18.0 Chili Bar Reservoir Flatwater Boating Study

18.1 Pertinent Issue Questions

This study focuses on the potential for low speed flatwater boating opportunities on the Chili Bar Reservoir. The Flatwater Boating Study addresses the following recreational resource question:

29. Is there a demand for flatwater recreation at Chili Bar Reservoir?

18.2 Background

The objectives of the Chili Bar Reservoir Flatwater Boating Study include:

- Identify and describe low-speed flatwater boating opportunities on Chili Bar Reservoir. Attributes analyzed shall include: aesthetics, access, location in relation to population centers, and season of use.
- Quantify how low-speed flatwater opportunities on Chili Bar Reservoir compare to other flatwater opportunities in the region. The region is defined as a 50-mile radius.
- Characterize how low-speed flatwater opportunities are affected by Project operations based on physical characteristics including reservoir elevations and project safety concerns. This will encompass operations between White Rock and Chili Bar Powerhouses.
- Characterize current and potential future demand for low-speed flatwater boating on Chili Bar Reservoir.

Because this study addresses an issue that is affected by the Upper American River Project (UARP) and the Chili Bar Project (Projects), SMUD and PG&E will cooperatively conduct the study so that results can be used in both the UARP relicensing and the Chili Bar Project relicensing. The TWG focused this study to low-speed boating based on the following circumstances: 1) narrow reservoir configuration, 2) potential hazards in the reservoir (e.g., sandbars) 3) reservoir fluctuation.

18.3 Study Area and Sampling Locations

The study area is defined as the Chili Bar Reservoir and points of access to the reservoir. Paddling opportunities that are within a one-hour drive from Placerville will be included in the study report as regional opportunities.

18.4 Information Needed From and Coordination with Other Studies

The flatwater boating study will draw, in part, upon information developed as part of other studies. Existing use information about flatwater boating use will be used from the UARP Carrying Capacity Study. Information about the current and future demand for flatwater paddling will be obtained from the Demand Study and visitor survey responses from the UARP Visitor Use and Impact Study. Hydrology data for reservoir elevations will be summarized. Information from the Aquatics Study (i.e., fish surveys, water temperature in Chili Bar) will be summarized. Information from the Pacific Gas and Electric Company shoreline recreation study relative to potential safety issues on the shoreline (e.g. safety of access points) will be summarized.

18.5 Study Methods And Schedule

Information gathering for this study will begin in April 2004 and should be completed by the end of July 2004.

Project Opportunities

The study shall describe the flatwater opportunities on the Chili Bar Reservoir. Attributes of quality shall include: aesthetics, access, contact with other users, availability of boat-in camping, seasonal constraints, impact of different reservoir elevations, travel time from population centers. A field reconnaissance will be conducted. A local guidebook author may attend these field reconnaissance visits in order to offer a reasoned judgment as to the relative

quality of the reservoir. GIS information will also be used to portray flatwater boating opportunities and constraints on the Project reservoir.

Regional Opportunities

A review of the literature of the flatwater boating opportunities within the region will be conducted to determine the relative quality of these paddling opportunities as compared to those on Chili Bar Reservoir. Local Retailers and Paddling Clubs will be interviewed to gain additional information such as paddling locations, preferences and needs.

Project Operations

Information on current Project operations will be used to determine and report the amount of surface level fluctuation that occurs at Chili Bar Reservoir under the current operation of the Projects.

Safety issues

Current safety issues and security needs will be reported as they relate to project operations. This will include researching and summarizing any applicable license orders, licensee's operator logs (it is anticipated that Pacific Gas and Electric Company would have the records of any occurrences of events reported to public safety agencies), correspondence between FERC and the Licensee, and the results of FERC Environmental, Public Use Inspections. The study may also include researching and reporting existing boating restrictions imposed on other FERC Project reservoirs, particularly re-regulating reservoirs. Some of the information collected under the Pacific Gas and Electric Company Shoreline Recreation Study regarding safety at potential access points will be summarized.

Current and Future Demand

Interviews with local retailers and public agency staff, or other entities with relevant information and interests will be conducted to investigate current trends in recreation. National publications such as Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends (Cordell 1999) and others will also be reviewed to determine trends in demand for flatwater boating recreation.

18.6 Analysis

The information developed in this study will be used to describe the Flatwater boating opportunities on Chili Bar Reservoir. The relative quality of the opportunity will be analyzed according to: aesthetics, access, contact with other users, availability of boat-in camping, seasonal constraints, impact of different reservoir elevations, and travel time from population centers. Other regional flatwater boating opportunities will also be evaluated to determine the available opportunities in the region.

Project operations, particularly reservoir elevations, will be analyzed to determine if there are changes that affect the quality of flatwater boating opportunities on the Project reservoir. Boating restrictions on the reservoir will be researched and the reasons for these restrictions will be provided.

Current and future demand for flatwater paddling and reservoir-based angling will be analyzed to assess the adequacy of the supply of opportunities within the region.

18.7 Study Output

A written report will be prepared to include documentation of findings with presentation in graphical and discussion format in a manner which appropriately answers the issue question. The study output will include a GIS map showing basic information about the reservoir including the potential location of the access points, the quality of boat launch areas, boat-in camp sites and areas with project safety concerns (GIS map will include surface elevation for low, mid and full pools). The study output will also include the summarized responses to the interviews with paddlesports retailers, paddle club members, interview sources, and Guidebook Authors. The report shall also include a synopsis of regional demand and opportunities for flatwater paddling and reservoir-based angling.

18.8 Recreation and Aesthetic TWG Endorsement

18.9 Literature Cited

None.

18.10 TWG and Plenary Group Endorsement

This study plan was approved on January 28, 2004 by the following entities of the TWG: ENF, BLM, American River Recreation Association/Camp Lotus, NPS, SWRCB, Charles Bertolette, FWS, Gold Country Paddlers/AW, EDC Parks and Recreation Dept., EDC Water Agency, Pacific Gas and Electric Company and SMUD.

8.6 Recreational Flow Study Plan (Downstream Reach below Chili Bar Dam)

8.6.1 Pertinent Issue Questions

The Recreational Flow Study addresses the following recreational resource questions:

3b. What are the effects of boating flows on water levels of UARP/Chili Bar Project reservoirs?
19. Can there be a flow management hydrology model (unimpaired hydrograph) built with a whitewater filter that estimates flows assuming UARP/Chili Bar presence and absence?
25. What are the impacts of the combined UARP and Chili Bar Projects on all types of recreation downstream of Chili Bar Dam?
31b. What are been the benefits of recreation associated with the UARP/Chili Bar Projects?
40/48. Are there any and, if so, what is the status of any identified/designated Wild and Scenic river reaches (e.g. USFS, BLM, NRI, or State of California) affected by the UARP/Chili Bar Projects?
41. What are the combined impacts to recreation relative to flows and reservoir levels of the UARP and Project 184 (Silver Creek to confluence downstream)?
69. What are the effects of UARP/Chili Bar Projects operation on whitewater boating in the 20-mile reach below Chili Bar dam?
1b. Is it possible to have consistent and regular releases that support boating in the reach below Chili Bar? ***[This question will also be addressed in the Recreation Plan because it's a trade-off question.]***
16. Can we provide whitewater boating flow information in advance for different stretches in the Project area, such as flow phone, website, flow modeling for 1-week intervals, and past releases? ***[This question will also be addressed in the Recreation Plan because it's a trade-off question.]***
74. How could operational changes to existing UARP facilities enhance the established whitewater-based recreational industry in ElDorado County? What would be the economic consequences to UARP?

8.6.2 Background

The Recreational Flow Study (downstream reach below Chili Bar Dam) primarily evaluates how operation of the UARP and Chili Bar Projects (Projects) affect the flow dependent recreational opportunities of fishing, swimming, gold panning, dredging and whitewater boating between Chili Bar Dam and Folsom Reservoir. Available existing whitewater boating information, which has been developed over the years, will be used where appropriate. New information will be developed for swimming, fishing, recreational gold panning and dredging and other types of flow-dependent day use activities. This study will evaluate potential operational changes to enhance recreational use, including constraints, issues, impacts and trade-offs. This study will work in cooperation with the Aquatics TWG to allow the Aquatics TWG to take advantage of any flows that may be considered during the recreational use evaluation.

Because this study addresses issues that are affected by the Projects, SMUD and PG&E will cooperatively conduct the study so that results can be used in both the UARP relicensing and the Chili Bar Project relicensing.

8.6.3 Study Objectives

The objectives of this study include:

- Describe existing fishing, swimming, recreational gold panning, dredging and whitewater boating opportunities and other types of flow-dependent day use activities below Chili Bar Dam.
- Identify the regional significance of existing and potential fishing, swimming, gold panning, dredging, whitewater boating opportunities and other types of flow-dependent day use activities below Chili Bar Dam.
- Determine how water year type, flow (including water temperature) and timing affect these opportunities.
- Identify the minimum, optimum and maximum flow regimes (including timing, duration and volume) for each of the identified flow-dependent recreation opportunities. Provide this information to the Aquatics TWG to determine if the Aquatics TWG can take advantage of the identified flows for study purposes.
- Answering the pertinent issue questions identified in 7.5.1

8.6.4 Study Area and Sampling Locations

The study area is defined as the SFAR between Chili Bar Dam and Folsom Reservoir. The analysis of regional significance of the recreational opportunities within the scope of the study will rely on a larger study area, which will include all rivers in Central California.

8.6.5 Information Needed From Other Studies

The pre- and post-Projects hydrograph (with data in graphical and tabular form) for the 20-mile reach below Chili Bar Dam and reservoir level information is needed from the Hydrology Study. The Recreation TWG needs hourly or better flow and reservoir level data, where available. Supply and Demand Studies will provide regional perspective information.

8.6.6 Study Methods and Schedule

The Recreational Flow Study will include several methodologies: 1) development of a preliminary range of flow scenarios to provide other TWG's, 2) review existing information, 3) interviews with key contacts, 4) analysis of hydrologic information, 5) operational constraints/inter-relationships between the Projects and 6) if necessary, a flow evaluation by representative user groups. If there is insufficient reliable data to determine minimum, optimum and maximum flows, the Licensees will develop a study plan to evaluate the suitability of different flows for all recreational activities.

1. PRELIMINARY RANGE OF FLOW SCENARIOS – A sub-group of local technical experts have developed a preliminary range of flow scenarios for whitewater boating that include the quantity of the flow in terms of the time of year, day of the week and time of day. This information is important to provide to other TWG's to make sure the effects of these possible flow scenarios on other resources are studied in the course of relicensing. The Recreation TWG reviewed the preliminary set of flow scenarios at its February 19, 2002, meeting and forwarded them to the Aquatics TWG.

2. REVIEW EXISTING INFORMATION – Existing information sources that relate to the recreational resources in the study area will be reviewed and summarized. There are planning documents and monitoring sources of information that can provide descriptions, use level information for the range of recreational uses, minimum, optimum and maximum whitewater flows and benefits of flow-dependent activities below Chili Bar Dam. These include the EDC River Management Plan (and supporting planning documents) and EDC & BLM monitoring data. Websites, recreation guides, chamber of commerce publications, BLM Land Management Plan, Wild and Scenic River Inventory (both state and federal) and similar publicly available information will be used to identify regional recreation opportunities and the existing & potential significance of the recreational resources in the study area. Information in recreational research literature regarding suitable flow, depth and water temperature ranges for swimming, recreational gold panning, dredging, and fishing will be reviewed and used to refine ranges of suitable flows for these flow-dependent activities (Note: The range of suitable flows for these uses will be initially determined from interviews with key contacts and the literature standards will be used to supplement the findings). Review ways that are used to provide current and predicted whitewater boating flow information. This information will be compiled beginning in the summer of 2002.

3. INTERVIEWS – The Licensees will conduct interviews with key contacts. The purpose of these interviews will be to obtain a perspective on the nature of and needs associated with flow-dependent recreation activities including whitewater boating, swimming, recreational gold panning, dredging and angling between Chili Bar Dam and Folsom Reservoir. Key contacts will be asked about locations of activities and flow-related needs that may exist for flow-dependent activities associated with their commercial operation or recreational interest. These local key contacts may include: agency representatives, El Dorado County Parks representatives, boating experts, fishing organizations, (i.e., fishing clubs, CSPA) and recreation facility operators in the Coloma area (American River Resort, Coloma Resort, Ponderosa Park, Marshall Gold Discovery Park, Henningson Park). A questionnaire will be developed to conduct the interviews in the summer and fall of 2002.

4. FOCUS GROUP – The Licensees will attempt to determine the range of suitable flows and water temperature for swimming, recreational gold panning, dredging and angling from interviews with key contacts and existing information as described above. Interview data will be reviewed relative to existing standards in recreation research literature to determine minimum, optimum and maximum flows for swimming, recreational gold panning, dredging and fishing. If there is insufficient reliable data to determine minimum, optimum and maximum flows, the Licensees will develop a study plan to evaluate the suitability of different flows for these activities using representative groups of users of swimmers, recreational gold panners and anglers. Potential recommended flow regimes will be forwarded to the Aquatics TWG.

5. ANALYSIS OF HYDROLOGIC INFORMATION – The available historical flow information will be summarized to display the flows in the study area under pre- and post-Project conditions. The data will be presented for the entire year. The data will be sorted by the type of water year (e.g., critically dry, dry, below normal, above normal and wet); graphs of the data as well as the tabular data will be provided. Daily flows will be presented and, where available, hourly flow data will also be presented. This information will be developed as part of the Hydrology Study, which is scheduled to have study results available late in 2002. Selected historical events reflected in the flow record such as deregulation, the power crisis and the cooperation between SMUD, PG&E and the boating community will be identified and explained as case studies. This information will be used to determine the volume and timing of water releases that have occurred under regulated conditions in the 20-mile reach below Chili Bar Dam. The suitable range of flows that are determined for whitewater boating, swimming, recreational gold panning, dredging and angling will be compared to the historical flow information and the preliminary range of flow scenarios (discussed in No. 1 above). The comparison will display the number of suitable days for each activity and the timing of their occurrence (time of year, time of day, duration and day of week, as data is available) under the pre- and post- Projects and potential flow conditions. In addition, the study will present historical hydrological flow information of similar unregulated rivers in the central region of the Sierra Nevada (i.e., Merced River) to obtain information on water temperature, seasonal and diurnal flow fluctuations if available. This data will be sorted by the type of water year similar to the pre- and post- Project flow data.

6. OPERATIONAL CONSTRAINTS AND INTER-RELATIONSHIPS OF THE PROJECTS - The study will include a description of the operational and facility constraints, opportunities and inter-relationships of the Projects including: capacities of the Chili Bar and White Rock powerhouses, reservoir storage, existing minimum flow and ramping rates requirements, and operating agreements. The water balance model will provide the methodology to assess the effects of different flow scenarios during different types of water years on the levels of the upstream Project reservoirs.

8.6.7 Analysis

The information developed in this study will be used to display the existing and potential flow-related impacts of the Projects on recreational activities below Chili Bar Dam and the level of the upstream Project reservoirs. Elevations of Slab Cr. and Chili Bar reservoirs will be looked at on a daily or hourly basis. The minimum, optimum and maximum flows for different river-related recreational activities will be compared to the pre-Project, post-Project, and preliminary flow scenarios to determine the opportunities that exist under each set of conditions. This comparison will be presented in terms of number of days available and timing (time of year and hour of day) for each activity. In addition, the projected level of the Project reservoirs will be presented for the post-Project and preliminary flow scenarios. Typical end-of-month upstream reservoir levels under each scenario will be presented over the course a year for the different types of water years. This side-by-side comparison of activities and effects on reservoir levels will be used in the Recreation Plan for the purpose of identifying the trade-offs if any, between types of recreation activities that would exist under different flow conditions.

8.6.8 Study Output

The study output will be a narrative report including summarized interview data and document reviews. Tables, charts and graphs will be used to display: 1) hydrologic data, 2) minimum, optimum and maximum flows for different activities, 3) projected upstream reservoir levels and 4) numbers of available days for different activities under different flow scenarios. Maps may be included to provide location information about flow-related recreation activities. The report will include the issue questions addressed, objectives, study area, methods, results, analysis,

discussion and conclusions. The report will be prepared in a format that allows the information to be inserted directly into (1) SMUD's Draft Environmental Assessment that will be submitted to the FERC with SMUD's application for a new license, and (2) PG&E's application for new license.

8.6.9 Preliminary Estimated Study Cost

A cost estimate for this study plan will be prepared after the Plenary Group approves the plan.

8.6.10 Recreation and Aesthetic TWG Endorsement

This study plan was approved on April 17, 2002 by the following entities of the TWG: ENF, American River Recreation Association, NPS, PCWA, BLM, California Outdoors, SWRCB, PG&E and SMUD. None of the participants at the meeting identified any objection to the content of the study plan. This study plan will be sent out to other members of the Recreation and Aesthetics TWG for their consideration. On May 1, 2002 the following participants gave Plenary Group approval to the plan: USFS, BLM, USFWS, Taxpayers of El Dorado County, Friends of El Dorado County, Camp Lotus, El Dorado County Water Agency, El Dorado County, Placer County Water Agency, California Department of Fish and Game, California State Water Resources Control Board, Pacific Gas and Electric and Friends of the River. None of the participants at the meeting said they could not "live with" this study plan.

8.6.11 Literature Cited.

None.