SACRAMENTO MUNICIPAL UTILITY DISTRICT
UPPER AMERICAN RIVER PROJECT
(FERC NO. 2101)

RECREATION NEEDS ASSESSMENT
TECHNICAL REPORT

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LIST OF ABBREVIATIONS AND ACRONYMS

Abbreviation/Acronym	Description
ADA	Americans with Disabilities Act
ADA/ABA	Americans with Disabilities-Architectural Barriers Act Guidelines
CC	Recreation Carrying Capacity Technical Report
CWW	Camino Whitewater Boating Flow Technical Report
EDC	El Dorado County
ENF	Eldorado National Forest
ENF ROG	Eldorado National Forest Recreation Opportunity Guide
ENF S&G	Eldorado National Forest LRMP Standard and Guideline
FERC	Federal Energy Regulatory Commission
FS Fee Demo	Forest Service Fee Demonstration Authority
FSH	Forest Service Handbook
FSM	Forest Service Manual
IHWW	Ice House Whitewater Boating Flow Technical Report
IIE	Information, Interpretation and Education
LRMP	Land and Resource Management Plan
NFS Land	National Forest System Land
RD	Recreation Demand Technical Report
ROS	Recreation Opportunity Spectrum
RS	Recreation Supply Technical Report
SCWW	Slab Creek Whitewater Boating Flow Technical Report
SFAR	South Fork American River
SFTR	Stream Fisheries Technical Report
SMUD	Sacramento Municipal Utility District
VAPO	Visual Assessment of UARP Operations Technical Report
VAPF	Visual Assessment of UARP Features Technical Report
VU&I	Visitor Use and Impact Technical Report
WWF	Whitewater Feasibility Technical Report

LIST OF APPLICABLE STUDY PLANS

Description

- Recreation Needs Assessment

7.3 Recreation Needs Assessment

7.3.1 Pertinent Issue Questions

The Recreation Needs Assessment addresses the following recreational resource questions:

7.a Identify recreation needs for the Project over the term of the license, including facilities from UARP to White Rock Powerhouse. ***[note: this question was separated into above and below Chili Bar]***
22. Do existing Project related transportation facilities (e.g. roads and trails) meet current/future recreation needs?
26. Can the trail from Loon Lake to Rubicon Reservoir be made more recreation friendly, or easy to walk on?
28. What needs exist for providing trail access around and through Project facilities to the river edge for fishing, portage, etc.?
65. Are there any needed or desired repairs/replacements at Project recreation facilities?
66. Are there any needed or desired measures (e.g., education, engineering, enforcement) at dispersed recreational sites near Project facilities?

7.3.2 Background

The Recreation Needs Assessment identifies existing and future recreation needs or desires associated with the Project. The analysis will synthesize information from the Recreation Supply, Demand, and Visitor Use and Impact studies to determine outstanding existing and future recreation needs of the Project.

7.3.3 Study Objectives

The objectives of this study include:

- Identifying the need for recreation opportunities
- Identifying the need for facilities
- Identifying the need for recreation sites (e.g., measures necessary at dispersed sites, trails)
- Identifying other needs (e.g., services, programs, land management)
- Answering pertinent issue questions listed above in 7.3.1

7.3.4 Study Area and Sampling Locations

The study area will include all identified recreation sites within one-quarter of a mile of Project reservoirs (including locations or river access points in the High Country, Crystal Basin and Canyonlands), as well as other recreation sites beyond the one-quarter mile zone identified in consultation with the ENF and other interested participants, and agreed to by SMUD. The study area tiers to the Recreation Supply and Demand studies. The study area for this study encompasses locations where recreation activities commonly occur as well as the area where additional Project facilities could be sited or other needs accommodated that are related to the Project.

7.3.5 Information Needed From Other Studies

This assessment will compare the results of the Recreation Supply and Recreation Demand Study. The completed reports of these two studies are needed to prepare the Recreation Needs Assessment.

7.3.6 Study Methods And Schedule

Methodology to complete the Recreation Needs Assessment will consist of a comparative review of the results of the Recreation Demand and Recreation Supply studies. Methods of comparison will be developed after the results of the Supply and Demand studies are developed in consultation with the Recreation and Aesthetics TWG. . This Assessment will be prepared in 2003 after the required studies listed in 7.3.5 are completed and the respective reports are prepared, and before completing the Carrying Capacity Study.

7.3.7 Analysis

As discussed in 7.3.6, this Assessment is a comparative analysis of study results listed in 7.3.5. The comparison will identify the unmet demand for recreational and activities, facilities, opportunities and services that may exist in the vicinity of the Project.

7.3.8 Study Output

The Assessment will be a narrative description of the recreational activities, facilities, opportunities and services activities (including management options) that could be considered in the vicinity of the Project. The discussion will be organized by geographical area (High Country, Crystal Basin and Canyonlands) and it will include the issue questions addressed, objectives, study area, analysis, discussion and conclusions (Note: methods and results will be included in the individual reports listed in 7.3.5 and will not be repeated in this assessment). The report will be prepared in a format that allows the information to be inserted directly into the Licensee-prepared Draft Environmental Assessment that will be submitted to the FERC with the Licensee's application for a new license.

7.3.9 Preliminary Estimated Study Cost

SMUD's consultant estimates that this study will cost $5,000 $\pm$ 20 percent.

7.3.10 Recreation and Aesthetics TWG Endorsement

This study plan was approved on February 22, 2002 by the following entities of the TWG: ENF, SWRCB, American River Recreation Association, NPS and SMUD. This study plan will be sent out to other members of the Recreation and Aesthetics TWG for their consideration.

The Plenary Group approved this study plan on March 6, 2002. The participants at the meeting who said they could "live with" the study plan were: Taxpayers of EDC, ENF, Camp Lotus/ARRA, SMUD, EDC, PG&E, EDC Citizens for Water, PCWA, NPS, BLM, CDFG, California Outdoors, and SWRCB. None of the participants at the meeting said they could not "live with" the study plan.

7.3.11 Literature Cited

None.

RECREATION NEEDS ASSESSMENT
TECHNICAL REPORT

SUMMARY

This Recreation Needs Assessment focuses on recreation-related improvements or additions to facilities, services and management that could be made at and near the Upper American River Project. This report draws upon the findings of the recreation studies as well as other resource studies conducted for this relicensing, and is based on the outcome of several Recreation and Aesthetics Technical Working Group (Recreation TWG) meetings, held during August through November 2004, where the participants collaboratively developed the Conclusions Matrix (approved by Recreation TWG on November 17, 2004), which consists of: 1) recreation objectives for different areas; 2) conclusions about study results; and 3) potential actions to address recreation concerns.

It should be kept in mind that both the Conclusions Matrix and this Recreation Needs Assessment were developed without consideration of jurisdiction, monetary impacts, or adverse impact to the primary purpose of the UARP – hydroelectric generation. The "needs" identified are not necessarily related to the impacts of the UARP, but they may have some bearing on the Recreation Plan ultimately developed for the UARP relicensing. Further, some needs are based solely on professional judgment or reflect a brainstorm by the Recreation TWG on a particular issue. Individual measures were included in this assessment based on the input of individual Recreation TWG participants and not based on the group's consensus. Consequently this assessment does not represent, as a whole, a complete set of measures endorsed by the Recreation TWG.

The list of measures identified in this assessment can be provided to the Settlement Negotiation Group for consideration to develop PM&E measures for the UARP. It should be noted that the Settlement Negotiations Group is not bound by these measures nor precluded from developing measures to address recreation needs that are not presented in this assessment.

The measures are identified as either a 'capital improvement' need or a 'management' need. Examples of capital improvement needs would include constructing a recreation facility, installing signs or making facility improvements to comply with the Americans with Disability Act. Examples of management needs would include providing for facility operation and maintenance needs, removing debris from reservoir surfaces or providing for patrols and monitoring at areas with recreational use. The recreation needs are also identified as either a 'current' or a 'potential' need. A current need addresses existing concerns or deficiencies and a potential need addresses concerns or deficiencies that may occur in the future.

The following tables, which are contained in this report, present summaries of the recreation needs for the general area at and near the UARP as well as specific geographic areas:

Area-wide

High Country

Crystal Basin

Canyonlands

This report does not include the recreation needs that may be associated with Pacific Gas and Electric Company's Chili Bar Reservoir or the 19.1-mile reach of the South Fork of the American River downstream of Chili Bar, which is consistent with Recreation Needs Assessment Study Plan approved by the Plenary Group on March 6, 2002. The recreation objectives, conclusions and potential actions developed by the Recreation TWG during August through November 2004, for the Chili Bar Reservoir and the reach downstream of Chili Bar are contained in *"Recreation Objectives, Conclusions and Potential Actions for the Chili Bar Reservoir and the reach downstream of Chili Bar,"* dated November 24, 2004.

1.0 INTRODUCTION

This Recreation Needs Assessment is one in a series of reports prepared by Devine Tarbell & Associates, Inc. (DTA), and The Louis Berger Group, Inc. for the Sacramento Municipal Utility District (SMUD) as an appendix to the SMUD's application to the Federal Energy Regulatory Commission (FERC) for a new license for the Upper American River Project (UARP or Project). The Recreation Needs Assessment focuses on recreation-related improvements or additions to facilities, services and management that could be made at and near the UARP. This report draws upon the findings of the recreation studies as well as other resource studies conducted for this relicensing. Additionally, the Recreation Needs Assessment is based on the outcome of several Recreation and Aesthetics Technical Working Group (Recreation TWG) meetings during August through November 2004 where the participants collaboratively developed the Conclusions Matrix, which consists of: 1) recreation objectives for different areas; 2) conclusions about study results; and 3) potential actions to address recreation concerns.

It should be kept in mind that both the Conclusions Matrix and this Recreation Needs Assessment were developed without consideration of jurisdiction, monetary impacts, or adverse impact to the primary purpose of the UARP – hydroelectric generation. The "needs" identified are not necessarily related to the impacts of the UARP, but they may have some bearing on the Recreation Plan ultimately developed for the UARP relicensing. Further, some needs are based solely on professional judgment or reflect a brainstorm by the Recreation TWG on a particular issue. Many individual measures were included in this assessment based on the input of individual Recreation TWG participants and not based on the group's consensus. Consequently this assessment does not represent, as a whole, a complete set of measures endorsed by the Recreation TWG.

The list of measures identified in this assessment can be provided to the Settlement Negotiation Group for consideration to develop PM&E measures for the UARP. It should be noted that the Settlement Negotiations Group is not precluded from developing measures to address recreation needs that are not presented in this assessment.

Unlike the technical reports prepared for this relicensing, this report has a unique outline which was agreed upon at the Recreation TWG meeting on August 10, 2004, and includes the following sections:

- **BACKGROUND** – Includes when the Recreation Needs Assessment Study Plan was approved by the UARP Relicensing Plenary Group; a brief description of the issue questions addressed, in part, by the needs assessment; the objectives of the Recreation Needs Assessment; and the study area.
- **METHODS** – A description of the methods used to prepare the Recreation Needs Assessment.
- **RECREATION NEEDS BY GEOGRAPHIC AREAS**– A general characterization of the geographic area (High Country, Crystal Basin and Canyonlands) followed by the recreation needs organized by reservoir or other specific area. This section includes a discussion of the management goals and objectives for the area, salient report findings and other supporting documentation, if available, followed by a listing of capital improvement and management needs for recreation resources at and near the UARP.

This report does not include the recreation needs that may be associated with Pacific Gas and Electric Company's Chili Bar Reservoir or the 19.1-mile reach of the South Fork of the American River (SFAR) downstream of Chili Bar, which is consistent with Recreation Needs Assessment Study Plan approved by the Plenary Group on March 6, 2002. The recreation objectives, conclusions and potential actions developed by the Recreation TWG during August through November 2004, for the Chili Bar Reservoir and the reach downstream of Chili Bar are contained in *"Recreation Objectives, Conclusions and Potential Actions for the Chili Bar Reservoir and the reach downstream of Chili Bar,"* dated November 24, 2004.

2.0 BACKGROUND

The UARP Recreation TWG developed several recreation studies to collect information to answer the issue questions relating to recreation resources associated with the UARP. In addition, other resource studies revealed relevant information about recreation resources such as angling opportunities and resource impacts potentially related to recreational uses. Based to a great extent on the findings of the many investigative studies completed for relicensing the UARP, the Recreation Needs Assessment attempts to synthesize this information and identify the existing and future recreation needs at and near the UARP. The Recreation Needs Assessment is comprehensive in a geographical sense as well as the types of capital improvements and management needs identified related to recreation resources.

The scope of public recreation needs may include items such as: providing for adequate recreation management; public health and safety; compliance with the Americans with Disabilities Act-Architectural Barriers Act Guidelines (ADA/ABA); reducing, minimizing or eliminating resource damage related to recreational use; law enforcement; providing adequate public access to UARP lands and waters; and providing and maintaining adequate public recreation facilities. Recreational use associated with the UARP primarily involves UARP reservoirs, their shorelines and UARP-related recreation facilities within the UARP boundaries.

Opinions differ regarding the degree to which the UARP may influence recreational use outside UARP boundaries. Because it is more effective to approach recreation management considering the entire landscape and the spectrum of recreation opportunities available, the recreation needs identified in this report are comprehensive in that they include all potential actions that relate or may relate to recreation at or near the UARP. The "needs" listed in this assessment were identified by one or more of the Recreation TWG participants; however, each need is not necessarily supported by all of the participants.

2.1 Recreation Needs Assessment Study Plan

On March 6, 2002, the UARP Relicensing Plenary Group approved the Recreation Needs Assessment Study Plan that was developed and approved by the Recreation TWG on February 22, 2002. On August 10, 2004, the Recreation TWG approved the outline for preparing this report. The Recreation Needs Assessment was designed to address, in part, the following issue questions developed by the UARP Relicensing Plenary Group:

Issue Question 7a	Identify recreation needs for the Project over the term of the license, including facilities from UARP to the White Rock Powerhouse.
Issue Question 22	Do existing Project related transportation facilities (e.g. roads and trails) meet current/future recreation needs?
Issue Question 26	Can the trail from Loon Lake to Rubicon Reservoir be made more recreation friendly, or easy to walk on?
Issue Question 28	What needs exist for providing trail access around and through Project facilities to the river edge for fishing, portage?
Issue Question 65	Are there any needed or desired repairs/replacements at Project-related recreation facilities?
Issue Question 66	Are there any needed or desired measures (e.g., education, engineering, enforcement) at dispersed recreational sites near Project facilities?

As discussed above, this Recreation Needs Assessment does not address UARP impacts or protection, mitigation or enhancement measures. Therefore, this report does not address Issue Question 26.

Specifically, the objectives of the study plan were to:

- Identify the need for recreation opportunities
- Identify the need for facilities
- Identify the need for recreation sites (e.g., measures necessary at dispersed sites, trails)

- Identify other needs (e.g., services, programs, land management)

The area addressed by the Recreation Needs Assessment includes all identified recreation sites within one-quarter of a mile of UARP reservoirs (including locations or river access points in the High Country, Crystal Basin and Canyonlands), as well as other recreation sites beyond the one-quarter mile zone identified in consultation with the Eldorado National Forest (ENF) and other interested participants, and agreed to by SMUD. The study area for this Recreation Needs Assessment encompasses locations where recreation activities commonly occur as well as the area where additional UARP facilities could be sited or other needs accommodated that are related to the UARP.

3.0 METHODS

There were two methods used to complete the Recreation Need Assessment. First, SMUD reviewed and synthesized the findings of various resource technical reports prepared for the UARP relicensing. The list of reports that were reviewed for pertinent information about recreation resources included:

- *Recreation Carrying Capacity (Version 0)*
- *Recreation Demand Technical Report (Version 1)*
- *Recreation Supply Technical Report (Version 1)*
- *Visitor Use and Impact Technical Report (Version 1)*
- *Whitewater Boating Feasibility Technical Report (Version 1)*
- *Ice House Whitewater Boating Technical Report (Version 0)*
- *Slab Creek Whitewater Boating Technical Report (Version 1)*
- *Visual Assessment of UARP Operations Technical Report (Version 1)*
- *Visual Assessment of UARP Project Features Technical Report (Version 1)*
- *Water Quality Technical Report (Version 1)*
- *Stream Fisheries Technical Report (Version 1)*

Second, SMUD discussed the report findings and recreation needs at a series of Recreation TWG meetings during August through November 2004. At these meetings the participants: 1) developed recreation objectives for the reaches below UARP dams, UARP reservoirs and other areas within or near the UARP boundary; 2) discussed and agreed upon general conclusions about recreation resources based on the recreation technical reports and professional judgment; and 3) developed potential actions that could be considered to meet the recreation needs and address resource concerns at or near the UARP. The information developed at these meetings was documented in an instrument referred to as the Conclusions Matrix, which was posted and updated on SMUD's relicensing bulletin board so that all participants could review the information and suggest potential actions for discussion at subsequent Recreation TWG meetings. The Conclusions Matrix was used as the foundation for developing this Recreation Needs Assessment. Specifically, the recreation objectives, the potential actions and the supporting rationale were used from the Conclusions Matrix.

It should be kept in mind that both the Conclusions Matrix and this Recreation Needs Assessment were developed without consideration of jurisdiction, monetary impacts, or adverse impact to the primary purpose of the UARP – hydroelectric generation. The "needs" may have some bearing on the Recreation Plan ultimately developed for the UARP relicensing. Some needs are based on the results of the various recreation studies, while others are based on the professional judgment of one or more members of the Recreation TWG (or a combination of both). Many individual measures were included in this assessment based on the input of individual Recreation TWG participants and not based on the group's consensus. Consequently this assessment does not represent, as a whole, a set of measures endorsed by the Recreation TWG.

This assessment consists of an inclusive list of all measures identified by the Recreation TWG that can be provided to the Settlement Negotiations Group for consideration to develop PME measures for the UARP. It should be noted that the Settlement Negotiation Group is not precluded from developing measures to address recreation needs that are not presented in this assessment.

The measures are identified as either a 'capital improvement' need or a 'management' need. Examples of capital improvement needs would include constructing a recreation facility, installing signs or making facility improvements to comply with ADA/ABA. Examples of management needs would include providing for facility operation and maintenance needs, removing debris from reservoir surfaces or providing for patrols and monitoring at areas with recreational use. The recreation needs are also identified as either a 'current' or a 'potential' need. A current need addresses existing concerns or deficiencies and a potential need addresses concerns or deficiencies that may occur in the future.

4.0 COMPREHENSIVE NEEDS

Certain recreation needs cross the boundaries of the three geographic areas addressed by this report. These include needs relating to: 1) Visitor Information, Interpretation and Education; 2) Wildlife Resistant Food and Trash Storage; 3) Developed Facility Components Consistent with Agency Planning and Policy; and 4) User Fees.

4.1 Visitor Information, Interpretation and Education

As discussed in the individual geographic sections below, there are various needs relating to Interpretation, Information and Education (II&E) for visitors. The needs for each of these areas should be considered in the context of all three geographic areas to provide appropriate II&E for visitors. Accordingly, an II&E plan should be developed that outlines the locations and schedules to provide specific programs, facilities, services or information. The plan should consider the most effective means of reaching visitors, visitor demand for II&E, and opportunities to educate visitors on laws, regulations and appropriate behavior to use when visiting the area. Individual elements of the plan are discussed in each of the geographic sections below.

4.2 Wildlife Resistant Food and Trash Storage

Another comprehensive need that exists includes actions necessary to address conflicts between humans and wildlife such as bear encounters in campgrounds. Food storage and trash storage and removal are topics that cross property and agency management boundaries and should be addressed without regard to land ownership or Recreation Opportunity Spectrum (ROS) class. Food storage and trash storage and removal should be addressed at all areas particularly in the High Country and Crystal Basin including the developed recreation facilities, dispersed recreation areas, recreation residences, organization and private camps, and resorts. Proper food storage should also be required of backpackers in the Desolation Wilderness. Visitor education would be a necessary component of any program to implement actions relating to proper food storage.

4.3 Developed Facility Components Consistent with Agency Policy

Some of the needs related to recreation include additional facilities and upgrading existing facilities. The needs are identified for each facility in this report however the specific components that become part of the design of any recreation facility located on National Forest System lands need to be examined relative to ENF planning documents and recreation facility design and planning direction included in applicable Forest Service Manuals (FSM) and Handbooks (FSH). Measures identified in this report should be consistent with existing agency policy and direction. Additionally, the measures identified in this report have not necessarily been reviewed relative to potential conflicts with other resources such as wildlife and cultural resources. The Settlement Negotiations Group should consider the measures presented in this report with the understanding that these measures have not been evaluated relative to implementation.

In some instances, identified recreation needs may be inconsistent with current management direction. As the license period is likely to extend over several decades, and implementation of some of the measures will likely occur in the long-term, it is impossible to forecast what resource agency policy and direction is likely to require. This is particularly true of facility development measures. As an example, throughout this needs assessment, the Recreation Opportunity Spectrum (ROS) classification for each location is referenced, and then the general descriptions are noted. These serve to provide background information about the general character of the management for the area and serve as guidelines in facility design and management. This being said, the measures implemented for recreational resources should be consistent with management direction that exists at the time when the planning is initiated for the specific measure or development.

4.4 User Fees

User fees have been an item discussed along with the development of many of the “needs” contained within the Needs Assessment. Each land managing agency has specific policy and legislation authorizing the collection of user fees and the use of such fees in variety of manners. Implementation of user fees should be considered to off-set costs of operation, maintenance, administration and capital replacements wherever the managing agency has authority and

direction to do so, and sufficient information exists on the effects of a fee schedule on visitors, visitation patterns, and subsequent ancillary effects.

4.5 Summary of Comprehensive Recreation Needs

The comprehensive recreation needs discussed in sections 4.1 through 4.4 are summarized in Table 4.5-1 below.

Table 4.5-1. Summary of the current and potential future comprehensive needs related to recreational use.

High Country, Crystal Basin & Canyonlands	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Area-wide	Provide for public recreation at the reservoir.		Develop an II&E Plan		Implement II&E Plan	RS: §5.2 RD: §4.8.2, Table 4.8-9, §5.1 VU&I §4.1.6 ENF S&G 21, 22, 23, 25 Professional judgment
All developed recreation facilities, dispersed recreation areas, recreation residences, organization and private camps and resorts	Public health and safety. Minimize human-wildlife conflicts.		Implement measures for proper food storage and trash removal. Require proper food storage in Desolation Wilderness. Include visitor education.		Implement measures for proper food storage and trash removal. Require proper food storage in Desolation Wilderness. Include visitor education.	VU&I: §4.1.7.1, Table 4.1-11, §4.4 Professional judgment
All developed recreation facilities on NFS land	Develop recreation facilities consistent with agency plans, policy and direction.		Review each proposed developed recreation facility and individual design components for consistency with FS plans, policy and direction.		Review each proposed developed recreation facility and individual design components for consistency with FS plans, policy and direction.	ENF LRMP FSH FSM
Area-wide, where user fees are currently not implemented.	Provide for public recreation in an environmentally sustainable manner.		Consider implementation of user fees to off-set costs of operation, maintenance, administration and capital replacements, as applicable.		Consider implementation of user fees to off-set costs of operation, maintenance, administration and capital replacements, as applicable.	

5.0 HIGH COUNTRY

5.1 General Description

The area designated as High Country includes two UARP reservoirs: Buck Island and Rubicon reservoirs as well as Rockbound Lake, a non-UARP body of water located between Buck Island and Rubicon reservoirs. The High Country consists almost entirely of public land managed by the Eldorado National Forest (ENF) with few privately owned parcels of land in the area of Spider Lake and Rubicon Springs. The reservoirs are located entirely on public land managed by the ENF. Buck Island is located in an area the agency manages as general forest and Rubicon Reservoir is located in an area the agency manages as wilderness (Desolation Wilderness). The area is generally accessible in the non-winter months from June through October. There is no paved motorized access to the area however motorized access using 4WD is available on the Rubicon OHV Route. Non-motorized access is available to the High Country on the Rubicon Hiking Trail and other trails. Bicycling is allowed on the non-motorized trails in the High Country that are not located within the Desolation Wilderness. There are no developed recreation facilities in the High Country other than the motorized and non-motorized trails.

5.2 Rubicon Reservoir

This reservoir has a surface area of 108 acres and it has a storage capacity of 1,450 acre-feet. The reservoir is located at 6,545 feet in elevation and it is the uppermost reservoir in the UARP. The slopes around the reservoir are fairly gentle and the Rubicon Hiking Trail is located along the west shoreline. A map of Rubicon Reservoir is provided in Figure 5.2-1.

5.2.1 Recreation Management Goal and Objectives

The reservoir has a 'Primitive' Recreation Opportunity Spectrum (ROS) classification. The general description for this designation are:

- Interaction between visitors is very low and the evidence of other users is minimal.
- Motorized use is prohibited.
- Recreation development would not be provided.

The Visual Quality Objective (VQO) is 'Preservation', recognizing that with the presence of the UARP, the ENF goal is to move as close to this condition as is reasonably possible.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

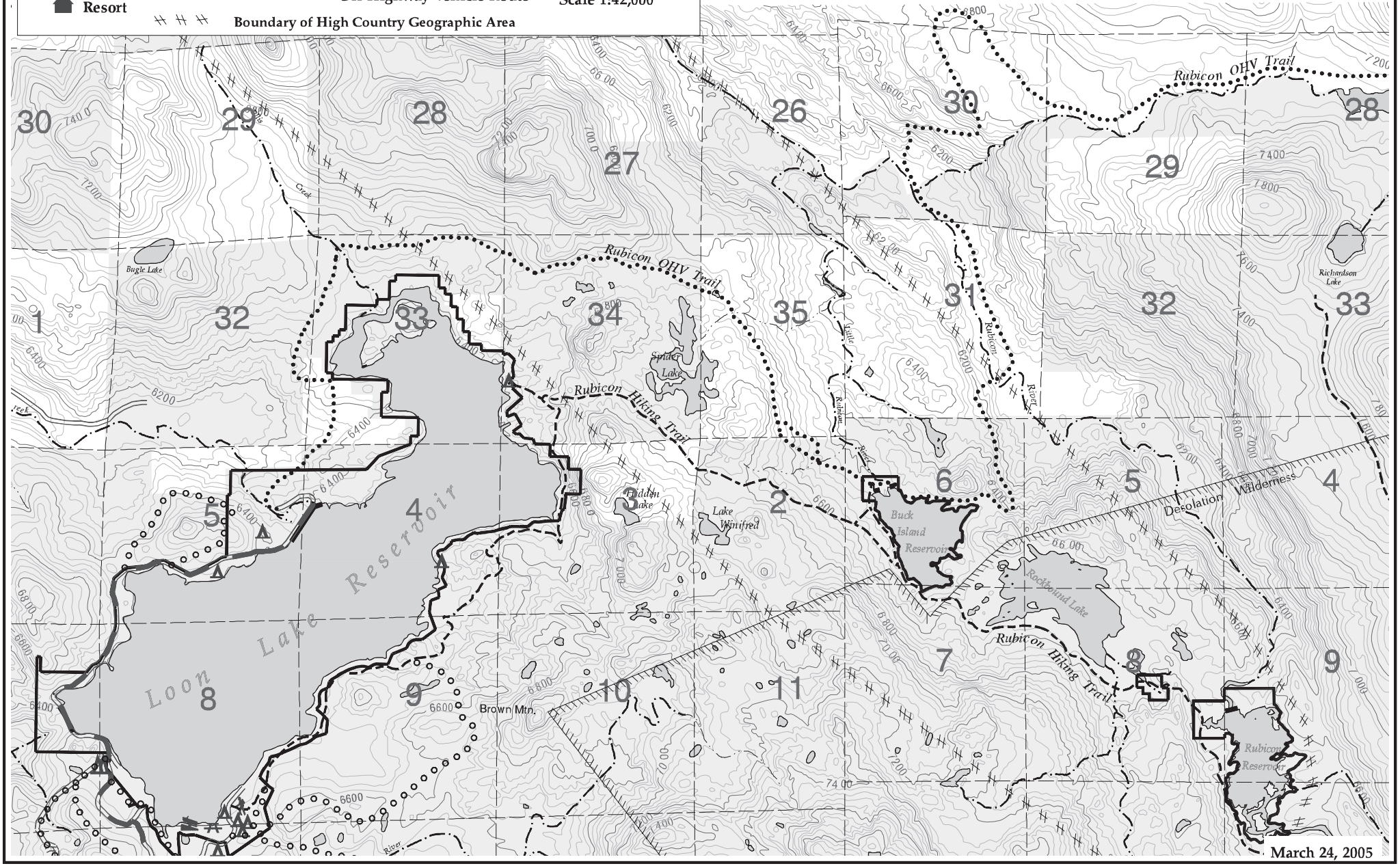
- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir consistent with Desolation Wilderness guidelines.
- Address resource impacts related to recreation use.
- Manage for year round recreation use with emphasis between June 15 and Oct. 1.

Figure 5.2-1
Developed Facilities in the High Country

- Campground
- Day Use/Picnic Area
- Visitor Information
- Boat Launch
- Sanitation Station
- Resort
- Chalet/Hut
- Hiking Trail
- Cross Country Ski Trail
- Off Highway Vehicle Route
- Boundary of High Country Geographic Area
- Project Boundary

North

Scale 1:42,000



March 24, 2005

5.2.2 Supply Factors

5.2.2.1 Developed Recreation Facilities

Because Rubicon Reservoir is surrounded by the Desolation Wilderness and is managed consistent with the Desolation Wilderness Guidelines, there are no developed recreation facilities at this reservoir other than trails.

5.2.2.2 Dispersed Recreation

Dispersed recreation occurs at the reservoir, mainly along the western shoreline near the Rubicon Hiking Trail. The ENF manages overnight use in this area by requiring wilderness permits and there is a quota on the number of permits it issues. Evidence of campfires was observed in areas where the ENF restricts such use. There is one dispersed site below the dam where resource damage was observed as a result of recurrent recreational use taking place too close to the bank of the Rubicon River.

5.2.2.3 Interpretation, Information and Education

There are no existing interpretation, information and education opportunities at this reservoir. Visitors receive information at the location where they obtain a wilderness permit and through any posted information at the trailheads or through on-site personal communication with ENF staff patrolling the area.

5.2.2.4 Recreation Activities

Recreation activities at and near this reservoir include dispersed camping, rock climbing, hiking, picnicking, fishing, hunting, swimming and scenic viewing. Motorized boating use is not allowed on the reservoir.

5.2.2.5 Regional Supply

There are many small, high elevation reservoirs and lakes located throughout the Sierra Nevada Mountain Range including those located in areas designated as wilderness. These reservoirs and lakes are often near a trail and provide waterside settings for overnight dispersed use. Similar to Rubicon Reservoir, these other small lakes in the wilderness, which have trails nearby, provide hiking and equestrian access for visitors.

5.2.2.6 Suitable and Available Sites

A discussion of suitable and available sites for recreation facility development at Rubicon Reservoir is not appropriate since the area is managed consistent with the Desolation Wilderness Guidelines and the ROS classification is ‘Primitive’.

5.2.3 Demand Factors

There are several elements of recreation demand that should be considered for recreation planning purposes at Rubicon Reservoir. The Desolation Wilderness is one of the most heavily used wildernesses in the country and this popularity is not likely to decline. Although the demand will likely continue to grow, use levels for overnight use will be controlled through wilderness permit quotas. Currently day use permits are required but there is not a quota on the number of day users allowed in the Desolation Wilderness. Increasing trends in hiking and walking combined with the projected growth in day use could increase day use visitation at the reservoir.

Visitor surveys collected at the Loon Lake Wilderness Trailhead reported information about visitor conflicts and desired improvements. No specific areas were identified where conflicts were occurring however there were a few respondents who would prefer to see a reduction in the motorized trail system and more enforcement of OHV regulations. Approximately half of those surveyed indicated some desired change to the non-motorized trail system. Improvements reported in the survey responses included more trails, better trail maintenance, improved signage and trails for biking.

5.2.4 Areas of Concern Related to Recreation Use

5.2.4.1 Environmental

Currently there are occasional instances where visitors have built campfires at Rubicon Reservoir and this is prohibited by the ENF. Although the area currently shows little evidence of human activity, the number and locations of dispersed overnight use sites is dynamic. Consequently, areas and types of inappropriate use may emerge in the future and site conditions may change.

5.2.4.2 Social

No user conflicts were identified at this reservoir. Overnight wilderness quotas and restrictions on motorized activities will likely minimize the potential for conflicts to develop at this reservoir in the future.

Aesthetic values are important at Rubicon Reservoir because it is located in the Desolation Wilderness. As the reservoir level lowers, stumps, rocks and shoreline become exposed which can lessen the visual appeal at the reservoir for visitors.

5.2.5 Recreation Needs At and Near Rubicon Reservoir

5.2.5.1 Capital Improvement Needs

Since Rubicon Reservoir is surrounded by the Desolation Wilderness and managed consistent with Desolation Wilderness Guidelines, developed recreation facilities are not consistent with the ‘Primitive’ ROS classification.

There is a need to restore the area below the Rubicon Dam where recurrent recreational and administrative use has caused resource damage. This potential action is a current need and it would respond to the concern for addressing resource impacts related to recreational use.

5.2.5.2 Management Needs

There is a need for monitoring recreational use and its potentially related impacts in this area. Elements of the monitoring program should include documenting use levels, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a funding mechanism for restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with the Desolation Wilderness guidelines. A monitoring program is a current need which should continue into the future.

Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as unauthorized campfires, trash and overnight visitors staying at or near the reservoir without a wilderness permit. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols are a current need for the Rubicon Reservoir and these patrols should continue into the future.

There is a need to continue to prohibit motorized boating use on the reservoir to manage recreational use consistent with the Desolation Wilderness Guidelines which prohibit the use of motorized equipment. To address concerns relating to visual quality, the reservoir could be operated to maintain the water level as high as possible during the recreation season, or stumps could be removed to address visual concerns. These potential actions are current needs that would achieve the visual quality objective of ‘Preservation’.

The recreation needs identified at and near Rubicon Reservoir are listed in Table 5.2-1.

5.3 Buck Island Reservoir

This reservoir has a surface area of 78 acres and it has a storage capacity of 1,070 acre-feet. The reservoir is located at 6,436 feet in elevation and the slopes around the reservoir are fairly gentle. The Rubicon Hiking Trail is located near the southern shoreline and the Rubicon OHV Route is located adjacent to the northern shoreline. There are numerous routes created by OHV users leading from the Rubicon OHV route to the shoreline between the dam and the easternmost point of the reservoir. A map of Buck Island Reservoir is provided in Figure 5.2-1.

Table 5.2-1. Summary of the current and potential future needs related to recreational use at and near Rubicon Reservoir.

Rubicon Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Dispersed overnight use site located downstream of dam	Address resource impacts related to recreation use.	Restore this area.				RS: §4.2.1.4; ENF staff field observations
Shoreline within ¼ mile of reservoir	Provide for managing existing and projected recreation use at the reservoir consistent with Desolation Wilderness Guidelines. Provide for public health & safety. Address resource impacts related to recreation use.		Continue patrols.		Continue patrols.	RD: § 4.8.2, Table 4.8-9, §5.2; RS: §4.2.1.4 Desolation Wilderness Mgmt. Guidelines: p. 34
	Provide for managing projected recreation use at the reservoir consistent with Desolation Wilderness Guidelines. Provide for public health & safety. Address resource impacts related to recreation use.		Continue monitoring program.		Continue monitoring program.	Desolation Wilderness Mgmt Guidelines: p. 50-63
Reservoir Surface	Manage reservoir consistent with Desolation Wilderness Guidelines to prohibit the use of motorized equipment.		Continue to prohibit motorized boating on the reservoir.		Continue to prohibit motorized boating on the reservoir.	Desolation Wilderness Mgmt. Guidelines p. 31
	Meet VQO objective of 'Preservation'		Consider maintaining reservoir level as high as possible during the recreation season, or consider stump removal.			Desolation Wilderness Mgmt. Guidelines p. 31 VAPF: §5.0

5.3.1 Recreation Management Goal and Objectives

The reservoir has a 'Semi-primitive Motorized' ROS classification. The general descriptions for this designation are:

- Concentrations of users are low but there is often evidence of other users.
- Motorized use is permitted and access roads to facilitate resource management shall be Maintenance Level I and II local roads.
- Recreation developments would be Level II.

The Visual Quality Objective (VQO) is 'Retention'.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir.
- Mitigate resource impacts related to recreation use.
- Manage for year round recreation use with emphasis between June 15 and Oct. 1.
- Manage OHV use and dispersed motorized camping near the reservoir to protect natural resources.

5.3.2 Supply Factors

5.3.2.1 Developed Recreation Facilities

Other than the Rubicon Hiking Trail and the Rubicon OHV Route, there are no other developed recreation facilities at Buck Island Reservoir.

5.3.2.2 Dispersed Recreation

Dispersed recreation occurs at the reservoir. Along the shoreline north and east of the dam motorized dispersed camping is extensive and the area receives heavy use since it is adjacent to the Rubicon OHV Route. Users have created multiple points for motorized access to the shoreline where many fire rings were observed, many of which were too close to the waters edge. Additionally, users have constructed primitive facilities at dispersed sites such as toilets, tables, signs, shelves, and benches. Observed damage at these sites included cut and damaged vegetation, erosion and compacted soil, tire tracks through wet areas, oil and transmission fluid on soil and rocks, trash, and improperly disposed human and animal waste.

There are a few dispersed overnight sites along the southern end of the reservoir accessed by hikers near the Rubicon Hiking Trail. These sites appear to receive little use, appear to be located at an adequate distance from the Rubicon Hiking Trail and shoreline and resource damage was not observed.

There is a trail between the Rubicon Hiking Trail and the Buck Island Dam that is used by SMUD for operating and maintaining the UARP. This trail is also used by hikers and mountain bikers and this trail is not designed or constructed to Forest Service standards; this trail is not included in the ENF transportation system so the ENF does not maintain this trail.

5.3.2.3 Interpretation, Information and Education

There are no existing interpretation, information and education opportunities at this reservoir. Visitors receive information at trailheads where information is posted, through the OHV information kiosk authorized by the ENF below Loon Lake Dam and through on-site personal communication with ENF patrol staff or EDC Sheriff deputies, and the Friends of the Rubicon (FOTR) volunteers patrolling the Rubicon OHV Route.

5.3.2.4 Recreation Activities

Recreation activities at and near this reservoir include OHV use, dispersed camping, mountain biking, hiking, picnicking, fishing, hunting, swimming and scenic viewing. The vehicular route of access to the reservoir is by the Rubicon OHV Route, which is narrow and requires 4WD and high clearance. Consequently, vehicles cannot tow boat trailers to this reservoir.

5.3.2.5 Regional Supply

There are many small, high elevation reservoirs and natural lakes in the region however there are few reservoirs where visitors can access a remote lakeside setting by vehicle at the high elevations of the Sierra Nevada and camp at the location of their choice. Demand for this area by OHV users along the Rubicon OHV Route is extremely high during the summer. Nearby and within 1.5 miles, Spider Lake affords visitors a similar opportunity.

5.3.2.6 Suitable and Available Sites

If developed recreation facilities were provided, the applicable development scale would be Level II. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Little site modification. Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimized contacts between users. Motorized access provided or permitted. Primary access over primitive roads. Interpretive services informal.

The existing condition at Buck Island Reservoir is that many of the desirable sites for motorized dispersed overnight use are not suitable from the standpoint of potential resource impacts. This condition is exacerbated by high numbers of users associated with the Rubicon OHV Route. Consequently, management actions should focus on site protection whereby the unsuitable sites currently used for motorized dispersed camping should be restored, their use for overnight use should be eliminated and overnight visitors need to be informed that these areas are not available

for their use. Additionally, the gentle slopes and abundant granite slabs attract OHV users to venture off of designated routes which has caused widespread resource damage. This condition should also be remedied through site controls.

5.3.3 Demand Factors

The most determinant demand factor influencing recreation use at Buck Island Reservoir is the demand related to the Rubicon OHV Route which passes on the northern shoreline of the reservoir. It is apparent that this reservoir is in high demand as evidenced by the extensive, recurrent high visitation and substantial resource damage. This route is known nationally as well as internationally and it attracts 45,000 to 60,000 visitors each year. Although the demand associated with the OHV route will likely continue to grow, El Dorado County has initiated a planning effort, which may include actions to manage the level of future use on the trail.

To a much lesser extent, the increasing trends in hiking and walking combined with the projected growth in day use could also influence use levels at the reservoir. Traveling from the Loon Lake Trailhead, this reservoir is the first trailside body of water past Loon Lake Reservoir and it is within a reasonable distance for hikers to reach the reservoir and return to the trailhead within a day. This circumstance could make this reservoir a likely place to see an increase in the demand for day hiking opportunities.

Visitor surveys collected at the Loon Lake Wilderness Trailhead reported information about visitor conflicts and desired improvements. No specific areas were identified where conflicts were occurring however there were a few respondents who would prefer to see a reduction in the motorized trail system and more enforcement of OHV regulations. Approximately half of those surveyed indicated some desired change to the non-motorized trail system. Improvements reported in the survey responses included more trails, better trail maintenance, improved signage and trails for biking.

5.3.4 Areas of Concern Related to Recreation Use

5.3.4.1 Environmental

Widespread motorized dispersed camping and OHV use occurring off of designated routes is prevalent along the shoreline between the dam and the easternmost point of the reservoir. This area coincides with the travel corridor of the Rubicon OHV Route. Resource damage observed along this area of the shoreline includes cut and damaged vegetation, erosion and compacted soil, tire tracks through wet areas, oil and transmission fluid on soil and rocks, trash, and improperly disposed human and animal waste.

5.3.4.2 Social

Although no user conflicts were identified specifically at this reservoir, the visitor surveys did reveal that some user groups do not value the impacts and activities associated with OHV use. In particular visitor responses indicated that some visitors disliked the noise, rowdy behavior, pollution and erosion associated with OHV use.

Currently, it appears that the means of access (vehicular vs. hiking) tends to separate users at the reservoir. OHV use occurs near the Rubicon OHV Route, which traverses the northern shoreline and hikers access the southern and western portions of the shoreline by way of the Rubicon Hiking Trail. This separation could account for the current lack of user conflicts between hikers and OHV users at and near the reservoir.

5.3.5 Recreation Needs At and Near Buck Island Reservoir

5.3.5.1 Capital Improvement Needs

There is a need to institute site controls, remove user created amenities, restore areas and restrict use where inappropriate recreation use is occurring at Buck Island Reservoir in the area accessed by the Rubicon OHV Route. Requiring users to stay in designated camping sites could address impacts associated with overnight use in the area. These potential actions are current needs and would respond to the concern for addressing resource impacts related to recreational use.

Between the Rubicon Hiking Trail and the gaging station near Buck Island Dam there is a need to improve the existing trail or, alternatively, develop another non-motorized trail. Similarly, there is a need to improve the primitive non-motorized trail that parallels the shoreline between the Buck Island Dam and the southern point of the reservoir where it joins the Rubicon Hiking Trail. Both of these trails should be improved to meet Forest Service trail standards so that they may be incorporated into the ENF transportation system. These potential actions would provide a formalized route of access for UARP operation and maintenance while improving public access to the reservoir. Additionally, there is a need to relocate the Rubicon OHV trail out of the area inundated by the increase of storage at Buck Island Reservoir.

5.3.5.2 Management Needs

Because there is a broader need to address the impacts occurring along the entire route of the Rubicon OHV Route and not just the portion of the trail that is in the vicinity of Buck Island Reservoir, a management plan for the trail should be developed that considers a permitting system for both commercial and private use and a system of designated campsites along the route. The needs relating to the Rubicon OHV Route are discussed in Section 5.4.2.

There is a need for monitoring recreational use and its potentially related impacts at and near Buck Island Reservoir. Elements of the monitoring program should include documenting use levels, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a mechanism for funding restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP and El Dorado County Rubicon Trail Plan). A monitoring program is a current need which should continue into the future.

Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as unauthorized OHV use, compliance with site closures, pollution and trash. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols are a current need for the Buck Island Reservoir, which should continue into the future.

To address concerns relating to visual quality, the reservoir could be operated to maintain the water level as high as possible during the recreation season, or the stumps could be removed to address visual concerns. These potential actions are current needs that would achieve the visual quality objective of 'Retention'.

The recreation needs identified at and near Buck Island Reservoir are listed in Table 5.3-1.

5.4 Other Areas in the High Country

There are other areas in the high country that are linear features on the landscape and require separate description and discussion. However, the general descriptions of factors relating to supply and demand that are provided for Rubicon and Buck Island reservoirs apply to these other areas as well. This section includes a general description of the subject area, a discussion of the goals and objectives for these areas that were developed by the Recreation TWG, and identifies the areas of environmental and social concern and the needs for these areas. The areas that are discussed in this section include: the Rubicon Hiking Trail, the Rubicon OHV Route and the Pleasant Lake Campground Trail which extends between Pleasant Campground and the Rubicon Hiking Trail.

5.4.1 Rubicon Hiking Trail

The Rubicon Hiking Trail originates at the Loon Lake Wilderness Trailhead, which is located at the south end of Loon Lake Reservoir. This route is the primary northern access route to the Desolation Wilderness and adjacent non-wilderness areas of the ENF. The pertinent goals and objectives for this trail are to maintain this trail for non-motorized use consistent with the ROS classifications applicable to the surrounding areas of Semi-primitive motorized and Primitive. The trail is also used by SMUD for access to Buck Island and Rubicon reservoirs for operation and maintenance purposes. The Desolation Wilderness Plan acknowledges SMUD's need for access to operate and maintain the UARP. Consequently, the guidelines in the plan allow vehicular access by SMUD on this trail up to the wilderness boundary.

Table 5.3-1. Summary of the current and potential future needs related to recreational use at and near Buck Island Reservoir.

Buck Island Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Dispersed overnight use sites located north and east of the dam	Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.	Institute site controls, closures, restore this area. Designate sites for overnight use.	Address increased demand for overnight use by developing a trail-wide plan for the Rubicon OHV Route that addresses use levels, commercial use, sanitation, dispersed overnight use along the trail, visitor education, law enforcement.			RS: §4.2.1.4 ENF S&G 27, 46, 83 ENF ROG (Pick Your Own Spot)
Primitive trail between Rubicon Hiking Trail and gaging station near dam	Address resource impacts related to recreation use. Provide public access to reservoir. Meet increased demand for hiking and day use.	Design and construct this non-motorized trail to standard. Include the trail in the ENF transportation system.			Provide for trail maintenance	RS: §4.2.1.4 RD: §4.8.1, Table 4.8-8, §5.1.2 FERC Guidelines ENF S&G 115

Table 5.3-1. Summary of the current and potential future needs related to recreational use at and near Buck Island Reservoir.

Buck Island Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Primitive trail along shoreline between dam and southernmost point of the reservoir	Address resource impacts related to recreation use. Provide public access to reservoir. Meet increased demand for hiking and day use.	Design and construct this non-motorized trail to standard. Include the trail in the ENF transportation system.			Provide for trail maintenance	RS: §4.2.1.4 RD: §4.8.1, Table 4.8-8, §5.1.2 FERC Guidelines ENF S&G 115
Northern shoreline in the vicinity of the Rubicon OHV Route	Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.	Close and restore inappropriate, user created routes and reroute trail away from shoreline				RS: §4.2.1.4 ENF LRMP S&G's 27, 46, 83
Shoreline within ¼ mile of reservoir	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC) Provide for public health & safety. Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.		Continue patrols		Continue patrols	ENF LRMP S&G115

Table 5.3-1. Summary of the current and potential future needs related to recreational use at and near Buck Island Reservoir.						
Buck Island Reservoir	**Overall Long-term Need or Current Deficiency Being Addressed**	**Current Needs or Deficiencies**		**Potential Future Needs**		**Reference to Supporting Study Results or Other Reference**
		Capital Improvements	**Management**	**Capital Improvements**	**Management**	
Shoreline within ¼ mile of reservoir	Provide for managing projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.		Continue monitoring program.		Continue monitoring program.	ENF LRMP ch. 5, Table V-1
Reservoir Surface	Meet VQO objective of 'Retention'		Consider maintaining reservoir level as high as possible during the recreation season or consider stump removal.			VAPF: §5.0

The trail is located in the corridor of an access road used for construction of Buck Island and Rubicon reservoirs. Portions of the trail are surfaced with 3 to 6-inch spoil material from the UARP tunnels. This material provides an uneven and uncomfortable tread, which could potentially be dangerous for hiking and equestrian use. Some portions of the trail have vegetation encroaching into the travel way and there are areas with erosion. The Desolation Wilderness Plan states that this trail is designated for hiker and equestrian use.

A map showing the location of the Rubicon Hiking Trail is provided in Figure 5.2-1.

5.4.2 Rubicon OHV Route

The Rubicon OHV Route is known both nationally as well as internationally as one of the best OHV opportunities. The route is an extremely popular attraction with estimated use on a summer weekend between 200 and 500 OHV's, and approximately 45,000 to 65,000 visitors annually during the three summer months. A map from the mid 1950s shows the Rubicon OHV Route historically ran from Georgetown to Lake Tahoe via Wentworth Springs Road. Today, most OHV enthusiasts access the trail at the Ellis Creek Route which was created by the building of the Loon Lake Dam (via Ice House Road) rather than at Airport Flat Campground (via Wentworth Springs Road) which remains accessible today andis the historic means of accessing the trail. At Loon Lake, OHV users drive across the Loon Lake Main Dam to its base where an undeveloped staging area exists. From the base of Loon Lake Main Dam, users drive on a short route, known as the Ellis Creek Tie, to connect with the historic Rubicon OHV route. The ENF recently granted an easement to EDC for this road, and the EDC is currently pursuing an easement for the portion that passes through the private land. The entire length of the Ellis Creek Tie between Loon Lake Dam and Wentworth Springs Road is a county road.

The ENF LRMP lists the Rubicon OHV Route as a candidate for the National Recreation Trails System, however there has been little effort to make it such. The route itself is a county road under jurisdiction of El Dorado County. There are approximately six miles of the trail located on National Forest System (NFS) land between Airport Flat Campground (T.13N., R.14E., section 11) and the ENF boundary (T.14N., R.16.E, section 30).

In recent years increasing numbers of OHV users are using non-street legal vehicles on the route; they transport these vehicles to the area on trailers since they are not licensed. This circumstance creates a need for staging areas for parking vehicles and trailers.

Resource damage associated with OHV use on the Rubicon OHV Route includes dispersed overnight use in sensitive or other areas inappropriate for recreation use, OHV use occurring off of designated routes, trash, improperly disposed human and animal waste, pollution, erosion, soil compaction and vegetation damage. Many OHV users camp at dispersed sites along the route, including along the north shore of Buck Island Reservoir and the north shore of Loon Lake Reservoir where impacts of this activity are easily observed. As further evidence of the resource impacts associated with OHV use on the Rubicon OHV Route, the EDC and ENF temporarily closed (summer of 2004) approximately 300 acres surrounding Spider Lake to public access because of sanitation concerns associated with excessive dispersed motorized camping. Spider

Lake is adjacent to the Rubicon OHV Route, between Loon Lake Reservoir and Buck Island Reservoir.

Currently EDC permits volunteers (FOTR and others) to staff an information hut in the area below the main Loon Lake Main Dam for the purpose of providing visitors information about the route and education about rules, regulations and how to minimize resource impacts associated with their visit.

The existence of non-game fish species in the Rubicon River is another resource concern that is likely attributed to vehicular access provided by the Rubicon OHV Route. The presence of these species in a location where cold-water species of fish would typically be found, is probably the result of anglers releasing minnows and other species used for bait angling into the watercourse, particularly in the area of Rubicon Springs.

A map showing the location of the Rubicon OHV Route is provided in Figure 5.2-1.

5.4.3 Pleasant Campground Trail

There is a trail connecting the Rubicon Hiking Trail to Pleasant Campground, a UARP-related recreation facility located on the shoreline of Loon Lake Reservoir. This trail has deep ruts with areas of erosion, vegetation encroachment and it is not clearly signed for visitors. This trail is also used by SMUD for access to Buck Island and Rubicon reservoirs. Operations and maintenance staff boat across the reservoir to Pleasant Campground and use this trail to connect to the Rubicon Hiking Trail, which leads to the reservoirs. A map showing the location of the Pleasant Campground Trail is provided in Figure 5.2-1.

5.4.4 Recreation Needs at Other Areas in the High Country

5.4.4.1 Capital Improvement Needs

Rubicon Hiking Trail

There is a need to reconstruct, and if necessary, relocate portions of the Rubicon Hiking Trail and provide adequate signage on the trail between the Loon Lake Wilderness Trailhead and Rubicon Reservoir. This potential action is a current need that would provide adequate recreation facilities and address resource impacts related to recreational use. This potential action also responds to the projected increase in hiking and day use and would address resource impacts such as erosion and bring the trail into compliance with non-motorized trail standards. Although this trail is a non-motorized trail, there is also a need to accommodate access by SMUD using quad runners for UARP operation and maintenance. This would be enabled by reconstructing and maintaining the trail with a suitable clearing width and trail tread up to the wilderness boundary.

Rubicon OHV Route

Capital improvement needs associated with the Rubicon OHV Route may be necessary however this determination should rely on the planning effort being conducted by the EDC. Consequently, there are no capital improvement needs identified at this time for the Rubicon OHV Route, as a whole. However, the reader is referred to section 4.3.5.1 for capital improvement needs at Buck Island Reservoir that relate to relocating portions of the Rubicon OHV Route to avoid sensitive areas near the shoreline of this reservoir.

Nearby and directly associated with the Rubicon OHV Route, there are management needs associated with the Ellis Creek Tie that would determine whether capital improvements are needed. The Ellis Creek Tie is a shorter route of access to the Rubicon OHV Route than the historical route along the Wentworth Springs Road. Presently, this short cut to the Rubicon OHV Route attracts many of the Rubicon OHV Route users to camp along the shoreline of Loon Lake between the two main dams and the existing visitor density in this area exceeds the ROS standard. There is a management need to include the Ellis Creek Tie, and the associated recreational use between the two main dams, in the EDC planning effort for the Rubicon OHV Route and to address the needs for capital improvement such as designated, hardened staging areas, restrooms, trash receptacles and visitor information and education, to address visitor needs and resource impacts associated with the continued access provided by this route. It would be desirable to provide a specific campground for OHV users and additional parking or staging areas in locations away from Loon Lake. Paving the route from the Loon Lake Main Dam to the existing staging area would address resource impacts relating to erosion. These are potential future needs that are dependent upon the EDC planning effort for the Rubicon OHV Route.

Pleasant Campground Trail

There is a need to reconstruct, install directional signs and maintain the Pleasant Campground Trail. This potential action is a current need that would provide for adequate recreation access for visitors and address resource impacts such as erosion and address the concern for public safety. Reconstructing the trail with sufficient width and tread suitable for access using quad runners would allow continued motorized access for UARP operation and maintenance.

5.4.4.2 Management Needs

Rubicon OHV Route

The Rubicon OHV Route is perhaps the recreation feature with the greatest associated needs in the High Country. The overlapping jurisdictions of the ENF and EDC, extremely high use levels, widespread resource impacts, serious sanitation problems and commercial use of the route create a need for a comprehensive planning effort for the trail. This is a current management need and consideration should be given to implementing a permit system, providing for sanitation needs at staging areas as well as along the trail (e.g. wag bags), designating sites for overnight use, instituting quotas, defining a season of use and providing for visitor education and enforcement of rules and regulations. Since the county road now includes the staging area

below the main Loon Lake Dam, the EDC planning process for the Rubicon OHV Route should address the management needs of the staging area.

Rubicon Hiking Trail, Rubicon OHV Route and Pleasant Campground Trail

There is a need for monitoring recreational use and its potentially related impacts on the Rubicon Hiking Trail, Rubicon OHV Route and Pleasant Campground Trail. Elements of the monitoring program should include documenting use levels, visitor satisfaction, detecting resource impacts related to recreational use (e.g. areas with unauthorized OHV use, sanitation, erosion, human/wildlife interaction) and, if necessary, a mechanism for funding restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at these areas. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP and El Dorado County Rubicon Trail Plan). A monitoring program is a current need for the Rubicon Hiking Trail and Pleasant Campground Trail, which should continue into the future. Monitoring associated with the Rubicon OHV Route and the Ellis Creek Tie is a potential future need that should be based on the pending Rubicon OHV Trail Plan.

Patrols in these areas are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal, perform minor trail maintenance and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as unauthorized OHV use, compliance with site closures, pollution and trash. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols would also respond to the visitors identified need for increased enforcement of rules and regulations. Patrols are a current need for these areas and patrols should continue into the future.

Capital improvements require funding for operation and maintenance (O&M) and there is a need to provide funding support for O&M. This potential action is a current need for the Pleasant Campground Trail and the Rubicon Hiking Trail that would respond to the need for adequate public recreation facilities, providing for public health and safety, meeting visitor needs and providing for existing recreational use at the UARP. O&M funding for any capital improvements that may be constructed in response to the pending Rubicon OHV Trail Plan are potential future actions would respond to these same needs.

The recreation needs associated with the Rubicon OHV Route, Rubicon Hiking Trail and Pleasant Lake Campground Trail are listed in Table 5.4-1.

Table 5.4-1. Summary of the current and potential future needs related to recreational use at other areas in the High Country: Rubicon Hiking Trail, Rubicon OHV Route and Pleasant Campground Trail.						
Other Areas in the High Country	**Overall Long-term Need or Current Deficiency Being Addressed**	**Current Needs or Deficiencies**		**Potential Future Needs**		**Reference to Supporting Study Results or Other Reference**
		Capital Improvements	**Management**	**Capital Improvements**	**Management**	
Rubicon Hiking Trail	Address resource impacts related to recreation use. Attain trail standards for non-motorized use. Provide adequate access for recreation use and UARP operation & maintenance. Meet increased demand for hiking and day use.	Reconstruct or relocate portions of the trail. Provide and maintain suitable trail width and tread sufficient for motorized access (quads) for UARP operations and maintenance up to wilderness boundary.	Continue to allow motorized access by SMUD for UARP operation and maintenance.	Maintain suitable trail width and tread sufficient for motorized access (quads) for UARP operations and maintenance up to wilderness boundary.	Provide for trail maintenance	RS: 4.2.1.3 ENF Staff Observations ENF S&G 106 FERC Guidelines Desolation Wilderness Guidelines state trail is intended for hiker & equestrian use
	Meet increased demand for hiking and day use. Provide adequate recreation facilities.	Provide adequate signage on the trail			Provide O&M.	RD: §4.8.2, Table 4.8-9 ENF S&G 108
	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use.		Continue patrols		Continue patrols	ENF S&G 115

Table 5.4-1. Summary of the current and potential future needs related to recreational use at other areas in the High Country: Rubicon Hiking Trail, Rubicon OHV Route and Pleasant Campground Trail.

Other Areas in the High Country	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Rubicon Hiking Trail	Provide for managing projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use.		Continue monitoring program.		Continue monitoring program.	ENF LRMP 5-7
Rubicon OHV Route-Entire Route	Provide for managing existing and projected recreation use consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use. Meet needs identified in visitor surveys. Meet ENF guidelines to allow OHV use only on designated routes.		Develop a trail-wide plan that addresses use levels, commercial use, sanitation, dispersed overnight use along the trail, visitor education season of use, facilities, law enforcement.	Consider locations away from Loon Lake for staging, parking and campgrounds specifically for Rubicon OHV users.		RD: §4.8.2, Table 4.8-9, §5.1.2 RS: §4.2.1.4 ENF Staff Observation Professional Judgment ENF LRMP S&G's 27, 46, 83
			Continue patrols.		Continue patrols	ENF S&G 115, EDC agency mandate
			Continue monitoring program.		Continue monitoring program.	ENF LRMP 5-7

Table 5.4-1. Summary of the current and potential future needs related to recreational use at other areas in the High Country: Rubicon Hiking Trail, Rubicon OHV Route and Pleasant Campground Trail.

Other Areas in the High Country	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Rubicon OHV Route-Northern shoreline of Buck Island Reservoir in the vicinity of the Rubicon OHV Route	Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.	Close and restore inappropriate, user created routes and reroute trail away from shoreline				RS: §4.2.1.4 ENF LRMP S&G's 27, 46, 83
Rubicon OHV Route-Ellis Creek Tie	ENF guideline to restrict OHV use to designated routes. Manage OHV use & dispersed motorized camping to protect natural resources. Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Meet ROS visitor density guidelines between main and auxiliary dams at Loon Lake.		Include Ellis Creek Tie and associated use in EDC OHV planning effort. Establish and accomplish management of staging area below Loon Lake Dam.	Provide staging areas and facilities for sanitation and trash. Pave road from main Loon Lake Dam to staging area. Include I&E signage.	Consider establishing a season of use and manage the existing staging area below Loon Lake Dam.	RS: §4.2.2.3 RD: §4.8.2, Table 4.8-9 ENF S&G 27

Table 5.4-1. Summary of the current and potential future needs related to recreational use at other areas in the High Country: Rubicon Hiking Trail, Rubicon OHV Route and Pleasant Campground Trail.

Other Areas in the High Country	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Pleasant Campground Trail	Address resource impacts related to recreation use. Attain trail standards for non-motorized use. Provide for public health and safety. Provide adequate access for recreation use and UARP operation & maintenance. Meet increased demand for hiking and day use.	Reconstruct the trail to standard. Provide and maintain suitable trail width and tread sufficient for motorized access (quads) for UARP operations and maintenance. Provide signage.	Continue to allow motorized access by SMUD for UARP operation and maintenance.			RS: 4.2.1.3 ENF Staff Observations ENF S&G 106 FERC Guidelines
	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use.		Continue patrols		Continue patrols	ENF S&G 115
			Continue monitoring program.		Continue monitoring program.	ENF LRMP ch. 5, Table V-1

5.5 Reaches in the High Country

5.5.1 Rubicon River-Rubicon Dam to Miller Creek

The Rubicon Reservoir Dam Reach is located on the Rubicon River and extends from the base of Rubicon Dam to the Miller Creek confluence. This section of river is approximately 4.1 miles long, ranges in elevation from 6,510 to 6,100 feet, and has a mean gradient of about 100 feet/mile (1.9 percent). The top of this reach is quite steep, dropping 357 feet in 1.25 miles. The next three miles down to the confluence with Miller Creek are low gradient with many beaver-constructed pools.

The area near Rubicon Springs sees significant OHV use and has high angling pressure. Other portions of this reach that are not accessible by vehicle, between Rubicon Reservoir and Hell Hole Reservoir, are reported to have excellent angling opportunities for Brown and Rainbow Trout. Most anglers fish this reach during multi-day backpacking trips due to remote access.

Accessing this reach for whitewater boating is extremely difficult. Running the section above Rubicon Reservoir requires taking a ferryboat across Echo Lake, then carrying kayaks 6.3 miles over Mosquito Pass, elevation 8,400', to the headwaters of the Rubicon River. The paddle down to Rubicon Reservoir is Class V with an average gradient of 144 feet per mile. Below Rubicon Reservoir the river has an average gradient of 165 feet per mile. This lower section contains several miles with a gradient of over 400 feet per mile. These steepest sections appear to be un-runnable, requiring several long portages. The best sections of this reach appear to be near the headwaters, which is not affected by the UARP.

5.5.1.1 Recreation Management Goals and Objectives

There are several desired goals for the Rubicon River reach. The primary goal is to retain the wilderness character of the reach within the Desolation Wilderness. Secondarily, there is a need to manage recreational use to maintain a wild trout fishery in the reach. It is also desired to retain the expedition whitewater boating opportunities. Finally, resource protection needs to be addressed particularly related to OHV use in the area around Rubicon Springs. The resource protection should be consistent with the Rubicon OHV Route Plan (EDC planning in progress).

5.5.1.2 Supply and Demand Factors

The remote nature of this reach limits the amount of recreational activities that can occur in this reach. For whitewater boaters the 6.3 miles hike over Mosquito Pass, which is required to run the reach above Rubicon Reservoir, or the 4.5 mile hike from Loon Lake Reservoir to Rubicon Springs to access the reach below Rubicon Reservoir are significant deterrents for most whitewater paddlers. Other expedition type runs in the Sierra Nevada are generally considered to be of higher quality, such as Upper Cherry Creek, the Middle Fork of the San Joaquin or Kings rivers.

The more inaccessible areas of this reach below Rubicon Dam have reported high quality trout angling. Most anglers who utilize this reach are specifically seeking a remote wilderness type of experience. The area above Rubicon Dam has limited angling opportunities due to naturally occurring low flows during the late summer. Day hikes are possible, however, due to the remoteness allow only very limited time on the river reach itself. Multi-day hiking, OHV or boating trips appear to be the only way to access this area of high quality angling.

5.5.1.3 Areas of Concern Related to Recreation Use-Environmental and Social

Currently, there remains a concern due to the OHV use in the area. A number of non-game species have been introduced into the river from the vehicular access at Rubicon Springs. While these species currently do not appear to be a threat to trout populations, the ability of vehicular users to transport other species into the area is a concern.

5.5.1.4 Capital Improvement Needs

Due to the desire to maintain a primitive wilderness character for this reach there are no capital improvement identified for this reach.

5.5.1.5 Management Needs

Providing flow information for recreationists would allow them to know the flow conditions in the Rubicon River before undertaking a trip into this reach. This flow information could be provided at both Rubicon Dam and below Miller Creek. An alternative location would be a single site located only at the Rubicon Dam. Both potential locations would provide flow information for the reach downstream of Rubicon Reservoir, while flow information below Miller Creek would provide additional flow information relative to inflows from Miller Creek. Monitoring to ensure recreation objectives are being met in the reach is a current need.

The recreation needs identified for the High Country reaches are listed in Table 5.5-1.

6.0 CRYSTAL BASIN

The area designated as the Crystal Basin includes Loon Lake, Gerle Creek, Union Valley and Ice House reservoirs, which support the majority of the recreation use associated with the UARP. As partial settlement of damaged from the Ice House Fire, which occurred in 1959, SMUD purchased and deeded to the Forest Service approximately 200 feet of shoreline surrounding each of the reservoirs (pers. com J. Marsolais, ENF, September 2004). As a result, nearly all of the shoreline lands surrounding the UARP reservoirs are federal lands available to the public for recreation, managed by the ENF and designated as general forest. Within the Crystal Basin there are also parcels of privately owned land, most of which are owned by Sierra Pacific Industries and managed for timber production.

Table 5.5-1. Summary of the current and potential future needs related to recreational use in the river reaches in the High Country: Rubicon River and Little Rubicon River.

River Reaches in the High Country	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Rubicon River-Rubicon Dam to Miller Cr.	Retain expeditionary whitewater boating opportunities in the reach.	None	Provide flow information for flows below Rubicon Dam and below Miller Creek confluence.	None	Provide monitoring to ensure recreation objectives are consistent with the primitive wilderness nature of this reach.	WWFS: §5.9, §5.11 VU&I §4.1.9.1 SFTR: §4.2

Within the Crystal Basin there are numerous developed recreation facilities that provide day use and overnight camping recreation opportunities, most of which are UARP-related recreation facilities. For this document, the UARP-related recreation facilities are defined as facilities that were constructed as part of SMUD's original Recreation Plan for the UARP and the facilities that were constructed under the amended Recreation Plan. The original UARP-related recreation facilities were constructed in the 1960s when the reservoirs were constructed. Additional facilities were constructed after SMUD amended the Recreation Plan in 1985 due to the construction of the Jones Fork Powerhouse. All of the UARP-related recreation facilities are owned and operated by the ENF.

During the winter, SMUD plows main routes of access for project operations and maintenance. The plowed roads allow public vehicular access in the general area of Ice House Road between Highway 50 and Loon Lake Chalet. The main plowed route of access, Ice House Road between Highway 50 and the Loon Lake Chalet, is a public road managed by EDC.

6.1 Loon Lake Reservoir

This reservoir has a surface area of 1,450 acres and it has a storage capacity of 76,200 acre-feet. The reservoir is located at 6,410 feet in elevation and the slopes around the reservoir are fairly gentle. There are paved roads and developed recreation facilities at this reservoir. The Rubicon Hiking Trail originates at the Loon Lake Wilderness Trailhead, which is located at the southern end of the reservoir. The Rubicon OHV Route is within one-half mile of the northern shore of the reservoir. The Ellis Creek route, originating below the main Loon Lake Dam, connects to the Rubicon OHV Route. This route is the primary access point for most visitors accessing the Rubicon OHV Route. It is also a county road. Typically, this reservoir receives snowfall between October and April and snow remains on the ground until May or June. A map of Loon Lake is provided in Figure 6.1-1.

6.1.1 Recreation Management Goal and Objectives

The northeast portion of the reservoir and shoreline has a 'Semi-primitive Motorized' ROS classification. The general descriptions for this designation are:

- Concentrations of users are low but there is often evidence of other users.
- Motorized use is permitted and access roads to facilitate resource management shall be Maintenance Level I and II local roads.
- Recreation developments would be Level II.

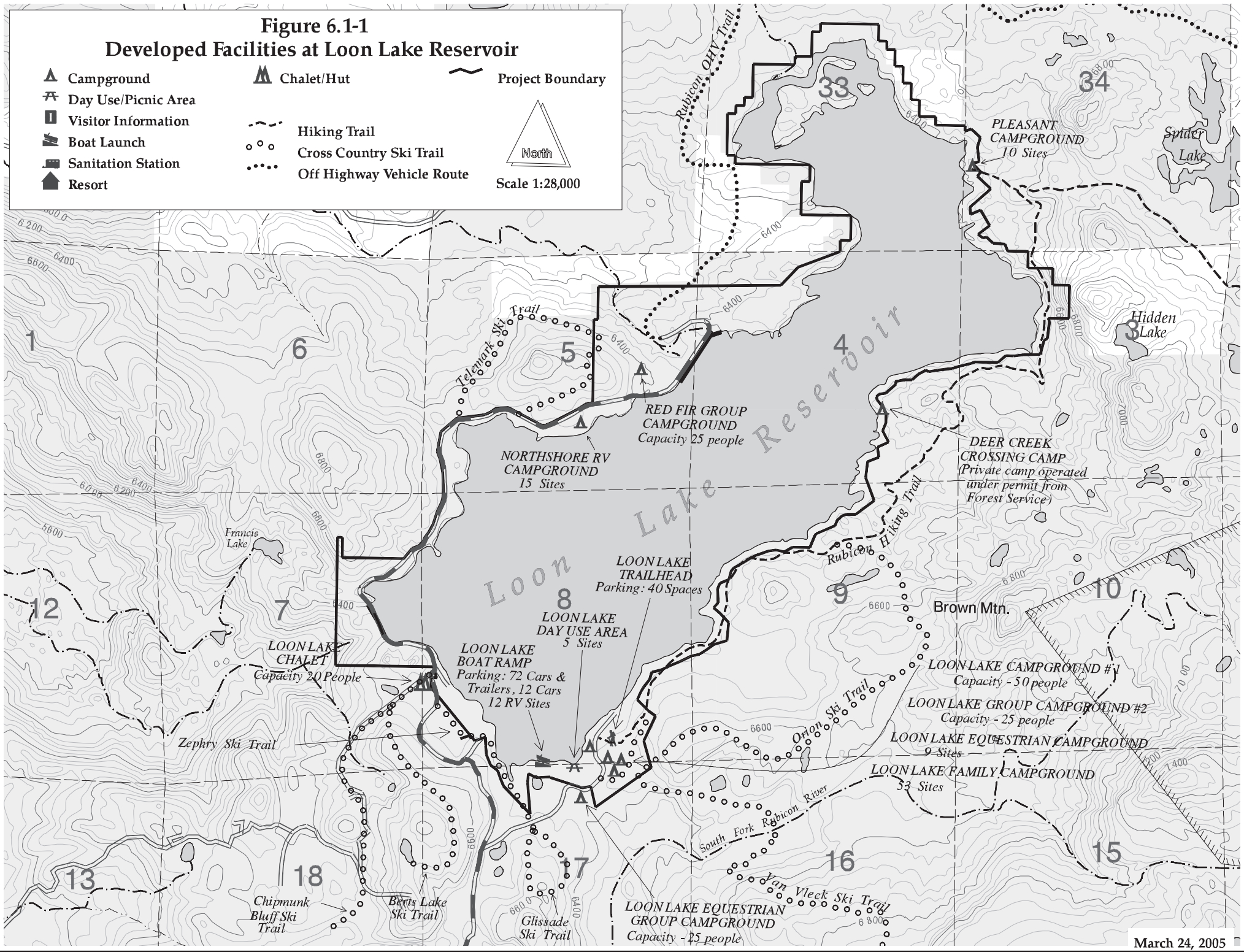


Figure 6.1-1
Developed Facilities at Loon Lake Reservoir
Campground
Day Use/Picnic Area
Visitor Information
Boat Launch
Sanitation Station
Resort
Chalet/Hut
Hiking Trail
Cross Country Ski Trail
Off Highway Vehicle Route
Project Boundary
North
Scale 1:28,000
Loon Lake Reservoir
PLEASANT CAMPGROUND 10 Sites
Spider Lake
Hidden Lake
Rubicon OHV Trail
Telemark Ski Trail
RED FIR GROUP CAMPGROUND Capacity 25 people
NORTHSHORE RV CAMPGROUND 15 Sites
DEER CREEK CROSSING CAMP (Private camp operated under permit from Forest Service)
Rubicon Hiking Trail
Francis Lake
LOON LAKE TRAILHEAD Parking: 40 Spaces
LOON LAKE DAY USE AREA 5 Sites
LOON LAKE BOAT RAMP Parking: 72 Cars & Trailers, 12 Cars 12 RV Sites
LOON LAKE CHALET Capacity 20 People
Brown Mtn.
LOON LAKE CAMPGROUND #1 Capacity - 50 people
LOON LAKE GROUP CAMPGROUND #2 Capacity - 25 people
LOON LAKE EQUESTRIAN CAMPGROUND 9 Sites
LOON LAKE FAMILY CAMPGROUND 33 Sites
Orion Ski Trail
Zephry Ski Trail
South Fork Rubicon River
Van Vleck Ski Trail
LOON LAKE EQUESTRIAN GROUP CAMPGROUND Capacity - 25 people
Glissade Ski Trail
Bents Lake Ski Trail
Chipmunk Bluff Ski Trail
March 24, 2005

The southwest portion of the reservoir and shoreline has a 'Roaded Natural' ROS classification. The general descriptions for this designation are:

- Sights and sounds of man are evident.
- Interaction between users is moderate to high.
- Facilities are designed for use by large numbers of people and intensified for motorized use and parking.
- Recreation developments would be Level III or IV.

The Visual Quality Objective (VQO) is 'Retention'.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

- Provide safe access to and on the reservoir.
- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir.
- Mitigate resource impacts related to recreation use.
- Manage reservoir surface for low speed watercraft.
- Enhance angling opportunities at the reservoir.
- Manage reservoir for recreation use from late spring to fall.
- Minimize human and wildlife conflicts.

6.1.2 Supply Factors

6.1.2.1 Developed Recreation Facilities

Table 6.1-1 lists all of the developed recreation facilities at and near Loon Lake Reservoir.

Table 6.1-1. Recreation facilities at Loon Lake Reservoir.

	Capacity			Potable Water	Toilets (F=Flush, V=vault, P=Pit)	Reservations (#reservable/#total)	Comments
	# sites[1]	PAOT[2]	Trail length (mi)				
Campgrounds							
Pleasant	10			No	P	0	Access by foot, bicycle or boat only. Pack-in/pack-out trash. No fee.
Wentworth Springs[3]	8			No	V	0	4WD or dirt bike access recommended for access. No fee.
Northshore RV	15			No	V	0	
Loon Lake	53			Yes	V	48/53	
Loon Lake Equestrian	9			Yes	V	4/9	

Table 6.1-1. Recreation facilities at Loon Lake Reservoir.

	Capacity			Potable Water	Toilets (F=Flush, V=vault, P=Pit)	Reservations (#reservable/#total)	Comments
	# sites[1]	PAOT[2]	Trail length (mi)				
Campgrounds							
Loon Lake Boat Launch	15			Yes	V	0/15	Self contained RV overflow. Accessible boarding platform. No campfires allowed. No fee.
Group Campgrounds							
Loon Lake Group 1 & 2	2	75		Yes	V	2/2	
Loon Lake Equestrian	1	25		Yes	V	1/1	
Red Fir	1	25		Yes	V	1/1	Tents only. No RV or trailers
Lodges							
Loon Lake Chalet		20		Yes	V	1/1	Overnight use by reservation only. Heat, electricity, kitchen, sleeping loft.
Deer Crossing Camp[3] (no road access)	1	50					Private youth camp authorized under Special Use Permit from ENF
Day Use Areas							
Loon Lake Chalet				Yes	V		Open to public during the day on weekends in the winter. Water available inside chalet. No fee.
Loon Lake Boat Launch	5			Yes	V		Picnic sites available. 72 vehicle w/trailer and 12 vehicle parking spaces. No fee. Accessible loading platform.
Sanitation Station							
Loon Lake Sanitation Station							Located south of Loon Lake adjacent to Ice House Road. No. fee.
Trailhead							
Loon Lake Trailhead				Yes	V		40 parking spaces. No fee.
Trails (non-motorized)							
Rubicon Hiking Trail[3]			3.8				Foot and pack stock trail (Loon Lake TH to Pleasant CG)
Loon Lake Trail[3]			3.0				Foot and pack stock trail (Tells Cr. To Loon Lake TH)
Trails (cross country ski)							
Chipmunk Bluff[3]			1.6				
Berts Lake[3]			.9				
Polaris[3]			2.5				
Telemark[3]			1.6				
Zephyr[3]			.6				
Campground[3]			1.2				

Table 6.1-1. Recreation facilities at Loon Lake Reservoir.							
	Capacity			Potable Water	Toilets (F=Flush, V=vault, P=Pit)	Reservations (#reservable/#total)	Comments
	# sites[1]	PAOT[2]	Trail length (mi)				
Trails (cross country ski)							
Glissade[3]			.6				
Orion[3]			3.4				Unmarked route
Van Vleck[3]			5.6				
Routes (motorized)							
Rubicon OHV Route[3]			22				OHV route between Loon Lake and Lake Tahoe. No fee.
Planned Development/Improvement							
Wildlife resistant food storage lockers at Loon Lake (all sites) and Northshore campgrounds in 2004							Funded by ENF CIP[4]

[1]Fire ring or fire grill with a picnic table, potable water and trash collection unless otherwise noted
[2]People-at-one-time
[3]non-UARP-related facility
[4]Capital Investment Program (ENF improvements with appropriated funding)

Accessibility deficiencies were found at all of the UARP-related recreation facilities at Loon Lake Reservoir. The types of deficiencies ranged from minor needs such as water faucets and toilet risers to major needs such as barriers in the paths of travel and restrooms that cannot be modified to meet ADA/ABA.

The physical conditions of the UARP-related recreation facilities at Loon Lake Reservoir range from poor to good. The developed UARP-related recreation facilities that are in poor condition include Pleasant Campground, Loon Lake Campground (lower loop), and Loon Lake Equestrian Group Campground.

The campgrounds, day use areas and boat launch are typically not available to the public in the winter months because they are covered with snow. Similarly the motorized and non-motorized trails are not typically available during the winter however some of the non-motorized trails and roads are signed and patrolled for cross-country skiing. The Loon Lake Chalet is available to the public during the winter for overnight and day use.

6.1.2.2 Dispersed Recreation

Dispersed recreation occurs at and near the reservoir shoreline. Along the shoreline between the main and auxiliary dams motorized dispersed camping is extensive and the area receives heavy and recurrent use. Users have created multiple points for motorized access to the shoreline where many fire rings exist, many of which were too close to the waters edge. Observed damage at these sites included cut and damaged vegetation, erosion and compacted soil, oil and transmission fluid on soil and rocks, trash, and improperly disposed human and animal waste.

The shoreline in the vicinity of Ellis Creek, once a popular area for motorized dispersed camping, was closed to motorized access and the ENF implemented site restoration measures in 2002-2003. This management action has been largely successful in eliminating inappropriate dispersed recreation at this area of the reservoir shoreline.

There are also dispersed use sites on the islands and in the area of Pleasant Lake. Most of these sites are accessed by boat for day and overnight use. Resource damage observed at these sites included trash, erosion, vegetation damage, user created benches and tables, improperly disposed human and animal waste. Although some of these sites are located more than 100 feet from the waters edge, there are also sites that are located too close to the shoreline. In general, this reservoir has many suitable areas for boat-in camping with high aesthetic appeal.

There are two locations where visitors use portions of the shoreline as informal boat launches. These include the area immediately adjacent to and north of the spillway at the main dam and just north and east of the auxiliary dam.

The reservoir has gentle sloping shorelines and there are rocks that lie just beneath the water surface, which can become boating hazards at all reservoir levels. As the reservoir lowers, more rocks become exposed requiring boaters to use caution as they travel on the water. Another navigational concern is woody debris delivered into the reservoir each spring with snowmelt. SMUD currently removes this debris from the reservoir prior to the summer recreation season.

6.1.2.3 Interpretation, Information and Education

There are no existing formal interpretation, information and education opportunities at this reservoir. Visitors obtain information about the area at trailheads, campgrounds, and boat launch where information is posted and through on-site personal communication with ENF patrol staff or EDC Sheriff deputies patrolling the Rubicon OHV Route. Visitors may also obtain information at the Cleveland Corral and Crystal Basin information stations and through the OHV information kiosk authorized by the ENF below Loon Lake Dam. During the winter, the ENF staffs a winter patrol ranger at the Loon Lake Chalet and posts information about trail and weather conditions on an information board at the Chalet. Additional staffing and patrol is also provided by the El Dorado Nordic Ski Patrol (EDNSP), a volunteer organization with the ENF.

6.1.2.4 Recreation Activities

Recreation activities at and near this reservoir during the summer months include OHV use, dispersed and developed camping, mountain biking, hiking, picnicking, fishing, hunting, swimming, motorized and non-motorized boating and wildlife and scenic viewing, bicycling, visiting cultural/historical sites and hunting. The five most important activities listed in the survey results collected at this reservoir are: fishing (lake or reservoir), hiking/walking, swimming, canoeing/kayaking and powerboating.

Recreation activities at and near this reservoir during the winter months include snow play, snowshoeing, cross-country skiing, fishing, camping, picnicking, wildlife and scenic viewing, hiking, OHV use, and snowmobiling. It should be noted that snowmobiling is not allowed in the

Loon Lake Basin but it is allowed on routes connecting to the Ice House Road downhill from the basin toward Highway 50.

6.1.2.5 Regional Supply

There are several high elevation lakes and reservoirs in the region accessible by paved roads. There are few however that offer the combination of the terminus of paved access leading toward the crest of the Sierra Nevada, an upper montane setting with large granite outcrops, aesthetic beauty of a waterside setting, developed recreation facilities and an additional attraction of access to motorized trails for OHV use. Within the region areas that could be considered comparable may include Silver, Caples, Fordyce, and Bear lakes, Prosser and Boca reservoirs.

From a winter recreation standpoint, there are several locations in the region that provide similar opportunities. There are winter trails and sno-parks in the region at Carson Pass, Echo Summit, Kirkwood (Hwy 88), Lake Tahoe, Yuba Gap, and Donner Lake. Backcountry skiing is available at areas at Lake Tahoe, Mount Rose, Donner Summit and Pyramid Peak (see *Recreation Supply Technical Report* for specific locations). The Loon Lake Chalet (and its operation) is the only facility of its kind in the entire National Forest System.

6.1.2.6 Suitable and Available Sites

If additional developed recreation facilities were provided in the northeast area of the reservoir shoreline, the applicable development scale would be Level II. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Little site modification. Rustic or rudimentary improvements designed primarily for protection of the site rather than the comfort of the users. Use of synthetic materials avoided. Minimum controls are subtle. Little obvious regimentation. Spacing informal and extended to minimized contacts between users. Motorized access provided or permitted. Primary access over primitive roads. Interpretive services informal.

If additional developed recreation facilities were provided in the southwest area of the reservoir shoreline, the applicable development scale would be Level III or IV. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Development Scale III—Site modification moderate. Facilities about equal for protection of natural site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standards roads. Interpretive services informal, but generally direct.
>
> Development Scale IV—Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads.

Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.

One potentially suitable site for additional developed recreation facilities was identified at the eastern shoreline of Loon Lake Reservoir between the Rubicon Hiking Trailhead and the Deer Crossing Organization Camp. The site is potentially suitable for a developed family and/or group campground. An access road would need to be constructed to the site if vehicular access is desired.

6.1.3 Demand Factors

The main demand factors that will likely influence recreation use at Loon Lake Reservoir include the demand for dispersed and developed overnight and day use, OHV use, angling and flatwater boating. It is apparent that the demand for dispersed overnight use along the shoreline between the dams is very high. With the projected increase in the demand for dispersed overnight use and presuming that management restrictions are not imposed that limit use, this shoreline and areas nearby will continue to see high use levels. Similarly, increased demand for developed recreation opportunities will likely cause there to be an increase in the number of visitors to the reservoir.

Many visitors to this reservoir are also attracted by OHV opportunities in the area. The demand for OHV is likely to increase in the future. In particular the Rubicon OHV Route which is known nationally and internationally for its quality OHV opportunities will continue to attract visitors and this will contribute to the increased level of visitation at and near the reservoir.

Regionally, the demand for angling will be fairly level. However, the high aesthetic quality of the reservoir combined with the low level of high-speed boating use will likely cause angling use at the reservoir to possibly increase. Non-motorized boating use is an activity projected to increase in the future. It is likely that an increase in non-motorized boating use will lead to increased use at this reservoir since it is well suited for this activity.

Recreation activities associated with winter use such as cross country skiing, snow play, back country skiing are also projected to increase in the future. Since this area provides winter opportunities for these activities, winter visitation will likely increase. Currently, most of the wintertime visitors are from El Dorado and Sacramento counties, which have populations growing at a rate faster than the state of California. The growth in these nearby population centers will also contribute to increased visitation.

Visitor surveys collected at the developed recreation facilities and the dispersed use areas at and near Loon Lake Reservoir reported information about desired changes or improvements that visitors would like to see. Approximately one-quarter of the summer survey respondents identified some type of change or improvement that they would like to see related to trails (motorized and non-motorized). Some of the more frequently suggested changes and improvements to the area included expanding OHV trail system, restricting and enforcing regulations relating to OHV use, more trails for biking, hiking, equestrian use and shoreline access, and improved trail maintenance.

Specific to the developed recreation facilities, visitors most frequently commented on the need for improvements to restrooms (including a desire for showers and flush toilets), potable water and hookups for RV's. Visitors also expressed concern for their safety because of recurrent problems with bears in the campgrounds. Suggestions relating to the reservoir included installing a courtesy dock at the boat launch and marking boating hazards. Some visitors would prefer to have fewer high-speed watercraft and PWC on the reservoir.

The winter survey responses indicated that visitors would like to have additional amenities in the Loon Lake Chalet such as a telephone, flush restrooms, showers and more electrical outlets. Some visitors also stated that the reservation system for the Chalet should be improved and it should be available for overnight reservations during the week (it currently is available for overnight reservations during both week and weekend days). Regarding changes or improvements to the general area, visitors suggested expanding and grooming the winter trails, improving trail markings, and plowing more roads and turnouts. Some visitors would like to have access to the campgrounds and boat launch for wintertime use. And some visitors would like to see snowmobiling allowed whereas other visitors commented that they like the area because snowmobiling is not allowed.

Indicators of latent demand are reflected in the survey responses. There were few respondents who said there were activities they wanted to participate in but were unable to participate in. The responses to the surveys conducted during the summer in the Crystal Basin included boating because there is no place to rent a boat, horseback riding because there is no place to rent a horse and playing horseshoes (there is no facility provided for this activity). The responses to the surveys conducted during the winter included camping in a campground (the facilities are closed during the winter), plowed access to the Loon Lake Boat Launch, snowmobiling, ice skating, hut-to-hut cross country skiing, cable sledding, and driving to the main dam because the road was not plowed.

6.1.4 Areas of Concern Related to Recreation Use

6.1.4.1 Environmental

Widespread motorized dispersed camping and OHV use is prevalent along the shoreline between the auxiliary and main dams between the Ice House Road corridor and the reservoir shoreline. Resource damage observed along this area of the shoreline included cut and damaged vegetation, erosion and compacted soil, tire tracks through wet areas, oil and transmission fluid on soil and rocks, trash, and improperly disposed human and animal waste.

Another topic of concern is OHV use following the first storms of the season and in the spring when snow is melting. Attempted access by OHV users on routes where snow or mud inhibits travel creates ruts in the roadbed and can damage the roads and areas adjacent to the road corridor. This condition currently exists on the Ice House Road beyond the Loon Lake Chalet, which is the end of the route plowed during the winter. Other roads adjoining the Ice House Road near Loon Lake receive similar pressure.

Visitors are often drawn from the developed recreation facilities, to the shoreline where they access their watercraft, swim, fish or participate in other recreational activities at the shoreline of the reservoir. This pattern of foot traffic has created numerous user created trails between the developed recreation facilities and the shoreline. In some cases the routes are steep and have areas of erosion. Concern regarding these trails includes the number and density of the trails leading to the shoreline that have developed over the years.

6.1.4.2 Social

Visitor surveys collected at the developed recreation facilities and the dispersed use areas at and near Loon Lake Reservoir reported information about recreation and non-recreation related conflicts. The majority of those surveyed at the developed facilities at Loon Lake Reservoir responded that there were no recreational activities (86% of the respondents) or no non-recreational activities (96% of the respondents) that conflicted with their activities. The conflicts identified in the remainder of the dispersed and developed survey responses related to OHV noise, rowdy visitor behavior and noise and speed relating to boating or PWC use.

Survey questions about visitor crowding at the developed recreation facilities indicated that, in general, those surveyed did not feel crowded during their visit. During the week most respondents indicated responses of 'not at all crowded' or 'slightly crowded'. Responses within the entire range of 'not at all crowded' to 'extremely crowded' were noted in the surveys conducted on weekends. Additionally, the area between the main and auxiliary dams appears to exceed the Roaded Natural ROS classification in terms of the density of visitors.

The apparent increase in encounters between humans and bears in the Loon Lake also create concerns for public safety and animal welfare.

6.1.5 Recreation Needs At and Near Loon Lake Reservoir

6.1.5.1 Capital Improvement Needs

Developed Recreation

There are UARP-related recreation facilities in poor condition with worn infrastructure and their design does not meet current standards. These facilities include Pleasant Lake, Loon Lake Equestrian Group and Loon Lake (lower loop) campgrounds and there is a need to redesign and reconstruct these facilities. The intent would be to provide for approximately the existing capacity and the same type of facility on the footprint of the existing facility. UARP-related recreation facilities that have been constructed more recently, other than these three developments, have infrastructure that is in good condition that do not require immediate reconstruction, however there are varying types of accessibility deficiencies. There is a need to upgrade individual site components that are not accessible at each of the UARP-related facilities that are not in need of redesign and reconstruction to meet ADA/ABA. These potential actions are current needs and would respond to the need to provide adequate public recreation facilities, meet the requirements for accessibility and address the concern for public health and safety.

Improving the quality of the facilities by redesign and reconstruction would respond to needs identified in visitor surveys and the increased demand for developed day and overnight recreation opportunities.

Site specific modifications suggested by the Recreation TWG include:

- Loon Lake Chalet—1) change the entrance to the south side of the building; 2) develop restrooms (and possibly showers) on second level; 3) redirect vehicular access to Chipmunk Bluff Road around the chalet on the north side. Relocating the access for Chipmunk Bluff Road outside of the parking area would reduce vehicle congestion and increase pedestrian safety in the parking area.
- Pleasant Lake—1) replace pit restrooms with vault restrooms; and 2) marking a channel on the reservoir leading to the shoreline of the campground. These potential actions would address public health and safety concerns. Restroom replacement would provide adequate public recreation facilities and a marked channel would help to meet the objective of providing safe access on the reservoir.
- Northshore Campground – 1) expand site to encompass/harden the dispersed camping area to the east of the existing facility.

In addition, each facility has a useful life and planning for its replacement should be provided as part of managing the UARP-related recreation facilities. Providing for replacement of the facilities would respond to the need to provide for projected increased demand for developed recreation opportunities.

Wildlife resistant food storage and dumpsters are capital improvements needed at the UARP-related recreation facilities. Wildlife resistant food storage lockers should be installed at all of the existing campgrounds and at the Loon Lake Wilderness Trailhead. All of the trash receptacles in all of the developed recreation facilities should be wildlife resistant. This potential action is a current need at all developed recreation facilities and would respond to the concern for public health and safety by minimizing human-wildlife conflicts.

Potential new facilities that should be considered to meet recreation needs at Loon Lake Reservoir include:

- Improving the existing heliport near the Loon Lake Chalet to meet Federal Aviation Administration standards including pilot-activated lighting. This is a potential future need that would address public safety concerns by improving responses to emergencies.
- A campground near the shoreline between the Loon Lake Wilderness Trailhead and Deer Crossing Camp. This is a potential future need that would respond to increased demand for developed recreation opportunities.
- Boat launch development at the construction road east of the auxiliary dam. The intent would be to harden the site and install site controls necessary to identify an area such that vehicles and dispersed campers do not occupy the area used for launching small trailered boats and non-motorized watercraft. This is a potential future need that would respond to the increase in demand for flatwater and continued demand for motorized boating

opportunities. This potential action would also address resource impacts that result from recurrent use at this dirt surfaced location adjacent to the waters edge and reduce user potential user conflicts.

- Design and construct formalized trails between the developed recreation facilities and the reservoir shoreline. Close and restore inappropriate user created trails. This would address resource damage related to recreation use and improve access to the reservoir for the public.
- Extend boat launch ramp to provide access to the reservoir from June 1-September 15 (this would be an alternative relating to managing reservoir levels. See section 6.1.5.2).

Dispersed Recreation

Capital improvements are needed to address resource impacts associated with widespread dispersed motorized camping between the auxiliary and main dam and at overnight sites accessed by boat. Potential actions should include site evaluations for closure, site restoration, designating and hardening sites for overnight use. These potential actions would meet the current need to address resource impacts related to recreation use, and would contribute to reducing visitor density to meet the Roaded Natural ROS classification. These potential actions would also respond to the projected increased demand for dispersed overnight use including sites accessible by boat.

Adjacent to Loon Lake Reservoir and directly associated with the Rubicon OHV Route, there are management needs associated with the Ellis Creek Tie that would determine whether capital improvements are needed. The Ellis Creek Tie is a shorter route of access to the Rubicon OHV Route than the historical route along the Wentworth Springs Road. Presently, this short cut to the Rubicon OHV Route attracts many of the Rubicon OHV Route users to camp along the shoreline of Loon Lake between the two main dams and the existing visitor density in this area exceeds the ROS standard. There is a management need to include the Ellis Creek Tie in the EDC planning effort for the Rubicon OHV Route and to address the needs for capital improvement such as designated, hardened staging areas, restrooms, trash receptacles and visitor information and education, to address visitor needs and resource impacts associated with the continued access provided by this route. It would be desirable to provide a specific campground for OHV users and additional parking or staging areas in locations away from Loon Lake. Paving the route from the Loon Lake Main Dam to the existing staging area would address resource impacts relating to erosion. These are potential future needs that are dependent upon the EDC planning effort for the Rubicon OHV Route.

6.1.5.2 Management Needs

Some of the most abundant resource impacts and common visitor conflicts identified at and near Loon Lake Reservoir appear to be related to OHV use. To address these concerns, a permitting system for dispersed overnight use at Loon Lake Reservoir could be implemented (refer to section 5.4.4). Sites for overnight use could be designated and a fee could be implemented to support funding monitoring and patrols in areas at and near Loon Lake Reservoir where dispersed recreation use occurs.

There is a need for monitoring recreational use and its potentially related impacts at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Loon Lake Reservoir. Elements of the monitoring program should include documenting use levels, visitor satisfaction, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a funding mechanism for restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP and El Dorado County Rubicon Trail Plan). A monitoring program is a current need, which should continue into the future.

There is a need for patrols at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Loon Lake Reservoir. Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as unauthorized OHV use, compliance with site closures, pollution and trash. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols would also respond to the visitors identified need for increased enforcement of rules and regulations on the reservoir and surrounding lands. Patrols are a current need for the Loon Lake Reservoir and patrols should continue into the future.

The management needs relating to the reservoir include continued removal of wood and debris from the reservoir surface, attaining a full reservoir (or as an alternative, striving for a near-full reservoir) each year after peak run-off and either extending the boat ramp or providing reservoir levels that ensure the boat ramp is available between June 1 and September 15 in all types of water years except under extraordinary circumstances. Consideration should be given to reservoir levels that provide for a quality recreation experience, including aesthetic aspects. Removing wood and debris would respond to the concern for public health and safety and would assist meeting the objective of providing safe access on the reservoir. The potential actions relating to debris removal and boat ramp extension or reservoir levels would also help achieve the objective of enhancing angling opportunities at the reservoir.

The UARP-related recreation facilities are capital investments that require funding for operation and maintenance (O&M). The maintenance should address both routine (annual) and heavy maintenance items (which generally serve to extend the useful life of the facilities). Accordingly, there is a need to provide support for O&M for the recreation facilities at Loon Lake Reservoir. This need would also exist for any new recreation facilities that may be constructed. This potential action is a current need that would respond to the need for adequate public recreation facilities, public health and safety, meeting visitor needs and providing for existing recreational use at the UARP.

Throughout the Crystal Basin there is a need to have vehicular access during the winter for public recreation. Plowed access is needed on the Ice House Road between Highway 50 and the

Loon Lake Chalet. Plowing the roads and turnouts is a current need that would allow continued public access for winter recreation in the Crystal Basin and would respond to the needs identified in the visitor surveys.

There are visitor information and education needs at and near Loon Lake Reservoir. There is a need to provide information about circumstances that may affect visitors' safety while boating on the reservoir such as the potential for high winds and rocks that may be at or just below the surface of the reservoir. This information should be posted at boat launch sites and campgrounds where visitors are likely to stop before launching their boats.

There is also a need to provide information about boat-in camping opportunities. This may include identifying locations suitable for boat-in camping on a map or brochure including visitor education about proper dispersed camping techniques in order to minimize the impact of this dispersed use. This potential action is both a current and potential future need, which responds to the growing trend in flatwater boating and dispersed recreation use. This potential action would contribute towards managing existing and projected recreation use at the reservoir, providing for public health and safety and providing safe access on the reservoir. Visitor education would contribute to minimizing the potential resource impacts associated with dispersed boat-in camping.

Overall there is a need to provide the public with information about recreation facilities and opportunities that are available at and near Loon Lake Reservoir. This need could be met as part of an information brochure that encompasses recreation resources in the Crystal Basin. This brochure should be made available at visitor points of contact including the Cleveland Corral and Crystal Basin Information Stations, ENF Supervisor's Office, Placerville and Pacific Ranger Stations. This is a current need that would provide the public with recreation information about the area at and near Loon Lake Reservoir.

The recreation needs identified at and near Loon Lake Reservoir are listed in Table 6.1-2.

Table 6.1-2. Summary of the current and potential future needs related to recreational use at and near Loon Lake Reservoir.

Loon Lake Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Pleasant Lake, Loon Lake Equestrian Group and Loon Lake (lower loop) campgrounds	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA. Meet needs identified in visitor surveys.	Redesign and reconstruct these UARP-related recreation facilities.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines ADA VU&I §4.1.7.1, Table 4.1-11 RS: §4.2.2.2, §5.2
All UARP-related recreation facilities other than listed above (existing) and future.	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA.	Upgrade individual facility components to meet ADA/ABA.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines ADA RS: §4.2.2.2, §5.2
All UARP-related recreation campgrounds and Loon Lake Wilderness Trailhead	Public health and safety. Minimize human-wildlife conflicts.	Install wildlife resistant food storage.				VU&I: §4.1.7.1, Table 4.1-11, §4.4 RS: §4.2
All UARP-related recreation facilities (existing and future)	Provide for managing projected recreation use. Provide adequate public recreation facilities.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1

Table 6.1-2. Summary of the current and potential future needs related to recreational use at and near Loon Lake Reservoir.

Loon Lake Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
All UARP-related recreation facilities (existing and future)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC) Provide for public health & safety. Address resource impacts related to recreation use. Meet visitor needs identified for increased enforcement of regulations.		Continue providing patrols		Continue providing patrols	ENF S&G 115
	Public health and safety. Minimize human-wildlife conflicts.	Install wildlife resistant dumpsters.				VU&I: §4.1.7.1, Table 4.1-11, §4.4 Professional judgment
	Address resource impacts relating to recreation use. Provide safe public access to the reservoir.	Design and construct formal trails between developed recreation facilities and the shoreline.	Provide for O&M.	Provide for O&M.		FERC Guidelines ENF S&G 83,106, 108 Professional judgment
Loon Lake Chalet	Provide facilities that meet ADA/ABA.	Change entrance to south side				Meet ADA
	Meet needs identified in visitor surveys.	Develop restrooms and showers on second level.				VU&I § 4.1.7.3, Table 4.1-14. Professional judgment

Table 6.1-2. Summary of the current and potential future needs related to recreational use at and near Loon Lake Reservoir.

Loon Lake Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Loon Lake Chalet	Provide for public safety.	Redirect vehicular access to Chipmunk Bluff Rd. around the chalet on north side.				Professional judgment
Heliport at Loon Lake Chalet	Provide for public health and safety.			Improve existing site to meet FAA standards including pilot-activated lighting.		EDC Impact Report (7/2004)
				Provide for facility replacement at end of useful life.	Provide for O&M.	EDC Impact Report (7/2004)
Shoreline between Loon Lake Wilderness TH and Deer Crossing Camp	Provide for projected increased demand for developed recreation opportunities.			Construct a new campground.		ENF staff RD: §4.5.3, Appendix A, §4.8.2, Table 4.8-9
				Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24
Construction road at shoreline east of auxiliary dam	Meet current and projected increased demand for flatwater boating opportunities. Address resource impacts related to recreation use. Reduce potential user conflicts between boat launch access and dispersed camping/parking.	Develop a boat launch facility (harden site, install site controls to separate dispersed camping/parking from area for launching).	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	RS: §4.2.2.3 RD: §4.8.2, Table 4.8-9 ENF S&G 24, 83

Table 6.1-2. Summary of the current and potential future needs related to recreational use at and near Loon Lake Reservoir.

Loon Lake Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Shoreline within ¼ mile of reservoir and islands in the reservoir (Current areas of concern: between the dams, shoreline at Pleasant Lake, below main dam)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources. Meet visitor needs identified for increased enforcement of regulations.		Continue providing patrols		Continue providing patrols	ENF S&G 115
	Provide for managing projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1

Table 6.1-2. Summary of the current and potential future needs related to recreational use at and near Loon Lake Reservoir.

Loon Lake Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Shoreline within ¼ mile of reservoir and islands in the reservoir (Current areas of concern: between the dams, shoreline at Pleasant Lake, below main dam)	Providing for public health and safety. Address resource impacts relating to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.		Implement a permit system for all areas with dispersed overnight use at and near Loon Lake, consider including a fee, to support funding needs for monitoring and patrols.		Implement a permit system for all areas with dispersed overnight use at and near Loon Lake, consider including a fee, to support funding needs for monitoring and patrols.	ENF LRMP p. 4-18 ENF S&G 25
	Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources. Meet current and projected increased demand for flatwater boating opportunities.	Site evaluations for site closures, restoration. Designate and harden sites as necessary for overnight use. Provide I&E signage.	Implement a permit system for all areas with dispersed overnight use at and near Loon Lake, consider including a fee, to support funding needs for O&M, if site controls are implemented.		Implement a permit system for all areas with dispersed overnight use at and near Loon Lake, consider including a fee, to support funding needs for O&M, if site controls are implemented.	RS: §4.2.2.3 ENF S&G 27, 46, 83 ENF ROG (Pick Your Own Spot) ENF LRMP p. 4-18
Dispersed overnight use sites between the main and auxiliary dams	Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources. Meet ROS guidelines for visitor density.	Site evaluations for site closures, restoration. Designate and harden sites as necessary for overnight use. Provide I&E signage.	Implement a permit system for all areas with dispersed overnight use at and near Loon Lake, consider including a fee, to support funding needs for O&M, if site controls are implemented.		Implement a permit system for all areas with dispersed overnight use at and near Loon Lake, consider including a fee, to support funding needs for O&M, if site controls are implemented.	RS: §4.2.2.3 CC: §5.3 ENF S&G 27, 46, 83 ENF ROG (Pick Your Own Spot) ENF LRMP p. 4-18

Table 6.1-2. Summary of the current and potential future needs related to recreational use at and near Loon Lake Reservoir.						
Loon Lake Reservoir	**Overall Long-term Need or Current Deficiency Being Addressed**	**Current Needs or Deficiencies**		**Potential Future Needs**		**Reference to Supporting Study Results or Other Reference**
		Capital Improvements	**Management**	**Capital Improvements**	**Management**	
Ellis Creek Tie (county road between Rubicon OHV Route and staging area below Loon Lake Main Dam)	ENF guideline to restrict OHV use to designated routes. Manage OHV use & dispersed motorized camping to protect natural resources. Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Meet ROS visitor density guidelines between main and auxiliary dams at Loon Lake.		Include Ellis Creek Tie and associated use in EDC OHV planning effort. Establish and accomplish management of staging area below Loon Lake Dam.	Provide staging areas and facilities for sanitation and trash. Pave road from main Loon Lake Dam to staging area. Include I&E signage.	Consider establishing a season of use and manage the existing staging area below Loon Lake Dam.	ENF S&G 27 Professional judgment
Loon Lake Reservoir Surface	Provide safe public access on the reservoir.		Remove wood and debris from reservoir.		Remove wood and debris from reservoir.	FERC Guidelines
		Mark a channel on the reservoir leading the shoreline of Pleasant Campground.				Professional judgment VU&I: §4.1.7.1, Table 4.1-11 RD: §4.8.2, Table 4.8-9, §5.2

Table 6.1-2. Summary of the current and potential future needs related to recreational use at and near Loon Lake Reservoir.

Loon Lake Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Loon Lake Reservoir Surface	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC) Provide for public health & safety, particularly boating safety. Address resource impacts related to recreation use. Meet visitor needs identified for increased enforcement of regulations.		Continue to provide patrols.		Continue to provide patrols.	EDC Sheriff Regulation
	Provide safe public access to the reservoir. Enhance angling opportunities at the reservoir.		Consider extending boat ramp or provide reservoir elevation that ensures boat ramp is usable June 1-Sept.15 except under extraordinary circumstances.		Consider extending boat ramp or provide reservoir elevation that ensures boat ramp is usable June 1-Sept.15 except under extraordinary circumstances.	RS: §4.3 VAPO: §4.1, Figure 4.1-1 RD: §4.8.2, Table 4.8-9, §5.2
			Consider attaining a full reservoir or strive for a near-full reservoir each year after peak run-off except under extraordinary circumstances.		Consider attaining a full reservoir or strive for a near-full reservoir each year after peak run-off except under extraordinary circumstances.	VAPO: §4.1, Figure 4.1-1 RD: §4.8.2, Table 4.8-9, §5.2

Table 6.1-2. Summary of the current and potential future needs related to recreational use at and near Loon Lake Reservoir.

Loon Lake Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Loon Lake Reservoir Surface	Provide for managing projected increased recreation use, including flatwater boating. Enhance angling opportunities. Provide public safe access on the reservoir.				Continue monitoring (visitor and management needs and impacts) program.	ENF LRMP ch. 5, Table V-1, EDC Sheriff Regulation FERC Guidelines
Ice House Road (an EDC Road) between Hwy 50 and Loon Lake Chalet	Provide access for SMUD staff to operate and maintain UARP. Provide for public winter recreation in the Crystal Basin.			Continue plowing these routes, including turnouts/parking areas.		SMUD staff Professional judgment
Interpretation, Information and Education (II&E)	Provide for public recreation at the reservoir. Meet current and projected increased demand for flatwater boating opportunities.	Element of II&E Plan-Provide map or brochure with boat-in camping locations and low impact camping techniques. Provide at boat launches and other developed facilities at Loon Lake Reservoir.		Update and provide additional printings of map or brochure.		RS: §5.2 RD: §4.8.2, Table 4.8-9, §5.1 VU&I §4.1.6 ENF S&G 21, 22, 23, 25 Professional judgment

Table 6.1-2. Summary of the current and potential future needs related to recreational use at and near Loon Lake Reservoir.

Loon Lake Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Interpretation, Information and Education (II&E)	Provide for public recreation at the reservoir.	Provide an information brochure listing recreation facilities available in the Crystal Basin and other important information visitors should know while visiting. Provide at points of visitor contact on the ENF.		Update and provide additional printings of map or brochure.		RS: §4.4 RD: §5.1.1 Professional judgment
	Provide for public health and safety. Provide safe access on the reservoir.	Provide boating safety information at boat launches and other developed recreation facilities at Loon Lake Reservoir.		Update information to be posted.		RS: §4.3, Table 4.3-1(b) FERC Guidelines Professional judgment

6.2 Gerle Creek Reservoir

This reservoir has a surface area of 60 acres and it has a storage capacity of 1,260 acre-feet. The reservoir is located at 5,231 feet in elevation and the slopes around the reservoir are fairly gentle and forested with mixed conifers. There are paved roads and developed recreation facilities at this reservoir. The Wentworth Springs Road, a paved county road and the historic route of the Rubicon OHV Route, provides the main route of access to the reservoir. Typically, this reservoir receives snowfall between October and April and snow remains on the ground until May or June. Boating on the reservoir is limited to non-motorized watercraft. A map of Gerle Creek Reservoir is provided in Figure 6.2-1.

6.2.1 Recreation Management Goal and Objectives

The reservoir and shoreline has a 'Roaded Natural' ROS classification. The general descriptions for this designation are:

- Sights and sounds of man are evident.
- Interaction between users is moderate to high
- Facilities are designed for use by large numbers of people and intensified for motorized use and parking.
- Recreation developments would be Level III or IV.

The Visual Quality Objective (VQO) is 'Retention'.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

- Provide safe access to and on the reservoir.
- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir.
- Mitigate resource impacts related to recreation use.
- Manage reservoir surface for non-motorized speed watercraft.
- Enhance angling opportunities at the reservoir.
- Manage reservoir for recreation use from spring to late fall.
- Minimize human and wildlife conflicts.

6.2.2 Supply Factors

6.2.2.1 Developed Recreation Facilities

Table 6.2-1 lists all of the developed recreation facilities at and near Gerle Creek Reservoir.

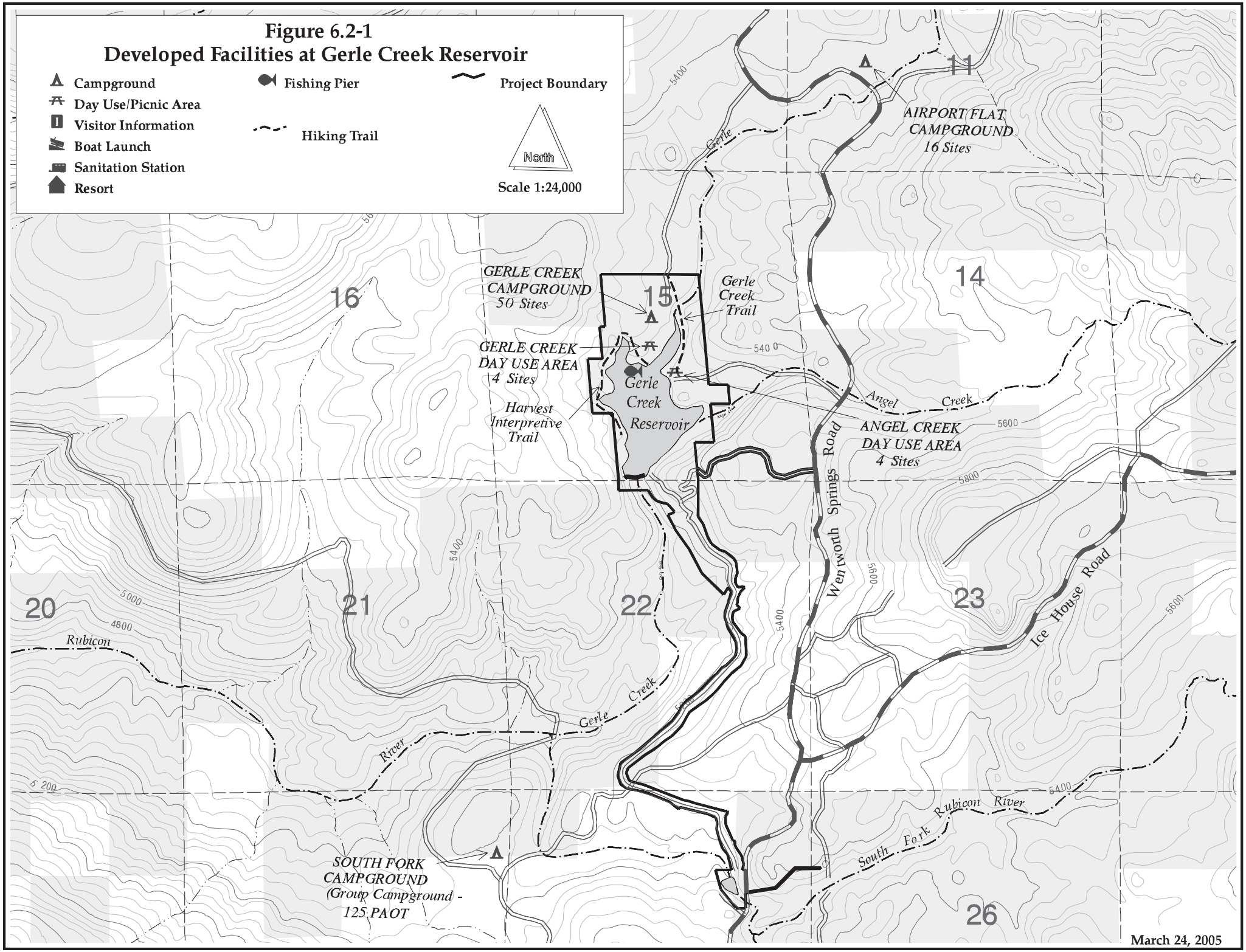


Figure 6.2-1
Developed Facilities at Gerle Creek Reservoir
Campground
Day Use/Picnic Area
Visitor Information
Boat Launch
Sanitation Station
Resort
Fishing Pier
Hiking Trail
Project Boundary
North
Scale 1:24,000
AIRPORT FLAT CAMPGROUND 16 Sites
GERLE CREEK CAMPGROUND 50 Sites
GERLE CREEK DAY USE AREA 4 Sites
Harvest Interpretive Trail
Gerle Creek Trail
Gerle Creek Reservoir
ANGEL CREEK DAY USE AREA 4 Sites
SOUTH FORK CAMPGROUND (Group Campground - 125 PAOT
Wentworth Springs Road
Ice House Road
Rubicon River
Gerle Creek
South Fork Rubicon River
Angel Creek
11
14
15
16
20
21
22
23
26
5400
5600
5800
5000
4800
5200
March 24, 2005

Table 6.2-1. Recreation facilities at and near Gerle Creek Reservoir.

	Capacity			Potable Water	Toilets (F=Flush, V=vault, P=Pit)	Reservations (# reservable/#total)	Comments
	# sites[1]	PAOT[2]	Trail length (mi.)				
Campgrounds							
Gerle Creek	50			Yes	V	32/50	
Airport Flat (located 1.0 miles from Gerle Creek Reservoir)	16			No	V	0/16	No fee.
South Fork[3] (located 3.3 miles from Gerle Creek Reservoir)		125		No	V	1/1	Operated as a group campground
Day Use Areas							
Gerle Creek	4			Yes	V		Includes a fishing pier accessible to persons with disabilities and small area for hand launching non-motorized watercraft. 18 parking spaces. No fee.
Angel Creek	4			No	V		No fee.
Trails (non-motorized)							
Summer Harvest Trail			.5				Interpretive trail accessible to persons with disabilities. No fee.
Gerle Creek Trail			.7				Aggregate surfaced trail connecting the two day use areas with trailhead parking (15 spaces) on Gerle Cr. CG access road. No fee.
Recreation Residences							
Gerle Creek Tract[3] (located 1.1 miles from Gerle Creek Reservoir)							Privately owned residences for seasonal occupancy on public land under Special Use Permit from ENF
Planned Development/Improvement							
Gerle Cr. Campground-Drill a new well in 2004							Funded by federal funds
Wildlife resistant food storage lockers at Gerle Cr. and Airport Flat CG's in 2004							Funded by ENF CIP[4]

[1]Fire ring or fire grill with a picnic table, potable water and trash collection unless otherwise noted
[2]People-at-one-time
[3]non-UARP-related facility
[4]Capital Investment Program (ENF improvements with appropriated funding)

The developed recreation facilities at Airport Flat Campground, Summer Harvest Trail (including the accessible fishing pier) and Gerle Creek Trail currently meet ADA/ABA. Accessibility deficiencies were found at some of the UARP-related recreation facilities at Gerle Creek Reservoir. At the Gerle Creek Campground and Gerle Creek Day Use Area the types of deficiencies ranged from minor needs such as water faucets and toilet risers to major needs such as barriers in the paths of travel and restrooms that cannot be modified to meet ADA/ABA. The only accessibility deficiency at Angel Creek Day Use Area is the lack of a designated accessible parking space.

The physical conditions of the UARP-related recreation facilities at Gerle Creek Reservoir range from good to poor. The Airport Flat Campground, Gerle Creek Day Use Area, Angel Creek Day Use Area and Gerle Creek Trail are in good condition. The accessible fishing pier is in need of heavy maintenance and replacement of decking material. The Gerle Creek Campground is in poor condition with cracked asphalt, short spurs that cannot accommodate long vehicles and worn restrooms and other facility components.

The campgrounds, day use areas and trails are typically not available to the public in the winter months because they are covered with snow.

6.2.2.2 Dispersed Recreation

Overnight dispersed camping is not allowed at Gerle Creek Reservoir however two sites with recurrent overnight use were observed on the southeast shoreline. At the time of inspection, the sites did not appear to have any resource damage however, their use is not consistent with ENF restrictions.

There is abundant dispersed motorized camping upstream of the reservoir along the east bank of Gerle Creek in the vicinity of the Wentworth Springs Road and Airport Flat Campground. Along Gerle Creek across from Airport Flat Campground the land is flat and open and users drive and park their vehicles, trailers and OHV's throughout the area. Observed damage at these sites included trash, improperly disposed human and animal waste, cut and damaged vegetation, erosion and compacted soil. The area along Gerle Creek just downstream from Wentworth Springs Road has been a popular site for dispersed motorized camping however the ENF has implemented site closures which have effectively eliminated overnight use in sensitive streamside areas.

Dispersed day use occurs around the entire shoreline however most of the use is concentrated between Angel Creek and Gerle Creek Day Use Areas. The Summer Harvest Trail and the user created trail between Angel Creek Day Use Area and the tailrace allow non-motorized access for visitors around the entire shoreline.

6.2.2.3 Interpretation, Information and Education

Interpretive opportunities at this reservoir are available on the Summer Harvest Trail where interpretive panels are posted with information about vegetation, traditional forest uses and at the small boat launching area which has interpretive panels with information about bald eagles. Information about the area is also posted at trailheads, campgrounds, and parking areas. Visitors may also obtain information at the Cleveland Corral and Crystal Basin information stations or through on-site personal communication with ENF patrol staff.

6.2.2.4 Recreation Activities

Recreation activities at and near this reservoir during the non-winter months include picnicking, wildlife and scenic viewing, photography, bicycling, canoeing/kayaking, OHV use, fishing, backpacking, sailboating, visiting cultural/historical sites and hunting. Powerboating was also

reported and it is presumed that these visitors were participating in this activity at other reservoirs where motorized boating is allowed. The five most important activities listed in the survey results collected at this reservoir are: swimming, hiking/walking, fishing (lake or reservoir), OHV use, canoeing/kayaking.

Recreation takes place near but not at this reservoir during the winter months. SMUD plows the Wentworth Springs Road up to the access road to the Gerle Creek Dam which provides public access in the area near Gerle Creek Reservoir for activities such as snow play, snowshoeing, cross-country skiing, wildlife and scenic viewing, hiking, OHV use, and snowmobiling.

Recreation activities near this reservoir during the winter months include snow play, snowshoeing, cross-country skiing, fishing, camping, picnicking, wildlife and scenic viewing, hiking, OHV use, and snowmobiling. It should be noted that snowmobiling is not allowed in the Loon Lake Basin but it is allowed on routes connecting to the Ice House Road downhill from the basin toward Highway 50.

6.2.2.5 Regional Supply

There are several high elevation reservoirs in the region accessible by paved roads that offer developed recreation facilities at waterside settings in mixed conifer settings. There are few reservoirs however where boating use is restricted to non-motorized watercraft. This restriction creates a relatively quieter setting for visitors where they can enjoy swimming, angling and paddling without engine noise and wave action that generally accompany motorized boating use. This reservoir is also known for its quality brown trout fishery. Within the region, reservoirs and lakes that could be considered comparable to Gerle Creek Reservoir that have quality non-motorized boating opportunities and developed recreation facilities in a forested setting would include Loon Lake Reservoir, Echo Lake and Jenkinson Lake (all three of which allow motorized use).

From a winter recreation standpoint, recreation at and near the reservoir is dispersed in nature. Accordingly there are several locations in the region that provide similar opportunities along the Ice House Road and other plowed routes in the Sierra Nevada in the vicinity of Carson Pass, Echo Summit, Kirkwood (Hwy 88), Lake Tahoe, Yuba Gap, and Donner Lake.

6.2.2.6 Suitable and Available Sites

If additional developed recreation facilities were provided at Gerle Creek Reservoir, the applicable development scale would be Level III or IV. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Development Scale III—Site modification moderate. Facilities about equal for protection of natural site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standards roads. Interpretive services informal, but generally direct.

> Development Scale IV—Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.

The number of developed campgrounds and day use facilities are near or at an adequate level of development. Potential recreation developments that do not increase overnight or day use capacity but instead provide opportunities for the existing capacity of visitors should be considered such as trails. The user created trail between the Angel Creek Day Use Area and the tailrace is a potential location for a new trail. Similarly the Summer Harvest Trail could be extended to the dam.

6.2.3 Demand Factors

The main demand factors that will likely influence recreation use at Gerle Creek Reservoir include the demand for developed overnight and day use, angling and flatwater boating.

Regionally, the demand for angling will be fairly level. However, the high aesthetic quality of the reservoir combined with restrictions on motorized boating use will likely cause use at the reservoir to possibly increase. Non-motorized boating use is an activity projected to increase in the future. It is likely that an increase in non-motorized boating use will lead to increased use at this reservoir since it is well suited for this activity.

Visitor surveys collected at the developed recreation facilities and the dispersed use areas at Gerle Creek Reservoir reported information about desired changes or improvements that visitors would like to see. Approximately 20 percent of the summer survey respondents identified some type of change or improvement that they would like to see related to trails (motorized and non-motorized). Some of the more frequently suggested changes and improvements to the area included expanding OHV trail system, restricting and enforcing regulations relating to OHV use, more trails for biking, hiking, equestrian use and shoreline access, and improved trail maintenance.

In the vicinity of Wentworth Springs Road and Gerle Creek suggestions were noted in the survey responses relating to OHV use, which include more group camping opportunities for OHV clubs and placing gravel to reduce dust. Visitors also suggested locating a cellular telephone tower to provide service in the Rubicon area.

Specific to the developed recreation facilities, approximately half of those surveyed suggested some type of change or improvement to the facilities. Visitors most frequently commented on the need for improvements to restrooms (including a desire for showers and flush toilets), cleaner restrooms, larger sites to accommodate RV's and improved potable water availability. Visitors also expressed concern for their safety because of recurrent problems with bears in the

campgrounds and they would also like to see increased numbers of and improvements to trails. Only one suggested change to the reservoir surface, allowing electric motorized watercraft, was identified in the visitor surveys.

Indicators of latent demand are reflected in the survey responses. There were few respondents surveyed at developed recreation facilities in the Crystal Basin who said there were activities they wanted to participate in but were unable to participate in. The responses to the surveys conducted at developed facilities during the summer included boating because there is no place to rent a boat, horseback riding because there is no place to rent a horse and playing horseshoes (there is no facility provided for this activity). The responses to the surveys conducted at dispersed areas in the Crystal Basin during the summer included visitors who wanted: 1) to water ski at night; 2) more OHV trails; 3) to hunt but could not because it was not hunting season; 4) to drive to Bassi Falls but the road is closed to motorized use; and 5) to have campfires in undeveloped sites when fire restrictions are in effect on the ENF.

6.2.4 Areas of Concern Related to Recreation Use

6.2.4.1 Environmental

Dispersed overnight use at the reservoir shoreline occurs at a couple of locations. Although resource damage was not observed at these locations, this activity is not allowed by ENF restrictions, which prohibit overnight camping outside of the developed campground.

Widespread motorized dispersed camping and OHV use is prevalent along the bank of Gerle Creek across from Airport Flat Campground. Resource damage observed at this area included improperly disposed human and animal waste, trash, soil compaction, lack of vegetative cover and numerous sites, some of which are within 100 feet of the stream course.

6.2.4.2 Social

Visitor surveys collected at the developed recreation facilities and the dispersed use areas at and near Gerle Creek Reservoir reported information about recreation and non-recreation related conflicts. The majority of those surveyed at the developed facilities at Gerle Creek Reservoir responded that there were no recreation (85% of the respondents) or non-recreation (93% of the respondents) activities that conflicted with their activities. The conflicts that were identified in the remainder of the dispersed and developed survey responses related to OHV noise, rowdy visitor behavior and noise associated with gunshots and fireworks.

Survey questions about visitor crowding at the developed recreation facilities indicated that, in general, those surveyed did not feel crowded during their visit. During the week most respondents indicated responses of ‘not at all crowded’ or ‘slightly crowded’. Responses between ‘not at all crowded’ to ‘moderately crowded’ were noted in the surveys conducted on weekends; none of the responses indicated a response of ‘extremely crowded’.
The apparent increase in encounters between humans and bears at and near Gerle Creek Reservoir also create concerns for public safety and animal welfare.

6.2.5 Recreation Needs At and Near Gerle Creek Reservoir

6.2.5.1 Capital Improvement Needs

Developed Recreation

The Gerle Creek Campground is in poor condition with worn infrastructure and its design does not meet current standards and there is a need to redesign and reconstruct this facility. The intent would be to provide for approximately the existing capacity and the same type of facility on the footprint of the existing facility. UARP-related recreation facilities that have been constructed more recently than the Gerle Creek Campground have infrastructure that is in good condition however there are varying types of accessibility deficiencies. There is a need to upgrade individual site components that are not accessible at Gerle Creek Day Use Area and one parking space needs to be designated at the Angel Creek Day Use parking area to meet ADA/ABA. These potential actions are current needs and would respond to the need to provide adequate public recreation facilities, meet the requirements for accessibility and address the concern for public health and safety. Improving the quality of the Gerle Creek Campground by redesign and reconstruction would respond to needs identified in visitor surveys and the increased demand for developed overnight recreation opportunities.

Site-specific modifications to existing UARP-related recreation facilities suggested by one or more individual members of the Recreation TWG include:

- Gerle Creek Day Use Area—hardening the boat launch area and improvements for accessibility. This would increase accessible opportunities for visitors.
- Summer Harvest Trail—Repair or replace interpretive signage on the trail. Consider new topics for interpretation on the trail and ways to provide interpretive opportunities for persons with impaired vision. Replace decking material on accessible fishing pier.

In addition, each facility has a useful life and planning for its replacement should be provided as part of managing the UARP-related recreation facilities. Providing for replacement of the facilities would respond to the need to provide for projected increased demand for developed recreation opportunities.

Wildlife resistant food storage and dumpsters are capital improvements needed at the UARP-related recreation facilities. Wildlife resistant food storage lockers should be installed at all of the existing campgrounds. All of the trash receptacles in all of the developed recreation facilities should be wildlife resistant. This potential action is a current need at all developed recreation facilities and would respond to the concern for public health and safety by minimizing human-wildlife conflicts.

Potential new facilities that should be considered to meet recreation needs at Gerle Creek include:

- Summer Harvest Trail—Extend the trail to the dam consistent with improvements to the existing portions of the trail. This would increase hiking opportunities for visitors including opportunities for persons with disabilities.
- New trail—Design and construct a trail in the location of the user created trail between Angel Creek Day Use Area and the tailrace. This would increase hiking opportunities for visitors including opportunities for persons with disabilities.

Dispersed Recreation

Capital improvements are needed to address resource impacts associated with widespread dispersed motorized camping in the vicinity of Wentworth Springs Road where it crosses Gerle Creek. Potential actions should include site evaluations for closure, site restoration, designating and hardening sites for overnight use. These potential actions would meet the current need to address resource impacts related to recreation use. These potential actions would also respond to the projected increased demand for dispersed overnight use and OHV use.

6.2.5.2 Management Needs

Some of the resource impacts and visitor conflicts identified at and near Gerle Creek Reservoir appear to be related to OHV use. To address these concerns, a permitting system for dispersed overnight use near Gerle Creek Reservoir could be implemented. Sites for overnight use could be designated and a fee could be implemented to support funding monitoring and patrols in areas at and near Gerle Creek Reservoir where dispersed recreation use occurs.

There is a need for monitoring recreational use and its potentially related impacts at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Gerle Creek Reservoir. Elements of the monitoring program should include documenting use levels, visitor satisfaction, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a funding mechanism for restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP). A monitoring program is a current need which should continue into the future.

There is a need for patrols at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Gerle Creek Reservoir. Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as unauthorized OHV use, compliance with site closures, pollution and trash. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may

occur in the area. Patrols would also respond to the visitors identified need for increased enforcement of rules and regulations on the reservoir and surrounding lands. Patrols are a current need for the Gerle Creek Reservoir, which should continue into the future.

The management needs relating to the reservoir include continued removal of wood and debris from the reservoir surface, attaining a full reservoir (or as an alternative striving for a near-full reservoir) each year after peak run-off and continuing to restrict boating on the reservoir to non-motorized watercraft. The reservoir level should be kept as high as possible such that the accessible fishing platform remains usable during the recreation season, including during the fall to benefit brown trout spawning, in all types of water years except under extraordinary circumstances. Removing wood and debris would respond to the concern for public health and safety and would assist meeting the objective of providing safe access on the reservoir. The potential actions relating to debris removal and reservoir level would also help achieve the objective of enhancing angling opportunities at the reservoir. Higher reservoir levels in the fall would likely improve angling opportunities associated with the brown trout fishery. Ensuring that the accessible fishing platform remains usable contributes to providing accessible opportunities for persons with disabilities.

The UARP-related recreation facilities are capital investments that require funding for operation and maintenance (O&M). The maintenance should address both routine (annual) and heavy maintenance items (which generally serve to extend the useful life of the facilities). Accordingly, there is a need to provide support for O&M for the UARP-related recreation facilities at Gerle Creek Reservoir. This need would also exist for any new recreation facilities that may be constructed. This potential action is a current need that would respond to the need for adequate public recreation facilities, public health and safety, meeting visitor needs and providing for existing recreational use at the UARP.

There are visitor information and education needs at and near Gerle Creek Reservoir. There is a need to provide information about circumstances that may affect visitors' safety while boating on the reservoir. Boater safety information should be posted at the boat launch and campground where visitors are likely to stop before launching their boats.

Overall there is a need to provide the public with information about recreation facilities and opportunities that are available at and near Gerle Creek Reservoir. This need could be met as part of an information brochure that encompasses recreation resources in the Crystal Basin. This brochure should be made available at visitor points of contact including the Cleveland Corral and Crystal Basin Information Stations, ENF Supervisors Office, Placerville and Pacific Ranger Stations. This is a current need that would provide the public with recreation information about the area at and near Gerle Creek Reservoir. The recreation needs identified at and near Gerle Creek Reservoir are listed in Table 6.2-2.

Table 6.2-2. Summary of the current and potential future needs related to recreational use at and near Gerle Creek Reservoir.

Gerle Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Gerle Creek Campground	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA. Meet needs identified in visitor surveys.	Redesign and reconstruct these UARP-related recreation facilities.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines ADA VU&I §4.1.7.1, Table 4.1-11 RS: §4.2.2.2, §5.2
Angel Creek Day Use Area, including Gerle Creek Trail	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA.	Upgrade individual facility components to meet ADA/ABA-designate one parking space.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines ADA RS: §4.2.2.2, §5.2
Gerle Creek Day Use Area (including fishing pier and boat launch)	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA. Provide accessible opportunities.	Upgrade individual facility components to meet ADA/ABA (fishing pier, restrooms, faucets). Harden and provide accessibility improvements at hand launch site.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines ADA RS: §4.2.2.2, §5.2
Airport Flat Campground	Provide adequate public recreation facilities. Provide for public health and safety.		Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines RS: §4.2.2.2, §5.2

Table 6.2-2. Summary of the current and potential future needs related to recreational use at and near Gerle Creek Reservoir.

Gerle Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Summer Harvest Trail	Provide adequate public recreation facilities. Provide accessible opportunities. Meet increased demand for hiking and day use.	Repair/replace interpretive signage on existing trail. Consider new interpretive message and opportunities for persons with impaired vision. Extend (design & construct) trail to dam.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 106, 108 RS: §4.2.2.2, §5.2 RD: §5.1.3 ADA Professional judgment
User created trail between Angel Creek Day Use Area and Tailrace	Provide adequate public recreation facilities. Provide accessible opportunities. Meet increased demand for hiking and day use.	Design and construct a new trail along the shoreline.	Provide for O&M	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 106, 108 FERC Guidelines RS: §4.2.2.3 RD: §5.1
Gerle Creek, Airport Flat Campgrounds	Public health and safety. Minimize human-wildlife conflicts.	Install wildlife resistant food storage.				VU&I: §4.1.7.1, Table 4.1-11, §4.4 Professional judgment
All UARP-related recreation facilities (existing and future)	Provide adequate public recreation facilities. Meet needs identified in visitor surveys.		Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines
	Provide for managing projected recreation use. Provide adequate public recreation facilities.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1

Table 6.2-2. Summary of the current and potential future needs related to recreational use at and near Gerle Creek Reservoir.

Gerle Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
All UARP-related recreation facilities (existing and future)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use. Meet visitor needs identified for increased enforcement of regulations.		Continue providing patrols		Continue providing patrols	ENF S&G 115 VU&I: §4.1.7.1, Table 4.1-11
	Public health and safety. Minimize human-wildlife conflicts.	Install wildlife resistant dumpsters.				VU&I: §4.1.7.1, Table 4.1-11 Professional judgment

Table 6.2-2. Summary of the current and potential future needs related to recreational use at and near Gerle Creek Reservoir.

Gerle Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
All UARP-related recreation facilities (existing and future)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources. Meet visitor needs identified for increased enforcement of regulations.		Continue providing patrols		Continue providing patrols	ENF S&G 115
	Provide for managing projected recreation use at and near the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1

Table 6.2-2. Summary of the current and potential future needs related to recreational use at and near Gerle Creek Reservoir.

Gerle Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
All UARP-related recreation facilities (existing and future)	Providing for public health and safety. Address resource impacts relating to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.		Implement a permit system for all areas with dispersed overnight use near Gerle Creek, consider including a fee, to support funding needs for monitoring and patrols.		Implement a permit system for all areas with dispersed overnight use near Gerle Creek, consider including a fee, to support funding needs for monitoring and patrols.	ENF LRMP p. 4-18 ENF S&G 25
	Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.	Site evaluations for site closures, restoration. Designate and harden sites as necessary for overnight use. Provide I&E signage.	Implement a permit system for all areas with dispersed overnight use near Gerle Creek, consider including a fee, to support funding needs for O&M, if site controls are implemented.		Implement a permit system for all areas with dispersed overnight use at and near Gerle Creek, consider including a fee, to support funding needs for O&M, if site controls are implemented.	RS: §4.2.2.3 ENF S&G 27, 46, 83 ENF ROG (Pick Your Own Spot) ENF LRMP 4-18
Gerle Creek Reservoir Surface	Provide safe public access on the reservoir.		Remove wood and debris from reservoir.		Remove wood and debris from reservoir.	FERC Guidelines
	Manage reservoir for non-motorized watercraft. Provide safe public access on the reservoir. Meet projected increase in demand for flatwater paddling opportunities.		Restrict boating use on reservoir to non-motorized watercraft.		Restrict boating use on reservoir to non-motorized watercraft.	EDC Ordinance

Table 6.2-2. Summary of the current and potential future needs related to recreational use at and near Gerle Creek Reservoir.

Gerle Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Gerle Creek Reservoir Surface	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP) and boating restrictions. Provide for public health & safety, particularly boating safety. Address resource impacts related to recreation use. Meet visitor needs identified for increased enforcement of regulations.		Continue to provide patrols.		Continue to provide patrols.	ENF S&G 115
	Provide safe public access to the reservoir. Enhance angling opportunities at the reservoir.		Provide reservoir elevation that ensures fishing platform is usable throughout the recreation season except under extraordinary circumstances.		Provide reservoir elevation that ensures fishing platform is usable throughout the recreation season except under extraordinary circumstances.	ADA Professional judgment
			Maintain high reservoir level in the fall to coincide with brown trout spawning.		Maintain high reservoir level in the fall to coincide with brown trout spawning.	VU&I: §4.1.9.1 Professional judgment

Table 6.2-2. Summary of the current and potential future needs related to recreational use at and near Gerle Creek Reservoir.

Gerle Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Gerle Creek Reservoir Surface	Provide for managing projected increased recreation use, including flatwater boating. Enhance angling opportunities. Provide public safe access on the reservoir.				Continue monitoring (visitor and management needs and impacts) program.	ENF LRMP ch. 5, Table V-1 FERC Guidelines
Interpretation, Information and Education (II&E)	Provide for public recreation at the reservoir. Provide safe access on the reservoir Meet current and projected increased demand for flatwater boating opportunities.	Element of II&E Plan-Provide boating safety information at boat launches. Provide interpretive opportunities on the trails at Gerle Creek Reservoir.		Update and maintain information posted at launches and on trails.		RS: §4.4 RD: §5.1 ENF S&G 23 FERC Guidelines
	Provide for public recreation at the reservoir.	Provide an information brochure listing recreation facilities available in the Crystal Basin and other important information visitors should know while visiting. Provide at points of visitor contact on the ENF.		Update and provide additional printings of map or brochure.		RS: §4.4 RD: §5.1, §5.2 ENF S&G 23

6.3 Union Valley Reservoir

This reservoir has a surface area of 2,860 acres and it has a storage capacity of 277,290 acre-feet. The reservoir is located at 4,870 feet in elevation and the slopes around the reservoir are fairly gentle and forested with mixed conifers. There are paved roads and developed recreation facilities at this reservoir. Although the immediate shoreline around the reservoir is public land managed by the ENF, the landownership pattern around the reservoir consists of public land as well as private land, most of which is owned by Sierra Pacific Industries. There are many access roads throughout this area, many of which were used during extensive timber removal following the Ice House Fire. Widespread unauthorized vehicular access on public and private land created a need to gate many of these roads to restrict public access. In general, there is public vehicular access to the reservoir except on the southern shoreline which SPI has installed gates on their access roads. Relative to the other UARP reservoirs, this reservoir has the largest capacity for developed recreation use. Typically, this reservoir receives snowfall between October and April and snow remains on the ground until May or June. A map of Union Valley Reservoir is provided in Figure 6.3-1.

6.3.1 Recreation Management Goal and Objectives

The reservoir and shoreline have a 'Roaded Natural' ROS classification. The general descriptions for this designation are:

- Sights and sounds of man are evident.
- Interaction between users is moderate to high
- Facilities are designed for use by large numbers of people and intensified for motorized use and parking.
- Recreation developments would be Level III or IV.

The Visual Quality Objective (VQO) is 'Retention'.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

- Provide safe access to and on the reservoir.
- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir.
- Mitigate resource impacts related to recreation use.
- Manage potential conflict on reservoir surface between low and high-speed watercraft.
- Enhance year round angling opportunities at the reservoir.
- Manage for recreation use from early spring to late fall.
- Minimize human and wildlife conflicts.

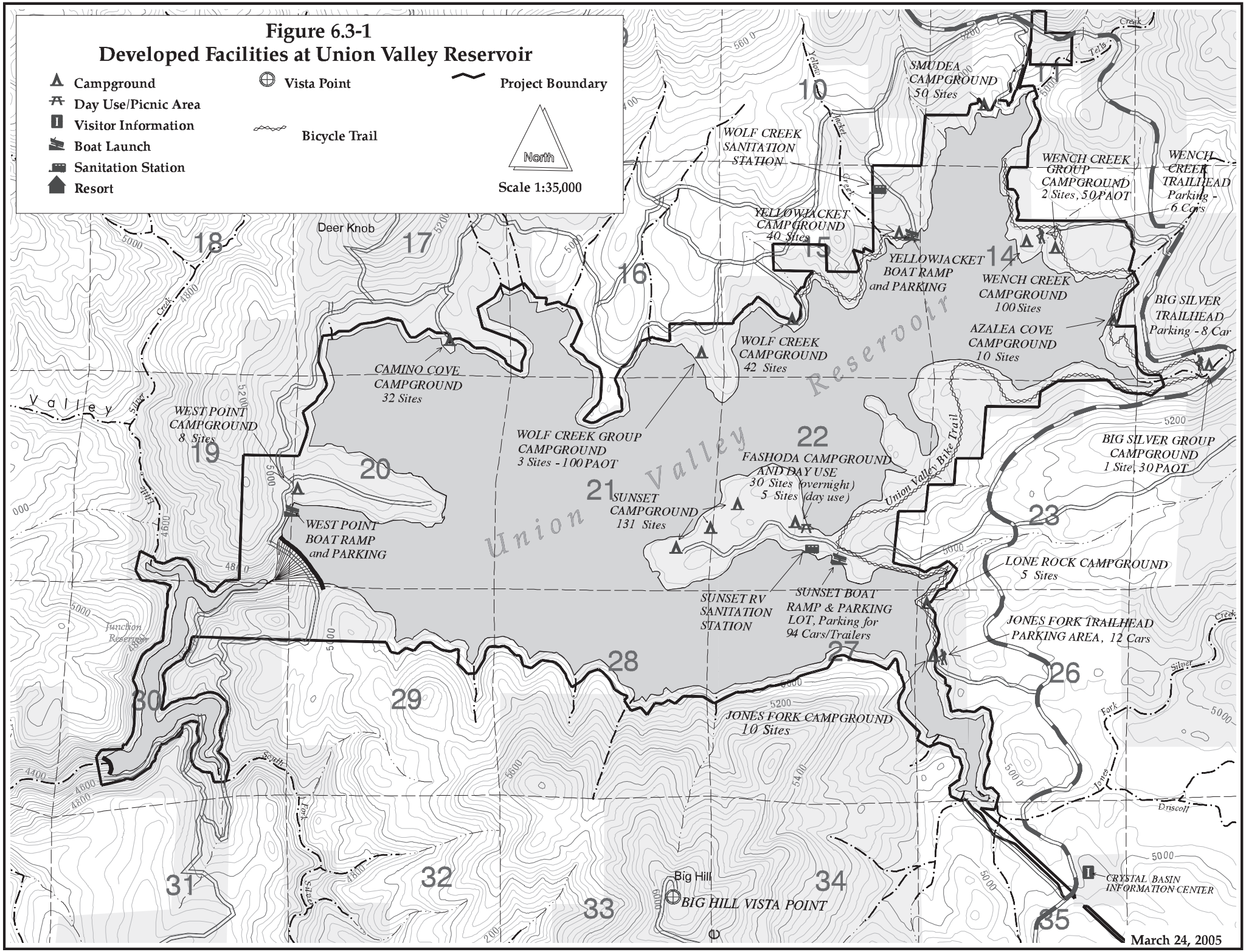


Figure 6.3-1
Developed Facilities at Union Valley Reservoir
Campground
Day Use/Picnic Area
Visitor Information
Boat Launch
Sanitation Station
Resort
Vista Point
Bicycle Trail
Project Boundary
North
Scale 1:35,000
SMUDEA CAMPGROUND 50 Sites
WOLF CREEK SANITATION STATION
WENCH CREEK GROUP CAMPGROUND 2 Sites, 50 PAOT
WENCH CREEK TRAILHEAD Parking - 6 Cars
YELLOWJACKET CAMPGROUND 40 Sites
YELLOWJACKET BOAT RAMP and PARKING
WENCH CREEK CAMPGROUND 100 Sites
BIG SILVER TRAILHEAD Parking - 8 Car
AZALEA COVE CAMPGROUND 10 Sites
WOLF CREEK CAMPGROUND 42 Sites
CAMINO COVE CAMPGROUND 32 Sites
WEST POINT CAMPGROUND 8 Sites
WOLF CREEK GROUP CAMPGROUND 3 Sites - 100 PAOT
FASHODA CAMPGROUND AND DAY USE 30 Sites (overnight) 5 Sites (day use)
BIG SILVER GROUP CAMPGROUND 1 Site, 30 PAOT
SUNSET CAMPGROUND 131 Sites
WEST POINT BOAT RAMP and PARKING
LONE ROCK CAMPGROUND 5 Sites
SUNSET RV SANITATION STATION
SUNSET BOAT RAMP & PARKING LOT, Parking for 94 Cars/Trailers
JONES FORK TRAILHEAD PARKING AREA, 12 Cars
JONES FORK CAMPGROUND 10 Sites
BIG HILL VISTA POINT
CRYSTAL BASIN INFORMATION CENTER
Union Valley Reservoir
Union Valley Bike Trail
Deer Knob
March 24, 2005

6.3.2 Supply Factors

6.3.2.1 Developed Recreation Facilities

Table 6.3-1 lists all of the developed recreation facilities at and near Union Valley Reservoir.

Table 6.3-1. Recreation facilities at Union Valley Reservoir.

	Capacity			Potable Water	Toilets (F=Flush, V=vault, P=Pit)	Reservations (# reservable/#total)	Comments
	# sites[1]	PAOT[2]	Trail length (mi.)				
Campgrounds							
Azalea Cove	10			No	V	0/10	Access by foot, boat or bicycle only. Pack-in/pack-out. No fee.
Camino Cove	32			No	V	0/32	No picnic tables. No fee.
Fashoda	30			Yes	V	0/30	Walk-in campground (service road is available to unload equipment) Showers and new restrooms installed in 2002.
Jones Fork	10			No	V	0/10	
Lone Rock	5			No	V	0/5	Access by foot, boat or bicycle only. Pack-in/pack-out. No fee.
Sunset	131			Yes	V	66/131	
Wench Creek	100			Yes	V/F	0/100	
Westpoint	8			No	V	0/8	No picnic tables or fire grills. No fee.
Wolf Creek	41			Yes	V	15/41	
Yellowjacket	40			Yes	V/F	19/40	
Group Campgrounds							
Big Silver	1	50		No	V	1/1	
Wench Creek	2	100		Yes	F	2/2	Site capacity: 50 and 50.
Wolf Creek	3	100		Yes	V	3/3	Site capacity: 25, 25 and 50.
Organization Camp							
SMUDEA[3]	50			Yes	F	N/A	Privately owned camp.
Day Use Areas							
Big Hill Vista Point	1			No	V		Interpretive display, paved path and formal overlook of the Crystal Basin. No fee.
Fashoda	5			Yes	V		Designated swimming beach with buoys. No fee.
Sunset Boat Launch				Yes	V		92 vehicle with trailer parking spaces. Paved launching lane with courtesy dock. Accessible boarding platform. No fee. Available for self-contained RV overflow (fee).
Westpoint Boat Launch				No	V		14 vehicle with trailer parking spaces. Paved launching lane. No fee.
Yellowjacket Boat Launch				No	V		18 vehicle with trailer parking spaces. Paved launching lane. No fee.

Table 6.3-1. Recreation facilities at Union Valley Reservoir.

	Capacity			Potable Water	Toilets (F=Flush, V=vault, P=Pit)	Reservations (# reservable/#total)	Comments
	# sites[1]	PAOT[2]	Trail length (mi.)				
Sanitation Stations							
Wolf Creek							Near Yellowjacket CG. No fee.
Sunset							Located between Sunset CG and Sunset Boat Launch. No fee.
Lodging							
Robbs Hut[3]	1	6				1/1	Year-round rental available by reservation. Heat, electricity, cooking stove.
Van Vleck[3]	1	6				1/1	Year-round rental available by reservation. Heat, electricity, cooking stove.
Trailhead							
Union Valley Bike Trailhead-Jones Fork CG				No	V		12 paved parking spaces. No fee.
Union Valley Bike Trailhead-Big Silver CG				No	V		7 paved parking spaces. No fee.
Union Valley Bike Trailhead at Wench Cr. CG				No	V		6 paved parking spaces. No fee.
Trails							
Union Valley Bike Trail (east segment)			5.2				Paved 8' wide bike path between Wench Creek CG and Jones Fork CG. No fee.
Union Valley Bike Trail (north segment)			1.1				Paved 8' wide bike path between Yellowjacket CG and Wolf Creek CG. No fee.
Resort (Private)							
Robbs Valley Resort[3]	30[4]						Privately owned resort with RV sites, store, restaurant, bar, live music, showers, dump station and parking for OHV events.
Planned Development/Improvement							
Wildlife resistant food storage lockers at Lone Rock, Azalea Cove and Jones Fork campgrounds in 2004							Funded by ENF CIP[5]
Robbs Valley Resort (private) plans to add 6 cabins in 2003 and possibly more in the future. May expand capacity for camping but no implementation date is set. Would also like to develop a group use site to host youth events (movies, programs).							
Shadow Mountain Hut construction 2 miles south of Loon Lake (Van Vleck area). To be used as overnight rental and warming hut.							Located on and funded by ENF
Azalea Cove Parking Area Improvement							ENF Schedule of Actions January, 2003
Bassi Falls Hiking Trail Construction (.75 mile)							ENF Schedule of Actions January, 2003

[1]Fire ring or fire grill with a picnic table, potable water and trash collection unless otherwise noted
[2]People-at-one-time
[3]non-UARP-related facility
[4]RV sites with hook-ups
[5]Capital Investment Program (ENF improvements with appropriated funding)

Accessibility deficiencies were found at some of the UARP-related recreation facilities at Union Valley Reservoir. The types of deficiencies ranged from minor needs such as water faucets and toilet risers to major needs such as barriers in the paths of travel and restrooms that cannot be modified to meet ADA/ABA.

Most of the UARP-related recreation facilities at Union Valley Reservoir were constructed or reconstructed over the last 10 years and they are in good condition. The one exception is the Sunset Campground, which opened in 1966, which is in poor condition with worn infrastructure, short spur lengths, narrow access roads with cracked pavement and broken vehicle barriers. Yellowjacket Campground is also nearing poor condition.

The Ice House Road, a county road which passes by Union Valley Reservoir, is plowed during the winter however the access roads leading to the campgrounds, day use area and boat launch from Ice House Road are not plowed. On the west side of the reservoir, the Bryant Springs Road is plowed across the dam to Westpoint Boat Launch. The boat launch area is also plowed during the winter, which allows the public to launch boats during the winter. In addition, the access road to Big Hill Vista Point is also plowed. Other than the Westpoint Boat Launch and the Big Hill Vista Point, the developed recreation facilities at Union Valley are not open to the public during the winter months because they are covered with snow. Some visitors park in plowed turnouts along Ice House Road and access the Union Valley Bicycle Trail for cross country skiing and snow shoeing.

6.3.2.2 Dispersed Recreation

Dispersed recreation occurs at and near the reservoir shoreline in the forms of day use activities such as swimming and angling and overnight dispersed camping. In the vicinity of the developed recreation facilities much of this use is associated with visitors who are staying or visiting one of the developed recreation facilities. Along the northern shoreline between Union Valley Dam and Camino Cove Campground, there are several sites along the shoreline that are popular sites for dispersed motorized and boat-in camping. In particular, visitors with RV's and tents densely occupy the area immediately adjacent to the Westpoint Boat Launch through the summer months resulting in a compacted surface lacking vegetative cover. Nearby, visitors also disperse camp on the peninsula known as Westpoint however resource damage associated with this use was not observed.

Continuing eastward along the shoreline from this point, vehicular access has been closed and much of the land is private, except for the immediate shoreline, which is NFS land. The shoreline in this area is gentle sloping and there are several boat-in campsites that receive recurrent use that are located within the 200-foot buffer of public land. Many of these sites are located too close to the shoreline and the types of resource damage observed included soil compaction improperly disposed human and animal waste, cut and damaged vegetation, and trash. It appears that these sites are used for dispersed day use as well overnight use. Occasional points of vehicular access have been observed along this section of the shoreline despite the road closures.

Along the shoreline in the vicinity of the Jones Fork and Sunset campgrounds, there are several user-created trails that visitors use for pedestrian access the shoreline. Some of the trails appear steep and do not have waterbars to prevent erosion. OHV tracks were observed that lead to the shoreline in the Jones Fork arm of the reservoir and along the shoreline across from the Sunset boat launch. These are areas not open to vehicular access for the public but apparently some visitors access these areas by vehicle. The areas where there are foot trails leading to the reservoirs are mostly connected to the campgrounds, day use areas and boat launch locations where visitors travel to the waters edge from these areas.

Dispersed overnight and day use was also observed along Tells Creek upstream of Union Valley Reservoir. Resource damage observed at this location, included trash, improperly disposed human and animal waste, graffiti on rocks and a user-made pit toilet. Visitors access this area with vehicles by a short, steep, and narrow unpaved road that intersects Ice House Road just west of Tells Creek.

Dispersed recreation use has also been popular on Big Silver Creek and Jones Fork Silver Creek, which are two tributaries to Union Valley Reservoir. These sites are not within the UARP boundary and they are located approximately one to five miles away from the reservoir. These sites were identified by the ENF as having recreational use potentially related to the UARP. The ENF has accomplished watershed restoration efforts at both of these locations including road closures, signage, barriers, ripping, and mulching. These watershed restoration projects were accomplished in 2002 and 2003 and these actions have been largely successful in reducing vehicle access near the creeks and on sensitive slopes. Visitors are allowed to access the sites by foot but installing barriers that control vehicle access has reduced dispersed overnight camping at these locations.

Water quality may be affected at some areas of Union Valley Reservoir. Fecal coliform levels were high at near Camino Cove Campground, Fashoda Beach, and Jones Fork Campground during sampling periods with high recreational activity. However, these levels diminished in subsequent sampling efforts when there was lower recreational activity occurring in the respective areas.

The powerline corridor north of Union Valley Reservoir is another area receiving dispersed use. The access roads and cleared areas under the powerline attract OHV users however these routes of access are not designated by the ENF as OHV routes.

The reservoir has gentle sloping shorelines and there are rocks that lie just beneath the water surface, which can become boating hazards at reservoir levels below full pool. As the reservoir lowers, more rocks become exposed requiring boaters to use caution as they travel on the water. Another navigational concern is woody debris delivered into the reservoir each spring with snowmelt. SMUD currently removes this debris from the reservoir prior to the summer recreation season.

6.3.2.3 Interpretation, Information and Education

Big Hill Vista Point, which overlooks Union Valley Reservoir, has interpretive panels describing points of interest that are visible from this site. The ENF offers interpretive and education opportunities related to the bald eagles nesting at this reservoir. The programs consist of ranger talks, interpretive stations and opportunities to view nest sites through a spotting scope. Since 1986 the ENF has organized approximately six of these programs each summer at various developed recreation facilities, depending on the location of the nest sites.

Information about the area is available to visitors at trailheads, campgrounds, boat launch where information is posted. Visitors may also obtain information at the Cleveland Corral and Crystal Basin information stations, or through on-site personal communication with ENF patrol staff.

6.3.2.4 Recreation Activities

Recreation activities at and near this reservoir during the non-winter months include OHV use, dispersed and developed camping, bicycling, hiking, picnicking, fishing, hunting, swimming, motorized and non-motorized boating and wildlife and scenic viewing, bicycling, backpacking, visiting cultural/historical sites and hunting. The five most important activities listed in the survey results collected at this reservoir are: fishing (lake or reservoir), swimming, powerboating, PWC use and hiking/walking.

Recreation activities at and near this reservoir during the winter months include snow play, snowshoeing, cross-country skiing, fishing, camping, picnicking, wildlife and scenic viewing, hiking, OHV use, and snowmobiling. It should be noted that snowmobiling is not allowed in the Loon Lake Basin but it is allowed on routes connecting to the Ice House Road downhill from the basin toward Highway 50.

6.3.2.5 Regional Supply

There are several high elevation reservoirs in the region accessible by paved roads. There are fewer reservoirs however with suitable surface area and configuration for high speed motorboating that are within one or two hours drive from major population centers located in a forested setting with developed recreation facilities for day and overnight use. Within the region areas that could be considered most comparable to Union Valley Reservoir may include Lake Tahoe, Ice House Reservoir, Lower Bear River Reservoir, Silver Lake, Jenkinson Lake, and Folsom Lake.

From a winter recreation standpoint, there are several locations in the region that provide similar opportunities. There are winter trails and sno-parks in the region at Carson Pass, Echo Summit, Kirkwood (Hwy 88), Lake Tahoe, Yuba Gap, and Donner Lake. Backcountry skiing is available at areas at Lake Tahoe, Mount Rose, Donner Summit and Pyramid Peak (see *Recreation Supply Technical Report* for specific locations).

6.3.2.6 Suitable and Available Sites

If additional developed recreation facilities were provided at Union Valley Reservoir, the applicable development scale would be Level III or IV. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Development Scale III—Site modification moderate. Facilities about equal for protection of natural site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standards roads. Interpretive services informal, but generally direct.
>
> Development Scale IV—Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.

The area in the vicinity of Westpoint is a potentially suitable location for additional recreational development. The topography has gentle slopes and the area is near the reservoir. The site is potentially suitable for a developed family and/or group campground.

The shoreline around the reservoir is potentially suitable for non-motorized trail development however further site evaluation and investigation relating to rights-of-way would be needed.

6.3.3 Demand Factors

The main demand factors that will likely influence recreation use at Union Valley Reservoir include the demand for motorized boating, developed overnight and day use, angling, and OHV use. Each of these types of recreation is expected to have increased levels of participation in the future. Another factor that will strongly influence demand at this reservoir is its proximity (one to two hours) to large population centers. The short drive makes this an attractive option for day use and short weekend trips as well as a destination for a stay of a week or longer. Since this reservoir can provide opportunities for each of these types of use and nearby the population centers will experience growth rates higher than the state average, this will contribute to expected increased levels of use.

High speed boating is a particularly important activity for visitors to the reservoir. Although the trend in motorized boating has been fairly level, the proximity to growing population centers of Sacramento and Placerville will likely lead to increased boating use at the reservoir. It should also be noted that there are two regional factors that may also affect boating demand at Union Valley Reservoir. Currently it appears that visitors displaced by lowering water levels at Folsom Lake come to Union Valley Reservoir in the fall. Water levels at other regional opportunities, as

well as Folsom Lake, may influence demand at Union Valley Reservoir. Second, management restrictions such as the prohibition of alcohol use at Folsom Lake and possible restrictions on PWC use at certain water bodies may cause use to shift to other lakes and reservoirs where these restrictions do not exist. Union Valley Reservoir would be a likely substitute for visitors looking for an alternative where their activities would not be subject to increasing use restrictions.

Union Valley Reservoir is also known for its quality kokanee fishery. Although the demand for angling is projected to be fairly stable, the quality of the fishery at this reservoir combined with growth in the nearby population centers will likely lead to increased demand for angling. This reservoir also sees considerable winter angling from day users from nearby communities. As the local residential population grows, winter angling at this reservoir can also be expected to increase.

Recreation activities associated with winter use such as cross country skiing, snow play, back country skiing are also projected to increase in the future. Since this area provides winter opportunities for these activities, winter visitation will likely increase. Currently, most of the wintertime visitors are from El Dorado and Sacramento counties, which have populations growing at a rate faster than the state of California. The growth in these nearby population centers will also contribute to increased visitation.

Visitor surveys collected at the developed recreation facilities and the dispersed use areas at and near Union Valley Reservoir reported information about desired changes or improvements that visitors would like to see. Many of the summer survey respondents identified some type of change or improvement that they would like to see related to trails (motorized and non-motorized). Some of the more frequently suggested changes and improvements to the area included expanding OHV trail system, restricting and enforcing regulations relating to OHV use, more trails for biking, hiking, equestrian use and shoreline access, and improved trail maintenance.

Specific to the developed recreation facilities visitors most frequently commented on the need for improvements to restrooms (including a desire for showers and flush toilets), potable water and hookups for RV's. Larger sites for RV access were suggested in survey responses collected at Westpoint and Camino Cove campgrounds. Visitors would also like to have picnic tables at the Sunset Boat Launch and Camino Cove Campground. Suggestions relating to the reservoir included improvements to the Westpoint and Yellowjacket boat launches.

The winter survey responses specific to Union Valley Reservoir included suggestions to plow access to the Sunset Boat Launch (fishing access), improvements to support cross country skiing and snowshoeing on the south shore of Union Valley Reservoir and opening a campground. These improvements are problematic however, as there is a nesting pair of bald eagles in the vicinity. Regarding changes or improvements to the general area, visitors suggested expanding and grooming the winter trails, improving trail markings, and plowing more roads and turnouts.

Indicators of latent demand are reflected in the survey responses. There were few respondents who said there were activities they wanted to participate in but were unable to participate in. The

responses to the surveys conducted during the summer in the Crystal Basin included boating because there is no place to rent a boat, horseback riding because there is no place to rent a horse and playing horseshoes (there is no facility provided for this activity). The responses to the surveys conducted during the winter included camping in a campground (the facilities are closed during the winter), snowmobiling, ice skating, hut-to-hut cross country skiing, and cable sledding.

6.3.4 Areas of Concern Related to Recreation Use

6.3.4.1 Environmental

As discussed in 6.3.2.2 there are currently five areas where there are environmental concerns associated with recreation use. These include: 1) area adjacent to Westpoint Boat Launch, 2) northern shoreline between Westpoint and Camino campgrounds; 3) shoreline near Sunset Campground and in the Jones Fork arm of the reservoir; 4) Tells Creek in the vicinity of Ice House Road; and 5) the powerline corridor on the north side of the reservoir. Also contributing to resource damage are OHVs, which access the shoreline when the reservoirs are low. The types of resource damage include campsites located too close to the waters edge, soil compaction, lack of vegetative cover, pollution, graffiti, unauthorized OHV use, erosion, trash and improperly disposed human and animal waste. Water quality in certain areas of the reservoir may also be a concern at certain areas at and near the reservoir that experience concentrated and high levels of recreational use.

Visitors are often drawn from the developed recreation facilities, to the shoreline where they access their watercraft, swim, fish or participate in other recreational activities at the shoreline of the reservoir. This pattern of foot traffic has created numerous user created trails between the developed recreation facilities and the shoreline. In some cases the routes are steep and have areas of erosion. Concern regarding these trails includes the number and density of the trails leading to the shoreline that have developed over the years.

6.3.4.2 Social

Visitor surveys collected at the developed recreation facilities and the dispersed use areas at and near Union Valley Reservoir reported information about recreation and non-recreation related conflicts. The majority of those surveyed at the developed facilities at Union Valley Reservoir responded that there were no recreation (87% of the respondents) or non-recreation (95% of the respondents) activities that conflicted with their activities. The conflicts identified in the remainder of the survey responses related to OHV and logging truck noise, rowdy visitor behavior and noise and speed relating to boating or PWC use.

Survey questions about visitor crowding at the developed recreation facilities indicated that, in general, those surveyed did not feel crowded during their visit. During the week most respondents indicated responses of ‘not at all crowded’ or ‘slightly crowded’. Responses within the entire range of ‘not at all crowded’ to ‘extremely crowded’ were noted in the surveys conducted on weekends. Only a few respondents (3 to 7%) reported feeling extremely crowded

and the facilities where these responses were collected included Westpoint Boat Launch, Wench Creek Campground, Sunset Boat Launch and Sunset Campground.

The apparent increase in encounters between humans and bears in the general area of Union Valley Reservoir also create concerns for public safety and animal welfare.

6.3.5 Recreation Needs At and Near Union Valley Reservoir

6.3.5.1 Capital Improvement Needs

Developed Recreation

There are UARP-related recreation facilities in poor condition with worn infrastructure and their design does not meet current standards. These facilities needing to be redesigned and reconstructed include Sunset and Wench Creek Family and Wench Creek Group campgrounds and the restroom at Yellowjacket Boat Launch. The intent would be to provide for approximately the existing capacity and the same type of facility on the footprint of the existing facility. UARP-related recreation facilities that have been constructed more recently, other than these developments, have infrastructure that is in good condition however there are varying types of accessibility deficiencies. There is a need to upgrade individual site components that are not accessible at each of the UARP-related recreation facilities that are not in need of redesign and reconstruction to meet ADA/ABA. These potential actions are current needs and would respond to the need to provide adequate public recreation facilities, meet the requirements for accessibility and address the concern for public health and safety. Improving the quality of the facilities by redesign and reconstruction would respond to needs identified in visitor surveys and the increased demand for developed day and overnight recreation opportunities.

Site-specific modifications to existing UARP-related recreation facilities suggested by one or more individual members of the Recreation TWG include:

- **Jones Fork Campground**—(1) Formalize routes of access to the shoreline to address erosion and other resource impacts associated with recreation use.
- **Sunset Campground**—(1) Formalize routes of access to the shoreline to address erosion and other resource impacts associated with recreation use. (2) Add flush restrooms and showers to respond to visitor needs identified in visitor surveys. (3) Add an entrance kiosk on the main road to the peninsula to direct visitors and provide information.
- **Wench Creek Campground**—(1) Add showers to respond to visitor needs identified in visitor surveys.
- **Yellowjacket Campground**—(1) Add showers to respond to visitor needs identified in visitor surveys.
- **Big Silver Group Campground**—(1) Provide potable water to respond to visitor needs identified in visitor surveys. (2) Provide a shade structure. (3) Formalize routes of access to Big Silver Creek to address erosion and other resource impacts associated with recreation use. (4) Provide barriers or other means to control OHV use in the campground.

- **Westpoint Boat Launch**—(1) Modify ramp to eliminate sand and material deposition and undercutting of the ramp.
- **Yellowjacket Boat Launch**—(1) Modify ramp to eliminate sand and material deposition and undercutting of the ramp. (2) Replace restroom.
- **Union Valley Bicycle Trail**—(1) Provide accessible parking space at Jones Fork Trailhead parking area.
- **Wolf Creek Campground**—(1) Pave roads within the campground.

In addition, each facility has a useful life and planning for its replacement should be provided as part of managing the UARP-related recreation facilities. Providing for replacement of the facilities would respond to the need to provide for projected increased demand for developed recreation opportunities.

Wildlife resistant food storage and dumpsters are capital improvements needed at the UARP-related recreation facilities. Wildlife resistant food storage lockers should be installed at all of the existing campgrounds. All of the trash receptacles in all of the developed recreation facilities should be wildlife resistant. This potential action is a current need at all developed recreation facilities and would respond to the concern for public health and safety by minimizing human-wildlife conflicts.

Potential new facilities that should be considered to meet recreation needs at Union Valley Reservoir include:

- Amphitheater in the vicinity of Sunset Campground. This facility would improve education and interpretive opportunities for visitors. This potential action is a future need.
- Group site for overnight use in the vicinity of Sunset Campground. This facility would respond to the current need for developed group capacity and projected increase in recreational group use. This potential action is a current need.
- Expansion of Westpoint Campground to include additional family campsites and a group site for overnight use. These facilities would respond to the projected increase in demand for developed camping opportunities for groups and families. This potential action is a future need.
- Facilities to support non-water related recreation opportunities. Evaluate and determine appropriate facilities that could be provided to keep Union Valley visitors at the reservoir, thereby reducing visitor tendency to visit other areas in the Crystal Basin. Depending on the facilities provided, this potential action could increase educational and interpretive as well as accessible recreational opportunities at the reservoir. This potential action is a future need.
- Develop an emergency helicopter landing pad in the vicinity of Union Valley Reservoir. Lighting would not be provided at the site. This is a potential future need that would address public safety concerns by improving responses to emergencies. This potential action is a future need.

- Extend the paved non-motorized trail from Tells Creek to Union Valley Dam (north side of reservoir). This is a need that would provide additional non-water related opportunities for visitors, which would reduce the potential for users to visit other nearby areas. This potential action would also respond to the projected increase in comfort biking and routes could potentially be developed by the EDC that connect to this route.
- Construct an unpaved non-motorized trail between Jones Fork Campground and Union Valley Dam (south side of reservoir). This is a potential future need that would provide additional non-water related opportunities for visitors, which would reduce the potential for users to visit other nearby areas. This potential action would also respond to the projected increase in mountain biking and routes could potentially be developed by the EDC that connect to this route.
- Design and construct formalized trails between the developed recreation facilities and the reservoir shoreline. Close and restore inappropriate user created trails. This would address resource damage related to recreation use and improve access to the reservoir for the public. This potential action is a current need.
- Extend at least one of the boat launch ramps to provide year-round access to the reservoir (this would be an alternative relating to managing reservoir levels. See section 6.3.5.2).
- Reconstruct and extend the Yellowjacket Boat Ramp to provide additional usage during the peak summer.

Dispersed Recreation

Capital improvements are needed to address resource impacts associated with dispersed overnight camping along the shoreline between Westpoint and Camino Cove campgrounds. Potential actions should include site evaluations for closure, site restoration, designating and hardening sites for overnight use. These potential actions would meet the current need to address resource impacts related to recreation use. These potential actions would also respond to the projected increased demand for dispersed overnight use.

6.3.5.2 Management Needs

Some of the most abundant resource impacts and common visitor conflicts identified at and near Union Valley Reservoir appear to be related to OHV use, noise and disruption associated with power boating and PWC use and rowdy or noisy visitor behavior. To address these concerns, a permitting system for dispersed overnight use at Union Valley Reservoir could be implemented. Sites for overnight use could be designated and a fee could be implemented to support funding monitoring and patrols in areas at and near Union Valley Reservoir where dispersed recreation use occurs. Additional developed facilities construction could be considered to encourage user to stay in hardened sites.

There is a need for monitoring recreational use and its potentially related impacts at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Union Valley Reservoir. Elements of the monitoring program should include documenting use levels, visitor satisfaction, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a funding mechanism for restoration. A

monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP). A monitoring program is a current need which should continue into the future.

There is a need for patrols at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Union Valley Reservoir. Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as unauthorized OHV use (currently a problem on the north shore and Jones Fork arm of Union Valley Reservoir), compliance with site closures, pollution and trash. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols would also respond to the visitors identified need for increased enforcement of rules and regulations on the reservoir and surrounding lands. Patrols are a current need for the Union Valley Reservoir and these patrols should continue into the future.

The management needs relating to the reservoir include continued removal of wood and debris from the reservoir surface, attaining a full reservoir (or as an alternative striving for a near-full reservoir) each year after peak run-off and providing reservoir levels that ensure two of the boat ramps at the reservoir are available between Memorial Day weekend and September 15 in all types of water years except under extraordinary circumstances. Consideration should be given to reservoir levels that provide for a quality recreation experience, including aesthetic aspects. Additionally, either one of the boat ramps could be extended or reservoir levels could be provided that ensures one boat ramp (Westpoint) is available year round except under extraordinary circumstances. Removing wood and debris would respond to the concern for public health and safety and would assist meeting the objective of providing safe access on the reservoir. Possible actions could also include marking boating hazards. The potential actions relating to debris removal and boat ramp extension or reservoir levels would also help achieve the objective of enhancing angling opportunities at the reservoir and providing safe access on the reservoir. Additionally, since Union Valley has the highest capacity of developed recreation, lower water levels have significant potential to displace users to other locations. The potential actions relating to reservoir level would reduce the potential for displacing boating to other areas which could cause over crowding or boating at areas which may be less suited for this activity.

The UARP-related recreation facilities are capital investments that require funding for operation and maintenance (O&M). The maintenance should address both routine (annual) and heavy maintenance items (which generally serve to extend the useful life of the facilities). Accordingly, there is a need to provide support for O&M and for the UARP-related recreation facilities at Union Valley Reservoir. This need would also exist for any new recreation facilities that may be constructed. This potential action is a current need that would respond to the need for adequate public recreation facilities, public health and safety, meeting visitor needs and providing for existing recreational use at the UARP.

Throughout the Crystal Basin there is a need to have vehicular access during the winter for public recreation. Plowed access is needed on the Ice House Road between Highway 50 and the Loon Lake Chalet, and on Bryant Springs Road between Ice House Road and the Westpoint Boat Launch. Plowing the roads and turnouts is a current need that would allow continued public access for winter recreation in the Crystal Basin and would respond to the needs identified in the visitor surveys.

Roads surrounding the reservoir need to be examined to determine if they meet current standards for providing access to public facilities; in some instances, widening and paving may be necessary to facilitate appropriate levels of access (note: this need was provided by the ENF in February 2005, which was subsequent to the final TWG meeting held to receive comments on this report; this need has not been reviewed with or discussed among the Recreation TWG participants.)

There are visitor information and education needs at and near Union Valley Reservoir. There is a need to provide information about circumstances that may affect visitors' safety while boating on the reservoir such as rocks that may be at or just below the surface of the reservoir. This information should be posted at boat launch sites and campgrounds where visitors are likely to stop before launching their boats.

There is also a need to provide information about boat-in camping opportunities. This may include identifying locations suitable for boat-in camping on a map or brochure including visitor education about proper dispersed camping techniques in order to minimize the impact of this dispersed use. This potential action is both a current and potential future need, which responds to the growing trend in dispersed recreation use. This potential action would contribute towards managing existing and projected recreation use at the reservoir, providing for public health and safety and providing safe access on the reservoir. Visitor education would contribute to minimizing the potential resource impacts associated with dispersed boat-in camping.

Overall there is a need to provide the public with information about recreation facilities and opportunities that are available at and near Union Valley Reservoir. This need could be met as part of an information brochure that encompasses recreation resources in the Crystal Basin. This brochure should be made available at visitor points of contact including the Cleveland Corral and Crystal Basin Information Stations, ENF Supervisor's Office, Placerville and Pacific Ranger Stations. This is a current need that would provide the public with recreation information about the area at and near Union Valley Reservoir.

The recreation needs identified at and near Union Valley Reservoir are listed in Table 6.3-2.

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Sunset, Wench Creek Family, Wench Creek Group and Restrooms at Yellowjacket Boat Launch	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA. Meet needs identified in visitor surveys.	Redesign and reconstruct these UARP-related recreation facilities.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines ADA VU&I §4.1.7.1, Table 4.1-11 RS: §4.2.2.2, §5.2
All UARP-related recreation facilities other than listed above.	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA.	Upgrade individual facility components to meet ADA/ABA.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines ADA RS: §4.2.2.2, §5.2
All UARP-related recreation campgrounds	Public health and safety. Minimize human-wildlife conflicts.	Install wildlife resistant food storage.				VU&I: §4.1.7.1, Table 4.1-11, §4.4 Professional judgment
All UARP-related recreation facilities (existing and future)	Provide for managing projected recreation use. Provide adequate public recreation facilities.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
All UARP-related recreation facilities (existing and future)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC) Provide for public health & safety. Address resource impacts related to recreation use. Meet visitor needs identified for increased enforcement of regulations.		Continue providing patrols		Continue providing patrols	ENF S&G 115 VU&I: §4.1.7.1, Table 4.1-11
	Public health and safety. Minimize human-wildlife conflicts.	Install wildlife resistant dumpsters.				VU&I: §4.1.7.1, Table 4.1-11 Professional judgment
	Address resource impacts relating to recreation use. Provide safe public access to the reservoir.	Design and construct formal trails between developed recreation facilities and the shoreline.	Provide for O&M.		Provide for O&M.	FERC Guidelines ENF S&G 83, 106, 108
Sunset Campground	Meet needs identified in visitor surveys.	Provide flush restrooms and showers.				VU&I: §4.1.7.1, Table 4.1-11 ENF Staff
	Provide for managing existing and projected recreation use at the reservoir.	Provide a visitor kiosk on the entrance road.				ENF Staff

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Yellow Jacket and Wench Creek campgrounds	Meet needs identified in visitor surveys.	Provide showers				VU&I: §4.1.7.1, Table 4.1-11
Big Silver Creek Group Campground		Provide potable water.				ENF Staff
		Provide shade structure.				ENF Staff
	Address resource impacts relating to recreation use.	Design and construct formal trails between the campground and Big Silver Creek.				FERC Guidelines ENF S&G 83, 106, 108 Professional judgment
	Address resource impacts relating to recreation use.	Provide barriers or other means to control OHV use in campground.				ENF Staff ENF S&G 28
Westpoint Boat Launch	Provide adequate public recreation facilities. Meet needs identified in visitor surveys. Address resource impacts relating to recreation use.	Modify ramp to prevent deposition and undercutting.				ENF S&G 24 Professional judgment
Yellowjacket Boat Launch	Provide adequate public recreation facilities. Meet needs identified in visitor surveys. Address resource impacts relating to recreation use.	Modify ramp to prevent deposition and undercutting.				ENF S&G 24 VU&I: §4.1.7.1, Table 4.1-11 Professional judgment

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Yellowjacket Boat Launch	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA.	Replace restrooms.				RS: §4.2.2.2 FERC Guidelines ENF S&G 24 ADA
Union Valley Bicycle Trail-Jones Fk. Trailhead	Provide facilities that meet ADA/ABA.	Provide an accessible parking space.				RS: §4.2.2.2
North shoreline between Tells Creek and Union Valley Dam	Provide adequate public recreation facilities. Provide for public health and safety. Meet projected increase for comfort biking.			Design and construct an extension of the paved non-motorized trail on north side of reservoir.	Provide for O&M.	RD: §4.3.3.8 VU&I: §4.1.7.1, Table 4.1-10 ENF S&G 106, 108
South shoreline between Jones Fork Campground and Union Valley Dam	Provide adequate public recreation facilities. Provide for public health and safety. Provide for projected increase in mountain biking.			Design and construct an unpaved non-motorized trail on the south side of the reservoir.	Provide for O&M.	RD: §4.3.3.8 VU&I: §4.1.7.1, Table 4.1.10
Wolf Creek Campground		Pave access roads within the campground.				Professional judgment
Vicinity of Sunset Campground	Provide for projected increased demand for developed recreation opportunities for group use.	Construct a new campground for group use.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	RD: §4.3.3.3, §4.3.3.8, §5.1.1, §5.1.3 ENF S&G 24

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Vicinity of Sunset Campground	Provide for projected increased demand for II&E opportunities.			Construct a new amphitheater. Provide for facility replacement at end of useful life.	Provide for O&M.	RD: §5.1.1, §5.1.3 ENF S&G 22, 24
Westpoint Campground	Provide for projected increased demand for developed recreation opportunities for group use.			Construct a new campground for group use. Provide for facility replacement at end of useful life.	Provide for O&M.	RD: §4.3.3.3, §4.3.3.8, §5.1.1, §5.1.3 ENF S&G 24
	Provide for projected increased demand for developed recreation opportunities.		.	Expand existing family campground to accommodate additional capacity. Provide for facility replacement at end of useful life.	Provide for O&M.	RD: §4.5.3, Appendix A, § 4.8.2, Table 4.8-9, §5.1.3 RS: §4.2.2.3 ENF Staff
Vicinity of Union Valley Reservoir	Provide for projected increased demand for II&E opportunities. Provide accessible recreation opportunities. Reduce potential for users to visit nearby areas.			Evaluate, determine, and provide appropriate facilities to provide non-water related recreation opportunities.	Provide for O&M.	Professional judgment
	Provide for public health and safety.			Develop an emergency helicopter landing pad.	Provide for O&M.	EDC Impact Report (7/2004)

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Shoreline within ¼ mile of reservoir (current areas of concern: Westpoint Boat Launch, So. Side of dam, Westpoint, between Westpoint and Camino Cove, Lizard Rock, Jones Fk arm.)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use. Manage recreation use near the reservoir to protect natural resources. Meet visitor needs identified for increased enforcement of regulations.		Continue providing patrols		Continue providing patrols	ENF S&G 115
	Provide for managing projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC). Provide for public health & safety. Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1 RD: §5.2

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Shoreline within ¼ mile of reservoir (current areas of concern: Westpoint Boat Launch, So. Side of dam, Westpoint, between Westpoint and Camino Cove, Lizard Rock, Jones Fk arm.)	Providing for public health and safety. Address resource impacts relating to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources.		Implement a permit system for all areas with dispersed overnight use at and near Union Valley Reservoir, consider including a fee, to support funding needs for monitoring and patrols.		Implement a permit system for all areas with dispersed overnight use at and near Union Valley Reservoir, consider including a fee, to support funding needs for monitoring and patrols.	ENF LRMP p. 4-18
	Address resource impacts related to recreation use (boating).		Implement measures to address erosion along the shoreline resulting from wave action.			Professional judgment ENF S&G 83
	Address resource impacts related to recreation use. Manage OHV use & dispersed motorized camping near the reservoir to protect natural resources. Meet current and projected increased demand for flatwater boating opportunities.	Site evaluations for site closures, restoration. Designate and harden sites as necessary for overnight use. Provide I&E signage.	Implement a permit system for dispersed overnight use at all areas with dispersed overnight at and near Union Valley Reservoir, consider including a fee, to support funding needs for O&M, if site controls are implemented.		Implement a permit system for dispersed overnight use at all areas with dispersed overnight at and near Union Valley Reservoir, consider including a fee, to support funding needs for O&M, if site controls are implemented.	RS: §4.2.2.3, §5.2 RD: §4.8.2, Table 4.8-9, §5.1.2 ENF LRMP p. 4-18

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Dispersed overnight use sites adjacent to Westpoint Boat Launch and between Westpoint and Camino Cove	Address resource impacts related to recreation use. Manage dispersed camping near the reservoir to protect natural resources. ENF guidelines for overnight use near watercourses. Address water quality concerns associated with recreation use.	Site evaluations for site closures, restoration. Designate and harden sites as necessary for overnight use. Provide I&E signage.	Implement a permit system for dispersed overnight use at all areas with dispersed overnight at and near Union Valley, consider including a fee, to support funding needs for O&M, if site controls are implemented.		Implement a permit system for dispersed overnight use at all areas with dispersed overnight at and near Union Valley, consider including a fee, to support funding needs for O&M, if site controls are implemented..	RS: §4.2.2.3, §5.2 RD: §4.8.2, Table 4.8-9, §5.1.2 ENF LRMP p. 4-18
Union Valley Reservoir Surface	Provide safe public access on the reservoir.		Remove wood and debris from reservoir.		Remove wood and debris from reservoir.	FERC Guidelines
			Maintain the existing buoyed swimming area.		Maintain the existing buoyed swimming area.	FERC Guidelines Professional judgment
				Consider marking boating hazards.		Professional judgment

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Union Valley Reservoir Surface	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP, EDC) Provide for public health & safety, particularly boating safety. Address resource impacts related to recreation use. Meet visitor needs identified for increased enforcement of regulations.		Continue to provide patrols.		Continue to provide patrols.	EDC Sheriff regulation RD: §5.2
	Provide safe public access to the reservoir. Enhance angling opportunities at the reservoir. Reduce the potential to displace boating to other areas.		Consider extending boat ramps or provide reservoir elevation that ensures 2 boat ramps are usable Memorial Day weekend-Sept.15 and 1 ramp (Westpoint) is available year round except under extraordinary circumstances.		Consider extending boat ramps or provide reservoir elevation that ensures 2 boat ramps are usable Memorial Day weekend-Sept.15 and 1 ramp (Westpoint) is available year round except under extraordinary circumstances.	RS: §4.3 VAPO: §4.2, Figure 4.1-2 RD: §4.8.2. Table 4.8-9, §5.2

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Union Valley Reservoir Surface			Consider attaining a full reservoir or strive for a near-full reservoir each year after peak run-off except under extraordinary circumstances.		Consider attaining a full reservoir or strive for a near-full reservoir each year after peak run-off except under extraordinary circumstances.	VAPO: §4.2, Figure 4.1-2 RD: §4.8.2, Table 4.8-9, §5.2
	Provide for managing projected increased recreation use, including flatwater boating. Enhance angling opportunities. Provide public safe access on the reservoir.				Continue monitoring (visitor and management needs and impacts) program.	EDC Sheriff regulation
Ice House Road (an EDC Road) between Hwy 50 and Loon Lake Chalet and Bryant Springs Road to Westpoint Boat Launch	Provide access for SMUD staff to operate and maintain UARP. Provide for public winter recreation in the Crystal Basin. Provide for public recreation at the reservoir.			Continue plowing these routes, including turnouts/parking areas.		SMUD staff Professional judgment

Table 6.3-2. Summary of the current and potential future needs related to recreational use at and near Union Valley Reservoir.

Union Valley Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Interpretation, Information and Education (II&E)	Provide for public recreation at the reservoir. Meet current and projected increased demand for developed and dispersed recreation opportunities.	Element of II&E Plan-Provide map or brochure with boat-in camping locations and low impact camping techniques. Provide at boat launches and other developed facilities at Union Valley Reservoir.		Update and provide additional printings of map or brochure.		RS: §5.2 RD: §4.8.2, Table 4.8-9, §5.1 VU&I: §4.1.6 ENF S&G 21, 22, 23 Professional judgment
	Provide for public recreation at the reservoir.	Provide an information brochure listing recreation facilities available in the Crystal Basin and other important information visitors should know while visiting. Provide at points of visitor contact on the ENF.		Update and provide additional printings of map or brochure.		RS: §4.4 RD: §5.1.1 Professional judgment
	Provide for public health and safety. Provide safe access on the reservoir.	Provide boating safety information at boat launches and other developed recreation facilities at Union Valley Reservoir.		Update information to be posted.		FERC Guidelines Professional judgment

6.4 Ice House Reservoir

This reservoir has a surface area of 678 acres and it has a storage capacity of 45,960 acre-feet. The reservoir is located at 5,450 feet in elevation and the slopes around the reservoir are fairly gentle and forested with mixed conifers. There are paved roads and developed recreation facilities at this reservoir. Although the immediate shoreline around the reservoir is public land managed by the ENF, the landownership pattern around the reservoir consists of public land as well as private land, most of which is owned by Sierra Pacific Industries. In general, there is public vehicular access to the reservoir except on the southern shoreline because SPI has installed gates on their access roads. Typically, this reservoir receives snowfall between October and April and snow remains on the ground until May or June. A map of Ice House Reservoir is provided in Figure 6.4-1.

6.4.1 Recreation Management Goal and Objectives

The reservoir and shoreline have a 'Roaded Natural' ROS classification. The general descriptions for this designation are:

- Sights and sounds of man are evident.
- Interaction between users is moderate to high
- Facilities are designed for use by large numbers of people and intensified for motorized use and parking.
- Recreation developments would be Level III or IV.

The Visual Quality Objective (VQO) is 'Retention'.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

- Provide safe access to and on the reservoir.
- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir.
- Mitigate resource impacts related to recreation use.
- Manage potential conflict on reservoir surface between low and high-speed watercraft.
- Continue to provide overnight facilities and enhance day use opportunities.
- Enhance year round angling opportunities at the reservoir (in particular fall fishing opportunities).
- Manage for recreation use from early spring to late fall.
- Minimize human and wildlife conflicts.

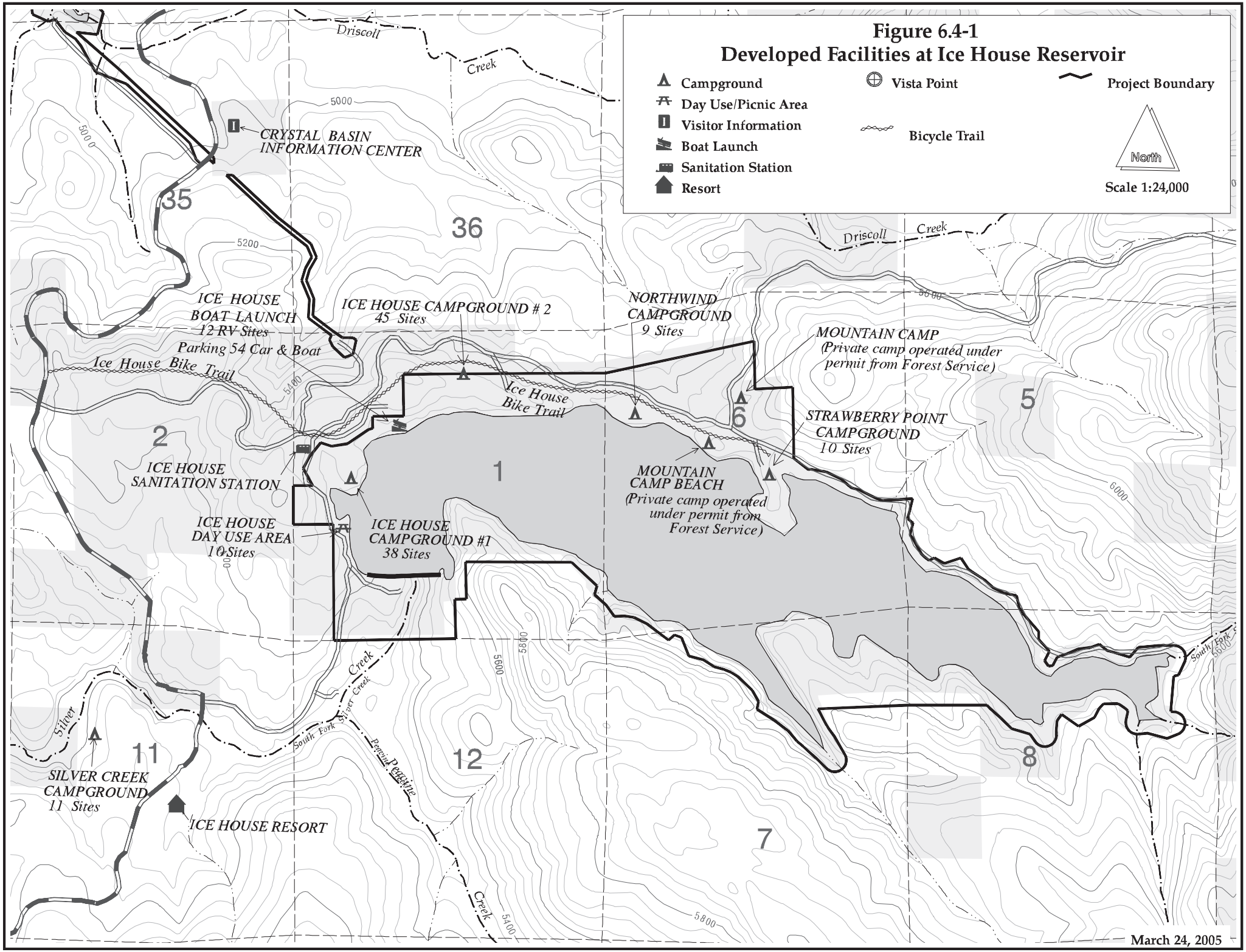


Figure 6.4-1
Developed Facilities at Ice House Reservoir
Campground
Day Use/Picnic Area
Visitor Information
Boat Launch
Sanitation Station
Resort
Vista Point
Bicycle Trail
Project Boundary
North
Scale 1:24,000
CRYSTAL BASIN INFORMATION CENTER
ICE HOUSE BOAT LAUNCH
12 RV Sites
Parking 54 Car & Boat
Ice House Bike Trail
ICE HOUSE CAMPGROUND # 2
45 Sites
NORTHWIND CAMPGROUND
9 Sites
MOUNTAIN CAMP
(Private camp operated under permit from Forest Service)
STRAWBERRY POINT CAMPGROUND
10 Sites
ICE HOUSE SANITATION STATION
ICE HOUSE DAY USE AREA
10 Sites
ICE HOUSE CAMPGROUND #1
38 Sites
MOUNTAIN CAMP BEACH
(Private camp operated under permit from Forest Service)
SILVER CREEK CAMPGROUND
11 Sites
ICE HOUSE RESORT
Driscoll Creek
South Fork Silver Creek
Peavine Peavine Creek
35
36
1
2
5
6
7
8
11
12
March 24, 2005

6.4.2 Supply Factors

6.4.2.1 Developed Recreation Facilities

Table 6.4-1 lists all of the developed recreation facilities at and near Ice House Reservoir.

Table 6.4-1. Recreation facilities at Ice House Reservoir.

	Capacity			Potable Water	Toilets (F=Flush, V=vault, P=Pit)	Reservations (# reservable/#total)	Comments
	# sites[1]	PAOT[2]	Trail length (mi.)				
Campgrounds							
Ice House 1 & 2	83			Yes	V	35/83	
Northwind	9			No	V	0/9	
Silver Creek[3]	11			No	V	0/10	ENF campground. No trailers permitted
Strawberry Point	10			No	V	0/10	
Organization Camp							
Mountain Camp[3]		100					Private youth camp authorized under Special Use Permit from ENF
Day Use Areas							
Ice House	10			No	V		No fee.
Cleveland Corral	3			No	V		Picnic sites at the visitor information station. No fee.
Ice House Boat Launch	8			Yes	V		Courtesy docks provided. Accessible boarding platform. No fee. Includes 8 sites for RV camping (fee).
Sanitation Station							
Ice House Sanitation Station							RV sanitation station located near Ice House CG. No fee.
Trails (non-motorized)							
Ice House Bike Trail[3]			3.1				Unpaved ENF bike trail between Strawberry Point and Ice House Road. No fee.
Information Centers							
Crystal Basin[3]				Yes	F		Located on Ice House Road near Union Valley Reservoir. Staffed by ENF during the summer providing visitor information, permits and maps. No fee.
Cleveland Corral				Yes	F		Located on Ice House Road near Highway 50. Staffed by ENF during the summer providing visitor information. No fee.

Table 6.4-1. Recreation facilities at Ice House Reservoir.

	Capacity			Potable Water	Toilets (F=Flush, V=vault, P=Pit)	Reservations (# reservable/#total)	Comments
	# sites[1]	PAOT[2]	Trail length (mi.)				
Resort (Private)							
Ice House Resort[3]	35[4] 8[5]						Privately owned resort with campground (some RV sites), motel rooms, store, restaurant, bar, showers. Use generators for power supply.
Planned Development/Improvement							
Develop host site at Strawberry Point CG							Funded by fees collected under Fee Demo UARP
Install potable water at Strawberry Point CG (plan to connect to Mtn. Camp water system and install an independent tank to supply the CG)							Funded by fees collected under Fee Demo UARP
Construct trails accessible to persons with disabilities that connect the shoreline to the Strawberry Point and Northwind CG's							Funded by fees collected under Fee Demo UARP
Ice House Resort (privately owned) plans to increase overnight capacity in the form of additional RV campsites and motel rooms. Considering staying open during the winter to accommodate overnight use.							No planned date for implementation is set.

[1]Fire ring or fire grill with a picnic table, potable water and trash collection unless otherwise noted
[2]People-at-one-time
[3]non-UARP-related facility
[4]Campsites (some have RV hook-ups)
[5]Motel rooms

Accessibility deficiencies were found at some of the UARP-related recreation facilities at Ice House Reservoir. The types of deficiencies ranged from minor needs such as water faucets and toilet risers to major needs such as barriers in the paths of travel and restrooms that cannot be modified to meet ADA/ABA.

Most of the UARP-related recreation facilities at Ice House Reservoir were constructed or reconstructed more than 10 years ago and they vary in their physical condition. The developed UARP-related recreation facilities that are in poor condition include the Ice House Campground, Ice House Day Use Area and Ice House Sanitation Station.

The Ice House Road as well as the roads leading to and including the Ice House Boat Launch and the Ice House Dam are plowed during the winter. These access roads are adjacent to the Ice House Campground and the Ice House Day Use Area.

6.4.2.2 Dispersed Recreation

At Ice House Reservoir overnight dispersed camping is not allowed at the reservoir outside of designated campgrounds. Despite this restriction overnight camping was observed during site

inspections on July 4 and 23, 2002. Along the north shore most of the dispersed recreation use is related to day use activities, which occur between Strawberry Point Campground and the inlet of the SF Silver Creek. Resource damage associated with dispersed recreation use at this area includes soil compaction from vehicles driving off of the access road, improperly disposed human and animal waste, trash and vegetation damage. Vehicles driving below the high water mark were observed during the early spring 2003 when the reservoir was low. On the south side of the reservoir five dispersed overnight sites were observed during the site inspections. Resource damage observed at these sites included vehicles driving on roads that are closed to the public, lack of vegetative cover, soil compaction from vehicles traveling to the shoreline, and recently used fire rings in a location where overnight camping is prohibited. Visitors appear to access these sites by driving on roads that are not open to the public (e.g. driving around gates or unauthorized use of gate keys) and by boat.

The access road along the north side of Ice House Reservoir is paved between Ice House Road and Strawberry Point Campground. The road is unpaved from the turnoff to Strawberry Point Campground to the end of the road where SF Silver Creek enters the reservoir. At this eastern end of the road there is an open area where vehicles may turnaround and vehicles were observed parked at this location. There is a user-created trail leading upstream from this parking area paralleling the creek and passing through private and public land. Interviews with ENF personnel and whitewater boaters indicate that this route is used for whitewater boating and hiking access to SF Silver Creek. Since overnight use is not allowed, this route provides access for day use activities.

Along the shoreline in the vicinity of the developed recreation facilities, there are several user-created trails that visitors use for pedestrian access the shoreline. Some of the trails appear steep and do not have waterbars to prevent erosion.

6.4.2.3 Interpretation, Information and Education

There are no existing formal interpretation, information and education opportunities at this reservoir. Visitors obtain information about the area at trailheads, campgrounds, and boat launch where information is posted. Visitors may also obtain information at the Cleveland Corral and Crystal Basin information stations, or through on-site personal communication with ENF patrol staff.

6.4.2.4 Recreation Activities

Recreation activities at and near this reservoir during the non-winter months include OHV use, dispersed and developed camping, bicycling, hiking, picnicking, fishing, hunting, swimming, motorized and non-motorized boating and wildlife and scenic viewing, bicycling, backpacking, visiting cultural/historical sites and hunting. The five most important activities listed in the survey results collected at this reservoir are: fishing (lake or reservoir), swimming, powerboating, PWC use and hiking/walking.

Recreation activities at and near this reservoir during the winter months include snow play, snowshoeing, cross-country skiing, fishing, camping, picnicking, wildlife and scenic viewing, hiking, OHV use, and snowmobiling. It should be noted that snowmobiling is not allowed in the Loon Lake Basin but it is allowed on routes connecting to the Ice House Road downhill from the basin toward Highway 50.

6.4.2.5 Regional Supply

There are several high elevation reservoirs in the region accessible by paved roads. There are fewer reservoirs however with suitable surface area and configuration for high speed motorized boating that are within one or two hours drive from major population centers located in a forested setting with developed recreation facilities for day and overnight use. Relative to the other UARP reservoirs suitable for high speed motorized boating, Ice House Reservoir is the closest reservoir to Highway 50. It is also the closest UARP reservoir to Highway 50 that has developed recreation facilities. Within the region, areas that could be considered most comparable to Ice House Reservoir may include Lake Tahoe, Union Valley Reservoir, Lower Bear River Reservoir, Silver Lake, Jenkinson Lake, and Folsom Lake.

From a winter recreation standpoint, there are several locations in the region that provide similar winter recreation opportunities. There are winter trails and sno-parks in the region at Carson Pass, Echo Summit, Kirkwood (Hwy 88), Lake Tahoe, Yuba Gap, and Donner Lake. Backcountry skiing is available at areas at Lake Tahoe, Mount Rose, Donner Summit and Pyramid Peak (see *Recreation Supply Technical Report* for specific locations).

6.4.2.6 Suitable and Available Sites

If additional developed recreation facilities were provided at Ice House Reservoir, the applicable development scale would be Level III or IV. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Development Scale III—Site modification moderate. Facilities about equal for protection of natural site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standards roads. Interpretive services informal, but generally direct.
>
> Development Scale IV—Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.

The area of the shoreline between Strawberry Point and the inlet of SF Silver Creek to the reservoir is currently used for dispersed day use. This area would be potentially suitable for additional developed day use recreation facilities, including hiking and bicycling trails.

6.4.3 Demand Factors

The main demand factors that will likely influence recreation use at Ice House Reservoir include the demand for motorized and non-motorized boating, developed overnight and day use, angling, and OHV use. Each of these types of recreation is expected to have increased levels of participation in the future. Another factor that will strongly influence demand at this reservoir is its proximity (one to two hours) to large population centers. The short drive makes this an attractive option for day use and short weekend trips as well as a destination for a stay of a week or longer. Since this reservoir can provide opportunities for each of these types of use and nearby the population centers will experience growth rates higher than the state average, this will contribute to expected increased levels of use.

High speed boating is a particularly important activity for visitors to the reservoir. Although the trend in motorized boating has been fairly level, the proximity to growing population centers of Sacramento and Placerville will likely lead to increased boating use at the reservoir. It should also be noted that there are two regional factors that may also affect boating demand at Ice House Reservoir. Currently it appears that visitors displaced by lowering water levels at Folsom Lake come to Ice House Reservoir in the fall. Water levels at other regional opportunities, as well as Folsom Lake, may influence demand at Ice House Reservoir. Second, management restrictions such as the prohibition of alcohol use at Folsom Lake and possible restrictions on PWC use at certain water bodies may cause use to shift to other lakes and reservoirs where these restrictions do not exist. Ice House Reservoir would be a likely substitute for visitors looking for an alternative where their activities would not be subject to increasing use restrictions.

As the UARP reservoir located closest to population centers that provides motorized boating opportunities and developed recreation facilities, this reservoir will likely see the greatest pressure resulting from projected increased demand for recreation. Currently existing use at the only developed day use area at the reservoir often exceeds its capacity during peak times of use.

This reservoir also sees considerable winter angling from day users from nearby communities. As the local residential population grows, winter angling at this reservoir can also be expected to increase.

Recreation activities associated with winter use such as cross country skiing, snow play, back country skiing are also projected to increase in the future. Since this area provides winter opportunities for these activities, winter visitation will likely increase. Currently, most of the wintertime visitors are from El Dorado and Sacramento counties, which have populations growing at a rate faster than the state of California. The growth in these nearby population centers will also contribute to increased visitation.

Visitor surveys collected at the developed recreation facilities and the dispersed use areas at and near Ice House Reservoir reported information about desired changes or improvements that visitors would like to see. Many of the summer survey respondents identified some type of change or improvement that they would like to see related to trails (motorized and non-motorized). Some of the more frequently suggested changes and improvements to the area included expanding OHV trail system, restricting and enforcing regulations relating to OHV use, more trails for biking, hiking, equestrian use and shoreline access, and improved trail maintenance.

Specific to the developed recreation facilities visitors most frequently commented on the need for improvements to restrooms including a desire for showers and flush toilets, potable water and hookups and larger campsites for RV's.

The winter survey responses specific to Ice House Reservoir included suggestions to plow more roads and turnouts. Regarding changes or improvements to the general area, visitors suggested expanding and grooming the winter trails, and improving trail markings.

Indicators of latent demand are reflected in the survey responses. There were few respondents who said there were activities they wanted to participate in but were unable to participate in. The responses to the surveys conducted during the summer in the Crystal Basin included boating because there is no place to rent a boat, horseback riding because there is no place to rent a horse and playing horseshoes (there is no facility provided for this activity). The responses to the surveys conducted during the winter included camping in a campground (the facilities are closed during the winter), snowmobiling, ice skating, hut-to-hut cross country skiing, and cable sledding.

6.4.4 Areas of Concern Related to Recreation Use

6.4.4.1 Environmental

As discussed in 6.4.2.2 there are currently two areas at and near Ice House Reservoir where there are environmental concerns relating to recreational use. These areas include: 1) the southern shoreline where there is concern about vehicular access on gated roads and dispersed overnight use where this activity is not permitted; and 2) the shoreline between Strawberry Point and the inlet of SF Silver Creek. The types of resource damage include unauthorized overnight use, unauthorized vehicular access, soil compaction, lack of vegetative cover, pollution, erosion, trash and improperly disposed human and animal waste.

Visitors are often drawn from the developed recreation facilities, to the shoreline where they access their watercraft, swim, fish or participate in other recreational activities at the shoreline of the reservoir. This pattern of foot traffic has created numerous user created trails between the developed recreation facilities and the shoreline. In some cases the routes are steep and have areas of erosion. Concern regarding these trails includes the number and density of the trails leading to the shoreline that have developed over the years.

6.4.4.2 Social

Visitor surveys collected at the developed recreation facilities and the dispersed use areas at and near Ice House Reservoir reported information about recreation and non-recreation related conflicts. The majority of those surveyed at the developed facilities at Ice House Reservoir responded that there were no recreation (78% of the respondents) or non-recreation (94% of the respondents) activities that conflicted with their activities. The conflicts identified in the remainder of the survey responses related to noise and speed relating to boating or PWC use and rowdy or noisy visitor behavior.

Survey questions about visitor crowding at the developed recreation facilities indicated that, in general, those surveyed did not feel crowded during their visit. During the week most respondents indicated responses of 'not at all crowded' or 'slightly crowded'. Responses within the entire range of 'not at all crowded' to 'extremely crowded' were noted in the surveys conducted on weekends. Between 10 and 25 percent of the survey respondents reported feeling extremely crowded and the facilities where these responses were collected included Strawberry Point and Ice House campgrounds, Ice House Boat Launch and Ice House Day Use Area. Although most of the 'extremely crowded' responses were collected on weekends, some of these responses were also recorded on weekdays.

The apparent increase in encounters between humans and bears in the general area of Ice House Reservoir also create concerns for public safety and animal welfare.

6.4.5 Recreation Needs At and Near Ice House Reservoir

6.4.5.1 Capital Improvement Needs

Developed Recreation

There are UARP-related recreation facilities in poor condition with worn infrastructure and their design does not meet current standards. These facilities needing to be redesigned and reconstructed include Ice House Campground and Ice House Day Use Area. The intent would be to provide for approximately the existing capacity and the same type of facility on the footprint of the existing facility. UARP-related recreation facilities that have been constructed more recently, other than these developments, have infrastructure that is in good condition however there are varying types of accessibility deficiencies. There is a need to upgrade individual site components that are not accessible at each of the UARP-related recreation facilities that are not in need of redesign and reconstruction to meet ADA/ABA. These potential actions are current needs and would respond to the need to provide adequate public recreation facilities, meet the requirements for accessibility and address the concern for public health and safety. Improving the quality of the facilities by redesign and reconstruction would respond to needs identified in visitor surveys and the increased demand for developed day and overnight recreation opportunities.

Site-specific modifications to existing recreation facilities suggested by one or more individual members of the Recreation TWG include:

- **Ice House Bicycle Trail—**Provide additional signage because the existing signage is not sufficient to direct visitors. This potential action is a current need to provide adequate recreation facilities for visitors. In addition, consider expanding this trail to encompass the entire shoreline of the reservoir (note: the need to expand the trail was provided by the ENF in February 2005, which was subsequent to the final TWG meeting held to receive comments on this report; this need has not been reviewed with or discussed among the Recreation TWG participants).

In addition, each facility has a useful life and planning for its replacement should be provided as part of managing the UARP-related recreation facilities. Providing for replacement of the facilities would respond to the need to provide for projected increased demand for developed recreation opportunities. Wildlife resistant food storage and dumpsters are capital improvements needed at the UARP-related recreation facilities. Wildlife resistant food storage lockers should be installed at all of the existing campgrounds. All of the trash receptacles in all of the developed recreation facilities should be wildlife resistant. This potential action is a current need at all developed recreation facilities and would respond to the concern for public health and safety by minimizing human-wildlife conflicts.

Potential new facilities that should be considered to meet recreation needs at Ice House Reservoir include:

- Group site for overnight use in the vicinity of Ice House Reservoir. This facility would respond to the projected increase in group recreational use. This potential action is a potential future need. Consider converting the Ice House Day Use Area into a group facility and relocate the picnic area (note: this potential conversion was provided by the ENF in February 2005, which was subsequent to the final TWG meeting held to receive comments on this report; this need has not been reviewed with or discussed among the Recreation TWG participants).
- Day use area development in the vicinity of the northern shoreline between Strawberry Point Campground and the inlet of SF Silver Creek. Day use area development, including sanitation facilities, would respond to the current need for developed day use capacity and projected increase in day use in the future. Facility development would also provide site hardening which would reduce existing resource impacts related to recreation use. This potential action is a current need.
- Designated boat-in area for overnight use. This proposed development would include approximately five sites for boat-in camping along the south shoreline of the reservoir. This potential action is a potential future need that would respond to the projected increase in flatwater boating and developed overnight use. This development would also address the issue of unauthorized overnight use in undesignated sites and provide site hardening, which would reduce existing resource impacts related to recreation use.
- Design and construct formalized trails between the developed recreation facilities and the reservoir shoreline. Close and restore inappropriate user created trails. This would

address resource damage related to recreation use and improve access to the reservoir for the public. This potential action is a current need.

- Extend boat launch ramp to provide year-round access to the reservoir (this would be an alternative relating to managing reservoir levels. See section 6.4.5.2).

6.4.5.2 Management Needs

There is a need for monitoring recreational use and its potentially related impacts at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Ice House Reservoir. Elements of the monitoring program should include documenting use levels, visitor satisfaction, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a mechanism for funding for restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP). A monitoring program is a current need which should continue into the future.

There is a need for patrols at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Ice House Reservoir. Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as unauthorized vehicle access (currently a problem on the south shore), compliance with site closures, pollution and trash. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols would also respond to the visitors identified need for increased enforcement of rules and regulations on the reservoir and surrounding lands. Patrols are a current need for the Ice House Reservoir and these patrols should continue into the future.

The management needs relating to the reservoir include continued removal of wood and debris from the reservoir surface, attaining a full reservoir (or as an alternative striving for a near-full reservoir) each year after peak run-off and extending the boat ramp or providing reservoir levels that ensure the boat ramp at the reservoir is available between Memorial Day weekend and September 15 in all types of water years except under extraordinary circumstances. Consideration should be given to reservoir levels that provide for a quality recreation experience, including aesthetic aspects. Removing wood and debris would respond to the concern for public health and safety and would assist meeting the objective of providing safe access on the reservoir. The potential actions relating to debris removal and boat ramp extension or reservoir levels would also help achieve the objective of enhancing angling opportunities at the reservoir and providing safe access on the reservoir.

The UARP-related recreation facilities are capital investments that require funding for operation and maintenance (O&M). The maintenance should address both routine (annual) and heavy maintenance items (which generally serve to extend the useful life of the facilities).

Accordingly, there is a need to provide support for O&M and for the UARP-related recreation facilities at Ice House Reservoir. This need would also exist for any new recreation facilities that may be constructed as a requirement of the UARP license. This potential action is a current need that would respond to the need for adequate public recreation facilities, public health and safety, meeting visitor needs and providing for existing recreational use at the UARP.

Throughout the Crystal Basin there is a need to have vehicular access during the winter for public recreation. Plowed access is needed on the Ice House Road between Highway 50 and the Loon Lake Chalet and to the Ice House Boat Launch. Plowing the roads and turnouts is a current need that would allow continued public access for winter recreation in the Crystal Basin and would respond to the needs identified in the visitor surveys. Currently campgrounds in the Crystal Basin are not operated and maintained for public use during the winter months. Some visitor responses indicate a demand for winter camping in developed sites. Ice House Campground would be a suitable location to provide this opportunity since the access roads leading to the campground is plowed, there is existing winter angling use at the reservoir and because this is the closest UARP reservoir to Highway 50 where snow tends to remain during the winter months. This is potential action is a current and potential future need that would respond to the current and projected increased demand for developed winter camping opportunities.

There are visitor information and education needs at and near Ice House Reservoir. There is a need to provide information about circumstances that may affect visitors' safety while boating on the reservoir and this information should be posted at boat launch sites and campgrounds where visitors are likely to stop before launching their boats. There is also a need to provide information about restrictions on overnight dispersed use at Ice House Reservoir.

Overall there is a need to provide the public with information about recreation facilities and opportunities that are available at and near Ice House Reservoir. This need could be met as part of an information brochure that encompasses recreation resources in the Crystal Basin. This brochure should be made available at visitor points of contact including the Cleveland Corral and Crystal Basin Information Stations, ENF Supervisor's Office, Placerville and Pacific Ranger Stations. This is a current need that would provide the public with recreation information about the area at and near Ice House Reservoir.

The recreation needs identified at and near Ice House Reservoir are listed in Table 6.4-2.

Table 6.4-2. Summary of the current and potential future needs related to recreational use at and near Ice House Reservoir.

Ice House Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Ice House Campground, Ice House Day Use Area, Ice House Sanitation Station	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA. Meet needs identified in visitor surveys.	Redesign and reconstruct these UARP-related recreation facilities.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines ADA VU&I: §4.1.7.1, Table 4.1-11 RS: §4.2.2.2, §5.2
Ice House Day Use Area		Consider converting Ice House Day Use Area into a group facility (relocate picnic area).				Professional judgment (note: this need was provided by the ENF in February 2005, which was subsequent to the final TWG meeting held to receive comments on this report; this need has not been reviewed with or discussed among the Recreation TWG participants)
Northwind Campground, Strawberry Point Campground, Ice House Boat Launch	Provide adequate public recreation facilities. Provide for public health and safety. Provide facilities that meet ADA/ABA.	Upgrade individual facility components to meet ADA/ABA.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 24 FERC Guidelines ADA RS: §4.2.2.2, §5.2

Table 6.4-2. Summary of the current and potential future needs related to recreational use at and near Ice House Reservoir.

Ice House Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Northwind, Strawberry Point and Ice House Campgrounds	Public health and safety. Minimize human-wildlife conflicts.	Install wildlife resistant food storage.				VU&I: §4.1.7.1, Table 4.1-11, §4.4 Professional judgment
Ice House Campground	Meet needs identified in visitor surveys. Meet projected increase in demand for winter camping opportunities.		Operate and maintain some of the sites for public use during the winter.		Operate and maintain some of the sites for public use during the winter.	VU&I: §4.1.7.3, Table 4.1-14 RD: §4.3.3.8, §5.1.3 Professional judgment
All UARP-related recreation facilities (existing and future)	Provide for managing projected recreation use. Provide adequate public recreation facilities.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1 FERC Guidelines
	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP) Provide for public health & safety. Address resource impacts related to recreation use. Meet visitor needs identified for increased enforcement of regulations.		Continue providing patrols		Continue providing patrols	ENF S&G 115
	Public health and safety. Minimize human-wildlife conflicts.	Install wildlife resistant dumpsters.				VU&I: §4.1.7.1, Table 4.1-11, §4.4 RS: §4.2

Table 6.4-2. Summary of the current and potential future needs related to recreational use at and near Ice House Reservoir.

Ice House Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
All UARP-related recreation facilities (existing and future)	Address resource impacts relating to recreation use. Provide safe public access to the reservoir.	Design and construct formal trails between developed recreation facilities and the shoreline.	Provide for O&M.		Provide for O&M.	FERC Guidelines ENF S&G 83, 106, 108 Professional judgment
Ice House Bicycle Trail	Provide adequate recreation public recreation facilities.	Provide additional signage.	Provide for O&M		Provide for O&M	Professional judgment ENF S&G 24
	Provide adequate recreation public recreation facilities.	Consider expanding the trail to encompass the entire shoreline of the reservoir.				Professional judgment (note: this need was provided by the ENF in February 2005, which was subsequent to the final TWG meeting held to receive comments on this report; this need has not been reviewed with or discussed among the Recreation TWG participants).
Vicinity of Ice House Reservoir	Provide for projected increased demand for developed recreation opportunities for group use.			Evaluate potential sites and construct a new campground for group use. Provide for facility replacement at end of useful life.	Provide for O&M.	RD: §4.3.3.3, §4.3.3.8, §5.1.1, §5.1.3 ENF S&G 24

Table 6.4-2. Summary of the current and potential future needs related to recreational use at and near Ice House Reservoir.

Ice House Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Northern shoreline between Strawberry Point Campground and SFSC inlet	Provide for current and projected increased demand for day use opportunities. Address resource impacts related to recreation use.	Construct a new activity-focused day use area considering trails, improved parking, developed day use facilities.		Provide for facility replacement at end of useful life.	Provide for O&M.	RS: §4.2.2.3 RD: §4.5.2, Table 4.5-2, §4.8.2, Table 4.8-9, §5.2 ENF S&G 24, 83
South shoreline of Ice House Reservoir	Provide for current and projected increased demand flatwater boating and developed overnight opportunities. Address resource impacts related to recreation use. Control unauthorized dispersed overnight use near the reservoir to protect natural resources.	Designate and harden sites as necessary for overnight use. Provide I&E signage.		Provide for facility replacement at end of useful life.	Provide for O&M.	RS: §4.2.2.3, §5.2 RD: §5.1.2 ENF S&G 25, 46, 83

Table 6.4-2. Summary of the current and potential future needs related to recreational use at and near Ice House Reservoir.

Ice House Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Shoreline within ¼ mile of reservoir (current areas of concern: south shoreline, between Strawberry Point Campground and inlet of SFSC and along SFSC upstream of Ice House Reservoir.)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use. Manage recreation use near the reservoir to protect natural resources. Meet visitor needs identified for increased enforcement of regulations.		Continue providing patrols		Continue providing patrols	ENF S&G 115
	Provide for managing projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use. Manage OHV use & control unauthorized dispersed overnight use near the reservoir to protect natural resources.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1

Table 6.4-2. Summary of the current and potential future needs related to recreational use at and near Ice House Reservoir.

Ice House Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Ice House Reservoir Surface	Provide safe public access on the reservoir.		Remove wood and debris from reservoir.		Remove wood and debris from reservoir.	FERC Guidelines
	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety, particularly boating safety. Address resource impacts related to recreation use. Meet visitor needs identified for increased enforcement of regulations.		Continue to provide patrols.		Continue to provide patrols.	EDC Sheriff regulation
	Provide safe public access to the reservoir. Enhance angling opportunities at the reservoir.		Consider extending boat ramp or provide reservoir elevation that ensures the boat ramp is available from Memorial Day weekend-Sept.15, except under extraordinary circumstances.		Consider extending boat ramp or provide reservoir elevation that ensures the boat ramp is available from Memorial Day weekend-Sept.15, except under extraordinary circumstances.	RS: §4.3 VAPO: §4.3, Figure 4.3-1 RD: §4.8.2, Table 4.8-9, §5.2

Table 6.4-2. Summary of the current and potential future needs related to recreational use at and near Ice House Reservoir.

Ice House Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Ice House Reservoir Surface			Consider attaining a full reservoir or strive for a near-full reservoir each year after peak run-off except under extraordinary circumstances.		Consider attaining a full reservoir or strive for a near-full reservoir each year after peak run-off except under extraordinary circumstances.	VAPO: §4.3, Figure 4.3-1 RD: §4.8.2, Table 4.8-9, §5.2
	Provide for managing projected increased recreation use, including motorized and non-motorized boating. Enhance angling opportunities. Provide public safe access on the reservoir.				Continue monitoring (visitor and management needs and impacts) program.	ENF LRMP 5-7 FERC Guidelines
Ice House Road (an EDC Road) between Hwy 50 and Loon Lake Chalet and access road to Ice House Boat Launch	Provide access for SMUD staff to operate and maintain UARP. Provide for public winter recreation in the Crystal Basin. Provide for public recreation at the reservoir.			Continue plowing these routes, including turnouts/parking areas.	Consider operating the Ice House Campground for winter camping.	SMUD staff Professional judgment

Table 6.4-2. Summary of the current and potential future needs related to recreational use at and near Ice House Reservoir.

Ice House Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Interpretation, Information and Education (II&E)	Provide for public recreation at the reservoir.	Provide an information brochure listing recreation facilities available in the Crystal Basin and other important information visitors should know while visiting. Provide at points of visitor contact on the ENF.		Update and provide additional printings of map or brochure.		RS: §4.4 RD: §5.1, §5.2 ENF S&G 23
	Provide for public health and safety. Provide safe access on the reservoir.	Provide boating safety information at boat launches and other developed recreation facilities at Ice House Reservoir.		Update information to be posted.		FERC Guidelines Professional judgment

6.5 Reaches in the Crystal Basin

6.5.1 Loon Lake Dam Reach

This river reach is 8.1 miles long with an average gradient of 133 feet per mile. The upper two thirds of this reach (below Loon Lake Reservoir) contains two large meadows punctuated by short sections with higher gradient. The steepest section is in the last third of the run which begins where Wentworth Springs Road crosses Gerle Creek. As the creek nears Gerle Creek Reservoir the gradient eases and the pools become larger. In contrast to other UARP reaches, access to this reach is generally good. Wentworth Springs Road parallels Gerle Creek for most of the reach. Gerle Creek is also unique in Crystal Basin because of the quality brown trout fishery in this reach.

6.5.1.1 Recreation Management Goals and Objectives

El Dorado County expressed a desire to reestablish the Wentworth Springs Road as the primary access to the Rubicon Trail OHV route. With increased use on Wentworth Springs Road there is a need to limit vehicular access to the right-of-way. The Recreation TWG chose to divide the management of this reach into three different sections, each having goals that meet the specific needs of that section.

1) Loon Lake Dam to Rocky Basin Creek includes the top 6.5 miles of this reach. The goal in this section is to maintain primitive character.
2) The next 0.5-mile section is from Rocky Basin Creek to Airport Flat Campground. The Recreation TWG recommended maintaining a semi-primitive character for this reach.
3) The final 1.2 miles from Airport Flat Campground to Gerle Creek Reservoir has paved access via Gerle Creek Campground Road and Wentworth Springs Road. This section currently sees higher day use than the other parts of the reach. The goal for this section is to allow for developed recreation opportunities.

6.5.1.2 Supply and Demand Factors

Results from the Stream Angler Focus Group indicated that because of the relatively high quality angling, high aesthetic value of the area, easy access and the unique wild brown trout fishery make this the most important reach on the UARP from an angling perspective. The fishery studies confirmed the status of the brown trout fishery on Gerle Creek. The electroshock fish sampling conducted during these studies consistently showed high numbers of brown trout throughout the reach. The Recreation TWG considered these factors and determined that there is a need to protect the brown trout fishery in this reach.

The opportunities for whitewater boating on this reach are somewhat limited. The *Whitewater Boating Feasibility Technical Report* revealed that the major obstacle to whitewater boating in this reach is that nearly half of the reach is comprised of two meadows, each of which are impassible due to vegetation in the channel. Utilizing this reach for whitewater boating would require running the boatable sections and transporting boats through non-navigable sections of

meadows. It is doubtful that boaters would be willing to undertake boating on this reach given the relatively short whitewater sections that exist.

6.5.1.3 Areas of Concern Related to Recreation Use—Environmental and Social

There are several areas of concern relating to recreational use in this reach. As previously stated, El Dorado County has expressed and interest in re-establishing the Historic Wentworth Springs Road as the primary access route for the Rubicon OHV Route. This is in response to vehicles fording Gerle Creek on the historic Wentworth Springs Road (a county road with no formal crossing or bridge at this location). As a result of having vehicles in the stream bed there is bank erosion and sediment in the creek. An additional concern is that high flows in this reach make Wentworth Springs Road impassable at times creating a safety concern for OHV users.

There was a general interest among the Recreation TWG participant in protecting this reach from excessive angling pressure and a specific concern about protecting brown trout during their fall spawning period. The Stream Angler Focus Group participants expressed an interest in seeing a catch and release or a two fish catch limit imposed on this reach. Fishery studies conducted on this reach indicate that increases in angling pressure could be having an impact on trout populations, particularly in the Wentworth Springs area.

6.5.1.4 Capital Improvement Needs

Capital improvements are needed to address resource impacts associated with widespread dispersed motorized camping in the vicinity of Wentworth Springs Road where it crosses Gerle Creek. The Recreation TWG determined that there was a need to construct an adequate crossing at this location on Wentworth Springs Road. This crossing would provide recreation access to the upper part of this reach, to the Rubicon OHV Route and protect water quality. Potential actions should include site evaluations for closure, site restoration, designating and hardening sites for overnight use. These potential actions would meet the current need to address resource impacts related to recreation use. These potential actions would also respond to the projected increased demand for dispersed overnight use and OHV use.

6.5.1.5 Management Needs

A management plan should be coordinated with the El Dorado County Rubicon Trail Management Plan. A monitoring program is a current need. A monitoring program would provide a mechanism for meeting future needs necessary to manage recreation use along the Loon Lake Dam Reach. Further, a monitoring system would provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP).

There are several angling recreational management needs. One of the specific issues that should be covered by this management plan would be to evaluate actions such as imposing species specific catch limit or 'catch and release' to protect this unique angling opportunity. Another management need is to protect late fall spawning of wild brown trout. These potential actions

are current management needs that would help achieve the recreation objective of managing the reach for a wild brown trout fishery and maintaining and enhancing angling opportunities.

Along Gerle Creek between Loon Lake Dam and Rocky Basin Creek there is a need to limit motorized vehicle access to the Wentworth Springs Road right-of-way. In addition, closing all user created OHV routes and limiting camping to designated campsites are needed. These potential actions are current management needs that would address resource impacts relating to recreational use. These potential actions are current needs that would provide OHV management consistent with ENF guidelines to restrict OHV use to designated routes and address resource impacts related to recreation use.

Within the section of Gerle Creek between Rocky Basin Creek and Airport Campground section there are a number of user created dispersed campsites, some of which are located too close to the waters edge. To address these concerns, a permitting system for dispersed overnight use in this area could be implemented. Sites for overnight use could be designated and a fee could be considered to support funding monitoring and patrols in areas at and near Gerle Creek where dispersed recreation use occurs. In the future, the level of overnight use and day use should not be increased over the existing level of recreational use. These potential actions are current needs that would provide OHV management consistent with ENF guidelines to restrict OHV use to designated routes and address resource impacts related to recreation use.

This reach should be included as part of the overall need for monitoring recreational use at and near the UARP and its potentially related impacts.

6.5.2 Robbs Peak Dam Reach

This reach is 5 miles long extending from the Robbs Peak Dam to the confluence with the main stem of the Rubicon River. The average gradient on this reach is 268 feet per mile with the steepest mile dropping over 500 feet. There is relatively good access in the top portion of the reach, where Forest Service Road 13N28 crosses the reach near the confluence of Gerle Creek. There is also good access at Forest Service Road 13N25 as it follows the river down stream. At river-mile 3.5 the gradient increases considerably and continues to be quite steep down to the confluence with the Rubicon River. A reconnaissance of this reach in 2004 found this section to be passable for whitewater boating but it would require considerable agility and rock bouldering skills. A few of dispersed campsites exist along the reach.

6.5.2.1 Recreation Management Goals and Objectives

The primary goal for this reach is to manage recreational use to maintain the wild trout fishery in the reach. Secondarily, there is a need to managing motorized dispersed use in order to maintain the natural character of the upper portion of reach.

6.5.2.2 Supply and Demand Factors

The Whitewater Boating Feasibility Study and subsequent reconnaissance to this reach found the whitewater boating opportunities are limited due to the steep gradient and the channel geomorphology. Whitewater use may occur in the future on an opportunistic basis. The upper portion of this reach provides better access for angling. Lower reaches appear to provide challenging hike-in angling opportunities with high aesthetic quality. Information from the fishery studies shows this reach to have a robust trout fishery. The Stream Angler Focus Group ranked this reach the third best stream angling opportunity on the UARP.

6.5.2.3 Areas of Concern Related to Recreation Use—Environmental and Social

It appears that the number of motorized user created access routes are increasing over time in the upper portions of this reach which are causing resource degradation. Results from the Stream Angler Focus Group indicated a concern of vehicular use affecting the quality of this fishery.

6.5.2.4 Capital Improvement Needs

At this point there appear to be no capital improvements necessary at this time.

6.5.2.5 Management Needs

As previously stated the primary management need is to evaluate actions that would limit vehicular access to this reach. Another management need is to provide flow information at the confluence of Gerle Creek with the SF Rubicon River to give whitewater paddlers the necessary information for them to take advantage of flows on this reach on an opportunistic basis.

This reach should be included as part of the overall need for monitoring recreational use at and near the UARP and its potentially related impacts.

6.5.3 Ice House Dam Reach

The 11.2 miles of the South Fork of Silver Creek below Ice House Dam is significantly different in character than the other reaches below UARP dams. It has the lowest gradient of all of the reaches surveyed with a 75 feet per mile gradient. The river channel is much more accessible than the steep canyons downstream of Junction Reservoir. Most of the reach flows through the area burned by the 1992 Cleveland Fire, which diminishes the natural beauty of the reach and created some wood hazards in the river. There is a considerable amount of private property along this reach, most of which is owned by Sierra Pacific Industries. There are a number of access locations where the public currently accesses this reach across private lands. However, public access does exist at the Silver Creek Campground, which is located 1.6 miles below the Dam.

6.5.3.1 Recreation Management Goals and Objectives

There is a need to develop a management plan through coordination between hydro system operators, river users, managing agencies and other affected parties. The Recreation TWG expressed a desire to provide for whitewater boating opportunities that are consistent with other recreational uses and ecological goals for this reach. There is also a desire to protect and enhance wild trout fishery and angling opportunities, as well as ensure that there is adequate access to the reach for the public.

6.5.3.2 Supply and Demand Factors

The *Ice House Whitewater Boating Flow Technical Report* found that boaters felt that this was a high quality reach, rating it an 8 on a 10-point scale and a close second to the Slab Creek reach in its desirability. The run is considered to be class IV in difficulty with the current amount of large woody debris in the river. What makes this run particularly unique is its moderate difficulty where reaches at this elevation in the Sierra Nevada typically have a greater level of difficulty. Optimal flows were determined to be between 400 and 550 cfs. If less large woody debris were present in the reach this run could be acceptable for commercial use with smaller rafts.

This reach is also highly desirable for anglers. Fishery studies confirmed high numbers of brown and rainbow trout in the upper portions of this reach. The reach is also desirable because it is the closest of the reaches in the Crystal Basin to Highway 50.

6.5.3.3 Areas of Concern Related to Recreation Use—Environmental and Social

The Stream Angler Focus Group expressed some concern over potential impacts of whitewater flow releases on other forms of recreation along the Ice House Reach. Some of these concerns include the possibility of decreased angler success during and after flow events. Another concern expressed was the possible impacts to the ecosystem due to flow events. Finally, there was a concern in regard to the potential impacts to Silver Creek Campground such as inundation of some campground facilities.

The *Ice House Whitewater Boating Flow Study Technical Report* documents that currently the public can access this reach at a number of locations however, most of these locations are on private land. Some of these access points are posted as private land but landowners may not actively or consistently assert their property rights to prevent trespassing. If the existing passive management of the private points of access changes, public access to this reach would be severely limited.

6.5.3.4 Capital Improvement Needs

Due to the limited public access on the Ice House Dam Reach and the high recreation potential, there is a need to purchase desirable parcels or the possibility for land exchanges to provide public recreational access to the reach. The goal would be to provide better access to this reach for all types of recreational users. A re-design and reconstruction of the Silver Creek Campground could be considered in order to facilitate this recreation opportunity. During the

Stream Angler Focus Group some anglers commented that a river trail along this reach would be desirable. The *Ice House Whitewater Boating Flow Technical Report* noted that the six hours and fifteen minutes required to complete the entire run seemed long, particularly since the study participants only took very short breaks and almost no time playing at the numerous play spots on the run. Members of the study participants stated that a take-out location in the last half of the run would be desirable. If flows for whitewater boating are provided and boating use develops in the future, capital improvements such as restrooms and parking areas would be need to be provided at appropriate access sites.

6.5.3.5 Management Needs

Regarding whitewater recreation there is a need to consider providing scheduled flow releases in this reach that would be suitable for whitewater boating of approximately 500 cfs. The preferred months for scheduled releases, in order of preference, are: July, June, a close second, and then May. The preferred days of the week for scheduled releases, in order of preference, are: Saturday, Sunday, Friday then others. If suitable flows are provided, the release schedule would be part of a River Management Plan that would need to be developed. In addition the plan would address: 1) river access; 2) safety concerns; 3) whitewater boater density; 4) conflicts with other recreational uses; 5) user education; and 6) monitoring. The plan would outline adaptive management options, including use thresholds that could be implemented based on monitoring. Adaptive management options could include different flow levels and/or changes to the schedule of releases to provide different types of boating experiences. This management plan should continue to monitor future use and possible resource impacts. The potential action of providing scheduled releases suitable for whitewater boating and the associated River Management Plan are current needs that would help achieve the recreation objective of providing whitewater boating opportunities in this reach. Monitoring and adaptive management would respond to the need to address resource impacts from recreational use and provide for public recreation at the UARP.

To the extent possible, consideration should be given to scheduling releases suitable for whitewater boating at a time, magnitude and duration that may also achieve other resource objectives (i.e. channel morphology).

This reach should be included as part of the overall need for monitoring recreational use at and near the UARP and its potentially related impacts.

The recreation needs identified for the reaches in the Crystal Basin are listed in Table 6.5-1.

Table 6.5-1. Summary of the current and potential future needs related to recreational use in the river reaches in the Crystal Basin.

River Reaches in the Crystal Basin	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Loon Lake Dam	Maintain primitive character by limiting motorized vehicle access to the r/w of the Wentworth Springs Rd. and any designated campsites. Protect Brown Trout Fishery	Construct adequate crossing at this location on the county road crossing of Gerle Creek.	Limit camping to designated sites from Loon Lake Dam to Rocky Basin Creek		Continue to monitor use	SFTR: §4.5 WWF: §5.8, §6.0, Table 6.1-1 VU&I: §4.1.9.1 ENF S&G 84 ENF LRMP ch. 5, Table V-1 ENF Staff
Robbs Peak Dam	Maintain existing opportunities. Manage recreational use to maintain wild trout fishery in the reach.		Limit roaded access to the reach.		Continue to monitor use	SFTR: § 4.8 WWF: §5.7, §6.0, Table 6.1-1 ENF S&G 28 VU&I: §4.1.9.1 ENF LRMP ch. 5, Table V-1
Ice House Dam	Provide for whitewater boating opportunities. Protect and Enhance Wild Trout Fishery.	Land acquisition to provide access.	Develop river management plan for whitewater releases and other recreational activities on the reach.	Facilities appropriate to any additional access locations developed for this reach	Continue to monitor use and adapt management plan	SFTR: §4.9 WWF: §5.4, §6.1, Table 6.1-1 VU&I: §4.1.9.1 IHWW: §4.4, §6.0 ENF LRMP ch. 5, Table V-1

7.0 CANYONLANDS

The area designated as the Canyonlands includes Junction, Camino, Slab Creek and Brush Creek reservoirs, which support a small amount of recreation use as compared to reservoirs in the Crystal Basin and High Country. The Canyonlands also include portions of the SF Silver Creek below and SF American River to the White Rock Powerhouse. The reservoirs in the Canyonlands are relatively small reservoirs located mostly on public lands managed by the ENF. Although almost all of the shoreline of these reservoirs and the surrounding lands consist of public land, access to the reservoirs and reaches is characteristically limited by steep topography and, consequently, few access roads. Within the Canyonlands there are parcels of privately owned land. Some parcels are owned by Sierra Pacific Industries and managed for timber production and there are also developed parcels of land with homes, particularly in the vicinity of Slab Creek Reservoir and White Rock Powerhouse.

During the winter, SMUD plows main routes of access for UARP operations and maintenance. Although the Canyonlands receive snow during the winter months, it does not usually persist throughout the winter. The plowed roads allow public vehicular access in the general area of Junction Reservoir, Slab Creek, and Brush Creek reservoirs.

Two of the reaches in the Canyonlands are suitable for whitewater boating. These reaches are the Camino Reach (between Camino Dam and Slab Creek Reservoir) and the Slab Creek Reach (between Slab Creek Dam and Chili Bar Reservoir).

7.1 Junction Reservoir

This reservoir has a surface area of 64 acres and it has a storage capacity of 3,250 acre-feet. The reservoir is located at 4,450 feet in elevation, the reservoir has a narrow configuration with four ‘arms’ and the slopes around the reservoir are steep. There are paved and unpaved, narrow roads leading to this reservoir and other than one informal boat launch, there are no developed recreation facilities at this reservoir. Typically, this reservoir receives snowfall between October and April. However, because of its elevation there are periods of time between storms when the snow may melt during the winter. A map showing Junction Reservoir is provided in Figure 7.1-1.

7.1.1 Recreation Management Goal and Objectives

The reservoir and shoreline has a ‘Roaded Natural’ ROS classification. The general descriptions for this designation are:

- Sights and sounds of man are evident.
- Interaction between users is moderate to high
- Facilities are designed for use by large numbers of people and intensified for motorized use and parking.
- Recreation developments would be Level III or IV.

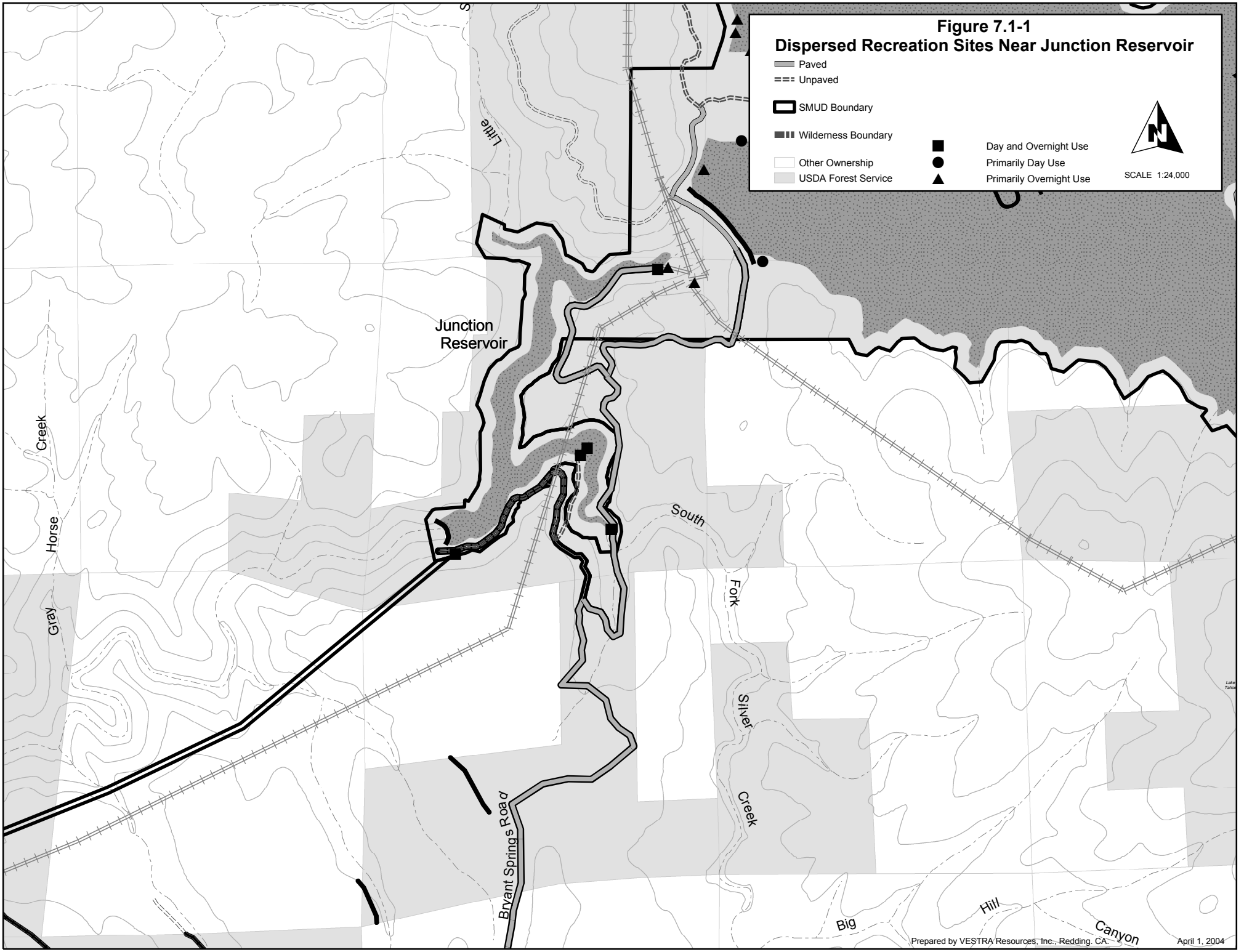


Figure 7.1-1
Dispersed Recreation Sites Near Junction Reservoir
Paved
Unpaved
SMUD Boundary
Wilderness Boundary
Other Ownership
USDA Forest Service
Day and Overnight Use
Primarily Day Use
Primarily Overnight Use
SCALE 1:24,000
Junction Reservoir
Little
Creek
Horse
Gray
South
Fork
Silver
Creek
Bryant Springs Road
Big
Hill
Canyon
Prepared by VESTRA Resources, Inc., Redding, CA.
April 1, 2004

The Visual Quality Objective (VQO) is 'Partial Retention'.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

- Provide safe access to and on the reservoir.
- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir.
- Mitigate resource impacts related to recreation use.
- Manage reservoir surface for low speed watercraft.
- Emphasize day use.
- Enhance angling opportunities at the reservoir.
- Manage reservoir for recreation use from early spring to late fall.

7.1.2 Supply Factors

7.1.2.1 Developed Recreation Facilities

Other than the informal boat launch, there are no other developed recreation facilities at Junction Reservoir.

The boat launch is typically available to the public in the non-winter months and it may occasionally be available during the winter during times when there is no snow on the ground.

7.1.2.2 Dispersed Recreation

Since there are no developed campgrounds or day use areas, visitors to the reservoir recreate in a dispersed manner. There is a boat launch that provides access to the reservoir surface however the rough, narrow access roads and small, narrow reservoir deter most visitors that want to go boating. It should be noted that motorized boating on the reservoir is prohibited by EDC ordinance however there are no signs informing visitors of this restriction. For the few users that visit here, Junction Reservoir provides flatwater opportunities for non-motorized boating. It also provides motorized boating opportunities for the visitors who are not aware of the existing boating restriction. Most of the existing motorized use is associated with fishing. Non-motorized boating opportunities may include anglers as well as those touring on the reservoir for enjoyment. The reservoir shoreline also provides angling opportunities.

Dispersed day and overnight recreation use occurs at the informal boat launch. Three fire rings were located and trash was observed both in the fire rings and the surrounding area. Two of the fire rings are located close to the shoreline and the third is located on a bench more than 100 feet from the shoreline. The access road has an aggregate base, it is in good condition and erosion was not observed.

A second dispersed site is located at the end of the access road to the dam where evidence of campfires was observed. Visitors can access this area by vehicle on the aggregate surfaced road.

There are anecdotal accounts from the ENF and SMUD's operations staff that visitors hike from this location to Silver Creek below the Junction Dam for day use activities such as swimming and fishing.

There is also a dispersed use site with fire rings located downstream from where Bryant Springs Road crosses SF Silver Creek. This is near where SF Silver Creek enters Junction Reservoir. The site has been accessed by vehicles in the past but the short access road to the site has been blocked with large granite boulders. Located adjacent to Bryant Springs Road this site is accessed by foot from the road by visitors for both day use activities such as picnicking and stream fishing as well as overnight use.

7.1.2.3 Interpretation, Information and Education

There are no existing formal interpretation, information and education opportunities at this reservoir. The existing visitors to this reservoir are primarily local residents from nearby communities who likely get information about the area from the ENF offices, maps or through on-site personal communications with ENF patrol staff.

7.1.2.4 Recreation Activities

Recreation activities at and near this reservoir during the non-winter months include swimming, hiking/walking, fishing, picnicking, wildlife viewing, photography, and OHV use. The three most important activities listed in the survey results collected at this reservoir are fishing (lake or reservoir), swimming, and hiking/walking.

Recreation activities at and near this reservoir during the winter months include angling, wildlife and scenic viewing, and hiking.

7.1.2.5 Regional Supply

There are few small bodies of water in the mid elevation of the Sierra Nevada that are accessible by road systems similar to that which exists at Junction Reservoir. Similar to Junction Reservoir, these reservoirs also have limited ability to provide many recreation opportunities because of steep slopes, small reservoir size and few points of shoreline access where visitors can recreate. Another limiting factor for recreation at these reservoirs is the warmer air temperatures that typically exist at lower elevations of the Sierra Nevada during the hot summer months when visitors are seeking cooler air temperatures. However, the limited recreation opportunities available at these types of reservoirs may actually be an attraction for visitors seeking few encounters with other people as well as local residents seeking nearby recreation opportunities. Since access to reservoirs in the mid-elevation range of the Sierra Nevada is largely dependent on weather, winter access is an important attribute for recreational use. Within the region areas that could be considered comparable to Junction Reservoir may include Slab Creek, Brush Creek, Finnon Lake, and Oxbow reservoirs. Lake Clementine could be another comparable water body however this reservoir provides motorized boating opportunities for high speed watercraft whereas Junction is less suited for this activity because of its size and configuration.

7.1.2.6 Suitable and Available Sites

If additional developed recreation facilities were provided at this reservoir, the applicable development scale would be Level III or IV. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Development Scale III—Site modification moderate. Facilities about equal for protection of natural site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standards roads. Interpretive services informal, but generally direct.
>
> Development Scale IV—Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.

Steep topography limits the suitability for recreation development at and near this reservoir. The only sites suitable for additional recreation facilities would include the area adjacent to the existing informal boat launch and in the vicinity of the inlet to Junction Reservoir where Bryant Springs Road crosses the SF Silver Creek. These two sites are also suitable for potential take-out locations for whitewater boating on the Ice House Reach.

7.1.3 Demand Factors

The main demand factors that will likely influence recreation use at Junction Reservoir include the demand for dispersed overnight and day use, angling and flatwater paddling. Regionally, the demand for angling will be fairly level. However, the proximity to population centers combined with the existing low levels of recreation use could cause angling use at the reservoir to possibly increase. Flatwater paddling is an activity projected to increase in the future and it is likely this increase will lead to increased use at this reservoir since it is well suited for this activity. Currently, most of the wintertime visitors are from El Dorado and Sacramento counties which have populations growing at a rate faster than the state of California. The growth in these nearby population centers will also contribute to increased visitation.

Visitor surveys collected at Junction Reservoir reported information about desired changes or improvements that visitors would like to see. The suggested changes and improvements to the area included expanding OHV trail system as well as restricting and enforcing regulations relating to OHV use. Visitors suggested improvements at the boat launch including adding picnic tables and planting trees for shade near the boat launch.

7.1.4 Areas of Concern Related to Recreation Use

7.1.4.1 Environmental

As discussed in 7.1.2.2 there are currently three areas at and near Junction Reservoir where there are environmental concerns relating to recreational use. These areas include: 1) area near the existing informal boat launch; 2) near the end of the access road to the dam; and 3) the inlet to Junction Reservoir where Bryant Springs Road crosses the SF Silver Creek. The types of resource damage include campsites located too close to the waters edge, pollution, trash and improperly disposed human and animal waste.

7.1.4.2 Social

The few survey responses collected at Junction Reservoir did not indicate existing areas of social concern however it is difficult to make conclusive statements since only five visitor surveys were collected at this reservoir. Existing visitation at and near the reservoir is low and it appears that there are few encounters between visitors.

7.1.5 Recreation Needs At and Near Junction Reservoir

7.1.5.1 Capital Improvement Needs

Developed Recreation

The informal boat launch is the only recreation facility at Junction Reservoir. The 0.2-mile access road to the launch site from Bryant Springs Road as well as the area used to launch boats have aggregate surfaces.

Site-specific modifications to existing UARP-related recreation facilities suggested by one or more individual members of the Recreation TWG include:

- **Junction Boat Launch**—1) pave the existing access road between Bryant Springs Road and the informal boat launch; 2) provide turnouts along the access road to allow vehicles to pass each other; 3) pave and extend the launch ramp; and 4) provide parking for up to 10 vehicles. These improvements would enhance overall public access at and near the reservoir, particularly during the winter months when access can be inhibited by snow and mud. This potential action is a current need that would also enhance angling opportunities. If flows suitable for whitewater boating are provided in the Ice House Reach, these improvements would also provide adequate recreation facilities at the take-out location for the run.

In addition, each facility has a useful life and planning for its replacement should be provided as part of managing the UARP-related recreation facilities. Providing for replacement of the facilities would respond to the need to provide for projected increased recreational use at and near the reservoir.

Potential new facilities that should be considered to meet recreation needs at Junction Reservoir include:

- Provide one- or two-unit vault restroom at the informal boat launch at Junction Reservoir. This potential action is a current need that would address resource damage related to recreation use at Junction Reservoir. If flows suitable for whitewater boating are provided in the Ice House Reach, these improvements would also provide adequate recreation facilities at the take-out location for the run.
- Improve the existing trail (old construction road) between Bryant Springs Road and SF Silver Creek at the inlet to Junction Reservoir. This potential action is a current need that would and improve access to the reservoir for the public. If flows suitable for whitewater boating are provided in the Ice House Reach, improving this trail would also provide adequate access at the take-out location for the run.

7.1.5.2 Management Needs

Management needs at Junction Reservoir focus on boating use and emphasizing day use. The small reservoir size, narrow configuration and steep slopes limit the suitability of this reservoir for high speed boating and create a desirable resource for flatwater paddling and low speed boating. Boating use on the reservoir should be limited to 5 m.p.h. by working with the EDC to revise the existing county ordinance. This potential action is a current need that would provide for safe boating on the reservoir, meet increased demand for flatwater paddling and enhance angling opportunities.

Day use opportunities should be emphasized at the reservoir by removing campfire rings and prohibiting overnight use. This management action would ensure that the limited amount of space at the boat launch is available for the greatest number of visitors. This potential action is a current need that would help achieve the recreation management objective for the area. This potential action would also address resource concerns such as campsites located too close to the shoreline.

Another management need is restricting vehicular access to the dam while providing space for vehicles to park for visitors wanting to access the river below the dam. This potential action is a current need that achieves the objective of ensuring public safety around UARP features. Although vehicles would no longer be allowed at the dam, this potential action would provide adequate parking for recreation use.

There is a need for monitoring recreational use and its potentially related impacts at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Junction Reservoir. Elements of the monitoring program should include documenting use levels, visitor satisfaction, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a mechanism for funding for restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans

(e.g. ENF LRMP). A monitoring program is a current need which should continue into the future.

There is a need for patrols at UARP-related recreation facilities and areas with dispersed recreation use at and near Junction Reservoir. Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as compliance with site closures, pollution and trash. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols are a current need for the Junction Reservoir and these patrols should continue into the future.

The management needs relating to the reservoir include continued removal of wood and debris from the reservoir surface, and continue operating the reservoir within the range of fluctuations that have historically occurred. Removing wood and debris would respond to the concern for public health and safety and would assist meeting the objective of providing safe access on the reservoir. The potential actions relating to debris removal and reservoir level would also help achieve the objective of enhancing angling opportunities at the reservoir.

The UARP-related recreation facilities are capital investments that require funding for operation and maintenance (O&M). Accordingly, there is a need to provide support for O&M and for the UARP-related recreation facilities at Junction Reservoir. This need would also exist for any new recreation facilities that may be constructed as a requirement of the UARP license. This potential action is a current need that would respond to the need for adequate public recreation facilities, public health and safety, and providing for existing recreational use at the UARP.

There are visitor information and education needs at and near Junction Reservoir. There is a need to provide information about circumstances that may affect visitors' safety while boating on the reservoir such as the potential for spill conditions on the reservoir and reservoir fluctuation. This information should be posted at the boat launch site. Visitors should be made aware of any new restrictions that may be implemented such as restrictions on overnight use.

Overall there is a need to provide the public with information about recreation facilities and opportunities that are available at and near Junction Reservoir. This need could be met as part of an information brochure that encompasses recreation resources for the UARP. This brochure should be made available at visitor points of contact including the Cleveland Corral and Crystal Basin Information Stations, ENF Supervisors Office, Placerville and Pacific Ranger Stations. This is a current need that would provide the public with recreation information about the area at and near Junction Reservoir.

The recreation needs identified at and near Junction Reservoir are listed in Table 7.1-1.

Table 7.1-1. Summary of the current and potential future needs related to recreational use at and near Junction Reservoir.

Junction Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Junction Reservoir Informal Boat Launch	Provide adequate public recreation facilities. Provide for public health and safety. Enhance angling opportunities.	Redesign and reconstruct access road. Pave road and provide turnouts on access road.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	FERC Guidelines ENF Staff ENF S&G 24
		Pave and extend ramp to lower reservoir level.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	RS: §4.2.3.3, §4.3, Tables 4.3-1(a) and (b) Professional judgment
		Provide parking for up to 10 vehicles.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	RS: §4.2.3.3 RD: §4.4.7.2. Table 4.4-12 Professional judgment
	Provide adequate public recreation facilities. Address resource impacts related to recreation use.	Provide 1- or 2-unit vault restroom.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	RS: §4.2.3.3 ENF staff ENF S&G 24
	Emphasize day use opportunities at the reservoir.	Remove campfire rings at boat launch.	Restrict overnight use at the boat launch.		Restrict overnight use at the boat launch.	RS: §4.2.3.3 ENF Staff ENF S&G 46
SF Silver Creek at Bryant Springs Road	Provide safe public access to the reservoir.	Improve existing trail to the inlet of SFSC to Junction Reservoir.	Provide for O&M.		Provide for O&M.	Professional judgment ENF S&G 106, 108

Table 7.1-1. Summary of the current and potential future needs related to recreational use at and near Junction Reservoir.

Junction Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
All UARP-related recreation facilities (existing and future)	Provide for managing projected recreation use. Provide adequate public recreation facilities.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1
Access road to dam	Ensure public safety around UARP features.	Provide turnaround and parking at gated location.	Restrict public vehicular access to the dam.	Provide for O&M.	Restrict public vehicular access to the dam.	RS: §4.2.3.3 SMUD staff
Shoreline within ¼ mile of reservoir (current areas of concern: boat launch, access road at the dam and SFSC near Bryant Springs Road)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use. Manage recreation use near the reservoir to protect natural resources. Meet visitor needs identified for increased enforcement of regulations.		Continue providing patrols		Continue providing patrols	ENF S&G 115

Table 7.1-1. Summary of the current and potential future needs related to recreational use at and near Junction Reservoir.

Junction Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Shoreline within ¼ mile of reservoir (current areas of concern: boat launch, access road at the dam and SFSC near Bryant Springs Road)	Provide for managing projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use.				Continue monitoring program (visitor and management needs and impacts).	ENF ch. 5, Table V-1
Junction Reservoir Surface	Provide safe public access on the reservoir.		Remove wood and debris from reservoir.		Remove wood and debris from reservoir.	FERC Guidelines
			Work with EDC to change ordinance to allow motorized boating on reservoir.			EDC boating ordinance VU&I: §5.0
	Provide safe public access to the reservoir. Enhance angling opportunities at the reservoir.		Continue operating the reservoir within the range of fluctuations that have historically occurred.		Continue operating the reservoir within the range of fluctuations that have historically occurred.	Professional judgment RS: §4.3 Tables 4.3-1(a) and (b)

Table 7.1-1. Summary of the current and potential future needs related to recreational use at and near Junction Reservoir.

Junction Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Junction Reservoir Surface	Provide for managing projected increased recreation use, including non-motorized boating. Enhance angling opportunities. Provide public safe access on the reservoir.				Continue monitoring (visitor and management needs and impacts) program.	FERC Guidelines ENF LRMP ch. 5, Table V-1
	Provide for public health and safety. Provide safe access on the reservoir.	Provide boating safety information at boat launch.		Update information to be posted.		FERC Guidelines

7.2 Camino Reservoir

This reservoir has a surface area of 20 acres and it has a storage capacity of 825 acre-feet. The reservoir is located at 2,915 feet in elevation and the reservoir has extremely steep slopes. The paved, narrow road steeply descends toward the reservoir. Public vehicular access is restricted near the powerhouse for public safety reasons. Boating is not allowed on this small reservoir and there are no developed recreation facilities at this reservoir. Typically, this reservoir receives snowfall between October and April. However, because of its elevation there are periods of time between storms when the snow may melt during the winter. A map showing Camino Reservoir is provided in Figure 7.2-1.

7.2.1 Recreation Management Goal and Objectives

The reservoir and shoreline has a 'Roaded Natural' ROS classification. The general descriptions for this designation are:

- Sights and sounds of man are evident.
- Interaction between users is moderate to high
- Facilities are designed for use by large numbers of people and intensified for motorized use and parking.
- Recreation developments would be Level III or IV.

The Visual Quality Objective (VQO) is 'Partial Retention'.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir.
- Mitigate resource impacts related to recreation use.
- Prohibit boating use (except for administrative use).
- Manage for limited day use.

7.2.2 Supply Factors

7.2.2.1 Developed Recreation Facilities

There are no other developed recreation facilities at Camino Reservoir.

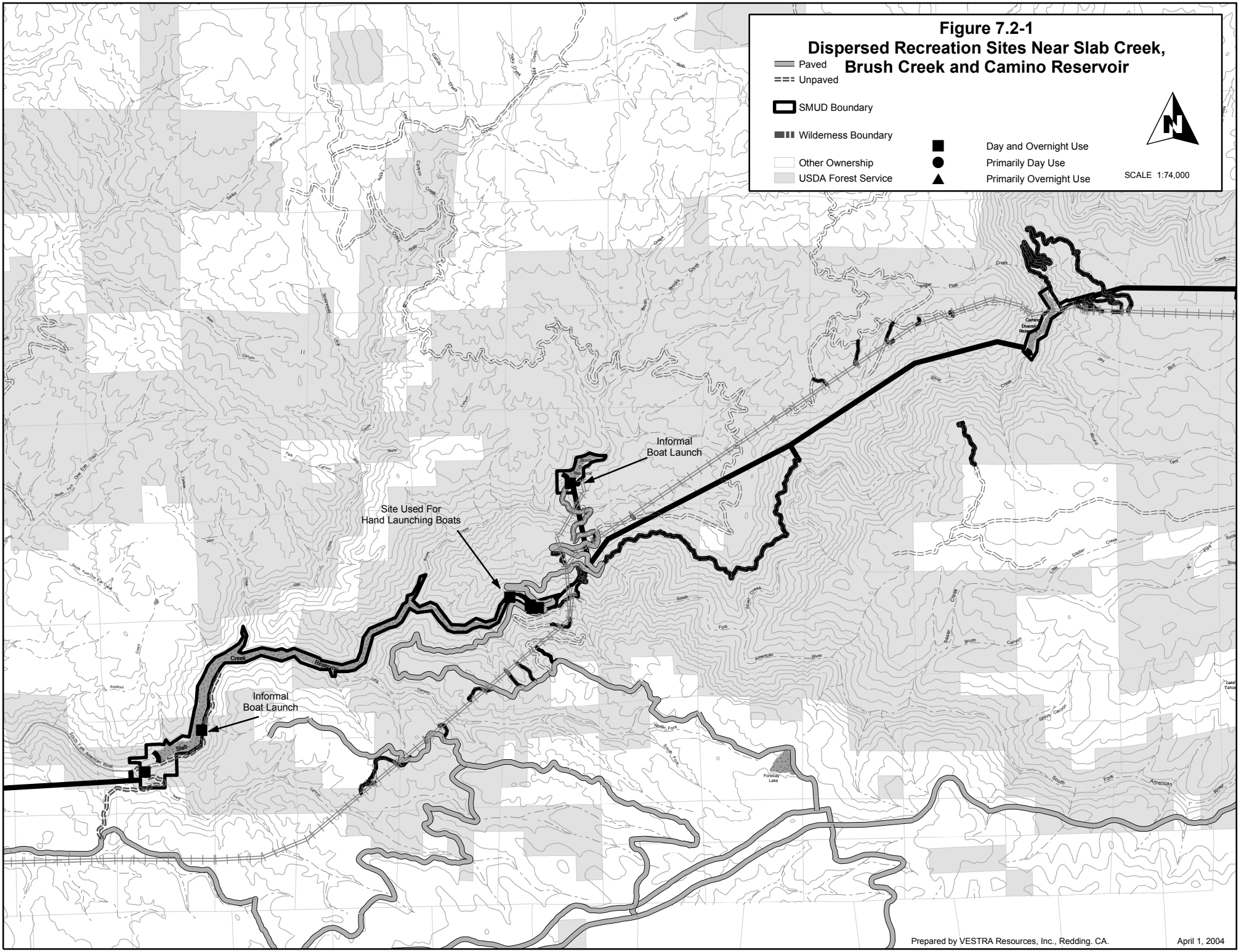


Figure 7.2-1
Dispersed Recreation Sites Near Slab Creek, Brush Creek and Camino Reservoir
Paved
Unpaved
SMUD Boundary
Wilderness Boundary
Other Ownership
USDA Forest Service
Day and Overnight Use
Primarily Day Use
Primarily Overnight Use
SCALE 1:74,000
Informal Boat Launch
Site Used For Hand Launching Boats
Informal Boat Launch
Prepared by VESTRA Resources, Inc., Redding. CA.
April 1, 2004

7.2.2.2 Dispersed Recreation

Since there are no developed recreation facilities at the reservoir and boating is not allowed, visitor use at and near Camino Reservoir is extremely low. Only occasional anglers are observed in the vicinity of this reservoir. These visitors can park near the gate on the access road and walk along the road that parallels the reservoir to reach the dam.

7.2.2.3 Interpretation, Information and Education

There are no existing formal interpretation, information and education opportunities at this reservoir. The existing visitors to this reservoir are primarily local residents from nearby communities who likely get information about the area from the ENF offices, maps or through on-site personal communications with ENF patrol staff.

7.2.2.4 Recreation Activities

Only occasional anglers are observed at this reservoir.

7.2.2.5 Regional Supply

There are few small bodies of water in the mid elevation of the Sierra Nevada similar to Camino Reservoir where motorized boating is not allowed. Reasons for boating restrictions include insufficient surface area for safe boating density, source of domestic water supply and potential for spill conditions. The reservoirs most similar to Camino Reservoir may include Chili Bar Reservoir, Finnon Lake, Walton Lake. Shoreline uses at these reservoirs are permitted such as fishing and swimming, except for Walton Lake where swimming is not allowed.

7.2.2.6 Suitable and Available Sites

If additional developed recreation facilities were provided at this reservoir, the applicable development scale would be Level III or IV. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Development Scale III—Site modification moderate. Facilities about equal for protection of natural site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standards roads. Interpretive services informal, but generally direct.
>
> Development Scale IV—Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads.

Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.

Steep, narrow access roads, boating restrictions and steep topography make the area at and near this reservoir unsuitable for recreation development.

7.2.3 Demand Factors

The main demand factor that will likely influence recreation use at Camino Reservoir is angling. Regionally, the demand for angling will be fairly level. However, the proximity to population centers combined with the existing low levels of recreation use could cause angling use at the reservoir to possibly increase. The growth in these nearby population centers will also contribute to increased visitation.

7.2.4 Areas of Concern Related to Recreation Use

7.2.4.1 Environmental

Currently there are no areas of environmental concern at or near this reservoir.

7.2.4.2 Social

Extremely low visitation at and near this reservoir causes there to be no existing areas with user conflicts. The reservoir surface itself is an area of social concern because of public safety issues associated with its small size and the potential for spill conditions. The steep and narrow access road leading to the reservoir is another area with public safety concerns, particularly during the winter months when there is ice and snow on the road.

7.2.5 Recreation Needs At and Near Camino Reservoir

7.2.5.1 Capital Improvement Needs

Developed Recreation

There are no capital improvement needs identified at and near this reservoir.

7.2.5.2 Management Needs

There are management needs identified for this area that relate to public safety concerns. Boating on the reservoir should continue to be restricted since there is the potential for spill conditions at this small re-regulating reservoir. This potential action is a current need that would provide for public safety on the reservoir.

The second management need is to continue to restrict vehicular access on the road beyond the powerhouse. This potential action is a current need that would provide for public safety around UARP features while providing limited day use opportunities such as shoreline angling. In addition, vehicular access should be further restricted during the winter months by gating the

access road near the area where the powerline crosses the road. This potential action would provide for public safety near UARP features by restricting public vehicular traffic on roads where winter driving conditions are variable.

There is a need for monitoring recreational use and its potentially related impacts at and near Camino Reservoir. Elements of the monitoring program should include documenting use levels, visitor satisfaction, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a mechanism for funding for restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP). A monitoring program is a current need which should continue into the future.

There is a need for patrols at areas with dispersed recreation use at and near Camino Reservoir. Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as compliance with site closures. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols are a current need for the Camino Reservoir and these patrols should continue into the future.

Visitor information needs at and near Camino Reservoir would include providing signage for public notification of boating and access restrictions at the reservoir.

The recreation needs identified at and near Camino Reservoir are listed in Table 7.2-1.

7.3 Brush Creek Reservoir

This reservoir has a surface area of 20 acres and it has a storage capacity of 1,530 acre-feet. The reservoir is located at 2,915 feet in elevation and the slopes around the reservoir are steep. There are paved and unpaved, narrow roads leading to this reservoir and other than two informal boat launches, there are no developed recreation facilities at this reservoir. Typically, this reservoir receives snowfall between October and April. However, because of its elevation there are periods of time between storms when the snow may melt during the winter. A map showing Brush Creek Reservoir is provided in Figure 7.2-1.

Table 7.2-1. Summary of the current and potential future needs related to recreational use at and near Camino Reservoir.

Camino Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Access road to dam	Ensure public safety around UARP features.		Restrict public vehicular access on access road beyond the powerhouse.		Restrict public vehicular access on access road beyond the powerhouse.	RS: §4.2.3.3 SMUD Staff
			Restrict vehicular access on access road beyond the powerline during the winter.		Restrict vehicular access on access road beyond the powerline during the winter.	SMUD Staff ENF Staff
Camino Reservoir Surface	Ensure public safety around UARP features.		Continue to restrict boating.		Continue to restrict boating.	FERC Guidelines
Interpretation, Information and Education (II&E)	Provide for public health and safety.		Provide signage to inform visitors about boating and access restrictions.	.	Provide signage to inform visitors about boating and access restrictions	FERC Guidelines Professional judgment

7.3.1 Recreation Management Goal and Objectives

The reservoir and shoreline has a 'Roaded Natural' ROS classification. The general descriptions for this designation are:

- Sights and sounds of man are evident.
- Interaction between users is moderate to high
- Facilities are designed for use by large numbers of people and intensified for motorized use and parking.
- Recreation developments would be Level III or IV.

The Visual Quality Objective (VQO) is 'Partial Retention'.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

- Provide safe access to and on the reservoir.
- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir.
- Mitigate resource impacts related to recreation use.
- Manage reservoir surface for low speed watercraft.
- Emphasize day use.
- Enhance angling opportunities at the reservoir.
- Manage for limited day use.

7.3.2 Supply Factors

7.3.2.1 Developed Recreation Facilities

Other than the two informal boat launches, there are no developed recreation facilities at Brush Creek Reservoir. Currently there are some potholes and rough surfacing on these launches.

The boat launches are typically available to the public in the non-winter months and may occasionally be available during the winter during times when there is no snow on the ground.

7.3.2.2 Dispersed Recreation

Since there are no developed campgrounds or day use areas, visitors to the reservoir recreate in a dispersed manner. There are two boat launches that provides access to the reservoir surface however the rough, narrow access roads and remote location deter most visitors that want to go boating. For the few users that visit here, Brush Creek Reservoir provides flatwater opportunities for motorized and non-motorized boating. Most of the existing motorized use is associated with fishing. Non-motorized boating opportunities may include anglers as well as

those touring on the reservoir for enjoyment. The reservoir shoreline also provides angling opportunities.

Dispersed day and overnight recreation use occurs near the informal boat launches that are located near the dam. Evidence of past campfires was observed at this location and at a second site approximately 100 yards downstream of this location. Vandalism was also observed near the intake structure. Vehicles can access this reservoir by paved roads but the road between the SFAR and the reservoir is very narrow and there is a steep drop on the downhill side of the road. Access to the shoreline of this reservoir is limited to the area near the informal boat launches because of steep slopes. There are reports of dispersed campsites on the north end of the reservoir. The ENF reports that during routine patrols on July 4, 2003 that they observed all of the available area for parking at the access road to the reservoir was filled. In March 2004 the ENF also reported seeing two anglers in a small boat with an electric motor using the reservoir; they had apparently caught several fish.

7.3.2.3 Interpretation, Information and Education

There are no existing formal interpretation, information and education facilities or services at this reservoir. The existing visitors to this reservoir are primarily local residents from nearby communities who likely get information about the area from the ENF offices, maps or through on-site personal communications with ENF patrol staff.

7.3.2.4 Recreation Activities

Anglers are occasionally observed at this reservoir and dispersed camping occurs near the informal boat launches.

7.3.2.5 Regional Supply

There are few small bodies of water in the mid elevation of the Sierra Nevada that are accessible by road systems similar to that which exists at Brush Creek Reservoir. Similar to Brush Creek Reservoir, these reservoirs also have limited ability to provide many recreation opportunities because of steep slopes, small reservoir size and few points of shoreline access where visitors can recreate. Another limiting factor for recreation at these reservoirs is the warmer air temperatures that typically exist at lower elevations of the Sierra Nevada during the hot summer months when visitors are seeking cooler air temperatures. However the limited recreation opportunities available at these types of reservoirs may actually be an attraction for visitors seeking few encounters with other people as well as local residents seeking nearby recreation opportunities. Since access to reservoirs in the mid-elevation range of the Sierra Nevada is largely dependent on weather, winter access is an important attribute for recreational use. Within the region areas that could be considered comparable to Brush Creek Reservoir may include Slab Creek, Junction, Finnon Lake, and Oxbow reservoirs.

7.3.2.6 Suitable and Available Sites

If additional developed recreation facilities were provided at this reservoir, the applicable development scale would be Level III or IV. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Development Scale III—Site modification moderate. Facilities about equal for protection of natural site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standards roads. Interpretive services informal, but generally direct.
>
> Development Scale IV—Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.

Steep, narrow access roads, and steep topography make the area at and near this reservoir suitable only to limited recreation development.

7.3.3 Demand Factors

The main demand factor that will likely influence recreation use at Brush Creek Reservoir is angling. Regionally, the demand for angling will be fairly level. However, the proximity to population centers combined with the existing low levels of recreation use could cause angling use at the reservoir to possibly increase. The growth in these nearby population centers will also contribute to increased visitation.

7.3.4 Areas of Concern Related to Recreation Use

7.3.4.1 Environmental

As discussed in 7.3.2.2 there is currently one area at and near Brush Creek Reservoir where there are environmental concerns relating to recreational use. This area is located at the area near informal boat launches. Although campfire rings are present in this area, currently the impacts at and near the reservoir appear to be limited to vandalism of the UARP infrastructure.

7.3.4.2 Social

The area near the informal boat launches is so small that even a few visitors to this area may cause visitors to feel crowded or even displace some visitors because there is not enough space for them. It is likely there are social concerns, particularly during peak use times, near the informal boat launches.

7.3.5 Recreation Needs At and Near Brush Creek Reservoir

7.3.5.1 Capital Improvement Needs

Developed Recreation

Capital improvement needs for developed recreation facilities at and near this reservoir include repairs and upgrades to the informal boat ramps, angler access trails, signing and potentially a fishing access pier if use increases significantly.

Dispersed Recreation

Capital improvements are needed to address resource impacts associated with dispersed use near the informal boat launches. Potential actions should include removing campfire rings and hardening sites for day use and signage. These potential actions would meet the current need to address resource impacts related to recreation use. These potential actions would also respond to the projected increased demand for day use.

7.3.5.2 Management Needs

Management needs at Brush Creek Reservoir focus on boating use and emphasizing day use. The small reservoir size and steep slopes limit the suitability of this reservoir for high speed boating and create a desirable resource for flatwater paddling and low speed boating. Boating use on the reservoir should be limited to 5 m.p.h. This potential action is a current need that would provide for safe boating on the reservoir, meet increased demand for flatwater paddling and enhance angling opportunities.

Day use opportunities should be emphasized at the reservoir by removing campfire rings and installing traffic control barriers. This management action would ensure that the limited amount of space at the boat launch is available for the greatest number of visitors. This potential action is a current need that would help achieve the recreation management objective for the area. This potential action would also address resource relating to vandalism of UARP infrastructure.

There is a need for monitoring recreational use and its potentially related impacts at and near Brush Creek Reservoir. Elements of the monitoring program should include documenting use levels, visitor satisfaction, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a mechanism for funding for restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP). A monitoring program is a current need which should continue into the future.

There is a need for patrols at areas with dispersed recreation use at and near Brush Creek Reservoir. Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence

of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as vandalism to UARP infrastructure. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols are a current need for the Brush Creek Reservoir and these patrols should continue into the future.

The management needs relating to the reservoir include continued removal of wood and debris from the reservoir surface. Removing wood and debris would respond to the concern for public health and safety and would assist meeting the objective of providing safe access on the reservoir. This potential action would also help achieve the objective of enhancing angling opportunities at the reservoir.

Funding needs to be provided for maintaining any capital improvements (site hardening measures and boat launches) provided at the reservoir. This potential action is a potential future need that would respond to the need for adequate public recreation facilities, public health and safety, and providing for existing and future recreational use at the UARP.

Visitor information needs at and near Brush Creek Reservoir would include providing signage relating to boating safety at the reservoir and informing visitors to pack out their trash.

The recreation needs identified at and near Brush Creek Reservoir are listed in Table 7.3-1.

7.4 Slab Creek Reservoir

This reservoir has a surface area of 280 acres and it has a storage capacity of 16,600 acre-feet. The reservoir is located at 1,850 feet in elevation, the reservoir has a long and narrow configuration and the slopes around the reservoir are steep. There are paved and unpaved, narrow roads leading to this reservoir and other than two informal boat launches, there are no developed recreation facilities at this reservoir. This reservoir is located just within the western edge of the boundary of the ENF. Approximately one third of the reservoir is located on privately owned land. Typically, this reservoir can receive snowfall between October and April. However, because of its elevation the area is mostly free of snow through the winter months. A map showing Slab Creek Reservoir is provided in Figure 7.2-1.

The level of dispersed recreation activities at Slab Creek Reservoir is likely to change in the near future as a result of security issues. Based on the findings of a confidential, FERC-required security study conducted throughout the UARP, which is unrelated to the relicensing effort, it is likely that access to Slab Creek Reservoir will be restricted in the near future. If this restriction is implemented, recreational pursuits may no longer be available on the reservoir. The ultimate outcome of implementing security measures could preempt any of the recreation needs listed below from being implemented.

Table 7.3-1. Summary of the current and potential future needs related to recreational use at and near Brush Creek Reservoir.

Brush Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Informal Boat Launches	Provide adequate public recreation facilities. Provide safe public access to the reservoir. Provide for public health and safety. Enhance angling opportunities.		Provide O&M (patching/resurfacing).	Consider improvements if use increases significantly, such as increased parking, improvements to boat ramps, improved fishing access, etc.	Provide O&M.	FERC Guidelines ENF S&G 24
Shoreline in the vicinity of the informal boat launches	Emphasize day use. Provide safe public access to the reservoir. Enhance angling opportunities.	Site hardening (traffic control and signage)	Provide O&M.	Consider improvements if use increases significantly, such as improved fishing access (fishing pier), etc.	Provide O&M.	RS: §4.2.3.3 RD: §4.8.2 Table 4.8-9, §5.2

Table 7.3-1. Summary of the current and potential future needs related to recreational use at and near Brush Creek Reservoir.

Brush Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Shoreline within ¼ mile of reservoir (current areas of concern: near informal boat launches)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use. Manage recreation use near the reservoir to protect natural resources. Meet visitor needs identified for increased enforcement of regulations.		Continue or increase patrols		Continue or increase patrols	ENF S&G 115
	Provide for managing projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1
Brush Creek Reservoir Surface	Ensure public safety around UARP features.		Restrict boating speed on the reservoir to 5 m.p.h.		Restrict boating speed on the reservoir to 5 m.p.h.	RS: §4.3, Tables 4.3-1(a) and (b) VU&I: §5.0

Table 7.3-1. Summary of the current and potential future needs related to recreational use at and near Brush Creek Reservoir.

Brush Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Brush Creek Reservoir Surface	Provide safe public access on the reservoir.		Remove wood and debris from reservoir.		Remove wood and debris from reservoir.	FERC Guidelines
	Provide for managing projected increased recreation use, including non-motorized boating. Enhance angling opportunities. Provide public safe access on the reservoir.				Continue monitoring (visitor and management needs and impacts) program.	ENF Ch. 5, Table V-1 FERC Guidelines
			Increase fish stocking.			Professional judgment (note: this need was provided by the ENF in February 2005, which was subsequent to the final TWG meeting held to receive comments on this report; this need has not been reviewed with or discussed among the Recreation TWG participants)
Interpretation, Information and Education (II&E)	Provide for public health and safety.		Provide signage to inform visitors about boating safety and pack-in/pack-out.	.	Provide signage to inform visitors about boating safety and pack-in/pack-out.	Professional judgment

7.4.1 Recreation Management Goal and Objectives

The reservoir and shoreline has a 'Roaded Natural' ROS classification. The general descriptions for this designation are:

- Sights and sounds of man are evident.
- Interaction between users is moderate to high
- Facilities are designed for use by large numbers of people and intensified for motorized use and parking.
- Recreation developments would be Level III or IV.

The Visual Quality Objective (VQO) is 'Retention'.

Goals and objectives relating to recreation resources for the area as agreed to by the Recreation TWG include:

- Provide safe access to and on the reservoir.
- Ensure public safety around UARP features.
- Provide for managing existing and projected recreation use at the reservoir.
- Mitigate resource impacts related to recreation use.
- Manage reservoir surface for low speed and non-motorized (paddling) watercraft.
- Emphasize day use and allow limited overnight use.
- Enhance non-motorized (paddling) opportunities at the reservoir.
- Manage for year round recreation use.
- Develop an interagency management plan to address access, reservoir level management, facilities, and public use management.

7.4.2 Supply Factors

7.4.2.1 Developed Recreation Facilities

There are two informal boat launches at Slab Creek Reservoir. There is a narrow road near the dam which leads to a small area where boats can be launched. The road is signed that vehicles with trailers are not permitted on this road. This restriction is necessary because there is not sufficient room to turn around at the end of the road where the launch site is located. Consequently, this boat launch only serves visitors who transport their watercraft on the vehicle. The boat launch has a paved surface.

At the upstream end of the reservoir there is another boat launch with an unpaved surface. Although boats may be launched at this site, the water has a flowing current, particularly at low reservoir elevations which can cause navigational difficulties for motorized as well as non-motorized watercraft.

The boat launches are typically available to the public year round and they may occasionally be unavailable during the winter because of snow on the ground.

7.4.2.2 Dispersed Recreation

Since there are no developed campgrounds or day use areas, visitors to the reservoir recreate in a dispersed manner. There is a boat launch that provides access to the reservoir surface however the rough, narrow access roads and small, narrow reservoir deter most visitors that want to go boating. For the few users that visit here, Slab Creek Reservoir provides flatwater opportunities for motorized and non-motorized boating. Most of the existing motorized use is associated with fishing. Non-motorized boating opportunities may include anglers as well as those touring on the reservoir for enjoyment. The reservoir shoreline also provides angling opportunities.

At the upper end of Slab Creek Reservoir near the bridge on Forebay Road (a paved road) there are numerous, user-created fire rings along the north side of the reservoir. These sites are located along an unpaved access road that is approximately one-quarter to one-half mile long. The end of the access road terminates at the waters edge and allows access for visitors to launch small boats; this is the transition point between the SFAR and Slab Creek Reservoir. This area is also the take-out location for the Golden Gate and Camino whitewater boating runs. At the lowest reservoir elevation the watercourse at this access point has a downstream current. Even at the highest reservoir levels, there is still a noticeable current present at the access point. As the reservoir level recedes, more of the river channel is exposed creating a longer distance of flowing river channel between the access site and the flatwater of the reservoir. This condition has created two types of problems for visitors who have launched boats from this site. First, flatwater paddlers have had difficulty paddling against the current to return to their vehicles after using this site to access the reservoir. This situation is exacerbated if the reservoir elevation lowers during the visitors' time on the reservoir and exposes more of the river channel. Lower reservoir elevations also expose more rocks and obstacles that are barriers to navigating the SFAR in this area. Boaters who launch while these features are inundated may have difficulty navigating back to the access site later in the day if the reservoir level lowers and these barriers become exposed.

Resource damage that was observed at this site included fire rings and vehicle use occurring too close to the shoreline, deep ruts caused by OHV or 4-wheel drive vehicles on steep slopes, user-created pit toilet at the waters edge, graffiti, trash, and damage to riparian vegetation. Visitors have repeatedly used one area, for target practice as evidenced by an accumulation of shell casings and various targets including an old microwave and a computer terminal. During the site inspection in 2002, one visitor had an active campfire during the fire season when a Forest Closure Order was in effect that prohibited campfires outside of developed recreation facilities.

At the lower end of Slab Creek Reservoir near the dam, there is an access road leading to the waters edge that allows access for launching small boats. The road is unpaved and narrow with a small area where vehicles can turn around. There is a fire ring at this location, an accumulation of shell casings, paint on rocks and a rope swing tied in the tree at the shoreline. Trash was also observed at this site. Near the dam at the intersection of the roads that lead to the dam and the

informal boat launch, the presence of shell casings, a fire ring and trash indicate that dispersed recreation use also occurs at this location. The main access road to this lower end of the reservoir, Slab Creek Dam Access Road, is gated near North Canyon Road. This gate is open during the daylight hours to allow daytime recreation use and closed at night. This measure was implemented to address the recurrent problem with people illegally dumping trash along this road.

The ENF recently issued a permit for commercially guided paddling trips on Slab Creek Reservoir. The permit holder uses the upper end of the reservoir as a launch site and the group of paddlers traverses the reservoir to the informal boat launch near the dam where the visitors end their trip. The permit holder provides a shuttle service for visitors so they do not need to paddle against the current at the upstream end of the reservoir. Although most of the shoreline has extremely steep slopes there are about three suitable areas where visitors can get out of their boats to explore or camp. It should be noted that these locations are located on private land.

Below the dam, there is a gated UARP access road leading to the SFAR downstream of the dam. This road provides a route of access to the river where anglers are occasionally observed. This is also the location that would be used for whitewater boating access to the Slab Creek Reach.

7.4.2.3 Interpretation, Information and Education

There are no existing formal interpretation, information and education facilities or services at this reservoir. The existing visitors to this reservoir are primarily local residents from nearby communities who likely get information about the area from the ENF offices, maps or through on-site personal communications with ENF patrol staff.

7.4.2.4 Recreation Activities

Recreation activities at and near this reservoir include swimming, hiking/walking, fishing, picnicking, wildlife viewing, canoeing/kayaking, photography, powerboating, bicycling, PWC use, backpacking, hunting, and OHV use. The three most important activities listed in the survey results collected at this reservoir are fishing (lake or reservoir), canoeing/kayaking, fishing (river or stream).

7.4.2.5 Regional Supply

There are few small bodies of water in the mid elevation of the Sierra Nevada that are accessible by road systems similar to that which exists at Slab Creek Reservoir. Similar to Slab Creek Reservoir, these reservoirs also have limited ability to provide many recreation opportunities because of steep slopes, small reservoir size and few points of shoreline access where visitors can recreate. Another limiting factor for recreation at these reservoirs is the warmer air temperatures that typically exist at lower elevations of the Sierra Nevada during the hot summer months when visitors are seeking cooler air temperatures. However the limited recreation opportunities available at these types of reservoirs may actually be an attraction for visitors seeking few encounters with other people as well as local residents seeking nearby recreation opportunities. Since access to reservoirs in the mid-elevation range of the Sierra Nevada is

largely dependent on weather, winter access is an important attribute for recreational use. Within the region areas that could be considered comparable to Slab Creek Reservoir may include Junction, Brush Creek, Finnon Lake, and Oxbow reservoirs. Lake Clementine could be another comparable water body; however, this reservoir provides motorized boating opportunities for high-speed watercraft, whereas Slab Creek is less suited for this activity because of its size, configuration and the limited access for trailered boats. Also comparable is Forebay Reservoir in Pollock Pines; however, no water-contact activities are allowed at this reservoir.

7.4.2.6 Suitable and Available Sites

If additional developed recreation facilities were provided at this reservoir, the applicable development scale would be Level III or IV. This level of development is defined in FSM 2330.3 Exhibit 01 as:

> Development Scale III—Site modification moderate. Facilities about equal for protection of natural site and comfort of users. Contemporary/rustic design of improvements is usually based on use of native materials. Inconspicuous vehicular traffic controls usually provided. Roads may be hard surfaced and trails formalized. Development density about 3 family units per acre. Primary access may be over high standards roads. Interpretive services informal, but generally direct.
>
> Development Scale IV—Site heavily modified. Some facilities designed strictly for comfort and convenience of users. Luxury facilities not provided. Facility design may incorporate synthetic materials. Extensive use of artificial surfacing of roads and trails. Vehicular traffic control usually obvious. Primary access usually over paved roads. Development density 3-5 family units per acre. Plant materials usually native. Interpretive services often formal or structured.

Steep topography limits the suitability for recreation development at and near this reservoir. The only site suitable for additional recreation facilities is the area adjacent to the existing informal boat launch at the upstream end of the reservoir. This site is also the take-out location for whitewater boating on the Golden Gate and Camino runs.

7.4.2.7 Whitewater Flows and Reservoir Boating

The suitability of the Slab Creek Reach for whitewater boating was investigated in the Slab Creek Whitewater Boating Flow Study. The study revealed that this reach has the potential to provide Class IV and V whitewater boating opportunities. In order to provide sufficient flows for the whitewater boating study, the UARP had to be operated to cause water to be spilled over the dam. During the study, boating on the reservoir was not allowed because of the concern for boats being carried in the current over the dam. In addition, the Slab Creek Powerhouse, located on the dam face, was monitored for potential damage during the spill event for the study.

7.4.3 Demand Factors

The main demand factors that will likely influence recreation use at Slab Creek Reservoir include the demand for dispersed overnight and day use, angling and flatwater paddling. Regionally, the demand for angling will be fairly level. However, the proximity to population centers combined with the existing low levels of recreation use could cause angling use at the reservoir to possibly increase. Flatwater paddling is an activity projected to increase in the future and it is likely this increase will lead to increased use at this reservoir since it is somewhat suited for this activity. Currently, most of the wintertime visitors are from El Dorado and Sacramento counties which have populations growing at a rate faster than the state of California. The growth in these nearby population centers will also contribute to increased visitation.

Visitor surveys collected at Slab Creek Reservoir reported information about desired changes or improvements that visitors would like to see. Fifty nine percent of the visitors surveyed indicated at least one change or improvement needed at Slab Creek Reservoir. Most of the suggested changes and improvements to the area relate to improvements to management of the area. Visitors most often commented that they would like to see less trash and pollution and they would like to see trash and restroom facilities provided. Comments were also received about reservoir access. Visitors would like to have improved access to the reservoir when the water is low and the ability to launch trailered boats. Visitors also would like to see boating restrictions imposed on the reservoir for speed or motor size, and they would like to see the reservoir stocked with trout.

7.4.4 Areas of Concern Related to Recreation Use

7.4.4.1 Environmental

As discussed in 7.4.2.2 there are currently four areas at and near Slab Creek Reservoir where there are environmental concerns relating to recreational use. These areas include: 1) northern shoreline between the existing informal boat launch at the upstream end of the reservoir and Forebay Road; 2) near the end of the access road to the dam, including the adit access road below the dam; 3) area near the informal boat launch at the lower end of the reservoir; and 4) along the Slab Creek Dam Access Road between North Canyon Road and the dam. The types of resource damage include campsites located too close to the waters edge, erosion and vegetation damage from widespread OHV use, pollution, trash, graffiti, illegal trash dumping and campfires, and improperly disposed human and animal waste.

7.4.4.2 Social

The survey responses collected at Slab Creek Reservoir indicate existing areas of social concern. Although existing visitation at and near the reservoir is low and visitors do not feel crowded, it appears that there are serious concerns relating to visitor behavior. Twenty six percent of those surveyed experienced a conflict with their recreational activity. These conflicts included visitors shooting guns and fireworks, noisy or rowdy visitor behavior and inappropriate OHV use.

7.4.5 Recreation Needs At and Near Slab Creek Reservoir

7.4.5.1 Capital Improvement Needs

Developed Recreation

The informal boat launches at the upstream end of the reservoir near the Forebay Road and at the downstream end of the reservoir near the dam are the only recreation facilities at Slab Creek Reservoir.

Site-specific modifications to existing UARP-related recreation facilities suggested by one or more individual members of the Recreation TWG include:

- Upper Reservoir Boat Launch—1) utilize site design (i.e. traffic controls, parking area, paved trail extending below the high water mark to the lowest probable reservoir level that may exist) to favor non-motorized boating use; and 2) provide safety signage for boating safety and pack-in/pack-out. These improvements would enhance overall public access and safety at and near the reservoir, achieve the objective to enhance non-motorized opportunities on the reservoir, and respond to visitor needs identified at this area. These potential actions are current needs for the area that would also address resource impacts which exist at this area and would respond to the projected increase in demand for non-motorized boating.
- Lower Reservoir Boat Launch—1) utilize site design (i.e. traffic controls, parking area, paved trail extending below the high water mark to the lowest probable reservoir level that may exist) to favor non motorized boating use; 2) continue to not allow trailers on the portion of the access road between the dam and the launch; 3) provide a larger turnaround area, and parking for up to five or more vehicles; 4) provide restroom facilities if use warrants; and 5) provide safety signage for boating safety and pack-in/pack-out. These improvements would enhance overall public access and safety at and near the reservoir, achieve the objective to enhance non-motorized opportunities on the reservoir, and respond to visitor needs identified at this area. These potential actions are current needs for the area that would also address resource impacts which exist at this area and would respond to the projected increase in demand for non-motorized boating.
- Access road to Lower Boat Launch—1) install guard rails; and 2) make larger turnouts for vehicles to pass each other. These potential actions are current needs that would provide for public safety on this narrow road.

In addition, each facility has a useful life and planning for its replacement should be provided as part of managing the UARP-related recreation facilities. Providing for replacement of the facilities would respond to the need to provide for projected increased recreational use at and near the reservoir.

Potential new facilities that should be considered to meet recreation needs at Slab Creek Reservoir include:

- Provide 5-7 sites along shoreline in the vicinity of the Forebay Road, including restrooms, available for overnight use (consider fee). This potential action is a current need that would address resource damage related to recreation use at Slab Creek Reservoir and respond to the visitor needs for improved management in this area.
- If whitewater boating flows are provided in the Slab Creek Reach, additional facility needs for parking and sanitation would be needed in the area of the intersection of the Adit Access Road and the Slab Creek Dam Access Road. This potential action is a potential future need that would provide adequate recreation facilities and prevent resource damage or concerns from developing in this location.

7.4.5.2 Management Needs

Management needs at Slab Creek Reservoir focus on reservoir boating use, emphasizing day use while allowing overnight use. The narrow configuration and steep slopes limit the suitability of this reservoir for high speed boating and create a desirable resource for flatwater paddling and low speed boating. Boating use on the reservoir should be limited to 5 m.p.h. This potential action is a current need that would provide for safe boating on the reservoir and meet increased demand for flatwater paddling while still allowing low speed boating on the reservoir. Managing boating use on the reservoir during spill events, including induced spill events to provide whitewater boating flows in the Slab Creek Reach, is another management issue. One potential action that could be implemented to address this concern would be to close the reservoir to all boating use during spill events. Alternatively, another potential action would be to allow boating use on the reservoir during spill events while implementing measures to protect public safety at the dam such as signage and grab lines. One of these potential actions should be implemented to meet a potential future need, should whitewater boating flows be provided, to ensure public safety around UARP features.

Other management needs relating to the reservoir include continued removal of wood and debris from the reservoir surface, and consideration of providing reservoir level information to the public and operating the reservoir within a maximum range of daily reservoir fluctuation. These potential actions would respond to the concern for public health and safety and would assist meeting the objective of providing safe access on the reservoir. The potential actions relating to debris removal and reservoir level would also help achieve the objective of enhancing paddling and low speed boating opportunities at the reservoir.

Day use opportunities should be emphasized at the reservoir by removing campfire rings in inappropriate locations including at the Lower Slab Creek Boat Launch and hardening some sites along the northern shoreline in the vicinity of the Forebay Road for overnight use. This management action would ensure that the limited amount of space at the boat launches is available for the greatest number of visitors. This potential action is a current need that would help achieve the recreation management objective for the area to emphasize day use while allowing limited overnight use. This potential action would also address resource concerns such

as campsites located too close to the shoreline, erosion, sanitation and pollution. Providing a developed facility for overnight use would help reduce visitor conflicts by establishing a management presence to curtail and hopefully eliminate activities such as shooting guns, illegal campfires and discourteous visitor behavior.

Campfires should not be allowed at or near Slab Creek Reservoir. However, if sites for overnight use are developed at the upstream end of the reservoir, campfires may be allowed within these sites. This management action is a current need that would address the concern for potential resource damage and public safety concerns associated with potential wildland fires.

Another management need is to continue restricting vehicular access below the dam on the Adit Access Road while providing parking space for visitors wanting to access the river below the dam. This potential action is a current need that would achieve the objective of ensuring public safety around UARP features. Although vehicles would not be allowed on the Adit Access Road, this potential action would provide adequate parking for recreation use within a reasonable walking distance of the river.

Another need related to access relates to the Slab Creek Dam Access Road, which has a gate that is closed during non-daylight hours. There is a need to continue restricting public vehicular access on this road to control illegal activities such as trash dumping and campfires.

There is a need for monitoring recreational use and its potentially related impacts at UARP-related recreation facilities, reservoir surface and areas with dispersed recreation use at and near Slab Creek Reservoir. Elements of the monitoring program should include documenting use levels, visitor satisfaction, detecting resource impacts related to recreational use (e.g. sanitation, erosion, human/wildlife interaction) and, if necessary, a mechanism for funding for restoration. A monitoring program would provide a mechanism to provide for meeting future needs necessary to manage recreation use at and near the reservoir. Monitoring would also provide information to assess whether recreation use is being managed consistent with applicable management plans (e.g. ENF LRMP). A monitoring program is a current need which should continue into the future.

There is a need for patrols at UARP-related recreation facilities and areas with dispersed recreation use at and near Slab Creek Reservoir. Patrols in the area are needed to provide a point of visitor contact, ensure visitor compliance with management restrictions, provide periodic trash removal and eliminate evidence of inappropriately located dispersed use sites. Patrols would respond to the concern for addressing resource impacts such as compliance with site closures, pollution and trash. Patrols in the area would also improve public safety by shortening response time for accidents or other emergencies that may occur in the area. Patrols are a current need for the Slab Creek Reservoir and these patrols should continue into the future.

The UARP-related recreation facilities are capital investments that require funding for operation and maintenance (O&M). Accordingly, there is a need to provide support for O&M and for the UARP-related recreation facilities at Slab Creek Reservoir. This need would also exist for any new recreation facilities that may be constructed. This potential action is a current need that

would respond to the need for adequate public recreation facilities, public health and safety, and providing for existing recreational use at the UARP.

There are visitor information and education needs at and near Slab Creek Reservoir. There is a need to provide information about circumstances that may affect visitors' safety while boating on the reservoir such as the potential for spill conditions on the reservoir and the potential for daily changes in reservoir levels. This information should be posted at the boat launch sites. Visitors should be made aware of any new restrictions that may be implemented such as restrictions on overnight use.

Overall there is a need to provide the public with information about recreation facilities and opportunities that are available at and near Slab Creek Reservoir. This need could be met as part of an information brochure that encompasses recreation resources for the UARP. This brochure should be made available at visitor points of contact including the Cleveland Corral and Crystal Basin Information Stations, ENF Supervisor's Office, Placerville and Pacific Ranger Stations. This is a current need that would provide the public with recreation information about the area at and near Slab Creek Reservoir.

The recreation needs identified at and near Slab Creek Reservoir are listed in Table 7.4-1.

7.5 Reaches in the Canyonlands

7.5.1 Junction Dam Reach

The average gradient of this 11-mile reach is 180 feet per mile is considerably steeper than either the Slab Creek Reach or Camino Reach. One section of the river drops over 400 feet in one mile. Silver Creek Falls, which has three drops totaling about 100 feet, is in this section. Access to this reach is extremely limited in that there is no roaded access. Hiking up from Camino Reservoir or down from Junction Reservoir are the primary means to access the reach. Based on helicopter reconnaissance on June 11, 2003, and field reconnaissance on October 15, 2003, it was determined that most of the reach appears to be boatable, however, Silver Creek Falls is a serious obstacle.

7.5.1.1 Recreation Management Goals and Objectives

The Recreation TWG determined that the goal for this reach is to design a management plan to preserve the existing primitive recreational experiences available at this reach. These experiences include activities such as remote angling, hiking/canyoneering.

Table 7.4-1. Summary of the current and potential future needs related to recreational use at and near Slab Creek Reservoir.

Slab Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Upper Slab Creek Reservoir Boat Launch (Upstream end of reservoir near Forebay Road)	Provide adequate public recreation facilities. Enhance paddling opportunities. Meet projected demand for non-motorized boating. Provide for public health and safety. Meet identified visitor needs.	Install traffic controls, create parking area and pave a trail extending below the high water mark to the lowest probable reservoir level that may exist.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	RS: §4.2.3.3, §4.3, Tables 4.3-1(a) and (b) VU&I: §4.1.7.2, Table 4.1-12 Professional judgment ENF S&G 83
	Provide for safe access on the reservoir. Address resource impacts related to recreation use.	Install safety and pack-in/pack-out signage.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	ENF S&G 25
Shoreline between Forebay Road and Upper Slab Creek Reservoir Boat Launch	Provide adequate public recreation facilities. Provide for day use and limited overnight camping. Address resource impacts related to recreation use.	Design and construct hardened sites (5-7) for overnight use including restrooms.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	RS: §4.2.3.3 RD: §4.4, Table 4.4.12 ENF S&G 24, 25, 83 Professional judgment
Lower Slab Creek Reservoir Boat Launch (Downstream end of reservoir near dam)	Provide adequate public recreation facilities. Enhance paddling opportunities. Meet projected demand for non-motorized boating. Provide for public health and safety. Meet identified visitor needs.	Install traffic controls, create parking area (~5 vehicles) and pave a trail extending below the high water mark to the lowest probable reservoir level that may exist.	Provide for O&M.	Provide for facility replacement at end of useful life.	Provide for O&M.	RS: §4.2.3.3, §4.3, Tables 4.3-1(a) and (b) VU&I: §4.4, Table 4.4.12 Professional judgment ENF S&G 24, 25

Table 7.4-1. Summary of the current and potential future needs related to recreational use at and near Slab Creek Reservoir.

Slab Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Lower Slab Creek Reservoir Boat Launch (Downstream end of reservoir near dam)	Emphasize day use opportunities at the reservoir.	Remove campfire rings at boat launch. Install safety and pack-in/pack-out signage.	Prohibit overnight use at the boat launch.		Prohibit overnight use at the boat launch.	RS: §4.2.3.3 ENF S&G 46 Professional judgment
Access road between dam and Lower Slab Creek Reservoir Boat Launch	Provide safe public access to the reservoir.	Install guard rails and widen turnouts to allow vehicles to pass each other.	Continue to prohibit trailers on this road.	Provide for facility replacement at end of useful life.	Provide for O&M.	Professional judgment ENF S&G 24
All UARP-related recreation facilities (existing and future)	Provide for managing projected recreation use. Provide adequate public recreation facilities.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1
Slab Creek Dam Access Road	Address resource impacts. Provide for public health and safety. Provide public notice (signing) of available recreation opportunities.		Restrict public vehicular access to daylight hours only or restrict access to SMUD and affected landowners only. Provide adequate signing and information.		Restrict public vehicular access to daylight hours only or restrict access to SMUD and affected landowners only.	SMUD Staff Public comments
Adit Access Road	Ensure public safety around UARP features.	Provide parking near gate.	Restrict public access on this road to foot traffic.		Restrict public access on this road to foot traffic.	SMUD Staff FERC Guidelines

Table 7.4-1. Summary of the current and potential future needs related to recreational use at and near Slab Creek Reservoir.

Slab Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Adit Access Road	Provide adequate recreation facilities. Address resource impacts related to recreation use.			Provide parking and restrooms if whitewater flows are provided.		FERC Guidelines ENF S&G 84
Shoreline within ¼ mile of reservoir (current areas of concern: boat launches, Slab Creek Dam Access Road)	Provide for managing existing and projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use. Manage recreation use near the reservoir to protect natural resources. Meet visitor needs identified for increased enforcement of regulations.		Continue or increase patrols.		Continue or increase patrols.	ENF S&G 115
	Provide for managing projected recreation use at the reservoir consistent with applicable plans (ENF LRMP). Provide for public health & safety. Address resource impacts related to recreation use.				Continue monitoring program (visitor and management needs and impacts).	ENF LRMP ch. 5, Table V-1

Table 7.4-1. Summary of the current and potential future needs related to recreational use at and near Slab Creek Reservoir.

Slab Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Slab Creek Reservoir Surface	Provide safe public access to the reservoir. Enhance non-motorized boating opportunities at the reservoir.		Remove wood and debris from reservoir.		Remove wood and debris from reservoir.	FERC Guidelines
			Provide for opportunities to use the shoreline, which may include purchasing those lands now in private ownership.			Professional judgment (note: this need was provided by the ENF in February 2005, which was subsequent to the final TWG meeting held to receive comments on this report; this need has not been reviewed with or discussed among the Recreation TWG participants).
			Consider operating within a range of reservoir fluctuation.		Consider operating within a range of reservoir fluctuation.	RS: §4.3, Tables 4.3-1 (a) and (b) Professional judgment
			Restrict boating speed to 5 m.p.h.		Restrict boating speed to 5 m.p.h.	Professional judgment RD: §4.4, Table 4.4-12, §4.8.2, Table 4.8-9, §5.2

Table 7.4-1. Summary of the current and potential future needs related to recreational use at and near Slab Creek Reservoir.

Slab Creek Reservoir	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Slab Creek Reservoir Surface	Ensure public safety around UARP features.				Close reservoir to boating use during spill events or allow boating while implementing other measures such as signage & grab lines.	FERC Guidelines Professional judgment
	Provide for managing projected increased recreation use, including non-motorized boating. Provide public safe access on the reservoir.				Continue monitoring (visitor and management needs and impacts) program.	ENF LRMP ch. 5, Table V-1 FERC Guidelines
Interpretation, Information and Education (II&E)	Provide for public health and safety. Ensure public safety around UARP features. Provide for interpretation and education at appropriate areas.		Provide signage to inform visitors about boating safety, reservoir level changes, spill conditions and pack-in/pack-out. Develop and implement interpretive services or facilities for historic roads and features.		Provide signage to inform visitors about boating safety, reservoir level changes, spill conditions and pack-in/pack-out.	FERC Guidelines ENF S&G 25

7.5.1.2 Supply and Demand Factors

This 8.3-mile reach is very difficult to access. There are two options for access, either hiking up from Camino Reservoir or hiking down from Junction Reservoir. Hiking along the river channel is challenging due to the very steep canyon. Whitewater boating on this reach would be very challenging due to Silver Creek Falls. The falls consists of three drops totaling about 100 feet. The last drop of the falls is the tallest and the flow line lands on the right canyon wall. Portaging the falls appears to be problematic because there are vertical walls on both sides of the falls that extend downstream of the falls. While this section of river may be runnable by a select few kayakers, it is certainly beyond the skill level of the vast majority of the boaters in Northern California.

Angling on this reach was described as fair by the participants in the Stream Angler Focus Group. Anglers also reported that it was very difficult to fish this reach because of the steep canyon.

7.5.1.3 Areas of Concern Related to Recreation Use—Environmental and Social

No existing areas of environmental or social concern were identified.

7.5.1.4 Capital Improvement Needs

There are no capital improvement needs identified for this reach.

7.5.1.5 Management Needs

Providing flow information on this reach was recommended by both the Stream Angler Focus Group and the *Whitewater Feasibility Study Technical Report*. This information would allow recreationists to know the flow in the reach before embarking on a trip into this area. This is especially important considering the difficult access to the reach.

This reach should be included as part of the overall need for monitoring recreational use at and near the UARP and its potentially related impacts.

7.5.2 Camino Dam Reach

The reach is 9.2 miles long with an average gradient of 119 feet per mile. As with the Junction Dam reach, access to the reach is very limited because there are no roads leading to the reach. The only options are hiking down from Camino Dam, hiking up from Camino Powerhouse or hiking in from the Camino tunnel adit road.

7.5.2.1 Recreation Management Goals and Objectives

The recreation TWG suggested providing for future whitewater boating opportunities pending the results of the September 15, 2004 whitewater study completed on this reach.

7.5.2.2 Supply and Demand Factors

The quality of the fishing rating ranged from poor to good by the three anglers who participated in the Stream Angler Focus Group and had fished the reach. The one angler who had the most extensive experience on this reach, twelve trips, stated that his fishing success on this reach had decreased since the 1997 flood, but had been improving in recent years. The *Whitewater Feasibility Study Technical Report* revealed that this reach has only been run twice, in 1983 and 1998, before the Camino Whitewater Boating Flow Study was conducted in the September 2004. Both of the previous runs were made during high run-off events. Those who boated the reach in 1983 and 1998 as well as the and participants in the Camino Whitewater Boating Flow Study ranked the difficulty of the run as class V, and assigned quality ratings of 5 to 8 on a 10-point scale. Preliminary data from the flow study revealed the range of boatable flows for this reach is between 500 and 1,200 cfs. Currently spill flows would only occur during large storm events. The shuttle is rather lengthy at 32 miles, which takes approximately 1 hour and 15 minutes to drive, one-way. The round trip for this shuttle from the Sly Park exit on Highway 50 would be roughly 3.5 hours.

7.5.2.3 Areas of Concern Related to Recreation Use—Environmental and Social

The access road leading to Camino Reservoir is steep, narrow and the road surface can be icy during the winter months. Public vehicular access is restricted by SMUD beyond the powerhouse to provide for public safety near UARP infrastructure.

7.5.2.4 Capital Improvement Needs

There are no capital improvement needs identified for this reach.

7.5.2.5 Management Needs

A management plan needs to include coordinating boatable flows with channel morphology flows if they are provided on the Camino Dam Reach. In addition, providing predictions of seasonal and real-time flow information on this reach would allow whitewater paddlers to take advantage of flows on this reach on an opportunistic basis.

This reach should be included as part of the overall need for monitoring recreational use at and near the UARP and its potentially related impacts.

7.5.3 Brush Creek Reach

The Brush Creek Reach is 2.13 miles long and extends from Brush Creek Dam to Slab Creek Reservoir. Brush Creek is a small drainage that is quite steep with a gradient of 467 feet per mile. The reach is very difficult to access. Hiking in the canyon near Brush Creek Reservoir or boating across Slab Creek Reservoir and hiking up the reach are the only options.

7.5.3.1 Recreation Management Goals and Objectives

The recreation needs on the Brush Creek Reach are limited considering the challenging access. The Recreation TWG determined that the goal on this reach is to maintain any existing recreation opportunities.

7.5.3.2 Supply and Demand Factors

Challenging access and steep gradient limit the recreation opportunities on this reach.

7.5.3.3 Areas of Concern Related to Recreation Use—Environmental and Social

No existing areas of environmental or social concern were identified.

7.5.3.4 Capital Improvement Needs

There are no capital improvement needs identified for this reach.

7.5.3.5 Management Needs

This reach should be included as part of the overall need for monitoring recreational use at and near the UARP and its potentially related impacts.

7.5.4 Slab Creek Reach

The Slab Creek Reach is 8.5 miles long with an average gradient of 89 feet per mile. The top four miles of the reach are steeper, over one hundred feet per mile, than the last 3.5 miles. River habitat types include riffle, run, and pool. The upper part of the reach is dominated by large boulders and bedrock. While the lower reach is comprised of many long shallow riffles and pools. The *Slab Creek Whitewater Boating Technical Report* found the difficulty class for the entire reach to be between class IV and V, and is most suited for boaters with advanced skills or better. Access to the river can be obtained at several locations including, White Rock Power House, Rock Creek Power House and SFAR access from Rock Creek Road. Access at all sites is an issue due to lack of parking and all but one are currently gated. The Stream Angler Focus Group, a component of the Visitor Use and Impact Study, reported the quality of the fishing on this reach to be low due to minimal numbers of catchable trout and difficult terrain to cover along the streambed.

7.5.4.1 Recreation Management Goals and Objectives

The Recreation TWG expressed a goal to provide for whitewater boating opportunities that are consistent with other recreational uses and ecological goals for this reach. There is also a goal to protect and enhance wild trout fishery and angling opportunities, as well as to ensure that there is adequate access for the public.

7.5.4.2 Supply and Demand Factors

The Slab Creek reach currently provides limited angling opportunities. The *Stream Fisheries Technical Report* found low numbers of catchable trout in this reach. The *Stream Angler Focus Group Technical Report* similarly found the quality of the fishing to be low. In addition, it was difficult for anglers to move up and down this reach due to large boulders and steep canyon walls.

The *Whitewater Boating Flow Study For Slab Creek Reach Technical Report* indicated that the minimum navigable flow for the reach is approximately 400 cfs. Most boaters felt that flows between 500 cfs and 2,000 cfs would provide an acceptable boating experience for them. Kayakers tended to prefer flows at the lower end of this range, the optimum range of flows being approximately 700 to 1,100 cfs. Whereas rafters tended to prefer flows at the higher end of this range, the optimum range of flows being approximately 1,100 to 1,500 cfs.

At the highest test flow, more boaters tended to rate the overall difficulty of the reach as class V, most appropriate for the most experienced kayakers. The lower portions of the reach may be less difficult and may be suitable for intermediate boaters.

The social carrying capacity for the reach was determined to be approximately 108 boats per day. This equates to between 110 and 150 users per day depending on the proportional use of rafts. The physical carrying capacity is limited by the available parking at the put-in, which is estimated to be between 30 and 40 cars. While there is sufficient parking capacity at the various take-out locations, White Rock Powerhouse, Rock Creek Powerhouse and the SFAR Access Road from Rock Creek Road, all of these locations are currently gated or have the potential to be gated. Access to the reach as it currently exists severely limits the physical carrying capacity of this reach.

7.5.4.3 Areas of Concern Related to Recreation Use—Environmental and Social

The potential for conflicts between boating flows and users needs to be addressed. Even though conflicts with shore based users along the reach are likely to remain low due to extremely limited access and current low levels of visitation, there is a concern that flatwater boating on Slab Creek Reservoir during Whitewater boating releases could create a potential safety issue on the reservoir. In order to provide sufficient flows for whitewater boating, the UARP has to be operated to cause water to be spilled over the dam and there could be a potential for the resulting current on the reservoir surface to carry boaters over the dam. During the study, boating on the reservoir was not allowed because of the concern for boats being carried in the current over the dam.

7.5.4.4 Capital Improvement Needs

If flows for whitewater boating are provided and boating use develops in the future, capital improvements such as restrooms and parking areas will be need to be provided at appropriate access sites. These improvements should be identified in an access plan for the Slab Creek Reach.

7.5.4.5 Management Needs

There is a need to develop a management plan through coordination between hydro system operators, river users, managing agencies and other affected parties.

A particular management need is to address access to this reach prior to initiating whitewater flows. Specifically, all of these access sites are gated however the gate on the SFAR access from Rock Creek Road is typically open. The Mosquito Road Bridge does provide access, however, it has limited parking potential as a routine point of access to the reach. The Slab Creek Adit Access Road is immediately below the Slab Creek Dam. It is gated where it meets the Chute Camp Road. This is a UARP road (within the FERC Project Boundary and listed in the existing license) located on NFS land and the gate is locked by SMUD at all times to prevent vandalism and for public safety reasons. This road is approximately one-third of a mile in length and it is a steep, partially paved, narrow, one-lane road that leads to the put-in site at the rivers edge.

Regarding whitewater recreation there is a need to consider providing scheduled flow releases in this reach that would be suitable for whitewater boating of 3 hours at 1,400 cfs from 10-1, and 3 hours at 800 cfs from 2-5 approximately. The preferred months for scheduled releases, in order of preference, are: August, September, July, June, May, October, April and March. The preferred days of the week for scheduled releases, in order of preference, are: Saturday, Sunday, Friday then others. If suitable flows were provided, the release schedule would be part of a River Management Plan that would need to be developed. The plan would address: 1) river access; 2) safety concerns; 3) whitewater boater density; 4) conflicts with other recreational uses, 5) user education; and 6) monitoring. The plan would outline adaptive management options, including use thresholds that could be implemented based on monitoring. Adaptive management options could include different flow levels and/or changes to the schedule of releases to provide different types of boating experience. This management plan should continue to monitor future use and possible resource impacts. The potential action of providing scheduled releases suitable for whitewater boating and the associated River Management Plan are current needs that would help achieve the recreation objective of providing whitewater boating opportunities in this reach. Monitoring and adaptive management would respond to the need to address resource impacts from recreational use and provide for public recreation at the UARP.

To the extent possible, consideration should be given to scheduling releases suitable for whitewater boating at a time, magnitude and duration that may also achieve other resource objectives (i.e. channel morphology).

Before a whitewater flow schedule can commence on the Slab Creek Reach an access plan for the reach needs to be developed. Currently there is no public vehicular access to the reach. The put-in and take-out locations used during the Slab Creek Whitewater Flow Study were accessed through gates that are typically locked. Parking at the put-in near Slab Creek Dam is limited. These physical carrying capacity limitations will require a plan as to how boaters will access this reach if flows are implemented.

The recreation needs identified for the reaches in the Canyonlands are listed in Table 7.5-1.

Table 7.5-1. Summary of the current and potential future needs related to recreational use in the river reaches in the Canyonlands.

River Reaches in the Canyonlands	Overall Long-term Need or Current Deficiency Being Addressed	Current Needs or Deficiencies		Potential Future Needs		Reference to Supporting Study Results or Other Reference
		Capital Improvements	Management	Capital Improvements	Management	
Junction Dam Reach	Maintain existing opportunities		Provide flow information			VU&I: §4.1.9.1 WWF: §5.3, §5.11, §6.0, Table 6.1-1 SFTR: §4.10
	Provide for managing projected recreation use.				Continue monitoring program	ENF LRMP ch. 5, Table V-1
Camino Dam Reach	Provide for whitewater opportunities on spill or channel morphology flows		Provide flow information			VU&I: §4.1.9.1 WWF: §5.2, §6.0, Table 6.1-1 RS: §5.3 SFTR: §4.11 CWW: report prep in progress
	Provide for managing projected recreation use.				Continue monitoring program	ENF LRMP ch. 5, Table V-1
Brush Creek Dam Reach	Maintain existing recreation opportunities					Professional judgment
	Provide for managing projected recreation use.				Continue monitoring program	ENF LRMP ch. 5, Table V-1 SFTR: §4.13
Slab Creek Dam Reach	Provide whitewater boating opportunities.		Develop river management plan for whitewater releases.	Facilities as determined necessary by River Management Plan		VU&I: §4.1.9.1 WWF: §5.1, §6.0 RS: §5.3 SFTR: §4.14 SCWW: §4.4.2, §6.0
	Provide for managing projected recreation use.				Continue monitoring program	ENF LRMP ch. 5, Table V-1