COVER SHEET

FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE UPPER AMERICAN RIVER AND CHILI BAR
HYDROELECTRIC PROJECTS
Docket Nos. P-2101-084 and P-2155-024

Section 1
Purpose and Need for Action
Pages 1-1 through 1-12

FEIS

1.0 PURPOSE AND NEED FOR ACTION

On July 7, 2005, the Sacramento Municipal Utility District (SMUD) filed an application for new license for the Upper American River Project (UARP) with the Federal Energy Regulatory Commission (FERC or Commission). This application was prepared under the Alternative Licensing Process approved by the Commission on August 29, 2001, and included a preliminary draft environmental assessment (PDEA). The Project is on the Rubicon River, Silver Creek, and South Fork of the American River (SFAR) near Placerville, California (figure 1-1). The UARP's 11 reservoirs are capable of impounding more than 425,000 acre-feet of water. The eight powerhouses can generate up to 688 megawatts (MW) of power. The Project occupies 6,375[9] acres of federal land administered by the U.S. Department of Agriculture, Forest Service (Forest Service) Eldorado National Forest and 42.3 acres of federal land administered by the U.S. Bureau of Land Management (BLM).

On June 21, 2005, Pacific Gas and Electric Company (PG&E) filed an application for a new license for the Chili Bar Project using a Traditional Licensing Process. The Chili Bar Project is on the SFAR in El Dorado County, near Placerville, California, and it is a 7-MW hydroelectric project that encompasses about 3 river miles. The Chili Bar Project occupies 47.81 acres of federal land administered by the BLM, and its facilities are located downstream of SMUD's UARP (figure 1-1).

The Forest Service will be reviewing a special use permit application for construction of the Iowa Hill development on National Forest System lands. The Commission and the Forest Service have agreed to participate as cooperating agencies in the preparation of this final environmental impact statement (EIS) for the UARP.

The existing licenses for both the UARP and the Chili Bar Project (Projects) expired on July 31, 2007. The Commission issued annual licenses for the Projects on August 8, 2007.

1.1 PURPOSE OF ACTION

The Commission must decide whether to relicense the Projects and what conditions should be placed on any licenses issued. In deciding whether to authorize the continued operation of hydroelectric projects and related facilities in compliance with the Federal Power Act (FPA)[10] and other applicable laws, the Commission must

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[9]This acreage includes 185 acres of El Dorado National Forest lands associated with the proposed Iowa Hill development.

[10]16 U.S.C. §§791(a)-825(r), as amended by the Electric Consumers Protection Act of 1986, Public Law 99-495 (1986) and the Energy Policy Act of 1992, Public Law 102-486.

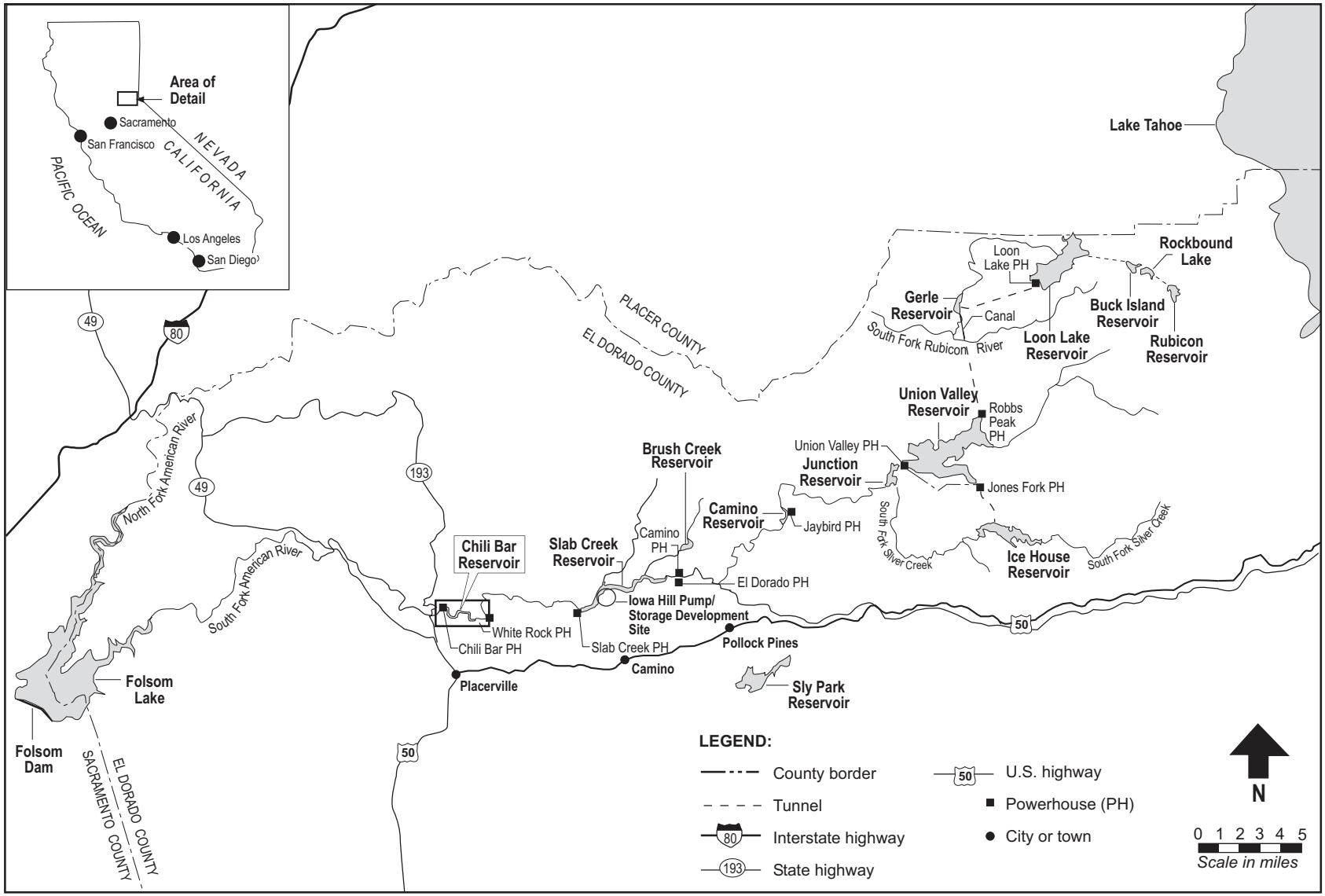

Figure 1-1. General vicinity of the UARP and Chili Bar Project. (Source: SMUD, 2005, PG&E, 2005, as modified by staff)

determine that the Projects will be best adapted to a comprehensive plan for improving or developing a waterway. In addition to the power and developmental purposes for which licenses are issued (e.g., flood control, irrigation, and water supply), the Commission must give equal consideration to the purposes of energy conservation; the protection of, mitigation of damage to, and enhancement of fish and wildlife (including related spawning grounds and habitat); the protection of recreational opportunities; and the preservation of other aspects of environmental quality. The Forest Service must decide whether to issue a special use permit for construction of the Iowa Hill development.

The Forest Service, under the Federal Land Policy and Management Act, must decide whether to grant a special use permit and/or easement for construction and operation of the proposed Iowa Hill development, including access and associated facilities. In this final EIS, we assess the environmental and economic effects of (1) continuing to operate the UARP and Chili Bar Project as they are currently operated (No-action Alternative); (2) operating the UARP with the Iowa Hill development as proposed by SMUD and the Chili Bar Project as proposed by PG&E (SMUD's Proposal and PG&E's Proposal as described in the Settlement Agreement, or the Proposed Action); (3) operating the UARP without the Iowa Hill development (UARP-only Alternative) and the Chili Bar Project as proposed by PG&E; and (4) operating the UARP with the Iowa Hill development as proposed by SMUD and the Chili Bar Project as proposed by PG&E with additional or modified environmental measures (Staff Alternative).

Important issues that are addressed in this final EIS include the potential effects of the Proposed Actions and alternatives on streamflows and water quality in the 12 river reaches (11 reaches of the UARP and one reach of the Chili Bar Project); the existing fish and amphibian resources in the river reaches, terrestrial resources, and plans to manage and enhance these resources; federally listed threatened or endangered plant and wildlife species; existing recreational uses and facilities and plans to improve and expand these facilities; cultural resources; and measures to protect these resources.

1.2 NEED FOR POWER

1.2.1 Regional Power Considerations

The UARP, with an installed capacity of 688 MW and an average annual generation of 1,835,000 megawatt-hours (MWh)[11] per year of energy, plays an important part in meeting the capacity requirements of SMUD. It is a significant power resource to the state of California and within the Western Electricity Coordinating

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[11]This value is the average generation for SMUD's No-action Alternative as provided in SMUD's April 11, 2007, Settlement Cost Analysis filed by Van Ness Feldman.

Council, which includes the states west of the Rockies; portions of Texas, Nebraska, and Kansas; Alberta and British Columbia, Canada; and a portion of North Baja California. Similarly, PG&E's Chili Bar Project, with an installed capacity of 7 MW and an average annual generation of 32,291 MWh[12] per year of energy, is another power resource available to the region.

Because the Projects are located in the California-Mexico Power area of the Western Electricity Coordinating Council region, we looked at the regional need for power as reported by the Western Electricity Coordinating Council[13] (WECC, 2005) to anticipate how the demand for electricity is expected to change in the region.

The California-Mexico Power area, which encompasses most of California and a part of Baja California in Mexico, has a significant summer peak demand. For the period from 2005 through 2014, the Western Electricity Coordinating Council forecasts peak demand and annual energy requirements in the area to grow at annual compound rates of 2.4 and 2.6 percent, respectively. The Western Electricity Coordinating Council anticipates that 6,783 MW of new capacity would come on line within the next 10 years in the California-Mexico Power area. The Projects could continue to meet part of the existing load requirements within a system in need of generating resources.

1.2.2 Iowa Hill Implications

SMUD's proposed Iowa Hill development would add an additional 400 MW of capacity during peak demand periods. The development would provide 931,000 MWh of super on-peak energy and 43,000 MWh of off-peak energy; however, 1,230,000 MWh of off-peak energy would be required to pump the water from Slab Creek reservoir to Iowa Hill reservoir during off-peak hours. This would result in net energy of –256,000 MWh.

SMUD and possibly other utilities in California would likely use the electricity from the Project to displace the use of gas-fired energy during on-peak hours. If the Project is not licensed, utilities would still need to provide a comparable amount of capacity and energy from other resources, most likely through the operation of gas-fired generation facilities.

The California Energy Commission was created in 1974 and is responsible for forecasting future energy needs and keeping historical energy data, among other duties. The California Energy Commission noted in its 2004 Integrated Energy Policy Report Update that "while supplies are tight during peak periods, the state has more than adequate amounts of power in the low load periods, especially at night" (CEC, 2004).

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[12]This value is the average generation for PG&E's No-action Alternative as provided in its May 18, 2006, Additional Information Response.

[13]WECC has yet to issue its 2006 forecast.

California utilities and generators have some options for shifting power supplies from off-peak to on-peak periods through the use of pumped-storage facilities.

If the UARP's license is issued to include the Iowa Hill development, the pumped-storage facility would contribute to a diversified generation mix and help meet power needs within and beyond the region. Regional power benefits from the new development would include those often referred to as ancillary system benefits, including spinning reserves, non-spinning reserves, peaking capacity, and grid stability. Pumped storage generates and stores power during off-peak periods that can be provided rapidly during on-peak periods. Additionally, it could allow SMUD to meet 6 to 7 years of anticipated peak demand growth. It could produce significant local generation to alleviate anticipated voltage and transmission constraints during peak-demand periods in the region and aid management of greatly increased minute-by-minute load balancing and control area[14] challenges presented by wind and other intermittent generation technologies required by renewable portfolio standards. Licensing the Iowa Hill development would allow SMUD to compete in the power market for sale of the Project's power and ancillary benefits.

1.3 SCOPING PROCESS

1.3.1 Upper American River Project

SMUD and PG&E conducted the National Environmental Policy Act (NEPA) scoping process for the overlapping issues for the UARP as part of SMUD's Alternative Licensing Process.[15] SMUD issued Scoping Document 1 on August 14, 2003. Three public scoping meetings were held in Sacramento and Placerville, California, on September 9–11, 2003, and a site tour was conducted on September 12, 2003. The scoping meetings allowed individuals an opportunity to submit oral or written comments to the relicensing record.

1.3.2 Chili Bar Project

The Commission issued Scoping Document 1 for the Chili Bar Project on December 20, 2005, to address non-overlapping issues exclusive to that Project.[16] After reviewing the two written comments filed during the scoping comment period, we

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[14]SMUD is one of four entities that currently operate control areas entirely within the state of California. As its own control area, SMUD is responsible for balancing the demand of its customers with power supplies.

[15]Under the Alternative Licensing Process, the applicant conducts scoping prior to filing the draft and final license application.

[16]Under the Traditional Licensing Process, the Commission issues a scoping document after a final license application is filed.

prepared Scoping Document 2 that addressed the comments from the State Water Resources Control Board (Water Board) and PG&E and presented the issues and alternatives for the Chili Bar Project in this final EIS.

1.4 AGENCY CONSULTATIONS

1.4.1 Alternative Licensing Process for UARP

After consulting with agencies, non-governmental organizations (NGOs), and members of the public, SMUD filed a formal request with the Commission to follow the Alternative Licensing Process. The Commission approved the request on August 29, 2001. From fall 2001 until 2005, the resource agencies and several NGOs participated in SMUD's Alternative Licensing Process with the intent (1) to produce a comprehensive set of protection, mitigation, and enhancement measures, acceptable to the settlement negotiations group, for submittal in the July 2005 final license applications for the UARP and Chili Bar Project; (2) to produce a quality settlement agreement to be submitted to the Commission for consideration in its environmental analysis; and (3) to preserve coordination between the UARP and Chili Bar Project on overlapping issues.

In April 2004, with the timeline for development of proposed measures and a settlement agreement behind schedule, the resource agencies proposed that SMUD be excused from completing a draft license application and instead have adequate time to complete studies, review study reports, develop and agree upon recommended measures, and write a comprehensive settlement agreement that would be acceptable to the settlement parties. The Commission excused SMUD from filing a draft license application. These goals were not achieved, however, and SMUD's final license application, including its PDEA, was filed without agreement on proposed measures among the parties in the Alternative License Process and without the parties knowing which environmental measures were proposed in the final license application.

PG&E filed a final license application for the Chili Bar Project in June 2005 under the Traditional Licensing Process.

1.4.2 Interventions and Comments

On July 28, 2006, the Commission issued a notice for the UARP soliciting interventions and requesting final terms, conditions, prescriptions, and recommendations and setting a comment deadline of 90 days from the date of the notice. On August 22, 2006, the Commission issued a notice for the Chili Bar Project that the Project was ready for environmental review and preliminary terms, conditions, and recommendations could be filed for the Chili Bar Project within 60 days of the date of the notice.

The following entities filed motions to intervene:

Intervenors in the UARP	Date of Filing
Eldorado Hills Community Service District	November 4, 2005
California Water Resources Control Board	September 6, 2006
Eldorado Parties[17]	September 13, 2006
U.S. Department of the Interior	September 22, 2006
Pacific Gas &Electric Company	September 25, 2006
Placer County Water Agency	October 4, 2006, and January 23, 2007
California Department of Fish and Game	October 17, 2006
Friends of the River	October 17, 2006
National Marine Fisheries Service	October 18, 2006

The following entities filed motions to intervene in the Chili Bar Project:

Intervenors in the Chili Bar Project	Date of Filing
U.S. Department of the Interior	September 22, 2006
California Water Resources Control Board	October 13, 2006
California Department of Fish and Game	October 17, 2006
National Marine Fisheries Service	October 18, 2006
Friends of the River	October 23, 2006
Sacramento Municipal Utility District	October 23, 2006

[17]Joint motion to intervene of the County of El Dorado, El Dorado County Water Agency, El Dorado Irrigation District, Georgetown Divide Public Utility District, and the El Dorado Water & Power Authority.

On November 16, 2006, the Commission extended the filing deadline for the final terms and conditions for the UARP and the preliminary terms, conditions, prescriptions, and recommendations for the Chili Bar Project to February 1, 2007, to give parties to the Settlement Agreement time to revise and file their terms, conditions, prescriptions, and recommendations.

The following entities filed comments, terms, conditions, prescriptions, or recommendations in response to the Commission's notice for the UARP and Chili Bar Project that are consistent with the Settlement Agreement:

Commenting Entities—UARP Project No. 2101	**Date of Filing**
California Water Resources Control Board	October 17, 2006
California Department of Fish and Game	October 18 2006 and January 31, 2007
U.S. Department of the Interior	October 17, 2006 and January 31, 2007
California Sportsfishing Alliance	October 18, 2006
National Marine Fisheries Service	October 18, 2006
U.S. Department of Agriculture, Forest Service	October 18, 2006 and January 30, 2007
California Department of Parks and Recreation	October 19, 2006
Environmental Council of Sacramento	October 19, 2006
Sacramento County Farm Bureau	October 23, 2006
Commenting Entities—Chili Bar Project No. 2155	**Date of Filing**
California Water Resources Control Board	October 16, 2006
California Department of Fish and Game	October 17 2006 and January 31, 2007
U.S. Department of the Interior	October 18, 2006 and January 31, 2007
California Department of Parks and Recreation	October 18, 2006

1.4.3 Settlement Agreement

After the final license applications were filed, seven resource agencies and several NGOs continued to work and developed a comprehensive alternative that addressed the interests of these parties and the interests of the licensees, as they were understood by these participants, as well as a rationale report that explained the rationale for the comprehensive alternative. On November 1, 2005, the seven agencies, two NGOs, and several individuals filed a Comprehensive Resource Agency/NGO Alternative and requested that the alternative be fully analyzed in the EIS. On August 18, 2006, SMUD filed a supplemental preliminary environmental assessment in response to the agency alternative.

From November 2005 until May 2006, the agencies and NGOs continued to negotiate with SMUD in an attempt to reach a comprehensive settlement agreement. That goal was not achieved, and in October 2006, the resource agencies filed preliminary terms, conditions, and recommendations in response to the Commission's July 28, 2006, notice. In November 2006, the agencies, NGOs, SMUD, and PG&E participated in negotiations that led to an Agreement in Principle, which was filed with the Commission on November 16, 2006. Because of the substantial progress that had been demonstrated in the Agreement in Principle, the Commission extended the deadline for filing preliminary terms, conditions, and recommendations to February 1, 2007.

SMUD and PG&E filed the Settlement Agreement on February 1, 2007. The Settlement Agreement was signed by representatives of federal and state agencies, NGOs, and individuals listed below. We consider the Settlement Agreement to represent the Proposed Actions for these Projects.

Signatories to the Settlement Agreement
U.S. Department of Agriculture, Forest Service
U.S. Department of the Interior, Fish and Wildlife Service
U.S. Department of the Interior, Bureau of Land Management
U.S. Department of the Interior, National Park Service
California Department of Fish and Game
California Department of Parks and Recreation
American Whitewater
Friends of the River
California Sportsfishing Protection Alliance
American River Recreation Association and Camp Lotus
Foothill Conservancy

Signatories to the Settlement Agreement
California Outdoors
Hilde Schweitzer
Rich Platt
Theresa Simsiman

The Commission issued a notice of the Settlement Agreement and set a comment deadline of March 10, 2007, and a reply comment deadline of March 25, 2007. The following entities filed comments on the Settlement Agreement.

Commenting Entities on Settlement Agreement	Date of Filing
Placer County Water Agency	March 9, 2007
California Sportfishing Protection Alliance	March 9, 2007

SMUD filed reply comments on March 16, 2007.

During the relicensing proceeding, SMUD and El Dorado County entered into the El Dorado-SMUD Cooperative Agreement on November 22, 2005. This agreement resolved all relicensing issues among SMUD, El Dorado County Water Agency, El Dorado Irrigation District (EID), Georgetown Divide Public Utility District, and the El Dorado Water & Power Authority. SMUD filed this agreement with the Commission on December 2, 2005, for information purposes only. Section 3.4.2 of the El Dorado-SMUD Cooperative Agreement requires SMUD and El Dorado County to create an Advisory Committee to the SMUD Board. The role of the Advisory Committee would be to receive public input and to develop reasonable and feasible measures to substantially mitigate the effects of activities related to construction of the Iowa Hill development on the surrounding communities and existing infrastructure. The agreement calls for the Advisory Committee to be convened no later than 30 days after SMUD issues its Notice of Intention to Proceed with construction of the Iowa Hill development following issuance of a license. However, SMUD and El Dorado County agreed that it would be beneficial to initiate the Advisory Committee early in order to engage the local community and address concerns.

The seven-member Advisory Committee, created in the spring of 2006, met 13 times between June 2006 and August 2007 and focused on five major areas of concern: visual, noise, transportation, fire protection, and socioeconomics. The results of the Advisory Committee's efforts were summarized in a series of matrices that are available on the SMUD relicensing web site. These matrices call for SMUD to adopt numerous measures beyond those included in the license application and with greater specificity than the Proposed Articles included in the Settlement Agreement. SMUD indicates in its filing dated December 7, 2007, that it is conducting preliminary analyses of these

mitigation measures but has not adopted any of the recommendations contained in the Advisory Committee's matrices. SMUD also indicates that it will address the mitigation measures proposed by the Advisory Committee in a supplemental document to be prepared under the California Environmental Quality Act. Commission staff requested that SMUD file any new or revised studies performed as a result of the recommendations of the Advisory Committee.

On January 31, 2008, SMUD filed a Technical Report of the Iowa Hill Pumped-Storage Development Turbidity Analysis (Stillwater, 2008), a Visual Resources Technical Report, Addendum No. 1 (CH2M HILL, 2008a), and a Transportation Route Technical Report (CH2M HILL, 2000b). We reviewed these technical reports and discuss the findings in this final EIS.

1.4.4 Comments on the Draft Environmental Impact Statement

The Commission issued its draft EIS for relicensing the UARP and the Chili Bar Project on September 21, 2007. The Commission also held a public meeting on November 5, 2007, in Placerville, California, to receive public comment on the draft EIS. In appendix A, we summarize the written and oral comments received, provide responses to those comments; and indicate, where appropriate, how we have modified the text of the final EIS.

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