the Commission by state and federal agencies, settlement negotiations were reconvened to try to achieve a comprehensive settlement in the relicensing of the UARP and Chili Bar Project. This led to an Agreement in Principle that was filed with the Commission on November 16, 2006, followed by a final Settlement Agreement that was filed on January 31, 2007. The Settling Parties consist of PG&E, SMUD, California Department of Fish and Game (CDFG), California Department of Parks and Recreation (CDPR), U.S. Forest Service, BLM, U.S. Fish and Wildlife Service (USFWS), National Park Service, American River Recreation Association and Camp Lotus, California Outdoors, California Sportfishing Protection Alliance, Friends of the River, American Whitewater, Foothill Conservancy, Theresa Simsiman, Hilde Schweitzer, and Rich Platt. Although not a signatory to the Settlement Agreement, State Water Board staff participated in the settlement discussions for the purpose of providing information and guidance to assure that operation of the Chili Bar Project under the conditions of the Settlement Agreement will comply with the Clean Water Act.

1.8 State Water Board Approval Process

On June 21, 2005, PG&E applied to FERC for a new operating license for Chili Bar Hydroelectric Project. Pursuant to Clean Water Act Section 401, a WQC or waiver thereof by the state, is required before FERC can approve the Project and issue a new license. On September 18, 2006, PG&E applied to the State Water Board for a WQC. PG&E then withdrew its application, and re-applied for a WQC on May 22, 2007 and subsequently withdrew and resubmitted its application on May 7, 2008, April 23, 2009, April 7, 2010, and March 25, 2011. The State Water Board must comply with CEQA before issuing a WQC for the Project. This Negative Declaration/Initial Study complies with CEQA and provides an analysis of the environmental impacts to be addressed through conditions that the State Water Board will include in the WQC. After the State Water Board issues a WQC, FERC will make a final determination on PG&E's relicensing application.

1.9 CEQA Determination

This section contains a checklist of environmental factors potentially affected by the Project and the Lead Agency's determination of the appropriate CEQA document for the Project.

1.9.1 Environmental Factors Potentially Affected

The environmental factors shown below were considered. If at least one impact could be considered "Potentially Significant," then further analysis would have been needed. No Potentially Significant Impacts were identified.

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

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

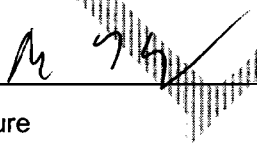
☒ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

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

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

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

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



Signature

11/11/12

Date

BARBARA EVOY

Printed Name

Deputy Director for Division of Water Rights

Title

CHAPTER 2

Project Description

2.1 Project Objectives

The purposes of the Project are to generate power and provide minor flood control benefits while meeting water quality standards in the SF American River. The Chili Bar Project currently provides an average annual generation of 32,291 MWh per year of energy to the California power grid, which encompasses most of California and a part of northern Mexico. The Project will provide an average annual generation of 31,291 MWh. The Project will continue to meet part of the existing load requirements within a system in need of generating resources (peak demand and annual energy requirements in the area are predicted to grow at annual compound rates of 2.4 and 2.6 percent, respectively, for the period from 2005 through 2014) (FERC, 2008).

2.2 Location

The existing Chili Bar Project is located immediately downstream of the SMUD's UARP (Figure 1) on the SF American River in El Dorado County, near the town of Placerville, California. It consists of a single development, with the following categories of landownership (FERC, 2008):

Ownership	Existing
Federal	47.81
PG&E	191.75
Private	15.04
Total	254.60

2.3 Project Area Land Use and Zoning

2.3.1 Surrounding Land Uses and Setting

The existing Project facilities and Chili Bar Reservoir are located in an area that is primarily forested and undeveloped. Few roads and residences are located in the vicinity of the Project. Except for the Project facilities located near the dam, PG&E manages its land as general open space; this appears to be consistent with the general low density land use zoning of the surrounding area (PG&E, 2005).

2.3.2 General Plan Designation

The General Plan land use designation of the Chili Bar Project area is Natural Resource, Open Space, and Rural Residential (El Dorado County Planning Department, 2004).

2.3.3 Zoning

County zoning regulations govern private parcels within the County. The zoning of land within the FERC Project boundary is Residential Agricultural-20 and Residential Agricultural-40.

The private parcels that border the Chili Bar Project boundary are zoned Residential-Agricultural with 20-acre or 40-acre minimum lot sizes, thus relatively low-density development exists on the private land that borders the Chili Bar Project. An area downstream of the dam and across the SF American River from the Chili Bar Project access road and outside the FERC Project boundary is zoned as a Mineral Resource District (PG&E, 2005).

2.4 Existing Project Features

The Chili Bar Powerhouse has a semi-automatic operation and is operated from PG&E's Wise Switching Center located approximately 35 miles away, in Auburn, California. Because the Chili Bar Project has limited reservoir storage, PG&E operates the project using the flow releases from SMUD's upstream White Rock powerhouse on a daily basis. Typically, the Chili Bar Project stores the releases from White Rock during off-peak hours, and generates electricity during peak load hours. Therefore, flows downstream of Chili Bar Dam often fluctuate daily. Given that White Rock powerhouse has a flow capacity of almost twice as much as Chili Bar Powerhouse, the Chili Bar Project also sometimes spills flow in excess of its generating capacity at Chili Bar Dam. Implementation of the coordination agreement with SMUD that is part of the Settlement Agreement is meant to reduce the occurrence of spills at Chili Bar Dam.

The existing Chili Bar Project facilities consist of:

- A concrete gravity dam that is 126 feet high and 380 feet long with a dam spillway that is 170 feet long with a crest elevation of 997.5 feet (National Geodetic Vertical Datum) located 31 feet below the crest of the dam
- A reservoir with a surface area of 110 acres and a useable storage capacity of 1,339 acre-feet at a normal operating minimum elevation 984 (National Geodetic Vertical Datum)
- A powerhouse that is 80 feet square containing a single turbine unit with a normal maximum gross head of 60 feet, a maximum hydraulic capacity of 1,979 cfs, and an installed capacity of 7 MW

There is no transmission line associated with the Project because the 21-kV switchyard connects directly to the local distribution grid. There are currently no formal recreational facilities within the FERC Project boundary. PG&E manages an informal boat launch at Chili Bar Dam. The boat launch is not accessible to the public; it is used by PG&E infrequently and exclusively for project inspection and maintenance purposes.

2.5 Features to be Added

The current Chili Bar FERC Project boundary ranges from approximately 50 to 250 feet on either side of the river, and starts approximately 320 feet downstream of Chili Bar Dam

extending to approximately 3.2 miles upstream of the dam. PG&E proposes to revise the FERC Project boundary by reducing it from its current 254.60 acres to 103.14 acres, as shown below.

Ownership	Existing acreage	Project acreage
BLM	47.81	15.02
PG&E	191.75	87.04
Private	15.04	1.08
Total	254.60	103.14

The Project boundary will be at the Chili Bar Reservoir normal maximum water surface elevation of 997.5 feet mean sea level. The Project boundary will enclose all Chili Bar Project works including Chili Bar Dam and downstream tailrace, intake structure, powerhouse, switchyard, access roads, stream gage, and reservoir. In addition, the Project boundary will include a 12-foot-wide corridor for a new hiking trail (Sand Bar Trail) to provide public access to the reservoir shoreline.

2.6 Settlement Agreement

PG&E filed a comprehensive Settlement Agreement with FERC on February 1, 2007. The terms of the Settlement Agreement include a wide range of measures described in Section 2.7 Settlement Agreement and Environmental Improvement Measures, and defined in the Settlement Agreement as Articles 2-1 through 2-21 for the Chili Bar Project[3]. The Articles in the Settlement Agreement were developed by many resource agencies, non-governmental organizations, and PG&E in an attempt to address the interests of all, and includes the standard Federal Power Act Section 4(e) conditions proposed by the BLM included as Appendix 4 to the Settlement Agreement.

2.6.1 Environmental Measures

In its Settlement Agreement, PG&E agrees to implement a comprehensive set of environmental measures addressing a range of environmental resources in the SF American River watershed (Articles 2-1 through 2-21). These measures include the following:

- New minimum streamflows and ramping rates
- A Coordination Agreement with SMUD to implement new flow requirements and other Settlement Agreement conditions
- A plan to monitor streamflows and reservoir elevations to assess compliance with the Settlement Agreement flow conditions

[3] The Settlement Agreement was prepared by SMUD for its Upper American River Project and by PG&E for its Chili Bar Hydroelectric Project. The two projects have common stakeholders and issues as well as operational and hydraulic interrelationships. As such, the Settlement Agreement also includes Proposed Articles 1-1 through 1-50 for the Upper American River Project.

- An annual review of listed special status plants and wildlife that might occur on BLM land, together with study requirements for newly listed species that includes identifying provisions for protecting listed species during any new construction or maintenance activities
- A monitoring program to determine the effects of new streamflow requirements and other Project effects on native fish populations, aquatic macroinvertebrates, amphibians and reptiles, riparian habitat, algal species, geomorphology, water temperature, and water quality in Chili Bar Reservoir and the downstream reach of the SF American River
- Monitoring for metals bioaccumulation in resident fish in Chili Bar Reservoir to assess health risks to human and wildlife consumers
- An adaptive management program to assess the effectiveness of the coordinated operations with SMUD in achieving the required streamflows
- A sediment management plan
- A vegetation and invasive weed management plan for the control of noxious weeds
- Public information services that include real-time streamflow and reservoir level
- Provision of specified recreational boating flows
- A visual resource protection plan
- An Historic Properties Management Plan to protect cultural resources

2.6.2 Recreation Features

PG&E proposes, as Article 2-13 in the Settlement Agreement, to:

- Construct a gravel parking area for three to four vehicles off Rock Creek Road.
- Develop the 36-inch-wide Sand Bar Trail that meets a grade of five percent or less from the parking area to Chili Bar Reservoir.
- Install a kiosk sign along the trail near its beginning, explaining the rules of the area.
- Install one picnic table of coated wire mesh material on a leveled out area that is outside of the floodplain. There are currently no formal recreational facilities within the Chili Bar Project boundary. PG&E currently manages an informal boat launch at the Chili Bar Dam. The boat launch is not accessible to the public; it is used by PG&E infrequently and exclusively for Project inspection and maintenance purposes.

The baseline for evaluating the potential significant environmental impacts of the Project includes the existing facilities and operations. This Initial Study and Draft Negative Declaration evaluate the potential impacts from the additional recreational facilities, from changes in Project operation, and from any current operations that will result in a more severe impact than currently occurs over the lifetime of the Project.

2.7 Settlement Agreement and Additional Measures

PG&E, as part of its proposed Project, has included measures to reduce impacts on air quality and cultural resources. These measures are listed below and are described in more detail in Chapter 3.

- **Air Quality:** Actions will be taken to reduce fugitive dust emissions during installation of the new recreation facilities.
- **Cultural Resources:** Monitoring will be implemented, and if human remains are discovered during construction of the new recreation facilities, relevant authorities will be contacted pursuant to the requirements of the Native American Historic Resource Protection Act Section (California Public Resources Code 5097.98) and California Health and Safety Code Section 7050.5.

2.7.1 Settlement Agreement Required Elements

Articles 2-1, 2-2, and 2-3 of the Settlement Agreement describe minimum streamflow requirements and operational coordination with SMUD. They are summarized below:

Settlement Agreement Article 2-1. Minimum Streamflows. The licensee, in consultation and coordination with the UARP licensee, shall, beginning as early as reasonably practicable within three months after license issuance, maintain minimum streamflows as set forth in the schedule below in SF American River below Chili Bar Reservoir Dam provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these streamflows. For compliance purposes, the point of measurement for the required minimum streamflows shall be United States Geological Survey gage 11444500 (PG&E gage A49). All specified streamflows are in cfs. The schedule specifies minimum streamflows, by month and water year type.

The minimum streamflows specified in the schedule may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the licensee. If the streamflow is so modified, the licensee shall provide notice to FERC, BLM, CDFG, USFWS, and the State Water Board as soon as possible but no later than 10 days after such incident. The minimum streamflows specified may also be temporarily modified for short periods in non-emergency situations five days after notice to FERC, and upon approval of the CDFG, BLM, US FWS, and the State Water Board.

In order for the licensee to adjust operations to meet the required minimum streamflows, the licensee shall have a three-year period after the license is issued or three years after completion of necessary facility modifications, whichever is later, in which daily mean streamflows may vary up to 10 percent below the amounts specified in the minimum streamflow schedules, provided that the average monthly streamflow in any given month equals or exceeds the required minimum streamflow for the month. After the applicable period, the licensee shall meet the minimum streamflow requirements specified in the minimum streamflow schedules.

Water Year Types. The minimum streamflow schedule has been separated into six water year types: Wet, Above Normal, Below Normal, Dry, Critically Dry, and Super Dry. The licensee shall determine the water year type based on the water year forecast of unimpaired

runoff in the American River below Folsom Lake published, near the beginning of each month from February through May, in the California Department of Water Resources Bulletin 120 "Report of Water Conditions in California."

South Fork American River Below Chili Bar Reservoir Dam

	Minimum Streamflow by Water Year (cfs)					
Month	**SD**	**CD**	**Dry**	**BN**	**AN**	**Wet**
Oct	150	185	200	250	250	250
Nov	150	185	200	200	200	250
Dec	150	185	200	200	200	250
Jan	150	185	200	200	200	250
Feb	150	185	200	200	200	250
Mar	150	185	200	200	200	250
Apr	150	200	250	250	300	350
May	150	200	250	250	350	500
June	200	200	250	250	350	500
July	150	185	200	250	300	350
Aug	150	185	200	250	300	300
Sept	150	185	200	250	250	250

SD = Super Dry
CD = Critically Dry
BN = Below Normal
AN = Above Normal

Settlement Agreement Article 2-2. Ramping Rates. The licensee, in consultation and coordination with the UARP licensee, shall, beginning as early as reasonably practicable within three months after license issuance, use the following ramping rates for licensee-controlled streamflow releases, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevation are sufficient to maintain these ramping rates:

South Fork American River Below Chili Bar Reservoir Dam Ramping Rates

Ramp Up	Ramp Down
500 cfs per hour for flows between 150 and 1,000 cfs	1 foot/hour for flows between 1,950 and 1,000 cfs
1 foot per hour for flows between 1,000 and 1,950 cfs	500 cfs per hour for flows between 1,000 and 600 cfs
	250 cfs per hour for flows between 600 and 150 cfs

Where facility modification is required to provide the specified ramping rates, the licensee shall complete such modifications as soon as reasonably practicable and no later than three years after license issuance. Prior to such required facility modifications, the licensee shall make every reasonable effort to provide the specified ramping rates within the capabilities of the existing facilities. The licensee shall make available to BLM, CDFG, FWS, and the State Water Board the streamflow records related to ramping upon request.

The ramping rates specified in the schedules may be temporarily modified if required by equipment malfunction or operating emergencies reasonably beyond the control of the licensee or whenever water spills occur over Chili Bar Dam. If the ramping rate is so modified, the licensee shall provide notice to FERC, BLM, CDFG, FWS, and the State Water Board as soon as possible, but no later than 10 days after such incident. The Licensee may also request short-term modification of the ramping rates in non-emergency situations by providing Notice to the Commission and obtaining approval from the Deputy Director for a temporary deviation from the required ramping rates.

The licensee shall provide notice, for events other than spill, to BLM, CDFG, FWS, and the State Water Board within 10 days after such an event occurs and shall provide a report documenting the reason that ramping rates were not followed within one month after such an event occurs.

Settlement Agreement Article 2-3. Coordination with UARP Licensee.

Coordination of Operations: The licensee shall coordinate operation of the Project with the licensee of the UARP to enable the licensee to comply with Article 2-1 (minimum streamflows), Article 2-2 (ramping rates), and Article 2-15 (recreational streamflows) of the Settlement Agreement. The licensee's responsibilities for achieving coordinated operations of the two projects are described in Exhibit 1 of the January 29, 2007 Coordination Agreement between Sacramento Municipal Utility District and Pacific Gas and Electric Company Regarding UARP and Chili Bar Project (Coordination Agreement)[4]. Within 120 days after license issuance, the licensee shall, jointly with the UARP licensee, prepare and file with FERC for approval a plan for coordinated operations of the two projects as described in Exhibit 1 of the Coordination Agreement. Upon FERC approval, the licensee shall implement the plan, including any changes required by FERC.

Coordination in Implementing Certain License Conditions: The licensee shall consult and coordinate with the licensee of the UARP as described in Exhibit 2 of the January 29, 2007 Coordination Agreement Between Sacramento Municipal Utility District and Pacific Gas and Electric Company Regarding UARP and Chili Bar Project in implementation of Settlement Agreement Article 2-1 (minimum streamflows), Article 2-2 (ramping rates) Article 2-4 (monitoring program), Article 2-5 (adaptive management program), Article 2-6 (sediment management plan), Article 2-14 (public information services), and Article 2-15 (recreational streamflows) of this license.

[4] The Coordination Agreement and Exhibit 1 are included in the Settlement Agreement as Appendix 7, which can be found on the State Water Board website at http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/cega_projects.shtml#chili.

In addition, one environmental measure (Article 2-13, BLM Recreation Improvements) includes the construction of new recreation facilities:

- Construction of: (1) a gravel parking area for three to four vehicles off Rock Creek Road; (2) a 36-inch-wide trail that is approximately 0.6 mile long and meets a grade of five percent or less from the parking area to Chili Bar Reservoir; (3) a kiosk sign along the trail near its beginning, explaining the rules of the area; and (4) one picnic table of coated wire mesh material on a leveled out area that is outside of the floodplain.

Construction of the new recreation facilities will occur within three years after the license is issued by FERC. A small crew will be needed to develop the new trail and gravel parking lot, and install the kiosk sign and picnic table. It is expected that these facilities will be developed within two to three weeks of the start of construction/installation activities.

Construction equipment to be used will include a grader, tractor/loader/backhoe, and delivery trucks (delivery of gravel, trail and kiosk sign materials, picnic table). Construction materials will be delivered to the site and stored in a designated area. An additional construction laydown area will not be required. The site will be accessed by vehicles driving on U.S. 50, Coloma Street (in Placerville), State Route 193 (also known as Georgetown Road), South Fork Road, Rock Creek Road, and Holland Drive. No hazardous materials are expected to be used in the construction/installation of recreation improvements; however, the construction worker vehicles, equipment, and materials delivery vehicles use fuels and lubricants that are considered hazardous materials.

2.8 Project Operation

The Chili Bar powerhouse has a semi-automatic operation and is operated from PG&E's Wise Switching Center located approximately 35 miles away, in Auburn, California.

2.9 Project Schedule

The schedule for the Project is outlined in the Settlement Agreement articles (available at the following website: http://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/ceqa_projects.shtml#chili). The schedule for the various activities outlined in the Settlement Agreement articles varies in time from within three months after license issuance; to within three years after license issuance or three years after completion of necessary facility modifications, whichever is later; to throughout the license period at specific intervals. Construction of the new recreation facilities will occur within three years after the license is issued by FERC (FERC, 2008).

2.10 Related Projects

SMUD's UARP is located immediately upstream of the Chili Bar Project. The Chili Bar Project manages the flow releases from SMUD's White Rock powerhouse and Slab Creek Dam on a daily basis.

2.11 Statutory Compliance

Several permits and approvals are required for the FERC relicensing of the Project. Of those required (discussed below), only the Section 401 WQC is a state-issued approval.

2.11.1 Section 401 Water Quality Certification

Section 401 of the Federal Water Pollution Control Act (Clean Water Act) requires recipients of federal permits for activities that have the potential to discharge into the waters of a state to present state certification that the project will comply with water quality standards. To continue to operate, the Chili Bar Project must receive a FERC license and State Water Board WQC. FERC regulations require PG&E to file as part of its license application a copy of the WQC provided by the State Water Board, or proof that such a certificate has been applied for, or that the requirement has been waived. PG&E applied for a Section 401 WQC on September 18, 2006, subsequently withdrew its application, and submitted a new application for WQC on May 22, 2007, then subsequently withdrew and resubmitted its application on May 7, 2008, April 23, 2009, April 7, 2010, and March 25, 2011. The withdrawal and resubmittal of PG&E's WQC application is done to avoid waiving the State Water Board's authority to issue the WQC because the one-year timeframe provided for under the Clean Water Act does not provide enough time for the State Water Board to comply with CEQA and issue the WQC

2.11.2 Endangered Species Act

FERC concluded in its Environmental Impact Statement that relicensing the Chili Bar Project with the fish and wildlife habitat protection and enhancement measures contained in the Settlement Agreement will have no effect on Pine Hill endemic plants and the valley elderberry longhorn beetle and will not likely adversely affect the California red-legged frog. FERC requested concurrence by letter dated September 25, 2007 from the USFWS on the California red-legged frog. By letter dated October 19, 2007, USFWS determined that the information in the Draft Environmental Impact Statement was insufficient for it to make a determination regarding the California red-legged frog, and requested additional information. On November 2, 2007, FERC provided the additional information requested to the USFWS. On December 6, 2007, USFWS concurred with FERC's determination that the relicensing of the Chili Bar Project is not likely to adversely affect the California red-legged frog (FERC, 2008).

2.11.3 National Historic Preservation Act

The National Historic Preservation Act (16 U.S.C. 470 et seq.) (as amended) requires federal agencies to manage cultural resources under their jurisdiction and authorizes the Secretary of the Interior to maintain a National Register of Historic Places (National Register). The law also provides for the creation of State Historic Preservation Offices to facilitate the implementation of federal cultural resource policy at the state level, and for the responsible federal agency to consult with Native American tribes who attach religious or cultural importance to cultural resources under their jurisdiction. Section 106 of the Act requires federal agencies to take into account the effect of any proposed undertaking on properties listed in, or eligible for, listing in the National Register. If the agency official determines that the undertaking may have adverse effects on properties listed in or eligible for listing in the

National Register, the agency official must afford an opportunity for the Advisory Council on Historic Preservation to comment on the undertaking. The relicensing of the Chili Bar Project is considered as an undertaking, and FERC acts as the agency official.

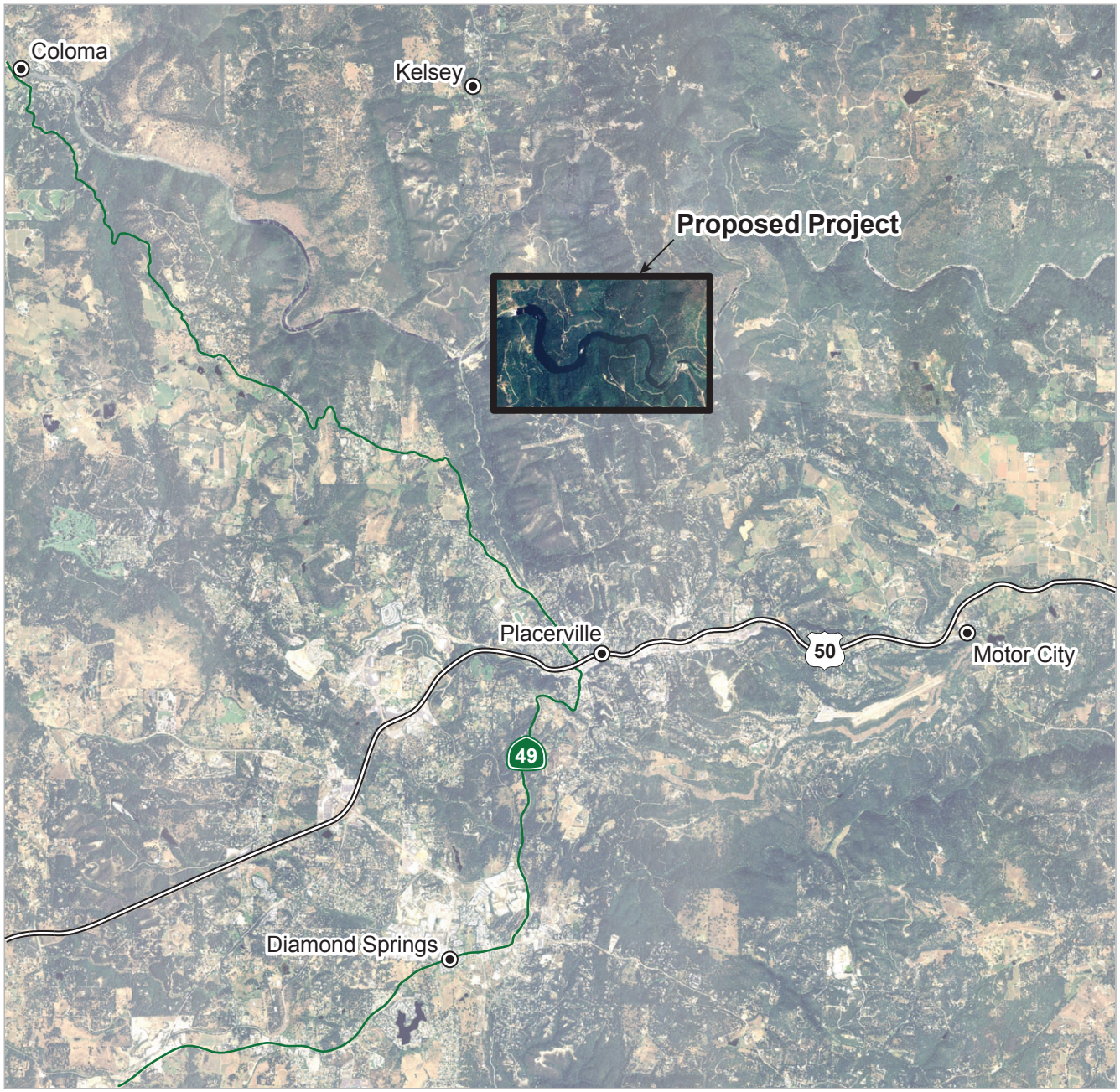
Since 2001, PG&E, under the authority of FERC, has conducted Section 106 consultations with the California State Historic Preservation Office and other interested parties. This consultation included scheduled collaborative cultural resource workgroup meetings, as well as individual meetings conducted by the applicants. FERC staff will be continuing Section 106 consultations. On January 15, 2008, FERC staff circulated a draft Programmatic Agreement for comments. Under the proposed action, PG&E will finalize the Historic Properties Management Plan within one year of license issuance. It will provide specific guidance to applicant personnel regarding the treatment of historic, archaeological, and traditional cultural resources during the terms of the new license (FERC, 2008).

2.11.4 Americans with Disabilities Act

Public recreation facilities must comply with the Americans with Disabilities Act of 1990 (Public Law 101-336) to the extent possible. FERC has no statutory role in implementing or enforcing the Americans with Disabilities Act as it applies to its license. A licensee's obligation to comply with the Americans with Disabilities Act exists independent of its Project license. As recreation facilities are updated, expanded, or newly developed, PG&E proposes to ensure that access needs of the disabled are addressed and comply with Americans with Disabilities Act standards. The recreational measures included are consistent with this Act (FERC, 2008).

2.11.5 Clean Air Act

The 1990 amendments to the Clean Air Act and the Conformity Rules require federal agencies to conform to State Implementation Plans. The U.S. Environmental Protection Agency (USEPA) and other federal agencies have established requirements and procedures to ensure that federally sponsored or approved actions will comply with the National Ambient Air Quality Standards, and conform to the appropriate State Implementation Plans. The conformity rules apply to designated non-attainment or maintenance areas for criteria pollutants regulated under the National Ambient Air Quality Standards. The State Implementation Plans are the approved state air quality regulations that provide policies, requirements, and goals for the implementation, maintenance, and enforcement of the National Ambient Air Quality Standards. State Implementation Plans include emission limitations and control measures to attain and maintain the National Ambient Air Quality Standards. The USEPA has developed two conformity regulations for transportation and non-transportation projects. Non-transportation projects are governed by the "general conformity" regulations (40 CFR Parts 6, 51, and 93) described in the final rule for Determining Conformity of General Federal Actions to State or Federal Implementation Plans. Because the Project is a non-transportation project, the general conformity rule applies. FERC prepared a general conformity determination and applicability analysis using the USEPA NONROAD model and provided the results in the Draft Environmental Impact Statement addressing the Project. In response to the California Air Resources Board, FERC prepared another general conformity determination and analysis using the California Air Resources Board (CARB) EMFAC and OFFROAD2007 models and provided the report to CARB for review (FERC, 2008).



REGIONAL LOCATION MAP

Aerial courtesy of Google™ Earth, 2009.
Image ©2009 DigitalGlobe.

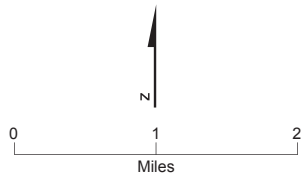
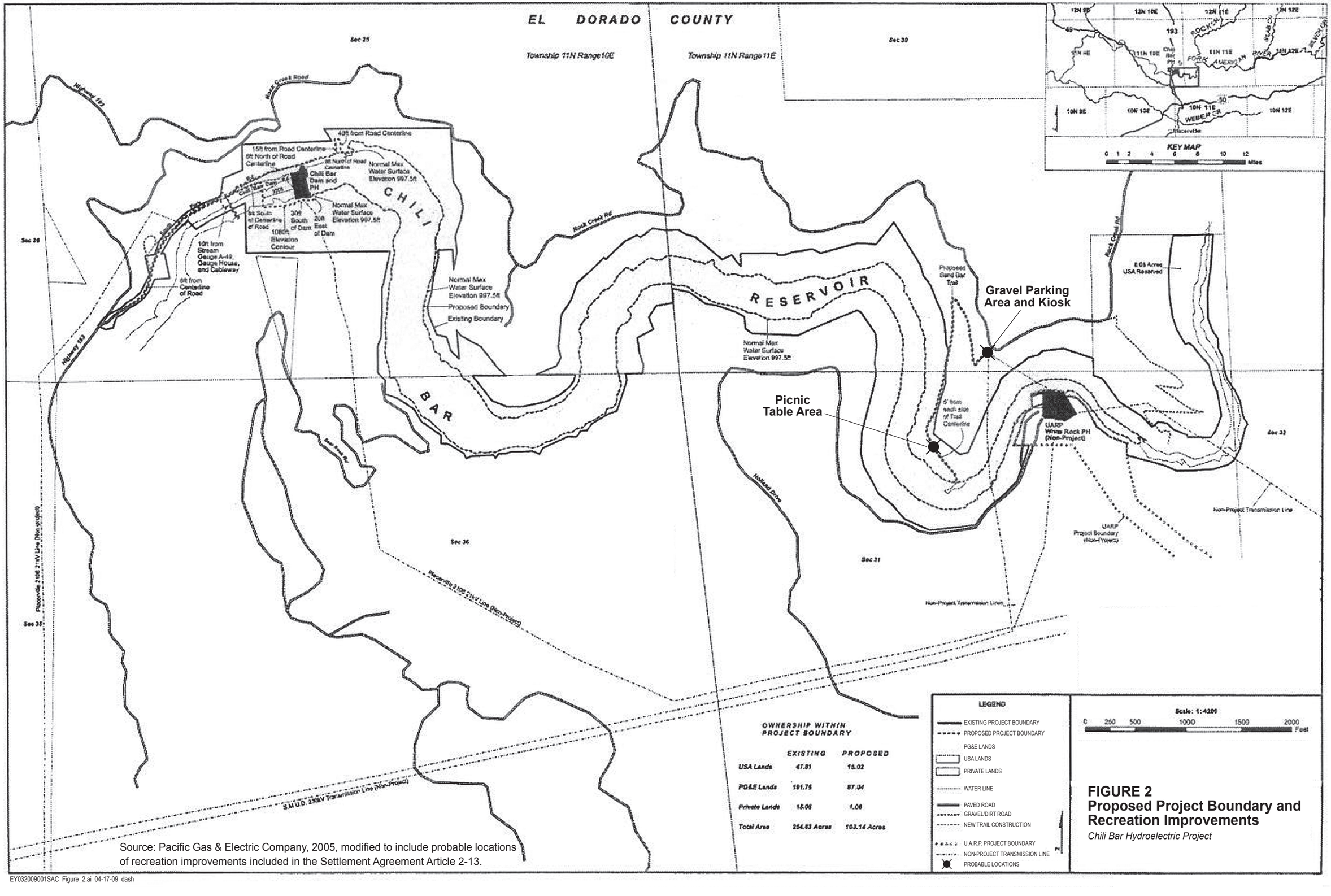


FIGURE 1
Project Location Map
Chili Bar Hydroelectric Project



Source: Pacific Gas & Electric Company, 2005, modified to include probable locations of recreation improvements included in the Settlement Agreement Article 2-13.

FIGURE 2
Proposed Project Boundary and Recreation Improvements
Chili Bar Hydroelectric Project

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CHAPTER 3

Environmental Checklist

3.1 Evaluation of Environmental Impacts

This chapter incorporates the Environmental Checklist contained in Appendix G of the CEQA Guidelines. Each resource topic section includes a description of the environmental setting, provides impact significance criteria and an explanation to the checklist impact questions, and describes measures adopted by PG&E in its Project Description to reduce potential impacts to less-than-significant levels.

3.2 Aesthetics

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
AESTHETICS – Would the project:				
a) Have a substantial adverse effect on a scenic vista? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in physical changes to the landscape altering a recognized scenic vista or area of unique or outstanding visual character.	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in physical changes to the landscape altering a recognized scenic resource within a state scenic highway.	☐	☐	☐	☒
c) Substantially degrade the existing visual character or quality of the site and its surroundings? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in physical degradation to the landscape altering the existing visual character or quality of the site and its surroundings.	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would introduce a new source of substantial light and glare that would alter existing day or nighttime views.	☐	☐	☐	☒

3.2.1 Environmental Setting

3.2.1.1 Landscape Description

The Chili Bar Project facilities and its reservoir are located in an area that is primarily forested and undeveloped. Few roads and residences are located in the vicinity of the Chili Bar Project. Except for the Chili Bar Project facilities located near Chili Bar Dam, PG&E manages its land as general open space.

3.2.1.2 California Scenic Highway System

U.S. 50 is an eligible scenic route in the California Scenic Highway System from State Route State Route 49 near Placerville to the Nevada State line (California Department of Transportation, 2009). The Chili Bar Project is located approximately three miles north of U.S. 50.

3.2.1.3 Bureau of Land Management Visual Resource Management

The BLM has a basic stewardship responsibility to identify and protect visual values on public lands. The BLM prepares and maintains on a continuing basis an inventory of visual values on public lands. Visual Resource Management objectives provide the visual management standards for the design and development of future projects and for rehabilitation of existing projects. Visual Resource Management classes assist managers in determining allowable change to a landscape.

The Chili Bar Project is located within the BLM Sierra Resource Management Area. The Sierra Resource Management Plan identifies areas within its planning area that are designated VRM Class I, II, and III. The Chili Bar Project area is not specifically identified in the Class I or II areas, so it is considered Visual Resource Management Class III[5] (BLM, 2008).

3.2.2 Impacts

3.2.2.1 Answers to Checklist Questions

Questions a and b: No scenic vistas, scenic resources, or designated scenic highways are located at, or near, the Chili Bar Project site. In addition, the Chili Bar Project facilities have been in place for over 40 years, and are part of the existing conditions. Therefore, no impact on scenic vistas, scenic resources, or scenic highways will occur.

In addition, PG&E's Settlement Agreement Article 2-16, Visual Resource Protection, provides the following:

1. Licensee shall meet with BLM every five years to review opportunities to improve how well Project facilities on or affecting BLM lands blend in with the surrounding landscape. The type of rehabilitation/reconstruction work needed will be dependent on

[5] Visual Resource Management Class III: Partially retain the existing character of landscapes. Manage Visual Resource Management Class III lands for moderate levels of change to the characteristic landscape. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements of form, line, color, texture, and scale of adjacent scenery and manmade visual intrusions.

current policies, technologies, condition of facilities, impacts to surrounding areas, and other factors.

2. During planning and prior to any new construction or maintenance of Project facilities that have the potential to affect visual resources of BLM lands (including but not limited to the recreation-related construction), the licensee shall file with FERC, a plan approved by BLM for the protection and rehabilitation of BLM visual resources affected by such construction or maintenance. At a minimum, the plan shall address clearings, spoil piles, and Chili Bar Project facilities involved in such construction or maintenance like diversion structures, penstocks, pipes, ditches, powerhouses, other buildings, transmission lines, corridors, and access roads. The plan shall address facility configurations, alignments, building materials, colors, landscaping, and screening. The Plan shall provide a proposed mitigation and implementation schedule to bring the Chili Bar Project facilities involved in such construction or maintenance affecting visual resources on BLM lands into compliance with visual resource standards and guidelines in the USDI 2004 South Fork American River: A Management Plan, and the USDI 2006 Cronan Ranch Draft Management Plan. Mitigation measures identified for either the visual resource plan for new construction or maintenance, or the measures identified for existing facilities, shall include, but are not limited to: (1) surface treatments with BLM-approved colors and natural appearing materials that will be in harmony with the surrounding landscape, (2) use of non-specular conductors for the transmission lines, (3) use of native plant species to screen facilities from view, (4) reshaping and revegetating disturbed areas to blend with surrounding visual characteristics, and (5) locating transmission facilities to minimize visual impacts (FERC, 2008).

Question c: The Chili Bar Project facilities have been in place for over 40 years, such that the impact on the visual quality of the site is a continuation of existing conditions. The only new Project features are the trail, gravel parking lot, and the placement of a kiosk sign and one picnic table. Implementation of the Project will not substantially degrade the existing visual character or quality of the site and its surroundings.

Question d: No nighttime Project construction is expected to occur, and no lights will be installed at the Chili Bar Project; therefore, no impact will occur to day or nighttime views in the area.

3.2.3 Mitigation

No significant impacts have been identified, so no mitigated is required.

3.3 Agriculture and Forest Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
AGRICULTURE AND FOREST RESOURCES				
In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and the forest carbon measurement methodology provided in the Forest Protocols adopted by CARB. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would convert important farmlands to urban uses.	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in a 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)) or timberland (as defined in Public Resources Code Section 4526) or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in a conflict with existing zoning or cause rezoning of forest land.	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in the loss of forest land or the conversion of forest land to a non-forest use.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
AGRICULTURE AND FOREST RESOURCES				
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?	☐	☐	☐	☒
Threshold of Significance: The proposed project would have a substantial adverse effect if it would involve other changes in the existing environment, which could result in the conversion of Farmland to a non-agricultural use.				

3.3.1 Environmental Setting

The Chili Bar Project area is not located within an area designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland. The Chili Bar Project area is located on land that is designated "Other Land"[6] (California Department of Conservation, 2006). The Chili Bar Project site is not located in an agricultural area; it is located in a forested area.

Preservation of farmland in California is encouraged by the California Land Conservation Act of 1965, commonly referred to as the Williamson Act. This program enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971. Williamson Act contracts are automatically extended, continuing indefinitely unless the owner requests cancellation or files for non-renewal. In 1998, the provisions of the Williamson Act were expanded by Senate Bill 1182 to strengthen agricultural land preservation incentives. The 1998 changes to the Act provided a 35 percent property tax discount and other incentives for farmland owners willing to maintain their land in agricultural land use for 20 years. The Chili Bar Project site is not subject to the Williamson Act.

[6] Other Land is land that is not included in any other mapping category. Common examples include low density rural developments, brush, timber, wetland, and riparian areas not suitable for livestock grazing, confined livestock, poultry, or aquaculture facilities, strip mines, borrow pits, and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sites by urban development and great than 40 acres is mapped as Other Land.

3.3.2 Impacts

3.3.2.1 Answers to Checklist Questions

Question a: The Chili Bar Project area is not located on land designated as Prime Farmland, Farmland of Statewide Importance, or Unique Farmland; therefore, no impact to those land classifications will occur as a result of implementing the Project.

Question b: The Chili Bar Project is not located on land that is subject to Williamson Act Contracts.

Question c: The Chili Bar Project is a developed site and its continued operation not affect the existing zoning or cause the rezoning of forest land.

Question d: The Chili Bar Project is a developed site in a forested area. Its continued operation will not result in the loss of forest land or the conversion of forest land to a non-forest use.

Question e: The Project will not involve changes to the environment that could result in the conversion of farmland to non-agricultural uses; or involve changes to the environment that could result in the conversion of forest land to a non-forest use.

3.3.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.4 Air Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY				
Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐
Threshold of Significance: The proposed project would have a significant adverse impact if air quality emissions from the construction or operation of the project features would exceed the local air district's air quality standards.				
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☐	☒	☐
Threshold of Significance: The proposed project would have a significant adverse impact if it would violate any air quality standard or contribute to an existing or projected air quality violation.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY				
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? **Threshold of Significance:** The proposed project would have a significant adverse impact if it would violate any air quality standard or contribute to an existing or projected air quality violation.	☐	☐	☒	☐
d) Expose sensitive receptors to substantial pollutant concentrations? **Threshold of Significance:** The proposed project would have a significant adverse impact if it would expose sensitive receptors to substantial pollutant concentrations.	☐	☐	☐	☒
e) Create objectionable odors affecting a substantial number of people? **Threshold of Significance:** The proposed project would have a significant adverse impact if it would create objectionable odors that would affect a substantial number of people.	☐	☐	☐	☒

3.4.1 Environmental Setting

The Chili Bar Project is an air emission-free facility (PG&E, 2005).

3.4.1.1 Air Quality in the Project Area

The USEPA and CARB have designated each county within California as either attainment or non-attainment for the National Ambient Air Quality Standards and the California Ambient Air Quality Standards. Pursuant to the federal Clean Air Act, the USEPA has designated El Dorado County as non-attainment for ozone and particulate matter less than 10 microns in diameter; unclassified for particulate matter less than 2.5 microns in diameter, carbon monoxide, and visibility-reducing particulates; and attainment for nitrogen dioxide and sulfur dioxide (FERC, 2008).

CARB has designated El Dorado County as non-attainment for ozone and particulate matter less than 10 microns in diameter; attainment for nitrogen dioxide, sulfur dioxide, sulfates, and lead; and unclassified for particulate matter less than 2.5 microns in diameter, carbon monoxide, hydrogen sulfide, and visibility-reducing particulates (CARB, 2006).

The El Dorado County Air Quality Management District is the regional agency that establishes and administers air quality regulations in the Chili Bar Project area.

3.4.2 Impacts

3.4.2.1 Answers to Checklist Questions

Question a: The Project will not conflict with or obstruct implementation of an applicable air quality plan. The Chili Bar Project has been in place for 40+ years, and it currently results in minimal air emissions from its operation. PG&E proposes some operational modifications, as needed, to implement resource management measures. Chili Bar Project's continued operation will result in no direct change in air quality from existing conditions.

Continued operation of the Chili Bar Project will not substantially increase air emissions (FERC, 2008). This is because: (1) continued Project operation will result in no change in air emissions; and (2) it will lead to the indirect generation of only a small amount of air emissions, when compared to existing conditions, due to replacement of the average annual 1,000 MWh of energy that will not be generated by the Project. There is no indication that these air emissions will occur in El Dorado County. There is a minor amount of construction associated with the Project's new recreation facilities, which will last only a short duration of time. Over a two- to three-week period, PG&E will construct a 0.6-mile-long trail and a gravel parking lot sized for three to four vehicles. The Project includes Environmental Improvement Measures to reduce these construction impacts to air quality to a less-than-significant level.

Question b: Implementation of the Project will result in no direct or indirect change in air quality at the Project from existing conditions, and little indirect change in air quality elsewhere from existing conditions. The Project currently has an average annual generation of 32,291 MWh per year of energy. The Project will provide an estimated average annual generation of 31,291 MWh per year (i.e., an average annual loss of 1,000 MWh per year will occur). This shortfall in energy production at the Project may result in the production of a small amount of air emissions elsewhere to make up the difference, but the Project will not contribute substantially to an air quality violation.

Question c: As indicated in response to questions a and b, the Project will result in minor short-term emissions from construction activities in the region. In addition, the Project's operation will continue to generate minimal air emissions, and will result in no change in local air quality from existing conditions. The minor construction activities associated with the recreation improvements may occur at the same time as other projects in the same geographical area, but are not expected to result in a cumulatively considerable increase in emissions. This is due to the short term of the construction period, the minor amount of activity associated with such construction, and the implementation of measures to reduce the potential generation of fugitive dust during development of the trail and gravel parking lot. These measures include the following:

- Construction access roads and the construction site will be sufficiently watered to prevent excessive amounts of dust.
- All earth materials transported off site on public roads will be either sufficiently watered or securely covered to prevent excessive amounts of dust.
- After construction is complete the construction site will be seeded with native grasses or plants.

In addition, operation of the Project will not result in a cumulatively considerable net increase in any criteria pollutant.

Question d: The Project will not emit air pollutants. Locations where the very young, elderly, and those suffering from certain illnesses or disabilities reside are considered "sensitive receptors" to air quality impacts. Examples of sensitive receptors include schools, day care centers, parks, recreational areas, medical facilities, rest homes, convalescent care facilities, and residences. Land use conflicts can arise when sensitive receptors are located near major sources of air pollutant emissions. The Chili Bar Project is located in an area that is very sparsely populated.

Question e: The Project will not generate objectionable odors.

3.4.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.5 Biological Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES – Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or USFWS? **Threshold of Significance:** The proposed project would have a significant adverse impact if it would cause the loss of designated species either directly or through habitat modifications.	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or USFWS? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would diminish the habitat value of riparian habitat or other state or federal recognized sensitive natural communities through physical modification to such areas.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES – Would the project:				
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? **Threshold of Significance:** The proposed project would have a substantial adverse effect on federally protected wetlands if it would directly remove, fill, or cause hydrologic interruption such that wetland functions and/or values were reduced or diminished.	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would interfere with the movement of fish and wildlife through migration corridors by removing, obstructing, or physically changing corridors so as to diminish use. Additionally, the project features would have a significant adverse effect if they would obstruct or diminish the quantity or quality of native nursery habitat.	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? **Threshold of Significance:** The proposed project would have a significant adverse impact if it would conflict with local policies or ordinances protecting biological resources.	☐	☐	☐	☒
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local or regional habitat conservation plan? **Threshold of Significance:** The proposed project would have a significant adverse impact if it would hinder the implementation of an adopted Habitat Conservation Plan.	☐	☐	☐	☒

3.5.1 Environmental Setting

3.5.1.1 Aquatic Resources and Habitat

The baseline condition in the SF American River downstream of Chili Bar Dam includes a flow regime characterized by fluctuating flows that can range between 3,600 cfs in summer and fall months during peak electrical demand periods followed by a subsequent drop to a

base flow of about 200 cfs during off-peak periods. PG&E evaluated the impact that fluctuating flows have on aquatic resources by implementing studies that focused on channel morphology, potential fish stranding, fish habitat, benthic macroinvertebrate populations, stream flow time-of-travel, and fish access to and use of tributaries of the SF American River (Devine Tarbell & Associates and Stillwater Sciences, 2005a). PG&E also evaluated stream habitat in the SF American River downstream of the Project by conducting aerial videography surveys during 2002. Run and glide are the dominant habitat types in this reach with lesser amounts of low gradient, high gradient, and pool habitat as well (Devine Tarbell & Associates and Stillwater Sciences, 2005b). PG&E determined that there were no barriers to trout migration (other than the dam) throughout the year (FERC, 2008).

No historical fish survey data were available for Chili Bar Reservoir or for the SF American River downstream of Chili Bar Dam prior to the studies implemented as part of the relicensing proceeding. PG&E conducted fish population surveys downstream of Chili Bar Reservoir at four locations in the SF American River, with the most downstream site located 0.4 mile upstream of the Folsom Lake high water line. The fish surveys took place in October of 2003 and 2004 and involved a combination of snorkel surveys and backpack electrofishing along the stream margins at all four sites. These data show that Chinook salmon, rainbow and brown trout, hardhead, Sacramento pike minnow, Sacramento speckled dace, Sacramento sucker, prickly sculpin, riffle sculpin, green sunfish, bluegill, and smallmouth bass area are present in the SF American River downstream of the Chili Bar Project. The presence of Chinook salmon in the SF American River is likely due to stocking of this species in Folsom Lake (Devine Tarbell & Associates and Stillwater Sciences, 2005c). PG&E sampled Chili Bar Reservoir in November 2002 to determine the fish species composition and found that Sacramento sucker were the dominant species with 70 percent of the fish collected, hardhead accounted for 23 percent and Brown trout accounted for 7 percent. No rainbow trout were encountered during the reservoir sampling effort. Other fish observed in the reservoir include Sacramento pike minnow and smallmouth bass (FERC, 2008).

As described in the Flow and Fluctuation Technical Report, overall fish abundance appears to be lower than would be expected for a stream the size of the SF American River (Devine Tarbell & Associates and Stillwater Sciences, 2005a). Although the specific mechanisms are unclear, the low abundance may be related to the fluctuating flow pattern due to decreased reproductive success, increased fish mortality through stranding, or displacement of fish. Fluctuating flows may also impact fish population abundance through its influence on channel morphology or water temperature. In addition, flows below Chili Bar Reservoir result in cooler stream temperatures as a result of cold inflows from White Rock Powerhouse, which may preclude the presence of abundant hardhead populations, a transition zone species that is generally associated with warmer water temperatures.

PG&E also evaluated habitat in Chili Bar Reservoir for its adequacy for both warm water and reservoir spawning fishes. Chili Bar Reservoir contains one reservoir-spawning species: smallmouth bass. The preferred habitat of smallmouth bass occurs primarily in the upper half of the reservoir where there are sand deposits, and shallower water. Most of the shoreline of Chili Bar Reservoir is steep, but little erosion occurs due to bedrock and large-sized substrate along with dense vegetation. Considerable emergent vegetation occurs in Chili Bar Reservoir. Rearing habitat for juvenile suckers exists within the reservoir due to

the presence of emergent vegetation, while the rearing habitat for smallmouth bass may be restricted due to temperature constraints associated with cool water releases from White Rock Powerhouse. Chili Bar Reservoir does not contain abundant rearing habitat for hardhead (Devine Tarbell & Associates and Stillwater Sciences, 2005c).

PG&E sampled benthic macroinvertebrate communities and assessed water quality by using measures of stream benthic macroinvertebrate community and physical/habitat characteristics to evaluate the biological integrity of stream ecosystems consistent with the California Stream Bioassessment Procedure (Harrington, 1999). Data were collected at six sites in the reach downstream of Chili Bar Dam in 2003 and 2004. Mayflies, stoneflies, and caddisflies comprised less than 40 percent of the organisms at most of the sites. The lowest percentage of mayflies, stoneflies, and caddisflies occurred at the site located a short distance downstream of Chili Bar Dam (six percent). These data indicate lower taxonomic richness and diversity in the reach downstream of the Chili Bar Dam, when compared to reference sites in the North Fork American and Consumnes Rivers, although this may partially be due to habitat conditions that are characterized by bedrock and boulder in the upper end of the reach (FERC, 2008). The low species diversity that was noted may also be associated with alterations in water temperature and flow (PG&E, 2005). Additional analyses of benthic macroinvertebrate communities are described in the Flow and Fluctuation Technical Report (Devine Tarbell & Associates and Stillwater Sciences, 2005a) where comparisons were made for samples collected at different locations in the stream channel based on degree of inundation. This study showed that benthic macroinvertebrate productivity was reduced in the stream margins compared to the baseflow channel, which reflects the periodic dewatering that occurs due to the fluctuating flow regime. However, the report also points out that under more natural conditions, during summer months the stream margins would never be inundated and productivity during that period of the year would likely be even lower.

3.5.1.2 Special-Status Aquatic Animal Species

Special-status species refer to those species or subspecies with federal and/or state listing pursuant to the Federal Endangered Species Act or the California Endangered Species Act (PG&E, 2005).

Six aquatic special-status species or subspecies that may occur in the Project area and in the SF American River downstream of Chili Bar Dam were identified in PG&E's license application (PG&E, 2005). These include: hardhead (*Mylopharodon conocephalus*), California roach (*Lavinia symmetricus*), California red-legged frog (*Rana aurora draytonii*), Foothill yellow-legged frog (*Rana boylii*), Western pond turtle (*Actinemys marmorata*), and Button's Sierra sideband snail (*Monadenia mormonum buttoni*). Of these, the California red-legged frog is listed as threatened under the Federal Endangered Species Act. The remaining special-status species are either federal or California species/subspecies of special concern.

The California Natural Diversity Database and USFWS endangered species database were also accessed to determine whether any newly listed species may occur in the vicinity of the Project. According to the USFWS database (2009), both the federally threatened Central Valley steelhead *(Oncorhynchus mykiss*) and the delta smelt *(Hypomesus transpacificus)* are listed as potentially occurring in the Project vicinity; however, it is highly unlikely that either species is present. Existing fish passage barriers located downstream of Chili Bar Dam

(i.e., Nimbus and Folsom Dams) currently prevent the occurrence of anadromous Central Valley steelhead in the SF American River. Delta smelt are typically only found in the Sacramento-San Joaquin Estuary.

Future actions described in the 2009 National Marine Fisheries Service Biological and Conference Opinion for the Long-term Operations of the Central Valley Project and State Water Project provide for a pilot project to investigate the reintroduction of steelhead upstream of Folsom Dam, which is part of the Central Valley Project operated by the U.S. Bureau of Reclamation. Therefore, although Central Valley steelhead are not currently present in the SF American River, it is possible the species may be present in the future.

3.5.1.3 Vegetation

Much of the Chili Bar Project area is composed of cismontane woodlands and lower montane coniferous forests. Dominant canopy species along south-facing slopes include interior live oak, black oak, California buckeye, ponderosa pine, and gray pine. Douglas fir and white fir dominate many of the north-facing slopes. Much of the understory is dominated by poison oak, scotch broom, California wild grape, and Himalayan blackberry (FERC, 2008).

3.5.1.4 Special-Status Plants

Special-status species refer to those species or subspecies with federal and/or state listing (pursuant to the Federal Endangered Species Act or the California Endangered Species Act and California Native Plant Protection Act), plants listed by the California Native Plant Society (2009), and plants listed by the BLM that meet the definition of a rare, threatened, or endangered plant (PG&E, 2005).

PG&E's license application identified fifteen special-status plants that occur or potentially occur in the Project vicinity (PG&E, 2005). The California Natural Diversity Database, California Native Plant Society Inventory of Rare and Endangered Plants and USFWS databases were also accessed to determine whether any newly listed species may occur in the vicinity of the Project. Of the plant species identified in the California Natural Diversity Database, California Native Plant Society, PG&E, and USFWS references, six are federally and/or state-listed species. The six special-status plant species are: the federally endangered Stebbins' morning-glory *(Calystegia stebbinsii),* the federally endangered Pine Hill ceanothus *(Ceanothus roderickii),* the federally endangered Pine Hill flannelbush *(Fremontodendron decumbens),* the federally endangered El Dorado bedstraw (*Galium californicum* ssp. *Sierrae),* the federally threatened Layne's ragwort, and the federally endangered Hartweg's golden sunburst *(Pseudobahia bahiifolia)* (Appendix A, Table A- 1).

BLM sensitive plant species are those that do not already occur on federal or state lists. Plant species identified in the California Natural Diversity Database, California Native Plant Society, and PG&E references were checked for BLM sensitivity. Nine of the plant species in the references described above are considered sensitive by BLM (BLM, 2009) and are listed in Table A-1 in Appendix A.

No special-status plant species were observed within the FERC Project boundary during 2004 special-status plant surveys. Potentially suitable habitat was found for five special status species: Big-scale balsamroot (*Balsamorhiza macrolepis* var. macrolepis), Brandegee's clarkia (*Clarkia bibloa* ssp. *brandegeeae*), Butte County fritillary (*Fritillaria*

eastwoodiae), Stebbin's phacelia (*Phacelia stebbinsii*), and oval-leaved viburnum (*Viburnum ellipitcum*) (FERC, 2008).

3.5.1.5 Noxious and Invasive Weeds

PG&E identified eight species of noxious weeds within the Chili Bar Project area: barbed goatgrass, Italian thistle, yellow starthistle, rush skeletonweed, Scotch broom, klamathweed, Himalayan blackberry, and medusahead. Scotch broom dominated significant portions within the Chili Bar Project area including the reservoir shorelines and roadsides. Smaller populations of other noxious weeds, including barbed goatgrass, Italian thistle, yellow starthistle, rush skeletonweed, klamathweed, and medusahead were observed and mapped throughout the Chili Bar Project area. In addition, Himalayan blackberry, a non-target invasive weed, was observed throughout the Chili Bar Project area, dominating portions of the riparian understory and other adjacent areas (FERC, 2008).

3.5.1.6 Riparian Vegetation

The dominant vegetation around Chili Bar Reservoir is upland forests supporting ponderosa pine, Douglas fir, and canyon live oak. In general, the occurrence of riparian vegetation along the reservoir is constrained by steep slopes and well-drained substrates. Some small areas of riparian-influenced (but often upland) vegetation do occur, most often as patches or thin bands of relatively modest gradient. The riparian habitats are dominated by tree and shrub-sized shining willow, California sycamore, Freemont cottonwood, and white alder, with lesser coverage of black walnut, tree-of-heaven, and occasional upland species such as black oak.

Overstory dominant species are typically white alder, arroyo willow, or shining willow, most often 10 to 20 feet in height and fewer than 20 years old. In addition, Freemont cottonwood is common, either as large trees on high banks, or as occasional young saplings (few cottonwood of intermediate size occur anywhere on the reach downstream of Chili Bar). Sixty-two percent of the shoreline of the SF American River downstream of Chili Bar supports riparian vegetation. Approximately 92 acres of riparian vegetation were mapped: 167.4 acres (87.3 percent) of which were Mixed Riparian Hardwood. Other vegetation mapped were Willow (11.7 acres), Fremont Cottonwood (6.5 acres), White Alder (5.8 acres), and Wet Meadow (0.4 acre) (FERC, 2008).

3.5.1.7 Wetlands

Although USFWS National Wetlands Inventory wetland maps do not indicate any wetlands along the steep-sided Chili Bar Reservoir, field investigations conducted in 2004 by PG&E documented occasional small herbaceous wetlands within the water fluctuation zone of Chili Bar Reservoir. They are too small to map and exist as a thin (less than seven feet wide), steep fringe of vegetation that is frequently submerged. According to National Wetlands Inventory maps, a series of marshy scrub-shrub and forested wetlands occurs along the SF American River downstream of Chili Bar. No marshy emergent wetlands occur (FERC, 2008).

3.5.1.8 Wildlife

PG&E ran the CDFG Wildlife Habitat Relationships System model for El Dorado County to predict the wildlife within the Chili Bar Project boundary. Five habitat types were identified as occurring in the Project boundary: Blue Oak-Foothill Pine, Montane Hardwood Conifer,

Ponderosa Pine, Montane Hardwood, and Montane Riparian. Blue Oak-Foothill Pine is predicted to provide habitat for 64 mammal species, 15 reptile species, and 156 bird species.[7] Montane Hardwood-Conifer is predicted to provide habitat for 66 mammal species, 15 reptile species, and 134 avian species. Montane Hardwood is predicted to provide habitat for 14 reptile species, 129 avian species, and 53 mammal species. Montane Riparian is predicted to provide habitat for 13 reptile species, 147 bird species, and 75 mammal species (PG&E, 2005).

Five bird species were observed during the boat surveys that were part of the bald eagle study: Canada goose, mallard, American wigeon, wood duck, and common merganser. None of these species was observed in large numbers (FERC, 2008).

During June and July of 2004, PG&E conducted bat surveys throughout the Chili Bar Project area. These surveys confirmed the presence of four bat species, Yuma myotis, big brown bat, silver-haired bat, and western pipestrelle, and indicated the likely presence of two additional species: Mexican free-tailed bat and pallid bat within the Chili Bar Project area (FERC, 2008).

3.5.1.9 Special-Status Terrestrial Wildlife

Terrestrial wildlife species were originally identified as having the potential to occur in the Chili Bar Project area using the Wildlife Habitat Relationships System (PG&E, 2005). At that time, the model for El Dorado County predicted 264 terrestrial vertebrate species (four reptiles, 178 birds, and 82 mammals), six of which are special-status species that might occur within the Chili Bar Project area (PG&E, 2005). The six species are the: federally threatened valley elderberry longhorn beetle *(Desmocerus californicus dimorphus)*, state endangered bald eagle (*Haliaeetus leucocephalus)*, state threatened Swainson's hawk *(Buteo swainsonii)*, state endangered American peregrine falcon *(Falco peregrinus anatum)*, state endangered little willow flycatcher *(Empidonax traillii brewsteri)*, and state endangered bank swallow *(Riparia riparia)*. The California Natural Diversity Database and USFWS databases were recently accessed to determine whether any newly listed species may occur in the vicinity of the Chili Bar Project. This search added the federal and state candidate species Pacific fisher (*Martes pennanti*) to the list (Appendix A, Table A-1).

PG&E conducted site-specific studies on targeted species/habitats: valley elderberry longhorn beetle, Nesting Waterfowl Habitat Assessment, bats, and bald eagle and osprey. These species were selected for study from the special-status species that might be likely to use the Chili Bar Project area because it was initially thought that they could be affected by the operation and management activities that are part of the Chili Bar Project. It was determined that no valley elderberry longhorn beetle habitat and no significant waterfowl nesting or foraging habitat exist in the Chili Bar Project area. It was also determined that, although there are suitable trees for nesting, and human disturbance is slight, because of lack of prey and lack of shallow water, the Chili Bar Project area provides poor habitat for nesting, wintering, or roosting for bald eagles. One immature bald eagle was identified upstream of White Rock Powerhouse during a bat reconnaissance survey, and one osprey was observed outside the Chili Bar Project area (PG&E, 2005).

[7] No species data were provided for the Ponderosa Pine habitat type.

The Yuma myotis (*Myotis yumanensis*) was determined to be present in the Chili Bar Project area (at the White Rock Powerhouse). It is a special-status bat species (a federal species of concern and a BLM sensitive species) (PG&E, 2005).

The Western pond turtle (USFWS-Sacramento Office Species of Special Concern, California protected, state species of special concern, BLM species of special concern) was documented within one mile of the Chili Bar Project area (PG&E, 2005).

3.5.1.10 Regulatory Setting

U.S. Bureau of Land Management Resource Management Plan

The Sierra Resource Management Plan and Record of Decision include the following goals and objectives pertaining to vegetation, fish and wildlife, and special-status species:

Vegetation Goals

- Promote a healthy and diverse mix of plant communities and provide a wide spectrum of organisms and ecosystem processes for the needs of plants, animals, and humans.
- Maintain the ecological integrity of foothill ecosystems in the face of urban growth and residential development through protection or improvement of habitat connectivity.

Vegetation Objectives

- Conserve and restore oak woodland, conifer forest, chaparral, riparian, meadow, Central Valley wetland, and grassland habitats to support long-term viability of native bird species, sensitive species, and the associated natural diversity of these habitats.
- Manage vegetation (including invasive species removal) to improve habitat conditions for particular wildlife species.
- Control invasive species and increase native plant species using early detection, rapid response, and prevention measures.
- Reduce hazardous fuels to prevent catastrophic wildfire.

Fish and Wildlife Goals

- Maintain, improve, or enhance native fish and wildlife populations and the ecosystems upon which they depend.
- Maintain the ecological integrity of foothill ecosystems in the face of urban growth and residential development through protection or improvement of habitat connectivity.
- Provide opportunities for research and education.

Fish and Wildlife Objectives

- Restore disturbed or altered habitat for all life stages of native wildlife species, aquatic species, macroinvertebrates, special-status species, and native fish species, including spawning fish habitat.
- Maintain or improve numbers of native fish, macroinvertebrates, and other aquatic species.
- Provide for adequate large woody debris (size, frequency, and distribution) within the natural range of variability to contribute to stream channel complexity and stability.

- Maintain or improve desired native plant communities while providing for wildlife/fisheries needs and soil stability.
- Reduce habitat fragmentation and maintain altitudinal migratory corridors (approximately 1,500 to 3,500 feet).
- Prevent and control infestations of non-native species that negatively impact native and game species.

Special-Status Species Goals

- Ensure all management activities and BLM authorizations are consistent with the conservation needs for special-status species.
- Manage special-status species habitat to assist in the recovery of listed species.

Special-Status Species Objectives

- Maintain or improve habitat for special-status species.
- Coordinate with USFWS on implementation of recovery plans and conservation strategies for special-status species.
- Promote the recovery of listed species and improve the status of candidate and special-status species to eliminate the need to officially list these species (BLM, 2008).

El Dorado County General Plan

The El Dorado County General Plan (2004) includes Objective 7.4.2, which provides for: Identification and protection, where feasible, of critical fish and wildlife habitat including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat (El Dorado County Planning Department, 2004).

El Dorado County Habitat Conservation Plan

El Dorado County does not currently have a Habitat Conservation Plan for the county. The County is in the process of developing an Integrated Natural Resources Management Plan, and expects to have it completed in approximately two years (year 2011) (Maurer, pers. comm., 2009).

Sacramento River-San Joaquin River Water Quality Control Plan

The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins indicates that the Central Valley Regional Water Quality Control Board has designated the following beneficial uses for the SF American River that are applicable to this biological resources analysis: Warm Freshwater Habitat; Cold Freshwater Habitat; and Wildlife Habitat (CVRWQCB, 2009).

3.5.2 Impacts

3.5.2.1 Answers to Checklist Questions

Question a: Effect on Aquatic Species. Implementation of the Project, which involves a continuation of the current fluctuating flow regime with a slightly higher minimum flow of 200 cfs, will not significantly impact aquatic species (common or special-status) compared to the baseline condition. The current flow fluctuation regime downstream of Chili Bar Dam

leads to greater productivity in the benthic macroinvertebrate community in the base flow channel, with decreased productivity (i.e., lower abundance) in the flow fluctuation zone. In areas of the stream channel with periodic exposure to air, species diversity and the number of individuals per square foot decrease as the exposure time increases. The new minimum streamflow will reduce the difference between daily high and low flows, and thus increase the wetted perimeter, which is likely to provide more suitable habitat for benthic macroinvertebrate colonization. This will lead to an improvement in fish habitat and will likely improve fish growth in the reach. In addition, adherence to the ramping rates will reduce the effects of flow fluctuations on sensitive aquatic species and reduce the likelihood that fish or other species become stranded due to sudden changes in flow. Transporting woody debris that collects in the Chili Bar Project reservoir to the stream channel downstream of the Chili Bar Project dam will enhance aquatic habitat, which could benefit the fish community in the Chili Bar Project reach. The monitoring and adaptive management program will provide information to inform resource managers whether or not the stated program goals are being met (FERC, 2008).

Effect on Vegetation Species. No special-status plant species were observed within the Chili Bar Project boundary during the 2004 special-status plant surveys.

Effect on Wildlife Species. Continued operation of the Project or the development of the new recreation facilities is anticipated to have no effect on the Yuma Myotis (present at the White Rock Powerhouse) or the Western pond turtle (documented within one mile of the Chili Bar Project area). No other special-status wildlife species were documented in the Chili Bar Project area.

Question b: Effect on Riparian Vegetation. Riparian vegetation is subject to flow alterations and large water level fluctuations as a result of the existing Chili Bar Project's operation. Implementation of Settlement Agreement Article 2-1 requires minimum streamflow to the Chili Bar Project reach, and Article 2-4 requires that PG&E conduct a riparian vegetation monitoring program that will provide an index of changes in riparian conditions that result from the new streamflows to determine if riparian conditions are in proper functioning condition, and to determine if riparian areas are being maintained or are in need of restoration.

Riparian vegetation in the Chili Bar Project reach meets the characteristics of "proper functioning condition," although there is evidence that Project operation has reduced the quality (showing signs of encroachment and reduced bank stability) (PG&E, 2005). The minimum flows will be beneficial to the health of the riparian vegetation by reducing the difference between daily high and low flows and increasing the wetted perimeter. This will provide more stable and suitable habitat (FERC, 2008).

Effect on Noxious and Invasive Weeds. Significant populations of the noxious weeds Scotch broom and Himalayan blackberry occur on the Chili Bar Reservoir shoreline and along roadsides. Current Project operation and maintenance activities have created conditions that are favorable to the existence of noxious weeds. Implementing the invasive weed and vegetation management plans in accordance with Settlement Agreement Article 2-10 will decrease current populations and control future infestations of noxious weeds within the Chili Bar Project boundary on BLM land.

Question c: Occasional small herbaceous wetlands exist within the water fluctuation zone of Chili Bar Reservoir. As reservoir elevations currently decline, wetland areas are exposed and become vegetated except at areas exposed during maximum drawdown, which tend to remain unvegetated. According to PG&E's study, *Riparian Vegetation and Wetlands Technical Report*, species richness of wetlands that are seasonally inundated by the reservoirs was much lower than in wetlands that are never inundated (FERC, 2008). The continued operation of the Project will result in no change to what currently occurs in the reservoir's water fluctuation zone.

Question d: PG&E determined that there were no barriers to trout migration (other than the dam) throughout the year. No barriers to fish passage were observed between the Chili Bar Project reservoir and the tributaries (PG&E, 2005). In addition, no migratory wildlife corridors or wildlife nursery sites were identified in PG&E's biological resources studies that were conducted during the relicensing process. Therefore, no impact on fish or wildlife species movement, wildlife corridors, or wildlife nursery sites will occur from the continued operation of the Project or the development of the new recreation facilities.

Question e: Operation of the Project will be consistent with the goals and objectives in the BLM's Sierra Resource Management Plan and Record of Decision, El Dorado County's General Plan, and the Sacramento River-San Joaquin River Water Quality Control Plan. The Project's continued operation will result in little change from existing conditions, and those changes are made to benefit biological resources.

Question f: No Habitat Conservation Plan currently exists for El Dorado County.

3.5.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.6 Cultural Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
CULTURAL RESOURCES – Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in 15064.5?	☐	☐	☒	☐
Threshold of Significance: The proposed project would have a substantial adverse effect if it would directly alter or change the context of the project area such that the scientific, cultural, or social value of a historical resource within the project area is diminished.				
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to 15064.5?	☐	☐	☒	☐
Threshold of Significance: The proposed project would have a substantial adverse effect if it would directly alter or change the context of the project area				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
CULTURAL RESOURCES – Would the project:				
such that the scientific, cultural, or social value of an archaeological resource is diminished.				
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in physical changes to the landscape, directly affecting or changing the context within which a paleontological resource or unique geologic feature exists, thereby diminishing its value.	☐	☐	☒	☐
d) Disturb any human remains, including those interred outside of formal cemeteries? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in physical changes to the landscape causing the potential to disturb human remains, including those interred outside of formal cemeteries.	☐	☐	☒	☐

3.6.1 Environmental Setting

3.6.1.1 Cultural History Overview

There are five general archaeological periods for the North-Central Sierra Nevada and the Sacramento Valley/foothills regions where the American River drainage is located. The periods (Late Pleistocene, Early Holocene, Archaic, Early-Middle Sierran, and Late Sierran) are characterized by artifacts and other remnants of human settlement.

To date, archaeologists have found no conclusive evidence that humans occupied the American River drainage during the Late Pleistocene period, prior to 10,000 before present (BP). This appears to have begun to change toward the end of the Early Holocene period (10,000 BP-7,000 BP) in areas to the east of the Sierra crest, as indicated by the presence of stemmed projectile points and stone tools.

Archaeologists have found more evidence of human occupation for the Archaic period (7,000 BP to 3,200 BP). Indigenous peoples were beginning to incorporate seeds and other vegetable matter into a diet previously based largely on meat (and in the foothills area, fish as well). There is also evidence of trade among groups in the form of shell ornaments and other "exotic" materials that suggest interaction between groups in the Central Valley and groups normally occupying areas east of the Sierras.

During the Early-Middle Sierran period (3,200 BP to 600 BP), archaeologists believe there was increasing regionalization of Native land use and also regular use of certain locations. Although no evidence of permanent habitation above 3,500 feet has been found in the

American River watershed, scholars generally believe that indigenous peoples timed excursions above that elevation to take advantage of local resources.

By the Late Sierran period (600 BP to 150 BP), there was year-round native occupation in the American River area. There is archaeological evidence of village sites in foothill areas. Contact with Europeans began with mid-16th century coastal explorations by Spaniards; however, the effect of European presence did not become evident until arrival of Spanish missionaries in 1769. From 1769 until the early 19th century, missionaries aggregated and colonized the Native inhabitants through the institutions of missions, presidios, and pueblos, greatly affecting the demography, social life and culture of the area's indigenous peoples.

With Mexico's independence from Spain in 1821, the missions were gradually secularized as "ranchos" dependent on Native inhabitants for labor. The United States' war with Mexico in the middle 1840s resulted in the cession of California in 1848. Also in 1848, the discovery of gold initiated Euro-American migration into the region on an enormous scale. There soon emerged a need for food, shelter, and the infrastructure that accompanies thousands of people in a developing area. Roads were built over the Sierra Nevada, often following trails used by Native populations for millennia. By 1850, El Dorado County had one of the largest populations in the state.

The Chili Bar Project area intersects historic period mining districts, in which an elaborate network of ditches and flumes were built, beginning in the mid-19th century, to provide power for miners. Grazing emerged as one of the biggest industries in the county and surrounding area, even as the gold rush began to decline. In the 1890s, logging, which had begun in the area in the mid-19th century, became a major activity in the county under the American River Land and Lumber Company and under successor companies until the Great Depression.

Of the many cultural groupings occupying various ecological niches in the Sierra Nevada and foothills, those most usually associated with the Chili Bar Project area are the Miwok, Nisenan (Southern Maidu) and Washoe. The Nisenan occupied the Sierra foothills below about 3,000 feet elevation in the vicinity of the American, Bear, Cosumnes, and Feather rivers. The Washoe lived in the vicinity of Lake Tahoe, east of the Sierra crest, but traveled extensively to the west. The Coast Miwok and Plains Miwok had for many years been affected by missionization and the Mexican ranchos; the Sierra Miwok less so. Nisenan, Miwok, and Washoe communities were displaced from their lands by miners, ranchers, and others seeking to extract resources from the region.

By the late 19th century, the "Rancheria" emerged as a Euro-American solution to problems of displaced Native peoples in California. The rancherias were lands purchased by Congressional authorization for displaced and homeless Native Americans of various tribal groups. Although the U.S. government terminated 30 rancherias under the California Rancheria Act of 1958, court decisions forced the government to recognize the "tribes, bands, communities, and groups" of 17 rancherias and restore those Rancherias to their previous status. Among these were the Shingle Springs and Auburn Rancherias, whose residents include Nisenan and Miwok families; and the Jackson Rancheria, home to a population of primarily Sierra Miwok. Some Nisenan and Miwok are affiliated with other Rancherias, such as Sheep Ranch, Tuolumne, Chicken Ranch, and Buena Vista.

The El Dorado Indian Council is among groups without federal recognition that represent descendants of the historical tribes affected by displacement and federal Indian policy. The Washoe, after many attempts to regain their lands and establish a reservation, were provided with 156 acres of land near Carson City for the Carson Indian Colony in 1917; an additional 40 acres were allocated for the Washoe at Dresslerville, and the Reno Sparks Indian Colony was allocated for both Washoe and Northern Paiute communities. In 1970, in a settlement of a claim against the government, the Washoe gained another 40 acres near Woodfords in Alpine County, California (FERC, 2008).

3.6.1.2 Prehistoric and Historic Archaeological Resources

Location surveys conducted for PG&E in 2004 and 2005 in the Chili Bar Project area of potential effect (APE) were accomplished chiefly by boat, due to the steep slopes of the river canyon and heavy vegetation. These surveys identified four historic-period archaeological sites. PG&E ultimately determined, in consultation with the State Historic Preservation Office, that two of these (a mine adit and a hydraulic mining cut with associated equipment pad), were ineligible for the National Register. PG&E did not evaluate the third site, known as the Chili Bar Toll House Cemetery because it lies on BLM land outside of the proposed Chili Bar Project boundary. This cemetery consists of a headstone marker and a flat area that may have been prepared as a cemetery pad; information in PG&E's application associates the grave with Ella Coolidge (who died April 24, 1862), daughter of a toll house keeper whose wife reportedly was a Native American. The fourth recorded resource is an old road alignment from Rock Creek Road to Chili Bar Reservoir, which features a section of fieldstone wall. PG&E has asked the State Historic Preservation Office to concur in its opinion that the road alignment is not eligible for the National Register. By letter dated August 9, 2005, the State Historic Preservation Office concurred with PG&E's determination that the road alignment is not eligible (FERC, 2008).

3.6.1.3 Traditional Cultural Properties

The previously-mentioned Chili Bar Toll House Cemetery is the only publicly known potential traditional cultural property to have been formally recorded to date in the Chili Bar Project APE. PG&E contacted tribes identified by California's Native American Heritage Council as potentially interested in the Chili Bar Project to elicit information or concerns those tribes might have regarding traditional cultural properties in the Chili Bar Project APE. Although none of the contacted tribes and groups (El Dorado Miwok Tribe, Ione Band of Miwok Indians, Shingle Springs Band of Miwok Indians, Sierra Native American Council, United Auburn Indian Community, and Wilton Rancheria) offered comment, the El Dorado Miwok Tribe requested a map of the area depicting the Chili Bar Project (FERC, 2008).

3.6.1.4 Historic Buildings and Structures

The Chili Bar Project APE does not contain buildings or structures more than 50 years old, and its hydroelectric facilities date to the late twentieth century (FERC, 2008).

3.6.1.5 Paleontological Resources

Paleontological resources are fossils – the remains or traces of prehistoric life preserved in the geological (rock stratigraphic) record. They range from the well-known and well-publicized (e.g., dinosaur and mammoth bones) to the more obscure but nevertheless

scientifically important (e.g., mollusks, paleobotanical remains, trace fossils, microfossils). This resource is considered important because of the potential of fossil remains to contribute substantively to science and education, including our understanding of climate change and its effect on ecosystems and species. Therefore, fossils are protected by both state and federal laws.

Fossils are important scientific and educational resources because of their use in: (1) documenting the presence and evolutionary history of particular groups of now-extinct organisms; (2) reconstructing the environments in which these organisms lived; and (3) determining the relative ages of the strata in which they occur and the geologic events that resulted in the deposition of the sediments that formed these strata. Paleontological resources include the casts or impressions of ancient animals and plants, their trace remains (e.g., burrows, trackways), microfossils (such as fossil pollen, ostracods, and diatoms), and unmineralized remains, such as the bones of Ice Age mammals or the trunks of trees that lived long ago.

The paleontological sensitivity of a project area is determined by considering its geology and the location of prior paleontological sites in the area that may be near the project area, or in similar geologic settings. For the Chili Bar Project area, a review of the available geological literature was combined with a paleontological resources records review conducted using two on-line databases: (1) the University of California Museum of Paleontology at Berkeley; and (2) the Paleobiology Database, an on-line tool maintained by an international consortium of scientists and funded, in part, by the National Science Foundation. Neither database can provide information on the location of paleontological sites at a level of resolution more exact than that of a county, although literature searches can often reveal the position of these sites.

The geology of the study area is not conducive to the preservation of fossils, and possesses low paleontological sensitivity. This is consistent with the regional geology of the west slope of the Sierra Nevada. As the Sierras are approached from the west, progressively older and more altered sedimentary rocks are encountered. First, older Neogene rocks of the Central valley, then Paleogene and Mesozoic marine sediments, and then Paleozoic marine sedimentary rocks are encountered from west to east. In areas such as the Chili Bar Project area, these Paleozoic rocks have experienced extensive metamorphism as a result of their proximity to the tectonically active valley margin, but particularly due to their proximity to the Sierra Nevadan batholith. Metamorphic rocks such as those that characterize most of the Chili Bar Project area generally have low to no paleontological sensitivity because the compression and heating that occurred during metamorphism destroyed most, if not all, fossil remains. Although paleontologically sensitive, Quaternary-age fluvial sediments may have occurred historically in the SF American River channel, it is assumed that 19th Century placer mining removed these from the Chili Bar Project area.

The University of California Museum of Paleontology records search conducted January 7, 2009, returned results indicating that there are a minimum of 22 fossil localities within El Dorado County, although all are from rocks farther to the north and west and outside of the Chili Bar Project area. Many are fossil plant records from Tertiary-age rocks such as those in the vicinity of Georgetown approximately 10 miles to the north, while others are invertebrate collections from the older marine sediments. A few are Quaternary megafauna records recovered from caves developed in limited outcrops of Paleozoic

limestone such as that occurring northeast of Folsom Lake in the vicinity of Cool, California, approximately 13 miles to the northwest (Stock, 1918).

3.6.1.6 Regulatory Setting

Cultural Resources

Section 106 of the National Historic Preservation Act of 1966, as amended, requires FERC to evaluate potential effects on properties listed or eligible for listing in the National Register prior to an undertaking. An undertaking means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a federal agency, including, among other things, processes requiring a federal permit, license, or approval. In this case, the undertaking is the proposed issuance of a new license for the Chili Bar Project. Potential effects that may be associated with this undertaking include any Project-related effects associated with the day-to-day operation and maintenance of the Project after issuance of a new license.

Historic properties are cultural resources listed or eligible for listing in the National Register. Historic properties represent things, structures, places, or archeological sites that can be either Native American or European-American in origin. In most cases, cultural resources less than 50 years old are not considered eligible for the National Register. Cultural resources also have to have enough internal contextual integrity to be considered historic properties. For example, dilapidated structures or heavily disturbed archeological sites may not have enough contextual integrity to be considered eligible.

Section 106 also requires that FERC seek concurrence with the State Historic Preservation Office on any finding involving effects or no effects on historic properties, and allow the Advisory Council on Historic Preservation an opportunity to comment on any finding of effects on historic properties. If Native American properties have been identified, Section 106 also requires that FERC consult with interested Native American tribes that might attach religious or cultural significance to such properties.

Pursuant to Section 106, FERC must take into account whether any historic property could be affected by a proposed new license within a project's APE. The APE is defined as the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties and/or traditional cultural properties, if any such properties exist. In this case, the APE for the Chili Bar Project encompasses all lands and waters within the existing FERC Project boundary, including the access road from Highway 193, the powerhouse and dam, and upstream to a point upriver of the UARP White Rock development. It also includes the route of PG&E's new Sand Bar hiking trail, which PG&E proposes to bring within its proposed license boundary. The State Historic Preservation Office concurred with the APE by letter dated November 24, 2004 (FERC, 2008).

Paleontological Resources

As non-renewable scientific resources, the preservation and protection of paleontological resources are addressed by several federal and state statutes (Marshall, 1976; Fisk and Spencer, 1994), most notably by the 1906 Federal Antiquities Act and other subsequent federal legislation and policies, and by the State of California's environmental regulations (CEQA, Section 15064.5). Professional standards for assessment and mitigation of adverse

impacts on paleontological resources have been established by the Society of Vertebrate Paleontology (1995; 1996).

Federal protection for significant paleontological resources would apply if any construction or other related project impacts occurred on federally managed lands, or if federal funds or entitlements are necessary for project implementation. Federal legislative protection for paleontological resources stems from the Antiquities Act of 1906 (PL 59-209; 16 United States Code 431 et seq.; 34 Stat. 225), which calls for protection of historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest on federal lands. In addition, the National Environmental Policy Act of 1969 (42 USC 4321 et seq.; 40 CFR, Part 1502, Section 1502.25), as amended, requires analysis of potential environmental impacts to important historic, cultural, and natural aspects of our national heritage.

CEQA (Public Resources Code Sections 21000 et seq.) requires that public agencies and private interests identify the environmental consequences of their proposed projects on any object or site of significance to the scientific annals of California. Guidelines for the implementation of CEQA (Public Resources Code Sections 15000 et seq.) define procedures, types of activities, persons, and public agencies required to comply with CEQA. One of the questions to be answered in the Environmental Checklist (Section 15023, Appendix G, Section V, part c) is whether the project will directly or indirectly destroy a unique paleontological resource or site.

Although CEQA does not define what is "a unique paleontological resource or site," Section 21083.2 defines "unique archaeological resources" as "any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

1. It contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information.
2. It has a special and particular quality, such as being the oldest of its type or the best available example of its type.
3. It is directly associated with a scientifically recognized important prehistoric or historic event."

With only slight modification, this definition is equally applicable to recognizing "a unique paleontological resource or site." Additional guidance is provided in CEQA Section 15064.5 (a)(3)(D), which indicates "generally, a resource shall be considered historically significant if it has yielded, or may be likely to yield, information important in prehistory or history."

Section XVII, part a, of the CEQA Environmental Checklist asks a second question equally applicable to paleontological resources: "Does the project have the potential to…eliminate important examples of the major periods of California history or pre-history?" To be in compliance with CEQA, environmental impact assessments, statements, and reports must answer both of these questions in the Environmental Checklist. If the answer to either

question is *yes* or *possibly*, a mitigation and monitoring plan must be designed and implemented to protect significant paleontological resources.

The CEQA lead agency having jurisdiction over a project is responsible to ensure that paleontological resources are protected in compliance with CEQA and other applicable statutes. California Public Resources Code Section 21081.6, entitled Mitigation Monitoring Compliance and Reporting, requires that the CEQA lead agency demonstrate project compliance with mitigation measures developed during the environmental impact review process.

Other state requirements for paleontological resource management are in California Public Resources Code, Section 5097.5. This statute defines as a misdemeanor any unauthorized disturbance or removal of a fossil site or remains on public land and specifies that state agencies may undertake surveys, excavations, or other operations, as necessary, on state lands to preserve or record paleontological resources. This statute applies to any construction or other related project impacts that would occur on state-owned or state-managed lands.

3.6.2 Impacts

3.6.2.1 Answers to Checklist Questions

Question a: Surveys conducted for PG&E for the Chili Bar Project identified four historic-period archaeological sites. Two of the four sites (a mine adit and a hydraulic mining cut with associated equipment pad) were determined to be ineligible for the National Register. PG&E did not evaluate the third site, known as the Chili Bar Toll House Cemetery because it lies on BLM land outside its proposed Chili Bar Project boundary. The fourth recorded resource is an old road alignment from Rock Creek Road to Chili Bar Reservoir, which features a section of fieldstone wall. The road alignment was determined to not be eligible for the National Register (FERC, 2008).

Although no specific impacts to historic resources have been identified, PG&E has included Article 2-17, *Heritages Resources*, in its Settlement Agreement. It states that PG&E shall develop and implement an Historic Properties Management Plan that will be incorporated into the Programmatic Agreement by reference. It specifically indicates that PG&E will complete, within six months after license issuance, an Historic Properties Management Plan for the BLM for approval. The Historic Properties Management Plan will take into account Project effects on prehistoric and historic resources, Native American traditional cultural values, direct and indirect effects to heritage resources within the APE, ethnographic studies, historic archaeological studies, and Project recreational impacts to archaeological properties affecting BLM lands. The Historic Properties Management Plan will also provide measures to mitigate the identified impacts, a monitoring program, and management protocols for the ongoing protection of archaeological properties. The Historic Properties Management Plan will be filed with FERC, and PG&E must implement it upon approval (FERC, 2008).

In addition, PG&E has included Article 2-18, *Heritage Resource Discovery,* in its Settlement Agreement. It states if prior to or during ground disturbance or as a result of Project operations, items of potential cultural, historical, archaeological, or paleontological value are reported or discovered, or a known deposit of such items is disturbed on BLM lands and

licensee adjoining property, a licensee will immediately cease work in the area so affected. PG&E will notify the BLM, and will not resume work on ground-disturbing activities until it received written approval from the land-owning agency. If it deems it necessary, the BLM could require PG&E to perform recovery, excavation, and preservation of the site and its artifacts at the licensee's expense through provisions of an Archaeological Resources Protection Act permit issued by the BLM (FERC, 2008).

Therefore, there will be a less than significant impacts to historic resources.

Question b: No prehistoric archaeological resources were identified in the Chili Bar Project APE (FERC, 2008). If unknown buried resources occur within the Chili Bar Project site, they may be affected by Project recreation or construction-related activities. PG&E has included Article 2-17, *Heritages Resources*, and Article 2-18, *Heritage Resource Discovery,* in its Settlement Agreement to ensure there will be a less than significant impact to any unknown archeological resources. See response to Question a.

Question c: No paleontological resources were identified in the Chili Bar Project vicinity, and none are expected based on the geology of the area. If unknown buried resources occur within the Chili Bar Project's APE, they may be affected by Project recreation or construction-related activities. PG&E has included Article 2-18, *Heritage Resource Discovery,* in its Settlement Agreement to ensure there will be a less than significant impact to any unknown paleontological resources. See response to Question a.

Question d: The Chili Bar Toll House Cemetery is located outside of the Chili Bar Project boundary, but is located within the Chili Bar Project's APE (FERC, 2008). No other human remains are known to be present in the vicinity. If unknown buried remains are discovered within the Chili Bar Project APE as a result of Project recreation or construction-related activities, PG&E, as part of its Project, will implement the measures described below:

- Pursuant to Section 5097.98 of the California Public Resources Code and Section 7050.5 of the California Health and Safety Code, if human remains or bone of unknown origin are found at the Project, all activity shall stop in the vicinity of the find and the El Dorado County Coroner shall be contacted immediately. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission. Treatment of the remains shall be conducted in accordance with the direction of the County Coroner or the Native American Heritage Commission, as appropriate. No additional activity shall take place within the immediate vicinity of the find until the identified appropriate actions have been implemented.

3.6.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.7 Geology and Soils

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS – Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would expose people or structures to geological hazards or related hazards, such as ruptures of a known earthquake fault, strong seismic shaking, seismic related ground failure (e.g., liquefaction), landslides, soil erosion or loss of topsoil, unstable geologic unit, expansive soils, or soils incapable of supporting septic systems.	☐	☐	☐	☒
ii) Strong seismic ground shaking? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would result in strong seismic ground shaking.	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would result in seismic-related ground failure, including liquefaction.	☐	☐	☐	☒
iv) Landslides? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would result in landslides.	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would result in substantial soil erosion or the loss of topsoil.	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS – Would the project:				
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would be located on a geologic unit or soil that is unstable or would become unstable as a result of the project, and potentially result in onsite or offsite landslide, lateral spreading, subsidence, liquefaction, or collapse.	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would be located on expansive soil, creating substantial risks to life or property.	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would be located on soils that are incapable of adequately supporting septic tanks or alternative wastewater disposal systems.	☐	☐	☐	☒

3.7.1 Environmental Setting

3.7.1.1 Geology and Soils

The rock types in the Chili Bar Project area are part of the Sierra Nevada metamorphic belt, a 200-mile-long northwest-trending belt that comprises the western foothills of the Sierra Nevada. The geology of the Chili Bar Project area can be characterized as granitic rocks of the Sierra Nevada Batholith and metamorphosed sedimentary rocks. The Sierra Nevada Batholith is a continuous plutonic (granitic) rock formation that forms much of the Sierra Nevada in California. Older metamorphosed sedimentary rocks are also present and include quartzite, schists, crystalline limestone, and dolomite rock types (FERC, 2008).

The slopes around the Chili Bar Reservoir are steep. Soils that comprise the lands around the reservoir include:

- Boomer-Sites: very rocky loams of 9 to 50 percent slopes; (loam soils have fairly balanced proportions of sand, silt and clay in the <2 millimeter particle size fraction)
- Boomer: very rocky loam of 30 to 50 percent slopes: these soils transmit water moderately slowly, resulting in rapid surface runoff and a high potential for erosion
- Auburn: extremely rocky silt loam of 3 to 70 percent slopes: the rate of runoff varies with slope from slow to very rapid and, likewise, the susceptibility for soil erosion varies from slight to very high
- Mariposa: very rocky silt loam of 50 to 70 percent slopes: with very steep slopes, surface runoff is rapid and the potential for soils to erode is high
- Metamorphic rocks: schist and slate formations, surface runoff is very rapid and the erosion hazard is slight to moderate (U.S. Department of Agriculture, Soil Conservation Service, 1974)

The Chili Bar Reservoir shoreline shows very little soil erosion. Emergent vegetation is present on 94 percent of the shoreline. Plant roots contribute to soil stabilization and reduced erosion, although more than 80 percent of the shoreline is steeply (30 to 45 percent) sloped. Soils on the shoreline contain substantial sand and silt (FERC, 2008).

3.7.1.2 Geologic Hazards

Ground Rupture

The site is not located within a special study zone, as delineated by the Alquist-Priolo Special Studies Zone Act of 1972; and no known fault, active or inactive, reaches the surface within the Chili Bar Project area (CGS, 2007). No known faults were found to cross the Chili Bar Project site. The potential for ground rupture to occur at the Chili Bar Project site or along the Chili Bar Project linears is low.

Seismicity

The Chili Bar Project area has historically experienced relatively low seismic activity. No active or potentially active faults pass through or near the Chili Bar Project area. Several faults that are active or potentially active are located within 62 miles (100 kilometers) of the Chili Bar Project area. In addition, El Dorado County is not listed as a county that is affected by significant earthquake fault zones (CGS, 2007).

The site would not be subject to strong seismic ground shaking because the expected peak ground acceleration is relatively low (10 to 20 percent gravity), based on 10 percent exceedance in 50 years (CGS, 2009).

The nearest faults to the Chili Bar Project site include the Bear Mountain and Melones Fault zones. The California Division of Mines and Geology Open File Report 84-52 (1984) reports that the Bear Mountain and Melones Fault Zones were evaluated and no special seismic zoning was recommended. These fault zones did not warrant zoning because they "either are poorly defined at the surface or lack evidence of Holocene (recent) displacement"

(El Dorado County, No Date). Therefore, the potential for strong ground motion to occur in the Chili Bar Project site is low.

Liquefaction

During strong ground-shaking, loose, saturated soils can experience a temporary loss of shear strength. This phenomenon is known as liquefaction. Liquefaction depends on grain size distribution, relative density of the soils, degree of saturation, and intensity and duration of the earthquake. The potential hazard associated with liquefaction is seismically induced settlement, lateral spreading, and the temporary loss of soil strength/bearing capacity and buoyancy for shallow linear structures. The Chili Bar Project site is not within a known area of liquefaction (El Dorado County Planning Department, 2004). Therefore, the potential for liquefaction to affect the Project is low.

Slope Stability

Slope instability depends on steepness of the slope, underlying geology, surface soil strength, and pore pressures in the soil. Significant excavating, grading, or fill work during construction might also introduce temporary slope stability hazards at either the Chili Bar Project site or along linear facility routes. Seismic-induced landslides typically occur in slide-prone geologic units that contain excessive amounts of water and are located on steep slopes. The Chili Bar Project area is not within a known slide-prone area. Therefore, the potential for landslides to affect the Project is low.

Expansive Soils

Expansive soils are clay-rich soils with physical characteristics that include substantial shrinking and swelling with cycles of wetting and drying. Soils with a high capacity for shrinking and swelling (i.e., expansive soils) can experience differential movement beneath foundations that can cause substantial structural damage. The Chili Bar Project site has not been mapped as an area that contains expansive soils (U.S. Department of Agriculture, Soil Conservation Service, 1974). Therefore, the potential for expansive soils to impact the Chili Bar Project site is low.

3.7.2 Impacts

3.7.2.1 Answers to Checklist Questions

Question a: The Chili Bar Project site is not located within a mapped Alquist-Priolo Earthquake Fault Zone. The site would not be subject to seismic ground shaking, and is not within a known liquefaction area. No significant impacts to topography are anticipated to occur, and the site would not be subject to an increased landslide potential. The Chili Bar Project site is not within a known landslide area.

Question b: The new trail will have less erosive potential than the existing trail, and emergent vegetation will further reduce the potential for soil loss to less than significant.

Question c: The Chili Bar Project site does not lie within a known unstable geologic unit.

Question d: The Chili Bar Project site does not lie within an area of known expansive soil.

Question e: Implementation of the Project will not require the use of septic tanks or alternative wastewater disposal systems.

3.7.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.8 Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
GREENHOUSE GAS EMISSIONS – Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? **Threshold of Significance:** The proposed project would cause a substantial adverse impact if it would generate greenhouse gas emissions, either directly or indirectly, that would adversely affect 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? **Threshold of Significance:** The proposed project would cause a substantial adverse impact if it would conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.	☐	☐	☐	☒

3.8.1 Environmental Setting

Various gases in the earth's atmosphere play a critical role in determining the earth's surface temperature. Solar radiation enters earth's atmosphere from space and a portion of the radiation is absorbed by the earth's surface. The earth emits this radiation back toward space but the properties of the radiation change from high-frequency solar radiation to lower-frequency infrared radiation. Greenhouse gases (GHGs) are transparent to solar radiation, but are effective in absorbing infrared radiation. Consequently, radiation that would otherwise escape back into space is retained, resulting in a warming of the earth's atmosphere. This phenomenon is known as the GHG effect (USBR, CCWD, and WAPA, 2009).

Scientific research to date indicates that observed climate change is likely a result of increased GHG emissions associated with human activity. Among the GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), ozone (O_3), water vapor, nitrous oxide (NO_x), and chlorofluorocarbons (CFCs). Human-caused emissions of these GHGs in excess of natural ambient concentrations are considered responsible for enhancing the greenhouse effect. GHG emissions contributing to global climate change are attributable, in large part, to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation (USBR, CCWD, and

WAPA, 2009). In general, climate change is a global problem and GHGs are global pollutants, unlike criteria air contaminants and toxic air contaminants that are pollutants of regional and local concern, respectively.

3.8.1.1 Regulatory Setting

Federal

The USEPA has taken actions to reduce GHG emissions. The USEPA Mandatory Reporting Rule became effective on December 29, 2009, and sources required to report were to begin collecting data on January 1, 2010. In general, suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of carbon dioxide equivalent (CO_2e) emissions are required to submit annual reports to USEPA.

On December 7, 2009, the USEPA released two findings regarding GHGs pursuant to Section 202(a) of the Clean Air Act: the Endangerment Finding and the Cause or Contribute Finding. These findings mean that the USEPA concluded that concentrations of CO_2, CH_4, N_2O hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride may contribute to air pollution and may endanger public health.

State

California is taking action to reduce GHG emissions. In June 2005, Governor Schwarzenegger signed Executive Order S-3-05 to address climate change and GHG emissions in California. This order sets the following goals:

- Reduce GHG emissions to 2000 levels by 2010
- Reduce GHG emissions to 1990 levels by 2020
- Reduce GHG emissions to 80 percent below 1990 levels by 2050

In 2006, California passed AB 32, the California Global Warming Solutions Act of 2006. The Act requires CARB to design and implement emission limits, regulations, and other feasible cost-effective measures to reduce statewide GHG emissions to 1990 levels by 2020 (USBR, CCWD, and WAPA, 2009). The statewide 2020 emissions limit is 427 million metric tons CO_2e (CARB, 2007). CO_2 emissions account for approximately 90 percent of the statewide GHG emissions (CARB, 2007). CH_4, N_2O, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride emissions account for the remainder of the statewide GHG emissions (CARB, 2007).

Part of CARB's direction pursuant to AB 32 is to develop a scoping plan that contains the main strategies California will use to reduce GHG emissions. The scoping plan includes a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms, such as a cap-and-trade system (CARB, 2008). The first regulation adopted by CARB pursuant to AB 32 was the regulation requiring mandatory reporting of GHG emissions. The regulation requires large industrial sources emitting more than 10,000 metric tons of CO_2 per year to report and verify their GHG emissions from combustion of both fossil fuels and biomass-derived fuels. The California cap-and-trade regulation was approved by CARB in December 2010 and will begin in the year 2012.

In 2009, Governor Schwarzenegger directed CARB, pursuant to Executive Order S-21-09, to adopt a regulation requiring the state's load-serving entities to meet a 33 percent renewable energy target by the year 2020 (Office of the Governor, 2009). CARB developed the Renewable Electricity Standard (RES) regulation to implement meeting the 33 percent target contained in Executive Order S-21-09. CARB approved the RES regulation in September 2010. The RES is included in the scoping plan measures and is intended to contribute to the reduction of GHG emissions by the year 2020.

Effects of Global Climate Change

Global climate change will affect water resources in California. Rising temperatures are anticipated to result in sea-level rise (as polar ice caps melt) and possibly change the timing and amount of precipitation, which could alter water quality. Climate change is also expected to result in more extreme weather patterns; both heavier precipitation that could lead to flooding, as well as more extended drought periods. There is uncertainty regarding the timing, magnitude, and nature of the potential changes to water resources as a result of climate change; however, several trends are evident (USBR, CCWD, and WAPA, 2009).

Snowpack and snowmelt may also be affected by climate change. Much of California's precipitation falls as snow in the Sierra Nevada and southern Cascades, and the state's snowpack represents approximately 35 percent of the state's useable annual water supply. The snowmelt typically occurs from April through July, which provides natural water flow to streams and reservoirs after the annual rainy season has ended. As air temperatures increase due to climate change, the water stored in California's snowpack could be affected by increasing temperatures resulting in: (1) decreased snowfall, and (2) earlier snowmelt (USBR, CCWD, and WAPA, 2009).

3.8.2 Impacts

3.8.2.1 Answers to Checklist Questions

Question a: The existing project has been in place for over 40 years, and currently results in minimal air emissions (and low GHG emissions) associated with periodic vehicle use to support operation of the Project. PG&E proposes some operational modifications, as needed, to implement resource management measures. These modifications do not require construction activities, except for the recreation facilities discussed below, and will not directly result in GHG emissions. The project's average annual generation is 32,291 MWh. However, if the new FERC license authorizes, and SMUD's Board of Directors approves, construction and operation of SMUD's Iowa Hill Project, an average annual drop in generation of 1,000 MWh at the Chili Bar Project could occur (FERC, 2008). Water available for power generation and required instream flows at Chili Bar is released from SMUD's Slab Creek Dam immediately upstream. Iowa Hill operations would utilize water pumped from Slab Creek Reservoir. The operation of Iowa Hill would alter water availability at Chili Bar in a way that leads to reduced power generation; however all required minimum flows will be met. Without Iowa Hill, the FERC EIS estimates an average annual drop in generation of 709 MWh at Chili Bar due to higher instream flow requirements. A review of PG&E's annual generation data shows that the predicted 1,000 MWh average annual energy loss is within the year-to-year variability in energy generation observed for the project for the time

period between 1990 and 2010[8]. Although the energy loss impact is expected to vary from year to year depending on the water year type, for purposes of this analysis, it was assumed that a 1,000 MWh loss in generation would be the maximum impact in any one year.

The anticipated reduction in energy generated by the project will need to be replaced by energy generated from another source. Because of the RES regulation that is in effect for electricity providers, PG&E will be required to use a renewable energy source to make up this loss, since Chili Bar is a small hydroelectric facility that qualifies as a renewable energy source under the RES. Although energy from hydropower generates only minimal GHG emissions, energy generated from other renewable energy sources could result in GHG emissions. Therefore, the indirect increase in GHG emissions was estimated based on replacing the 1,000 MWh of electricity lost from the project with a mix of PG&E's renewable energy projects.

The indirect emissions associated with energy generated from renewable energy sources, including geothermal and biomass, is estimated to be approximately 50 metric tons CO_2e per year based on the GHG emission calculation shown in Appendix C[9]. This amount of GHG emissions equates to less than USEPA's estimate for the average annual emissions from ten passenger vehicles[10]. Moreover, this value is negligible when compared to the 2020 GHG emission limit of 427 million metric tons CO_2e (CARB, 2007) and the 10,000 metric tons of CO_2e per year reporting limit required by California for large industrial sources.

Continued operation of the project will have a less-than-significant direct and indirect impact on generation of GHG emissions. Operation of the project will result in: (1) minimal GHG emissions at the project site; (2) estimated annual electricity generation that falls within the range of historic annual generation variability for the project; (3) an indirect increase in GHG emissions of 50 metric tons CO_2e if the SMUD Iowa Hill Project is constructed and the 1,000 MWh of lost generation is produced from various types of renewable energy projects; and (4) a minor amount of GHG emissions being generated due to the short duration of construction associated with the project's new recreation facilities (construction over a 2- to 3-week period of a 0.6-mile-long trail and a gravel parking lot sized for 3 to 4 vehicles). For these reasons, the project will have a less-than-significant impact on GHG emissions.

Question b: The project will not conflict with an applicable plan, policy, or regulation adopted to reduce GHG emissions, but instead, will be consistent with those plans and policies. Continued operation of the project will not generate additional GHG emissions at the project site compared to the current baseline. In addition, the project will be consistent with the measures outlined in the scoping plan for reducing GHG emissions (CARB, 2008). Generation of the estimated 1,000 MWh of electricity lost due to implementation of the Project will be accomplished by other renewable energy sources consistent with the RES regulation.

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[8] A summary of annual generation data for the years 1990 to 2010 is included in Appendix C.

[9] Wind, photovoltaic, solar thermal, small hydro, and landfill gas are all considered by CARB to have no emissions (CARB, 2010).

[10] Average passenger vehicle emissions are based on a USEPA estimate of 5.2 metric tons of CO2e per year, as shown at the following website: http://www.epa.gov/oms/climate/420f05004.htm.

3.8.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.9 Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would expose the public and environment to 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? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would expose the public and environment to hazardous materials.	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would expose the public and environment to hazardous materials.	☐	☐	☐	☒
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? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would be located on a recognized hazardous materials site and would cause the public or environment to come in contact with such materials.	☐	☐	☐	☒
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? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would result in a safety hazard for people residing or working in a project area that is within two miles of an airport.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS – Would the project:				
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? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would result in a safety hazard for people residing or working in a project area that is within the vicinity of a private airstrip.	☐	☐	☐	☒
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would impede emergency response or evacuation plans.	☐	☐	☐	☒
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? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would expose people or structures to risk of loss, injury, or death due to wildland fires.	☐	☐	☐	☒

3.9.1 Environmental Setting

3.9.1.1 Hazardous Materials

The Chili Bar Project facilities and its reservoir are located in an area that is primarily forested and undeveloped. Few roads and residences are located in the vicinity of the Chili Bar Project. No sites considered potentially hazardous were identified during a review of aerial photography of the Chili Bar Project area.

3.9.1.2 Naturally Occurring Asbestos

A review of the California Department of Conservation's map entitled "A General Location Guide for Ultramafic Rocks in California – Areas More Likely to Contain Naturally Occurring Asbestos" (2000), prepared at a scale of 1:1,100,000, did not indicate the Chili Bar Project area as being located in an area containing ultramafic[11] rocks (DOC, 2000). Similarly, a review of the El Dorado County map entitled "Asbestos Review Areas, Western Slope,

[11] Ultramafic rocks are igneous rocks that form in high temperature environments well below the surface of the earth. By the time they are exposed at the surface by uplift and erosion, ultramafic rocks may be partially to completely altered to serpentinite, a type of metamorphic rock in which small amounts of chrysotile asbestos are common.

County of El Dorado, State of California" (2005) did not indicate the Chili Bar Project area as being located in an area of known naturally occurring asbestos (El Dorado County, 2005).

3.9.2 Impacts

3.9.2.1 Answers to Checklist Questions

Questions a and b:

Hazardous Materials Used Onsite During Construction. During construction of the recreation improvements (trail, gravel parking area, and installation of a kiosk sign and picnic table), equipment and vehicles containing petroleum products will be onsite. Refueling and overnight storage of construction equipment will not occur onsite. During construction activities, minor spills of fuel or oils/lubricants from ruptured fuel and/or hydraulic lines on the construction equipment may occur. The Settlement Agreement includes the requirement to develop and implement a Hazardous Waste Plan approved by the BLM and the Deputy Director that will address hazardous substances storage and spill prevention and cleanup.

Hazardous Materials Used Onsite During Operation. Implementation (continued operation) of the Project will not require the transport, use, or disposal of hazardous materials. It will not change or create a hazard to the public by exposing the public to hazardous materials.

Other Potential Public Hazards (Naturally Occurring Asbestos). The Chili Bar Project area is not located in an area of known naturally occurring asbestos.

Question c: The Chili Bar Project site is not located within 0.25 mile of an existing school. In addition, neither Project construction, nor continued Project operation, will result in the emission of hazardous materials, substances, or wastes.

Question d: No hazardous materials are expected to be found in the Chili Bar Project area because the site is not located on a recognized hazardous materials site.

Question e: The Chili Bar Project is not located within two miles of a public airport.

Question f: The Chili Bar Project is not located near a private airstrip.

Question g: Emergency access to the few residences in the Chili Bar Project area is not expected to be affected during Project construction due to the short duration (two to three weeks) and the few vehicles that will be required to develop the trail, gravel parking area, and install the kiosk sign and picnic table. Because operation of the Project is a continuation of existing conditions, no change/impact on emergency access is expected during Project operation.

Question h: The risk of wildfires in the vicinity of the Chili Bar Project is not expected to change from existing conditions. The construction associated with the Project (the recreation facilities – trail, gravel parking area, kiosk sign, and picnic table) may require a minimal amount of vegetation clearing, which may reduce the threat of fire by reducing the fuel. Operation of the hydroelectric facilities under the conditions in the Settlement Agreement will result in no change in the risk of wildfires in the area.

3.9.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.10 Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY – Would the project:				
a) Violate any water quality standards or waste discharge requirements? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would cause conditions exceeding Central Valley Regional Water Quality Control Board water quality standards established in the applicable Basin Plan.	☐	☐	☐	☒
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (for example, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would severely degrade or deplete an aquifer or interfered with groundwater recharge.	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would cause accelerated erosion or siltation of waterbodies in the project vicinity.	☐	☐	☒	☐
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would cause or increase the severity of flooding on or off site.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY – Would the project:				
e) Create or contribute runoff water, which would exceed the capacity of existing or planned stormwater drainage systems, or provide substantial additional sources of polluted runoff? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would create or contribute runoff that results in exceeding the capacity of existing or planned stormwater drainage systems, or provides substantial additional sources of polluted runoff.	☐	☐	☐	☒
f) Otherwise substantially degrade water quality? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would degrade water quality to the degree that it impairs its beneficial use.	☐	☐	☐	☒
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would place housing within a 100-year flood plain.	☐	☐	☐	☒
h) Place within a 100-year flood hazard area structures, which would impede or redirect flood flows? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would place structures within a 100-year flood hazard area, which would impede or redirect flood flows.	☐	☐	☐	☒
i) Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam? **Threshold of Significance:** The proposed project would cause a substantial adverse effect if it would expose people or structures to a significant risk of loss of property, injury, or death as a result of flooding or failure of a levee or dam.	☐	☐	☐	☒
j) Inundation by seiche, tsunami, or mudflow? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would expose people, structures, or land to inundation by seiche, tsunami, or mudflow as a result of changes to hydrological conditions.	☐	☐	☐	☒

3.10.1 Environmental Setting

The Chili Bar Project uses water from the SF American River watershed to generate electricity. The total drainage area for the watershed is 598 square miles, as measured near Placerville approximately 700 feet downstream of Chili Bar Dam (FERC, 2008).

Chili Bar Reservoir operates as a reregulation facility for the upstream SMUD system to maintain the desired flow in the SF American River during peaking operations at White Rock powerhouse, while providing minimum flow and recreational flow releases to downstream reaches. Water from Chili Bar Reservoir is either diverted through the penstock that leads to the powerhouse and released into the SF American River near the base of the dam or it is released through the spillway. Chili Bar Reservoir has a useable storage volume of 1,088 acre-feet, an average daily reservoir level fluctuation of 4.2 feet (normally not exceeding 7 feet per day), and an annual variation of approximately 14.5 feet (FERC, 2008).

The minimum flow release at Chili Bar Dam is 100 cfs in the current license, although the actual minimum flow released is typically 200 cfs (FERC, 2008). Flows in the SF American River downstream of Chili Bar are augmented by several tributaries, such as Greenwood Creek and Weber Creek, and accretion from the tributaries can be substantial during runoff from winter rain events, but accretion is low during the June through October period (FERC, 2008). PG&E's existing compliance point for flows released from the Chili Bar Project is U.S. Geological Survey gage no. 11444500 (SF American River near Placerville), which will continue to be the compliance point in the new license as well (FERC, 2008).

PG&E operates the Chili Bar Powerhouse as a daily peaking plant during the mid-June through October period or when water is not available to operate the plant at full capacity. This operation normally results in the flow changing from approximately 200 cfs to approximately 2,000 cfs during most days, although in drier years, the flows typically peak between 1,100 and 1,500 cfs. When more water is available, outflow from White Rock Powerhouse and spillage over Chili Bar Dam can cause daily flows to reach over 3,600 cfs. Short duration spills at Chili Bar Dam occur on a fairly regular basis due to winter storm events. Longer duration spill flows are common during normal and wet years during peak snowmelt periods in the spring and early summer (FERC, 2008).

Water quality data collected as part of the relicensing studies were analyzed to determine compliance with the Central Valley Water Board's Basin Plan. Water quality data collected during 2002, 2003 and 2004 indicate that the Criterion Maximum Concentrations and Criterion Continuous Concentrations water quality criteria for some metals were exceeded both in Chili Bar Reservoir and in the SF American River downstream of the Chili Bar Project. These criteria are designed to protect aquatic life where the Criterion Maximum Concentrations is the highest concentration to which aquatic life can be exposed for a short period of time without deleterious effects, while the Criterion Continuous Concentrations is defined as the highest concentration to which aquatic life can be exposed for an extended period of time (four days) without deleterious effects. Chili Bar Reservoir samples that exceeded the Criterion Continuous Concentrations and/or Criterion Maximum Concentrations ranged from 50 percent of the copper samples, 16.2 percent of zinc samples, 12.5 percent of cadmium samples to zero percent of nickel or silver samples. In the SF American River downstream of Chili Bar Reservoir, dissolved copper concentrations exceeded both the Criterion Maximum Concentrations and Criterion Continuous

Concentrations objectives at four sampling sites (Devine Tarbell & Associates and Stillwater Sciences, 2005d).

The Central Valley Water Board's Basin Plan includes water quality objectives for bacteria. The portion of the objective that pertains to surface waters in the vicinity of the Chili Bar Project reads as follows:

> In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples in any 30-day period shall not exceed a geometric mean of 200 most probable number per 100 milliliters, nor shall more than 10 percent of the total number of samples taken during the 30-day period exceed 400 most probable number per 100 milliliters.

Water quality sampling to determine compliance with the bacteria objective took place both within Chili Bar Reservoir and in the SF American River downstream of the Chili Bar Project during 2003. To assess compliance with the geometric mean objective during high recreation use time periods, the 30-day sampling period included either the Independence Day or Labor Day holiday weekends. The sampling data indicate that the 400 most probable number per 100 milliliters criterion for fecal coliform was exceeded for more than 10 percent of the samples at four sites in the Chili Bar reach, while the geometric mean criterion of 200 most probable number per 100 milliliters was exceeded at the two most downstream sites (FERC, 2008).

The use of *E. coli* (instead of fecal coliform) as an indicator of risks to human health has been proposed as an amendment to the Central Valley Water Board's Basin Plan, with a proposed single sample maximum concentration objective of 235 most probable number per 100 milliliters. Sampling for *E. coli* was conducted as part of the relicensing studies in fall 2002, spring 2003, and summer 2003. Only one sample collected during this effort exceeded the single sample maximum with a value of 236 most probable number per 100 milliliters (Devine Tarbell & Associates and Stillwater Sciences, 2005d). In addition to the bacteria sampling conducted during the relicensing studies, PG&E also obtained historical data from El Dorado County for *E. coli* from a sampling program that took place from August 1997 to September 2002. Five locations, three of which correspond to locations sampled during relicensing, were sampled in the SF American River downstream of the Chili Bar Project at monthly intervals during October to March and bi-weekly intervals during May to September, with a total of 731 samples analyzed. Twenty-one samples had *E. coli* concentrations above the single sample maximum criteria (Devine Tarbell & Associates and Stillwater Sciences, 2005d).

The SF American River from below Slab Creek Reservoir downstream to Folsom Lake, which includes Chili Bar Reservoir, is listed on the 2006 Section 303(d) list of impaired water bodies as impaired for mercury (USEPA, 2006). Sampling results from the metals bioaccumulation study that examined fish tissue levels of mercury and other metals from fish collected in Chili Bar Reservoir indicate that fish tissue metal concentrations did not exceed screening values set to protect anglers who consume their catch (Devine Tarbell & Associates and Stillwater Sciences. 2005d).

The SF American River downstream of Chili Bar Reservoir is well-oxygenated, as evidenced by dissolved oxygen concentrations measured during the relicensing studies at greater than

85 percent saturation and 7.0 milligrams per liter (mg/l) of oxygen, except for on one occasion, when dissolved oxygen was measured at 6.1 mg/l on September 13, 2004 downstream of Greenwood Creek (Devine Tarbell & Associates and Stillwater Sciences, 2005d). Water temperature conditions common to Chili Bar Reservoir include seasonal warming trends between June and September and moderate warming in May. The water temperature in the lower end of the Chili Bar reach is rarely higher than 20 degrees Celsius and, under the proposed minimum streamflow releases, is expected to be slightly lower in May through September with mean temperatures less than 20°C (FERC, 2008), which will be protective of the cold freshwater habitat beneficial use.

3.10.2 Impacts

3.10.2.1 Answers to Checklist Questions

Question a: The proposed minimum streamflows in the SF American River downstream of Chili Bar Dam vary depending on water year type and month, and range between 150 cfs (in a Super Dry water year) and 500 cfs (in a Wet water year). Proposed minimum recreational flows below Chili Bar Dam also vary depending on the water year type, time of year and time of day, with minimum flows that peak between 1,300 cfs and 1,750 cfs daily. This will result in higher summer flows than currently occur. Water temperatures under the conditions in the Settlement Agreement are expected to be protective of the cold freshwater habitat beneficial use at the downstream end of the Chili Bar reach. The Project also requires that PG&E develop and implement a water temperature monitoring plan that will provide data to assess water temperature conditions over time.

Water quality data indicate that occasional exceedances of some water quality criteria, including water quality objectives for bacteria, occur in both Chili Bar Reservoir and in the SF American River under current baseline conditions. The Project will not substantially add new boating opportunities to the reach downstream of Chili Bar Reservoir, such that negligible changes in bacteria concentration are expected to occur as a result of its implementation (FERC, 2008). As part of the Project, PG&E will develop and implement a water quality monitoring plan that will provide for the collection of data to demonstrate seasonal conditions in Chili Bar Reservoir and at locations downstream in the SF American River. The water quality monitoring plan will include the collection of water temperature, DO, pH, specific conductance, Secchi depth and turbidity data, as well as chemical water quality data for constituents such as minerals, nutrients, metals, hardness, and petroleum products. PG&E will also seasonally monitor bacteria at a minimum of eight shoreline recreational locations in the SF American River downstream of the Chili Bar Project in a manner consistent with the most current Central Valley Water Board's Basin Plan objectives. In addition, PG&E will monitor the bioaccumulation of mercury, copper, lead, and silver in resident fish in Chili Bar Reservoir and monitor invasive algae species in the Chili Bar Dam reach. Implementation of these measures will provide the State Water Board with sufficient data to document Project compliance with water quality standards and to identify any trends in risks to the health of humans and wildlife (FERC, 2008).

The Project also includes provisions for the review of the monitoring plans and the resulting data by BLM, USFWS, CDFG, and the State Water Board, and will provide flexibility to the agencies to alter the monitoring program methodologies and frequencies of data collection, if needed. Additional provisions allow the State Water Board to identify trends and, if

necessary, to design possible measures to intervene if degradation occurs. There is also an Adaptive Management Program that is part of the Project that provides for other measures to be implemented if the monitoring results and/or other information indicate that the applicable resource objectives are not being met.

Question b: Continued operation of the Project and construction of the small-scale recreation improvements will not involve the use of groundwater, and there will be no land discharge of waste that could affect groundwater.

Question c: Continued operation of the Project and construction of the new recreation improvements will not alter the existing drainage pattern of the site or area, and will, therefore, not result in substantial erosion or siltation on- or off-site. Operation of the Project under the conditions in the Settlement Agreement will continue to alter the course of the SF American River, as it has done for 40+ years.

Question d: Continued operation of the Project will result in no change to the existing rate of surface runoff, and will, therefore, not result in flooding on- or off-site. Construction of the new recreation improvements (development of an informal hiking trail into a formal trail, a gravel parking area, a kiosk sign, and installation of a picnic table) will not increase the rate of surface runoff such that flooding will occur. The improvements to the trail will reduce the erosion that is currently occurring.

Question e: As indicated in Question d, the amount of surface runoff from the Chili Bar Project site is not expected to change from existing conditions. In addition, the type of runoff is not expected to change from existing conditions, Project implementation will not result in additional sources of polluted runoff, and the Project does not currently, nor will it in the future, contribute water to an existing or planned stormwater drainage system.

Question f: See response to Question a.

Question g: The construction of housing is not a part of the Project.

Question h: Continued Project operation and the development of new recreation improvements will not create a new flood hazard, nor will it impede or redirect flood flows.

Question i: Project implementation includes the continued operation of a hydroelectric project with a 126-foot-high/380-foot-long concrete gravity dam that has been in place since 1965. FERC, under the new license, will continue to conduct inspections of the Chili Bar Project that focus on the continued safety of the structures, the efficiency and safety of operations, compliance with the terms of the license, and proper maintenance. In addition, the Chili Bar Project has been inspected and evaluated every five years by an independent consultant, and a consultant's safety report has been filed with FERC for its review. The Project's implementation will result in the continuation of dam inspections, and will not expose people or structures to a significant risk of loss, injury, or death involving flooding.

Question j: People, structures, or land in the Chili Bar Project vicinity will not be exposed to a seiche, tsunami, or mudflow. There is minimal potential for seismic activity; therefore, a seiche is not expected to occur in the Chili Bar Project area. A tsunami is not expected to occur in the Chili Bar Project area because it is not located near an ocean. A mudflow is not expected to occur in the Chili Bar Project area because the Project area is not within a known area of liquefaction nor is it in a slide-prone area.

3.10.3 Mitigation

With implementation of the Settlement Agreement, no significant impacts will result, so no mitigation is required.

3.11 Land Use and Planning

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING – Would the project:				
a) Physically divide an established community? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would physically divide a community by a permanent barrier, such as a freeway, canal, or railroad, by which pedestrian or vehicle access to community features and services would be substantially impaired.	☐	☐	☐	☒
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would conflict with the BLM Sierra Resource Management Plan or the El Dorado County General Plan objectives and policies or Zoning Ordinances adopted for the purpose of avoiding or mitigating an environmental effect.	☐	☐	☐	☒
c) Conflict with any applicable habitat conservation plan or natural community conservation plan? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would conflict with an applicable habitat conservation plan or natural community conservation plan.	☐	☐	☐	☒

3.11.1 Environmental Setting

The existing Chili Bar Project facilities and its reservoir are located in an area that is primarily forested and undeveloped. Few roads and residences are located in the vicinity of the Chili Bar Project. Except for the Chili Bar Project facilities located near the dam, PG&E manages its land as general open space.

The El Dorado County General Plan land use designations of the Chili Bar Project area are Natural Resource (NR), Open Space (OS), and Rural Residential (RR) (El Dorado County Planning Department, 2004).

The BLM Sierra Resource Management Plan Lands and Realty Goals that are applicable to the Project are as follows: (1) Develop a public land pattern which enhances resource values and uses; and (2) Respond to demand for land use authorizations (BLM, 2008).

The BLM Sierra Resource Management Plan Forestry and Woodlands Goal that is applicable to the Project is: Manage all forests and woodlands under the principles of multiple use, sustained yield, and protection of the environment in accordance with federal laws, regulations, and policies (BLM, 2008).

3.11.2 Impacts

3.11.2.1 Answers to Checklist Questions

Question a: The Chili Bar Project is located in a rural area of El Dorado County. Implementation of the Project and the minor development of the new recreation facilities will not divide any established communities.

Question b: Project implementation will not conflict with the BLM's Sierra Resource Management Plan or the El Dorado County General Plan. Except for the Chili Bar Project facilities located near the dam, PG&E manages its land as general open space; this is consistent with the general low density land use zoning of the surrounding area (PG&E, 2005). Construction of recreational facilities will further the BLM's Sierra Resource Management Plan's goal of enhancing land uses and resource values.

Question c: El Dorado County does not currently have a Habitat Conservation Plan for the county (Maurer, pers. comm., 2008).

3.11.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.12 Mineral Resources

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
MINERAL RESOURCES – Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
Threshold of Significance: The proposed project would have a substantial adverse effect if it would preclude the extraction of significant mineral resources identified by the California Department of Conservation.				

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
MINERAL RESOURCES – Would the project:				
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒
Threshold of Significance: The proposed project would have a substantial adverse effect if it would preclude the extraction of locally important mineral resources identified in the El Dorado County General Plan. The adverse effect may occur as a result of a physical barrier to the mineral resource area or the creation of a conflicting land use between the project and the mineral resource area.				

3.12.1 Environmental Setting

The Chili Bar Project area is located within a Mineral Resources Overlay area (El Dorado County Planning Department, 2004), indicating the presence of mineral resources in the area.

3.12.2 Impacts

3.12.2.1 Answers to Checklist Questions

Question a: Although the Chili Bar Project is located within a Mineral Resources Overlay area according to the El Dorado County General Plan Land Use map, implementation (continued operation) of the Project will have no effect on mineral resources. Similarly, development of the new recreation improvements (trail, gravel parking area, kiosk sign, and picnic table) will have no effect on the mineral resources in the area.

Question b: Implementation of the Project will have no effect on mineral resource recovery sites. Similarly, development of the new recreation improvements (trail, gravel parking area, kiosk sign, and picnic table) will have no effect on such areas. Therefore, no impact will occur.

3.12.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.13 Noise

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE – Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? **Threshold of Significance:** The proposed project would have a substantial adverse effect if construction or operation of project features would result in noise levels that would exceed applicable El Dorado County noise standards for various land uses.				
Construction noise?	☐	☐	☒	☐
Operation noise?	☐	☐	☐	☒
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? **Threshold of Significance:** The proposed project would have a substantial adverse effect if its construction or operation would result in the generation of vibration or groundborne noise levels capable of damaging sensitive structures, interfering with land uses, or exposing people to excessive groundborne vibration or groundborne noise levels.	☐	☐	☐	☒
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? **Threshold of Significance:** The proposed project would have a substantial adverse effect if its operation would result in a permanent increase in ambient noise levels.	☐	☐	☐	☒
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in a temporary or periodic increase in ambient noise levels in the project vicinity.	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE – Would the project result in:				
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 expose people residing or working in the project area to excessive noise levels? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it was located within two miles of a public airport or public use airport and would expose people residing or working in the project area to excessive noise levels.	☐	☐	☐	☒
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it was located in the vicinity of a private airstrip and would expose people residing or working in the project area to excessive noise levels.	☐	☐	☐	☒

3.13.1 Environmental Setting

The Chili Bar Project site consists of an existing dam, reservoir, and associated hydroelectric facilities. The Chili Bar Project facilities and its reservoir are located in an area that is primarily forested and undeveloped. Few roads and residences are located in the vicinity of the Chili Bar Project.

Noise-sensitive receptors generally are defined as locations where people reside or where the presence of unwanted sound could adversely affect the designated use of the land. Typically, noise-sensitive land uses include residences, hospitals, places of worship, libraries, and schools, as well as nature and wildlife preserves and parks. The nearest sensitive receptor (a residence) to the Chili Bar Project site is located approximately 0.75 mile downstream of the site (FERC, 2008).

3.13.1.1 Fundamentals of Noise

Noise is defined as unwanted sound. Airborne sound is a rapid fluctuation of air pressure above and below atmospheric pressure. There are several ways to measure noise, depending on the source of the noise, the receiver, and the reason for the noise measurement.

The most common metric is the overall A-weighted sound level measurement that has been adopted by regulatory bodies worldwide. The A-weighting network measures sound in a similar fashion to how a person perceives or hears sound, thus achieving a strong correlation in terms of how to evaluate acceptable and unacceptable sound levels.

A-weighted sound levels are typically measured or presented as the equivalent sound pressure level (L_{eq}), which is defined as the average noise level on an equal energy basis for a stated period of time and is commonly used to measure steady-state sound or noise that is usually dominant. Statistical methods are used to capture the dynamics of a changing acoustical environment. Statistical measurements are typically denoted by L_{xx}, where xx represents the percentile of time the sound level is exceeded. Therefore, L_{90} represents the noise level that is exceeded during 90 percent of the measurement period. Similarly, L_{10} represents the noise level exceeded for 10 percent of the measurement period.

Another metric used in determining the impact of environmental noise is the differences in response that people have to daytime and nighttime noise levels. During the evening and at night, exterior background noises are generally lower than daytime levels. However, most household noise also decreases at night, and exterior noise becomes more noticeable. Furthermore, most people sleep at night and are sensitive to intrusive noises. To account for human sensitivity to evening and nighttime noise levels, the day-night level average (also abbreviated as L_{dn}) and the community noise equivalent level were developed. The day-night level is a noise metric that accounts for the greater annoyance of noise during the nighttime hours (10:00 p.m. to 7:00 a.m.). The community noise equivalent level is a noise index that accounts for the greater annoyance of noise during both the evening hours (7:00 p.m. to 10:00 p.m.) and nighttime hours.

Day-night level values are calculated by averaging hourly L_{eq} sound levels for a 24-hour period and applying a weighting factor to the nighttime L_{eq} values. Community noise equivalent level values are calculated similarly, except that a weighting factor is also added to evening L_{eq} values. The weighting factors, which reflect the increased sensitivity to noise during evening and nighttime hours, are added to each hourly L_{eq} sound level before the 24-hour day-night level or community noise equivalent level is calculated. For the purposes of assessing noise, the 24-hour day is divided into three time periods, with the following weightings:

- Daytime hours: 7:00 a.m. to 7:00 p.m. (12 hours) - Weighting factor of 0 decibels, a-weighted (dBA)
- Evening hours (for community noise equivalent level only): 7:00 p.m. to 10:00 p.m. (3 hours) – Weighting factor of 5 dBA
- Nighttime hours (for both community noise equivalent level and day-night level): 10:00 p.m. to 7:00 a.m. (9 hours) – Weighting factor of 10 dBA

The adjusted time period noise levels are then averaged (on an energy basis) to compute the overall day-night level or community noise equivalent level value. For a continuous noise source, the day-night level value is easily computed by adding 6.4 dBA to the overall 24-hour noise level (L_{eq}). For example, if the expected continuous noise level from a noise source is 60.0 dBA, the resulting day-night level from the source would be 66.4 dBA. Similarly, the community noise equivalent level for a continuous noise source is computed by adding 6.7 dBA to the overall 24-hour L_{eq}.

The effects of noise on people can be listed in three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction
- Interference with activities such as speech, sleep, learning
- Physiological effects such as startling and hearing loss

In most cases, environmental noise may produce effects in the first two categories only. No completely satisfactory way exists to measure the subjective effects of noise or to measure the corresponding reactions of annoyance and dissatisfaction. This lack of a common standard is primarily due to the wide variation in individual thresholds of annoyance and habituation to noise. Thus, an important way of determining a person's subjective reaction to a new noise is by comparing it to the existing or "ambient" environment to which that person has adapted. In general, the more the level or the tonal (frequency) variations of a noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

The general human response to changes in noise levels that are similar in frequency content (e.g., comparing increases in continuous (L_{eq}) traffic noise levels) are summarized as follows:

- A 3-dB change in sound level is considered a barely noticeable difference.
- A 5-dB change in sound level will typically be noticeable.
- A 10-dB change is considered to be a doubling in loudness (NYDEC, 2001).

3.13.1.2 Regulatory Background

Although the Chili Bar Project is located on BLM land, the BLM's Sierra Resource Management Plan does not address noise for construction activities. El Dorado County policies and FERC guidelines are summarized here.

County of El Dorado

The *County of El Dorado General Plan Public Health, Safety, and Noise Element* (El Dorado County Planning Department, 2004) establishes construction noise standards for community regions and adopted plan areas, rural centers, and rural regions. Table C-1 in Appendix C presents the rural region limits. Although the table includes limits for nighttime construction noise, the General Plan states that these limits "shall apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7:00 a.m. and 7:00 p.m., Monday through Friday, and 8:00 a.m. and 5:00 p.m. on weekends, and on federally recognized holidays" (El Dorado County Planning Department, 2004).

The 2004 General Plan also establishes significance criteria for evaluating noise impacts associated with the long-term operation of non-transportation projects (Table C-2 in Appendix C).

In areas where the ambient noise levels are in accordance with the standards, project operation increases that exceed 5 dBA are considered significant. In areas where the ambient noise levels exceed the standards, increases from project operation that exceed 3 dBA are considered significant (El Dorado County Planning Department, 2004).

The County of El Dorado's noise ordinance prohibits the operation of an "internal combustion engine in the unincorporated territory of the county that is not equipped with a

muffler designed for use with the engine, which is in good operating condition and is not equipped with a cutout, bypass or similar device" (El Dorado County, 2012).

Federal Energy Regulatory Commission

The FERC Guidance Manual for Environmental Report Preparation (August, 2002) states that the project must demonstrate that it "will comply with applicable noise regulations" and "must not exceed a day-night sound level (L_{dn}) of 55 dBA at any pre-existing noise-sensitive area." An L_{dn} of 55 dBA is equivalent to a continuous level of 49 dBA. It should be noted that the FERC manual was developed to provide guidance for natural gas projects, which have the potential to be very loud.

3.13.2 Impacts

3.13.2.1 Answers to Checklist Questions

Question a: Equipment used in the construction of the Project includes a grader, tractor/loader/backhoe, and delivery trucks for the delivery of gravel, trail, and kiosk sign materials and a picnic table. The Federal Highway Administration's Roadway Construction Noise Model (FHWA, 2006) contains typical noise levels generated by construction equipment and may be used to calculate the noise level at specified distances.

Using the equipment specified, a L_{eq} noise level range of 32 to 46 dBA and an L_{max} noise level range of 36 to 47 dBA may be expected at the nearest noise sensitive receptor. Both of these noise levels are less than the construction noise standards established by El Dorado County and by FERC. In addition, typical construction equipment and vehicles, including graders, tractors, loaders, backhoes, and delivery trucks have mufflers installed on them, and when in good working order, the muffled equipment and vehicles reduce noise emitted during Project construction activities. Therefore, a less than significant impact will occur from Project construction.

Implementation of the Project will not increase ambient noise from existing conditions, and will, therefore, comply with El Dorado County's operation noise limits.

Question b: Construction of the new recreation improvements will not involve the use of major equipment that will result in high levels of ground vibration, such as impact pile drivers. Likewise, Project operational equipment and associated activities will not involve the use of any equipment anticipated to generate ground-borne vibration of sufficient duration to result in an impact to nearby structures or sensitive receptors.

Question c: Noise from construction of the Project will be short term and temporary and will result in no permanent increase in ambient noise levels. In addition, there are no changes to existing conditions expected during Project operation and maintenance.

Question d: Noise levels from construction activities associated with the new recreation improvements (trail, parking area, kiosk sign, and picnic table installation) will be temporary and limited in duration, resulting in a L_{eq} noise level range of 32 to 46 dBA at the nearest noise sensitive receptor. This Project-related noise is expected to last for two to three weeks, and will cease at the completion of construction/installation activities. This is considered a less-than-significant impact on ambient noise levels. Implementation of the

Project will not increase ambient noise levels from existing conditions, so no temporary or periodic increase in ambient noise levels will result from operation.

Question e: The Project is not included within an airport land use plan, nor is it located within two miles of a public airport.

Question f: The Project is not located within the vicinity of a private airstrip.

3.13.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.14 Population and Housing

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
POPULATION AND HOUSING – Would the project:				
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would induce unplanned population growth in El Dorado County, Sacramento County, and/or Placer County (greater than that projected by the three counties' General Plans). The adverse effect would result in increased demand on public infrastructure, public services, housing, circulation or other resources identified in the Plans.	☐	☐	☐	☒
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? **Threshold of Significance:** The proposed project would have a substantial adverse effect if construction and operation of the facilities would require substantial numbers of existing housing to be displaced or require replacement housing to be constructed elsewhere.	☐	☐	☐	☒
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would displace substantial numbers of people and necessitate the construction of replacement housing elsewhere.	☐	☐	☐	☒

3.14.1 Environmental Setting

The region of influence includes the local area, or El Dorado County as a whole and communities in proximity to the Chili Bar Project, and the regional area, or the Sacramento

Primary Metropolitan Statistical Area (PMSA), which comprises the economically linked counties of Sacramento, Placer, and El Dorado (FERC, 2008).

El Dorado County has an estimated 2008 population of 176,075 (U.S. Census Bureau, 2008). The population of El Dorado County is projected to reach 241,263 individuals by 2025 (FERC, 2008). The housing stock for El Dorado County was 77,181 units as of January 1, 2004. Single-family homes accounted for 64,227 units, multiple-family dwellings accounted for 8,580 units, and mobile homes accounted for 4,374 units. In December 2001, the median home price in the county was $215,000; in 2005, it was $542,000 (FERC, 2008).

The 2008 estimated Sacramento County population was 1,394,154 (U.S. Census Bureau, 2008). In 2005, the median home value of occupied units was $365,500 (FERC, 2008).

The 2008 estimated Placer County population was 341,945 (U.S. Census Bureau, 2008). The median value for homes in Placer County in 2005 was $492,000, and 78 percent of the housing units in Placer County were single-family units (FERC, 2008).

3.14.2 Impacts

3.14.2.1 Answers to Checklist Questions

Question a: Implementation of the Project is not expected to induce growth in El Dorado, Sacramento, or Placer counties. The minor amount of Project construction activity associated with the new recreation improvements, and the short timeframe it will take to complete it (anticipated at two to three weeks), is expected to be accomplished by construction workers from any of the three counties listed above. No construction workers are expected to relocate to these counties as a result of Project construction.

Question b: Implementation of the Project is not expected to displace existing housing. Because the Project is not expected to induce growth and it will not displace existing housing, Project operation will not necessitate the construction of new or replacement housing. The minor amount of Project construction activity associated with the new recreation improvements will also not displace housing and require replacement housing.

Question c: Implementation of the Project is not expected to displace any people, so the construction of replacement housing will not be necessary. In addition, the minor amount of Project construction activity associated with the new recreation improvements will also not displace any people, so no replacement housing will be necessary.

3.14.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.15 Public Services

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
Fire protection? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would create an increased need for new fire protection facilities and services, or would require construction of such services and associated facilities, potentially causing other significant environmental impacts to occur.	☐	☐	☐	☒
Police protection? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would create an increased need for new police protection facilities and services, or would require construction of such services and associated facilities, potentially causing other significant environmental impacts to occur.	☐	☐	☐	☒
Schools? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would create an increased need for new school facilities and services, or would require construction of such services and associated facilities, potentially causing other significant environmental impacts to occur.	☐	☐	☐	☒
Parks? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would create an increased need for new park facilities and services, or would require construction of such services and associated facilities, potentially causing other significant environmental impacts to occur.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC SERVICES				
Other public facilities?	☐	☐	☐	☒
Threshold of Significance: The proposed project would have a substantial adverse effect if it would create an increased need for new governmental facilities and services, and other public services or facilities, or would require construction of such services and associated facilities, potentially causing other significant environmental impacts to occur.				

3.15.1 Environmental Setting

Fire protection in El Dorado County occurs from a variety of providers, including: Garden Valley Fire Protection District and El Dorado County Fire District. The Garden Valley Fire Protection District has a station in Garden Valley; it is a combination paid and volunteer staffed department providing fire protection, rescue, and initial response medical aid (Garden Valley Fire Protection District, 2012). The El Dorado County Fire District has several stations in the county. Several stations are located in Placerville, and serve the city and community of Placerville and surrounding communities (El Dorado County Fire District, 2012). The California Department of Forestry and Fire Protection (Cal Fire) provides fire protection and various emergency services via contracts with local governments (California Department of Forestry and Fire Protection, 2008).

The El Dorado County Sheriff's Office provides law enforcement services (including administrative, investigative, patrol, support, and custody services) in the County (El Dorado County Sheriff's Office, 2012).

The Placerville Union School District is among 15 school districts in El Dorado County. It has schools that serve grades Kindergarten through 8th grade near the Project area in El Dorado County (El Dorado County Office of Education, 2012).

El Dorado County manages the parks and trails in the County.

The El Dorado County Library has several office locations. The closest locations to the Project area are the Main Library in Placerville and the Georgetown Branch in Georgetown (El Dorado County Library, 2012).

3.15.2 Impacts

3.15.2.1 Answers to Checklist Questions

Question a: Implementation of the Project will have no effect on existing public services such as fire protection, police protection, schools, parks, or libraries in El Dorado County. There will be no change from existing conditions by continuing to operate the Project; no additional or new public services will be required by the Project. The development of the

new recreation improvements will be a benefit to recreationists who visit the Chili Bar Project reservoir by providing a formal trail, parking area, kiosk sign, and picnic table. Therefore, no impact will occur.

3.15.3 Mitigation

No significant impacts have been identified, so no mitigation is required

3.16 Recreation

.	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
RECREATION				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would create an increased need for new recreation facilities and services, or would require construction of such services and associated facilities, potentially causing other significant environmental impacts to occur.	☐	☐	☒	☐
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it included recreation facilities or would require the construction or expansion of such facilities, potentially causing other significant environmental impacts to occur.	☐	☐	☐	☒

3.16.1 Environmental Setting

El Dorado County currently has three parks under its jurisdiction: Pioneer Park in Somerset, Henningsen Lotus Park in Lotus, and Bradford Park in Shingle Springs. None are located near the Chili Bar Project.

El Dorado County adopted an updated River Management Plan in November 2001 to improve the County's management of whitewater recreation on the SF American River downstream of Chili Bar Dam. The County's goals are to preserve the river corridor's environmental resources, protect the area's rural character, reduce conflicts between residents and boaters, and maintain a quality whitewater boating experience (El Dorado County Environmental Management Department, 2011).

The 19.1-mile reach downstream of Chili Bar Dam is the most popular whitewater boating run in California, with approximately 3,000 to 4,000 users per day on summer weekends (FERC, 2008). The reach provides a unique whitewater opportunity because of relatively predictable year-round boatable flows and its proximity to major population centers, including Sacramento and the San Francisco Bay area. The Chili Bar run from Route 193 to Coloma offers Class III and IV boating with ranges in flows from 700 to 1,500 cfs for Class III+ and 1,500 to 10,000 cfs for Class III to IV. Optimum flow is 2,000 cfs (FERC, 2008).

The reach also provides opportunities for other recreational activities, including fishing, swimming, and gold panning and dredging. Inflow to Chili Bar Reservoir during regulated flow periods is controlled predominantly by the UARP's upstream storage and water use. UARP controls the major storage and water use in the river system upstream of the Chili Bar Project, with a storage capacity of more than 425,000 acre-feet. The Chili Bar Project encompasses approximately three river miles of the SF American River and operates on a water-available peaking basis. Therefore, flows in the reach downstream of Chili Bar Dam typically fluctuate on a daily basis (FERC, 2008).

PG&E manages the informal boat ramp at Chili Bar Dam, which is the only site on the reservoir that is easily accessible. It is not accessible to the public; it is used by PG&E infrequently and exclusively for Chili Bar Project inspection and maintenance purposes. BLM allows public use of its lands, and visitors access the reservoir along two steep trails from the north. Flat water boating and swimming at Chili Bar Reservoir are currently prohibited by PG&E because unpredictable and sudden releases from the upstream White Rock Powerhouse creates sudden and rapid changes in the Chili Bar Reservoir water surface level, exposing potential swimmers and boaters to swift currents and the possibility of being swept over the dam. To discourage swimming and boating uses, PG&E has gated the reservoir access road near the dam and posted signs prohibiting swimming and boating use on the reservoir, while still permitting foot access for fishing and general shore use (FERC, 2008). Although not included as part of PG&E's Project, FERC recommended in its Environmental Impact Statement that PG&E develop a recreation plan for the Project because it expects that recreational use and needs would change over the new Project license's term. This measure is not included in the Settlement Agreement.

3.16.2 Impacts

3.16.2.1 Answers to Checklist Questions

Question a: Continued operation of the Project will have no negative impact on existing parks or other recreational facilities in El Dorado County. Recreational activities around Chili Bar Reservoir, such as picnicking, off-highway vehicle use, hiking, and fishing, are not anticipated to be adversely affected by Project operation. Recreationists engaging in hiking and picnicking activities will benefit from the new recreation improvements (hiking trail/kiosk/parking area improvements and picnic table installation), and these improvements have the potential to lessen use pressure on existing facilities.

Minimum recreational flows downstream of Chili Bar Dam are included in Settlement Agreement Article 2-15, Recreational Streamflows, to vary by water year type, day of the week, and period of year, and will vary throughout the day, with minimum flows ranging between 1,300 cfs and 1,750 cfs (SMUD and PG&E, 2007). This will result in Project

operation providing higher summer flows than currently occurs, with potentially better flows for boating. More dependable boating flows in the river reach downstream of Chili Bar Dam may attract more whitewater users in that area, which may result in increased use at the put-in and take-out locations, and accelerated deterioration of recreation facilities at those locations. However, any increase in usage will remain consistent with El Dorado County's River Management Plan and is not expected to be significant.

Question b: The Project includes the development of a 0.6-mile-long trail, a gravel parking area sized for three to four vehicles, a kiosk sign, and one picnic table. Adverse effects on the environment are not expected from their development. The existing trail on BLM land from Rock Creek Road to Chili Bar Reservoir is informal and was created by user groups. Formalizing this trail will help ensure that it is designed to follow natural contours to reduce erosion and other impacts that can be associated with informal trails (FERC, 2008). The new trail improvement will provide benefits to recreational visitors by extending and formalizing trail access to Project facilities; it will formalize recreational use that already occurs in this area. The trail will continue to provide a variety of recreational opportunities, including walking, hiking, angling, sightseeing and biking access. Currently, anglers, picnickers, and other visitors follow an old logging road part way into the canyon and follow a user-made trail to the water's edge. Based on existing use of the informal trail, the new recreation improvements will also address a clear recreational demand for improved trails to the reservoir (FERC, 2008).

3.16.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.17 Transportation/Traffic

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
TRANSPORTATION/TRAFFIC – Would the project:				
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?	☐	☐	☒	☐

Threshold of Significance: The proposed project would have a substantial adverse effect if it would conflict with an existing plan or policy for the effectiveness of the circulation system.

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
TRANSPORTATION/TRAFFIC – Would the project:				
b) Conflict with an applicable congestion management plan, 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? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would cause an exceedance of a level of service standard.	☐	☐	☐	☒
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? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in changes to air traffic patterns that could result in substantial safety risks.	☐	☐	☐	☒
d) Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment)? **Threshold of Significance:** The proposed project would have a substantial adverse effect if its construction or operation would result in hazardous design features being created on existing or planned roadways. An adverse effect would also result from incompatible roadway uses, inadequate emergency access, inadequate parking capacity, or inability to implement adopted alternative transportation programs.	☐	☐	☐	☒
e) Result in inadequate emergency access? **Threshold of Significance:** The proposed project would have a substantial adverse effect if its construction or operation would 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? **Threshold of Significance:** The proposed project would have a substantial adverse effect if its construction or operation would conflict with adopted policies, plans, or programs that support alternative transportation modes.	☐	☐	☐	☒

3.17.1 Environmental Setting

The Chili Bar Project site can be accessed by U.S. 50, Coloma Street (in Placerville), State Route 193 (also known as Georgetown Road), South Fork Road, Rock Creek Road, and Holland Drive. U.S. 50 is an interstate highway, State Route 193 is a state highway, and the other roads are local roadways of varying widths and low speed limits.

3.17.2 Impacts

3.17.2.1 Answers to Checklist Questions

Question a: Continued operation of the Project will have no effect on existing traffic levels of roadways in the Chili Bar Project vicinity and will not conflict with the El Dorado County General Plan Transportation and Circulation Element, which governs the county-wide transportation system. More dependable boating flows in the river reach downstream of Chili Bar Dam may attract more whitewater users in that area, which may result in increased traffic levels on roads to the put-in and take-out locations. The increased traffic is expected primarily on weekends, and on some weekdays throughout the year, depending on water year type; however the increase is not expected to cause an increase in traffic beyond the capacity of existing transportation systems.

Construction of the new recreation improvements (trail, parking area, kiosk sign, and picnic table installation) is expected to last approximately two to three weeks, and few vehicles are expected to be associated with that work (construction worker vehicles, equipment, and delivery trucks). Because the work will require few vehicles and will be completed in a span of a few weeks, the construction work is not anticipated to substantially increase traffic levels in the area.

Question b: Implementation of the Project will have no effect on existing roadway level of service in the Chili Bar Project vicinity. Because construction of the new recreation improvements is expected to be short-term and few vehicles are expected to be associated with that work, existing roadway level of service is not expected to be affected.

Question c: Implementation of the Project is not connected to any airport, air traffic patterns, or air traffic safety. Therefore, no impact will occur.

Question d: Implementation of the Project will have no effect on existing roadway design and/or potential existing roadway design hazards in the area. The construction period for the new recreation improvements is expected to be short, lasting two to three weeks, and few vehicles are expected to be associated with that work (construction worker vehicles, equipment, and delivery trucks). Those vehicles are not expected to increase any roadway design hazards, if any currently exist.

Question e: Implementation of the Project will have no effect on emergency access in the area. The construction period for the new recreation improvements is expected to be short, lasting two to three weeks, and few vehicles are expected to be associated with that work (construction worker vehicles, equipment, and delivery trucks).

Question f: Implementation of the Project will have no connection to alternative transportation modes, and will result in no effect on policies, plans, or programs that support alternative transportation modes.

3.17.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.18 Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS – Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? **Threshold of Significance:** The proposed project would have a substantial adverse effect if its construction or operation would result in wastewater discharges exceeding waste discharge requirements (WDRs) established by the RWQCB.	☐	☐	☐	☒
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? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would require or result in the construction, operation, or expansion of a water or wastewater treatment facility, which could cause significant environmental impacts.	☐	☐	☐	☒
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? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would require or result in new or expanded storm water drainage facilities, the construction and operation of which could cause significant environmental impacts.	☐	☐	☐	☒
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? **Threshold of Significance:** The proposed project would have a substantial adverse effect if new or expanded water supply entitlements would be needed that would cause other significant adverse environmental effects.	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS – Would the project:				
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? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would result in a determination by the wastewater treatment provider that serves or may serve the project that it does not have 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? **Threshold of Significance:** The proposed project would have a substantial adverse effect if the solid waste disposal needs would cause the capacity of a landfill to be reached sooner than it would without the project.	☐	☐	☐	☒
g) Comply with federal, state, and local statutes and regulations related to solid waste? **Threshold of Significance:** The proposed project would have a substantial adverse effect if it would not comply with federal, state, and local statutes and regulations related to solid waste.	☐	☐	☐	☒

3.18.1 Environmental Setting

Wastewater collection and treatment services to El Dorado County are provided by wastewater treatment plants in the urbanized areas and individual septic systems in the rural areas.

Water service is provided to El Dorado County by the following service companies: El Dorado Irrigation District, Georgetown Divide Public Utility District, Grizzly Flats Community Services District, South Lake Tahoe Public Utility District, and Tahoe City Public Utility District.

El Dorado County has entered into contracts with several solid waste companies to provide solid waste collection, recycling, and disposal services throughout the County (El Dorado County Environmental Management Department, 2012).

3.18.2 Impacts

3.18.2.1 Answers to Checklist Questions

Question a: Implementation of the Project will have no effect on wastewater. No exceedances of wastewater treatment requirements will occur as a result of the Project.

Question b: Implementation of the Project will have no effect on water or wastewater treatment facilities. New or expanded water or wastewater treatment facilities will not be required as a result of Project implementation.

Question c: Implementation of the Project will have no effect on storm water drainage facilities. New or expanded storm water drainage facilities will not be required as a result of Project implementation.

Question d: Water will only be needed for dust suppression purposes during development of the 0.6-mile-long trail and gravel parking lot, for an estimated two to three weeks. It is expected that water will be provided via water trucks. The amount of water that will be used during that construction period is not expected to be a significant amount, and will not require additional water entitlements. Only water from the SF American River and water diverted from the Rubicon River watershed by SMUD will be required to operate the Project. This is a continuation of existing conditions.

Question e: Implementation of the Project will have no effect on existing wastewater treatment facilities within the County. New or expanded wastewater treatment facilities will not be required as a result of Project implementation.

Question f: Implementation of the Project will have no effect on existing landfills that serve El Dorado County, nor will the Project affect the lifespan of the landfills. New or expanded landfill facilities will not be required as a result of Project implementation.

Question g: Implementation of the Project is not connected to generation, transport, or disposal of solid waste, and will have no effect on federal, state, or local statutes and regulations related to solid waste.

3.18.3 Mitigation

No significant impacts have been identified, so no mitigation is required.

3.19 Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE:				
a) Does the 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	☐	☐	☒	☐

		Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE:					
	range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?				
b)	Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

3.19.1 Discussion

The Environmental Checklist was completed to assess the potential significance of environmental impacts that could result from the Project. The following provides answers to the questions listed in the mandatory findings of significance section:

a. As noted in the checklist for Biological Resources and Cultural Resources, the Project is not expected to result in significant impacts to special-status species and other biological resources, nor will it result in significant impacts to cultural resources with the implementation of mitigation.

b. The Final Environmental Impact Statement for the UARP and Chili Bar relicensing evaluated cumulative impacts and concluded that taken together, implementation of the two projects, as proposed in the Settlement Agreement, will cumulatively affect water resources, fish and wildlife, recreational opportunities, and cultural resources in the American River and the SF American River Basin. A summary of the issues brought up in the Final Environmental Impact Statement cumulative impacts discussion is presented below.

   Operation of the UARP and Chili Bar Project affects water temperatures in a variety of ways and may lead to higher water temperatures, as when diverting water around stream reaches leads to increased spring through summer temperatures in the bypassed reaches. At the same time, the use of low-level outlets for streamflow releases at UARP and Chili Bar dams can reduce water temperatures immediately downstream of some dams (e.g., UARP's Ice House and Loon Lake developments). In addition, the El Dorado Irrigation District operates FERC No. 184, which diverts up to 165 cfs of water out of the SF American River upstream of the UARP, which has resulted in an incremental increase in spring through summer temperatures in the river. In general, the increase in minimum flows proposed for the Project, together with the increases proposed for the UARP, would tend to reduce spring through summer temperatures in most of the stream reaches affected by the UARP and Chili Bar Project. These changes are expected

to provide a thermal regime that will support the designated beneficial uses, including coldwater habitat for resident fish.

Water quality in the SF American River downstream of the UARP and Chili Bar Project is generally good, although Central Valley Water Board's Basin Plan water quality objectives for bacteria and for some chemical parameters were exceeded at times based on data collected during the relicensing. Factors that may have adverse affects on water quality include land management, development, and water-oriented recreation, which may lead to high fecal coliform concentrations in heavily used areas of the reservoirs and in the Chili Bar dam reach. Expansion of the Hangtown Creek Wastewater Treatment Plant in nearby Placerville, which discharges treated wastewater to a tributary to the SF American River, is expected to reduce bacteria and nutrient loadings to the SF American River. In addition, El Dorado Irrigation District replaced a damaged and unstable section of the Project 184's canal with a two-mile-long bypass tunnel, which is expected to reduce canal failures that can lead to erosion and sedimentation. The cumulative effects of these actions will be an overall improvement in water quality.

Private land development, public land use, and hydropower development in the American River watershed have cumulatively affected sensitive amphibians such as California red-legged frog, foothill yellow-legged frog, and mountain yellow-legged frog. Activities such as road construction and the operation of hydroelectric facilities can lead to fragmentation of amphibian breeding populations and also create habitat for invasive species, such as bullfrogs, that prey on native amphibians. Flow releases to benefit coldwater fisheries during the summer and early fall and the UARP and Chili Bar reservoirs may isolate foothill yellow-legged frog breeding populations. Recreational flow releases proposed for the UARP may potentially affect native amphibians due to short-term fluctuations in flow. The ramping rates described in the Settlement Agreement will minimize potential impacts and improve the situation relative to existing conditions. Requirements for water temperature and amphibian monitoring together with adaptive management measures, such as the ability to cancel recreation flows based on various factors, will reduce impacts to native amphibians to a less than significant level. Previous management activities on National Forest System lands have reduced the amount and suitability of California spotted owl, northern goshawk, sensitive bat tree roosting, and Pacific fisher habitat in the Iowa Hill area. Based on the Eldorado National Forest Schedule of Proposed Actions (available at http://www.fs.fed.us/sopa/components/reports/sopa-110503-2011-01.html), there are no major habitat altering activities currently being planned within or adjacent to the analysis area.

The recreational measures proposed by PG&E and SMUD will improve recreational opportunities throughout much of the SF American River watershed. Although each proposed measure is incrementally small, together, the recreational measures will improve opportunities in the region. The recreational measures allow the Projects to adapt to changes in recreational use over time, better using existing recreational resources, and developing new resources that address current and foreseeable recreational activities, such as hiking and biking.

The UARP and Chili Bar Project are among a large number of hydroelectric projects in central California that affect prehistoric and historic archaeological resources located

along the American River and its tributaries. These projects attract recreational use around the reservoirs. The increased recreational use resulting from the availability of the reservoirs has contributed to both inadvertent and intentional destruction of prehistoric and historic archaeological resources and of traditional cultural properties. Although continued erosion and recreational use of the American River area would be expected to continue to affect archaeological resources and traditional cultural properties, the measures included in Historic Property Management Plans for the Chili Bar Project and the UARP, as well as measures being or already developed and implemented at other hydroelectric projects in the area, will cumulatively reduce the rate of destruction of these cultural resources (FERC, 2008).

None of the impacts highlighted in the analyses of individual environmental factors in this Initial Study are deemed to be significant.

c. **Growth Inducing Impacts:** The continued presence of the Chili Bar Project, its operational changes, and the addition of some recreational facilities, will not induce population growth. The Chili Bar Project will continue to provide electricity within PG&E's service area, slightly decreasing its electricity production (providing an estimated annual average generation of 31,291 MWh, rather than the current 32,291 MWh of electricity per year). The greater Sacramento area has a sufficient supply of electricity, and growth in that area is not constrained due to the availability of electricity. Because the relicensing of the Project will result in a reduction of its electricity output, it will not induce growth even if the area were electrically constrained. In addition, the Project's continued operation will not increase jobs in the area, which could also create growth.

Existing recreation use of the Chili Bar reservoir is low, and the new recreation improvements are few and minor (consisting of improvements to an existing hiking trail, a gravel parking area for three to four cars, a kiosk, and a picnic table), and will not promote growth in the area. Similarly, increased whitewater boating activities due to the new flow regime are not expected to promote significant growth in the area because a large portion of recreationists visiting the Crystal Basin area (which includes the UARP and Chili Bar Project) are residents of El Dorado County and the greater Sacramento region (CH2M HILL, 2004). Consequently, the Project will not cause increased demand on public infrastructure, public services, housing, transportation and circulation, or other resources. As indicated throughout this Initial Study, substantial adverse effects are not expected to occur as a result of the Project. PG&E has included Settlement Agreement Articles in its Project description and additional measures for identified impacts, as well as EIMs. As a result, the Project will not result in substantial adverse direct or indirect effects on human beings.

CHAPTER 4

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CHAPTER 5

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Appendix A
Federal and State-listed Species Potentially Occurring in the Chili Bar Hydroelectric Project Area

TABLE A-1
Federal and State Listed Species Potentially Occurring in the Chili Bar Hydroelectric Project Area

Scientific Name	Common Name	Status	Source	Habitat Requirements
Birds				
Buteo swainsoni	Swainson's hawk	ST	CNDDB 25 Quad, PG&E	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, and agricultural or ranch.
Empidonax traillii brewsteri	little willow flycatcher	SE	PG&E	Mountain meadows and riparian habitats in the Sierra Nevada and Cascades.
Falco peregrinus anatum	American peregrine falcon	FD, SE	PG&E	Near wetlands, lakes, rivers, or other water; on cliffs, banks, dunes, mounds; also, human-made structures.
Haliaeetus leucocephalus	bald eagle	FD, SE	CNDDB 25 Quad, PG&E	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water.
Riparia riparia	bank swallow	ST	PG&E	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.
Mammals				
Martes pennanti (pacifica) DPS	Pacific fisher	FC, SC, CDFG SC	CNDDB 25 Quad	Intermediate to large-tree stages of coniferous forests and deciduous-riparian areas with high percent canopy closure.
Amphibians				
Rana draytonii	California red-legged frog	FT, CDFG SC	USFWS, CNDDB 25 Quad	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Critical habitat exists approximately 5 miles east of the project area.
Rana sierrae	Sierra Nevada yellow-legged frog	FC, CDFG SC	CNDDB 25 Quad, PG&E	Always encountered within a few feet of water. Tadpoles may require 2 - 4 yrs to complete their aquatic development.
Fish				
Hypomesus transpacificus	delta smelt	FT, ST	USFWS	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay.
Oncorhynchus mykiss	Central Valley steelhead	FT	USFWS	Populations in the Sacramento and San Joaquin rivers and their tributaries.
Invertebrates				
Branchinecta lynchi	vernal pool fairy shrimp	FT	CNDDB 25 Quad	Endemic to the grasslands of the Central Valley, Central Coast Mountains, and South Coast Mountains, in astatic rain-filled pools.

TABLE A-1
Federal and State Listed Species Potentially Occurring in the Chili Bar Hydroelectric Project Area

Scientific Name	Common Name	Status	Source	Habitat Requirements
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT	USFWS, CNDDB 25 Quad, PG&E	Occurs only in the Central Valley of California, in association with blue elderberry (*sambucus mexicana*).
Plants				
Allium jepsonii	Jepson's onion	CNPS 1B.2, BLM	CNDDB 9 Quad, CNPS, PG&E	Valley and foothill grassland, and cismontane woodland.
Arctostaphylos nissenana	Nissenan manzanita	CNPS 1B.2, BLM	CNDDB 9 Quad, CNPS	Closed-cone coniferous forest, and chaparral.
Balsamorhiza macrolepis var. *macrolepis*	big-scale balsamroot	CNPS 1B.2, BLM	CNDDB 25 Quad, CNPS, PG&E	Cismontane woodland, and lower montane coniferous forest.
Calochortus clavatus var. *avius*	Pleasant Valley mariposa-lily	CNPS 1B.2, BLM	CNDDB 9 Quad, CNPS	Lower montane coniferous forest.
Calystegia stebbinsii	Stebbins' morning-glory	FE, SE, CNPS 1B.1	CNDDB 9 Quad, CNPS, PG&E	Chaparral, and cismontane woodland.
Ceanothus roderickii	Pine Hill ceanothus	FE, SR, CNPS 1B.2	CNDDB 9 Quad, CNPS, PG&E	Chaparral and cismontane woodland.
Chlorogalum grandiflorum	Red Hills soaproot	CNPS 1B.2, BLM	CNDDB 9 Quad, CNPS, PG&E	Cismontane woodland, chaparral, and lower montane coniferous forest.
Clarkia biloba ssp. *brandegeeae*	Brandegee's clarkia	CNPS 1B.2, BLM	CNDDB 9 Quad, CNPS, PG&E	Chaparral and cismontane woodland.
Fremontodendron decumbens	Pine Hill flannelbush	FE, SR, CNPS 1B.2	CNDDB 9 Quad, CNPS, PG&E	Chaparral and cismontane woodland.
Galium californicum ssp. *sierrae*	El Dorado bedstraw	FE, SR, CNPS 1B.2	CNDDB 9 Quad, CNPS, PG&E	Cismontane woodland, chaparral, and lower montane coniferous forest.
Horkelia parryi	Parry's horkelia	CNPS 1B.2, BLM	CNDDB 9 Quad, CNPS, PG&E	Lower montane coniferous forest, cismontane woodland, meadows and seeps, and riparian woodland.
Packera layneae	Layne's ragwort	FT, SR, CNPS 1B.2	USFWS, CNDDB 9 Quad, CNPS	Chaparral, cismontane woodland.
Pseudobahia bahiifolia	Hartweg's golden sunburst	FE, SE, CNPS 1B.1	CNDDB 25 Quad, CNPS	Valley and foothill grassland, cismontane woodland.

TABLE A-1
Federal and State Listed Species Potentially Occurring in the Chili Bar Hydroelectric Project Area

Scientific Name	Common Name	Status	Source	Habitat Requirements
Sagittaria sanfordii	Sanford's arrowhead	CNPS 1B.2, BLM	CNDDB 25 Quad, CNPS	Marshes and swamps.
Wyethia reticulata	El Dorado County mule ears	CNPS 1B.2, BLM	CNDDB 9 Quad, CNPS, PG&E	Chaparral, cismontane woodland, and lower montane coniferous forest.

Key:

F = Federal
S = State
E = Endangered
T = Threatened
C = Candidate
D = Delisted
R = Rare
CDFG = California Department of fish and game
SC = Species of Concern
CNPS = California Native Plant Society
1A = Plants presumed extinct in california
1B = Plants rare, threatened, or endangered in California and elsewhere
2 = Plants Rare, threatened, or endangered in California, but more common elsewhere
3 = Review list Plants
4 = Watch list plants
0.1 = Seriously threatened in California (high degree/immediacy of threat)
0.2 = Fairly threatened in California (moderate degree/immediacy of threat)
0.3 = Not very threatened in California (low degree/immediacy of threats or no current threats known)
BLM = BuReau of Land Management sensItive plant species

Notes:

List compiled July 2009 from the 1) USFWS List of Potential Species for Garden Valley USGS 7.5' Quadrangle, 2) CNDDB 9-quad and 25-Quad Lists, 3) CNPS 25-quad list, and 4) PG&E 2005 Species List,

USFWS List of Potential Species for Garden Valley USGS 7.5' Quadrangle was compiled in July 2009.

CNDDB 9-Quad Search was run in July 2009 and covered a range of approximately 8 to 19 miles from the proposed project and included: Camino, Coloma, Garden Valley, Georgetown, Greenwood, Placerville, Shingle Springs, Slate Mountain, and Tunnel Hill USGS 7.5' Quadrangles.

CNDDB and CNPS 25-Quad Searches were run in July 2009 and covered a range of approximately 15 to 30 miles from the proposed project and included: Auburn, Aukum, Camino, Clarksville, Colfax, Coloma, Devil Peak, Fiddletown, Folsom SE, Foresthill, Garden Valley, Georgetown, Greek Store, Greenwood, Latrobe, Lake Combie, Michigan Bluff, Omo Ranch, Pilot Hill, Placerville, Pollock Pines, Shingle Springs, Slate Mountain, Sly Park, and Tunnel Hill USGS 7.5' Quadrangles.

Appendix B
El Dorado County Noise Limits

TABLE B-1
2004 El Dorado County General Plan Construction Noise Limits for Rural Regions

Land Use Designation	Time Period	Noise Level (dB)	
		L_{eq}	L_{max}
All Residential (LDR)	7 a.m.–7 p.m.	50	60
	7 p.m.–10 p.m.	45	55
	10 p.m.–7 a.m.	40	50
Commercial, Recreation, and Public Facilities (C, TR, PF)	7 a.m.–7 p.m.	65	75
	7 p.m.–7 a.m.	60	70
Rural Land, Natural Resource, Open Space, and Agricultural Lands (RL, NR, OS, AL)	7 a.m.–7 p.m.	65	75
	7 p.m.–7 a.m.	60	70

Source: El Dorado County, 2004.

TABLE B-2
2004 El Dorado County General Plan Operation Noise Limits

Noise Level Descriptor	Daytime 7 a.m. – 7 p.m.		Evening 7 p.m. – 10 p.m.		Night 10 p.m. – 7 a.m.	
	Community	Rural	Community	Rural	Community	Rural
Hourly L_{eq}, DB	55	50	50	45	45	40
Maximum level, dB	70	60	60	55	55	50

Source: El Dorado County, 2004.

Appendix C
Chili Bar Power Generation and Greenhouse Gas Emissions

TABLE C-1
Gross Amount of Power Generated for Fiscal Years 1990-2010 (October 1 through September 30) at Chili Bar Hydroelectric Project (FERC License No. 2155)

Year	Gross Generation in KWh	Gross Generation in MWh
2010	18,689,600	18,690
2009	23,562,200	23,562
2008	18,738,900	18,739
2007	20,550,700	20,551
2006	44,134,800	44,135
2005	34,759,800	34,760
2004	26,962,100	26,962
2003	31,259,900	31,260
2002	17,563,300	17,563
2001	15,216,000	15,216
2000	37,570,200	37,570
1999	44,138,400	44,138
1998	50,802,700	50,803
1997	43,524,400	43,524
1996	38,586,700	38,587
1995	49,040,800	49,041
1994	17,089,000	17,089
1993	41,495,000	41,495
1992	16,749,000	16,749
1991	20,238,000	20,238
1990	20,668,000	20,668

Source: PG&E, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010a.

TABLE C-2
Estimate of Indirect Greenhouse Gas Emissions
Chili Bar Project

Emission Factor (see below):	111	lbs CO_2eq/MWh
Estimated Reduction in Annual Generation for Chili Bar Project[a]:	1,000	MWh/year
Potential Indirect CO_2eq Emissions Generated From Renewable Energy Sources to Balance Chili Bar Project MWh Reduction:	50[b]	Metric tons CO_2eq/year

Derivation of Renewable Energy Emission Factor Based on PG&E Renewable Portfolio Standard (RPS) Percentages

Renewable Energy Source	Emission Factor (lbs CO_2eq/ MWh)[c]	Percent of PG&E Total RPS[d,e]
Wind	0	22.3
Solar Thermal	0	0.0
Solar Photovoltaic (PV)	0	0.2
Geothermal	310	29.7
Solid-Fuel Biomass	70	27.3
Landfill /Digester Gas	0	1.6
Small Hydroelectric	0	17.8
Weighted Average Emission Factor for Renewable Energy Sources:	111	

Sources:

[a]Final Environmental Impact Statement for Hydropower License, FERC/FEIS-0216F, Upper American River Hydroelectric Project FERC Project No. 2101-084, California, Chili Bar Hydroelectric Project FERC Project No. 2155-024, California, March 2008, page 4-8.

[b]PG&E will replace reduction in Chili Bar generation with a renewable energy source. The indirect CO_2 equivalent is based on the weighted average emission factor per MWh for PG&E's renewable energy sources (shown below) and the estimated annual reduction of 1000 MWh in Chili Bar power generation.

[c]CARB, 2010.

[d]PG&E, 2010b.

[e]To be consistent with CARB, 2010, the 1.2% municipal solid waste portion of the PG&E reported RPS (in PG&E, 2010b) was not included in the calculation of the emission factor. In addition, municipal solid waste is not reported as a line item under renewables in the Total System Power Report for the California Energy Commission (http://energyalmanac.ca.gov/electricity/total_system_power.html). If municipal solid waste was included, the total would add to 100.1%, rather than the current total of 98.9%.