

REC 6 Appendix 1

Recreation Needs Analysis

REC 6 APPENDIX 1
RECREATION NEEDS ANALYSIS

Lewis River Hydroelectric Projects
FERC Nos. 935, 2071, 2111, and 2213

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ABBREVIATIONS AND ACRONYMS

4WD	4-wheel-drive
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities
ATVs	all terrain vehicles
CFR	Code of Federal Regulations
DNR	Washington State Department of Natural Resources
GIS	geographic information system
GPNF	Gifford Pinchot National Forest
I-5	Interstate 5
IAC	Washington State Interagency Committee for Outdoor Recreation
ILM	Integrated Landscape Management
IP	International Paper
LRMP	Land and Resource Management Plan
Monument	Mount St. Helens National Volcanic Monument
msl	mean sea level
ORVs	off-road vehicle
PUD	Public Utility District
PWC	personal watercraft
ROS	Recreation Opportunity Spectrum
ROW	right-of-way
RRG	Recreation Resource Group
RRMP	Recreation Resource Management Plan
RV	recreational vehicle
RVDs	recreation visitor days
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SR	State Route
State Parks	Washington State Park and Recreation Commission
US Access Board	U.S. Architectural and Transportation Barriers Compliance Board
USFS	U.S.D.A. Forest Service
USFWS	U.S. Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife

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EXECUTIVE SUMMARY

PacifiCorp and Public Utility District No. 1 of Cowlitz County (Cowlitz PUD) commissioned this study as part of the relicensing process for the preparation of a license application to be submitted to the Federal Energy Regulatory Commission (FERC) for the 4 Lewis River Hydroelectric Projects (Project) (FERC Project Nos. 935, 2071, 2111, and 2213). As part of this relicensing process, a series of inter-related studies is being conducted to assess and evaluate recreation resources associated with the Project (18 CFR 4.51(f)(5) 1998). This report presents the results of one of those studies: a needs analysis of recreation resources in the study area. The primary objective of this document is to identify existing recreation needs and projected future recreation needs for increments of time over the term of the new license. Needs are assessed for both existing and potential future developed recreation facilities and undeveloped dispersed sites in the study area.

Potential implementation of actions intended to address existing and future recreation needs must consider maintaining the existing natural setting of the study area, which provides a balance between development and natural open space. Maintaining this natural setting is an important issue for both local residents and visitors to the study area, as well as resource managers. Identification of recreation needs in this report does not commit PacifiCorp or Cowlitz PUD as the sole entities responsible for satisfying these needs.

The Recreation Needs Analysis is a synthesis of the results of several previous recreation studies conducted as part of PacifiCorp and Cowlitz PUD's relicensing process. Previous study results that are synthesized and referenced in this analysis include the Recreation Supply Analysis (EDAW 2000a), Recreation Demand Analysis (EDAW 2000b), and Draft Recreation Capacity and Suitability Analysis (EDAW 2001).

Results from this report and these other studies will be used in the development of alternatives for consideration by the Recreation Resource Group (RRG), which will be integrated into a Recreation Resource Management Plan (RRMP).

The 3 components of this synthesis report include:

- An analysis of overall "big picture" recreation needs in the study area over time (i.e., extent of new facilities that might be needed during the term of the new license (assumed to be 30 years) versus more focused needs on a site-by-site basis).
- Identification of focused recreation needs on a site-by-site basis, both existing (current to 2005) and future (2005 to 2035, in 10-year increments). This includes developed recreation facilities and dispersed undeveloped recreation sites.
- Development of Project-related recreation needs criteria to be considered during the relicensing process.

Many different types of sites, facilities, and use areas associated with various recreation activities were considered in this analysis. Facilities and sites related to the following activities were considered:

- Camping
- Day use/picnicking
- Boating
- Swimming and sunbathing
- Visiting I&E facilities/programs/signs
- Non-motorized trails
- Fishing
- General use of open space including wildlife observation and photography and hunting

The study area is comprised of Lake Merwin, river access sites below Lake Merwin, Yale Lake, Swift Reservoir, and the Swift 2 Power Canal and Bypass Reach.

Existing and Future Recreation Needs in the Study Area

Camping-Related Needs

Overall seasonal utilization of campgrounds in the study area during the full recreation season from the years 1996 to 2000 averaged 48 percent. Average weekend utilization during this period was higher at 60 percent, while average peak season (July and August) weekend utilization was much higher at 94 percent. In the next 30 years (2035), the demand for tent and RV camping is projected to increase by 130 percent. Utilization of several campgrounds in the study area is projected to reach peak season weekend capacity during this time. Thus, site managers should consider increasing the supply of camping facilities to help meet current and future demand. Based on these Projections, an estimated total of 128 additional campsites would be needed in the study area by 2035 to accommodate expected future demand. This could be accommodated through expansion of existing camping facilities and construction of new facilities by both the public and private sectors. Potential locations for helping meet camping needs in the study area include additional campsites at one or more of these sites:

- Cougar Camp at Yale Lake.
- Swift Camp at Swift Reservoir.
- An undeveloped area south of Speelyai Canal on Yale Lake.

Additionally, private campgrounds in the study area must add up to 133 new RV campsites to help meet the projected increase in RV camping by 2035. Implementation of actions to address new American with Disabilities Act (ADA) guidelines should be considered at all existing and new facilities.

Other important needs related to camping facilities include:

- Consideration of on-going maintenance and repair of camping facilities.
- Implementation of an expanded reservation system.
- Increased publicity/information over time, concerning visitor options at facilities.
- Increased management of shoreline dispersed boat-in or walk-in campsites.
- Construction of additional group reservation campsites.

Day Use/Picnicking-Related Needs

Nearly half of all visitors indicated that they were picnicking during their visit to the study area. Demand for picnicking is projected to increase by 179 percent by 2035. Projected demand at individual picnic areas in the study area indicates that a total of 94 additional picnic sites and parking spaces would be needed (based on a capacity of 75 percent on seasonal weekends) by 2035 to accommodate future demand, if current use of picnicking facilities were at capacity. Consideration should be given to increasing the supply of picnicking facilities including the construction of boat-in day-use picnicking sites. Other important needs related to picnicking facilities should include implementation of actions to address new ADA guidelines for universal access and continued maintenance of day use/picnicking facilities in the study area.

Boating-Related Needs

PacifiCorp operates 10 boat launches (19 ramp lanes) in the study area, including access sites below Merwin Dam. Utilization of 2 boat launch facilities is expected to exceed capacity within the next 30 years, while use at other facilities will likely approach or be at capacity during this period. Demand for boating and water-based recreation activities is currently high and will increase by 100 percent over the next 30 years. Thus, site managers should consider increasing the supply of boating-related facilities to help meet current and future demand. This could be accommodated through expansion of existing facilities and construction of new facilities. Potential actions for helping meet boating-related needs in the study area include:

- Merwin Lake – add 1 additional boat ramp lane at Speelyai Bay and possibly a new boat launch at Merwin Park.
- Yale Lake – recent improvements at Saddle Dam Park, along with other existing boat launches, are probably adequate. If a new campground is developed at an undeveloped site, a new boat launch should also be considered at this location.
- Swift Reservoir – develop a new boat launch along the northern shoreline west of the existing boat launch.
- Below Merwin Dam – improve existing boat launches only.

Other boating-related facilities should also be considered in the study area. These include expansion of existing parking areas to accommodate additional vehicle and trailer parking, construction of at least 1 fully ADA-accessible boat launch on each reservoir and lengthening at least 1 boat ramp on each reservoir to provide low-pool (year-round) access during drawdowns.

Additionally, increased marine patrols and management presence should be considered as the number of boats and jetskis/PWC is projected to double in the future (2035). Enforcement of boating regulations and other actions should be taken as needed to address boating activities. Finally, additional boat moorage may be considered at key locations.

Swimming and Sunbathing-Related Needs

Swimming is currently one of the most popular activities in the study area, and participation is expected to increase 114 percent by 2035. To meet this projected demand, existing designated swimming areas may be considered for expansion and/or a new swim area constructed at a new site. This should be considered in conjunction with other improvements and maintenance of existing swimming areas including providing delineators/floating booms, safety signs, and other apparatus to improve visitor swimming experiences and safety at all designated swim areas. One additional consideration should be the creation of a fully ADA-accessible swimming area at either an existing facility or any new facilities that are constructed.

Interpretation and Education-Related Needs

Currently, there are no significant interpretive facilities in the study area. However, demand for interpretive displays is very high in the region and is projected to increase by more than 193 percent by 2035. Many new opportunities for interpretive and educational facilities exist in the study area. Consideration should be given to new interpretive facilities, such as amphitheaters, signs and kiosks, and educational services such as camp-fire talks and nature walks. New ADA guidelines should be addressed at all facilities. An interpretive and education (I & E) plan and program should be considered for the study area, as well as the creation of self-guided nature trails at selected locations, such as Beaver Bay.

Non- motorized Trail-Related Needs

There are currently a limited number of non-motorized trails in the study area which receive variable amounts of use. As the demand for non-motorized hiking is projected to increase 157 percent by 2035, the creation of new trails in the study area should be considered. This projected demand could be partially met by considering the construction of new trails in many locations of the study area, as well as potential trail connections to destinations outside of the study area. Consideration should be given to developing a formal non-motorized trail along the IP Road at Yale Lake, plus the formalization of a trail from the Saddle Dam area to the Speelyai Canal. ADA-accessible trails should also be considered in the study area. A trail signage program should be developed. A coordinated management effort that addresses ORV and ATV use in the study area, principally along the IP Road, should be considered. Trail opportunities are being further identified in an on-going trails feasibility study that is focusing on key linkages for trail development from Merwin Park to Eagle Cliff Park along all 3 reservoirs.

Fishing-Related Needs

Although most fishing is boating-related and is addressed in the boating-related needs discussed previously, there are no designated angler access piers or docks, no ADA-accessible fishing opportunities, and no fish cleaning facilities in the study area. The demand for fishing from a boat is projected to increase by 90 percent through 2035. Consideration should be given to providing at least 1 ADA-accessible fishing pier on each reservoir. Increased visitor information regarding the location of existing public

shoreline access points should be considered. Finally, additional maintenance and some improvements at the 6 river access sites below Merwin Dam and at the Swift 2 Power Canal and Bypass Reach should also be considered.

General Open Space-Related Needs

An adequate supply of land for open space-related recreation activities, such as wildlife observation and hunting, appears to exist in the study area and the surrounding region. Visitor participation in hunting and wildlife observation is expected to increase by more than 50 percent by 2035. Consideration should be given to maintaining adequate open space lands to meet future physical and visual recreation open space needs. These lands should be coordinated with or serve a dual purpose with lands acquired for wildlife use. Consideration should also be given to providing designated wildlife viewing areas and trails, such as Watchable Wildlife sites, in compatible areas such as the Swift 2 Bypass Reach and at the Beaver Bay wetlands.

Project-Related Recreation Needs Criteria

Not all recreation needs identified in the study area should be assumed to be Project-related or the responsibility of PacifiCorp or Cowlitz PUD. Associating recreation needs in the study area with the Project, or Project-related recreation needs, will require consideration of criteria by the Recreation Resource Group (RRG) and other stakeholders. Two criteria for potential consideration include:

- The identified recreation need should be a direct cause of the Project.
- The identified recreation need should be in proximity to the Project boundary; a need must be within or adjacent to the FERC Project boundary to be considered.

Other criteria may also be developed by the RRG or other stakeholders during development of the Resource Enhancement and Alternatives Document and/or during the Settlement Agreement discussions in 2001 and 2002.

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1.0 INTRODUCTION

PacifiCorp and Public Utility District No. 1 of Cowlitz County (Cowlitz PUD) commissioned this study as part of the relicensing process for the preparation of a license application to be submitted to the Federal Energy Regulatory Commission (FERC) for the 4 Lewis River Hydroelectric Projects (Project) (FERC Project Nos. 935, 2071, 2111, and 2213). As part of this relicensing process, a series of inter-related studies is being conducted to assess and evaluate recreation resources associated with the Project (18 CFR 4.51(f)(5) 1998). This report presents the results of one of those studies: a needs analysis of recreation resources in the study area. The primary objective of this document is to identify existing recreation needs and projected future recreation needs for increments of time over the term of the new license. Needs are assessed for both existing and potential future developed recreation facilities and undeveloped dispersed sites in the study area.

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Results from this report and these other studies will be used in the development of alternatives for consideration by the Recreation Resource Group (RRG), which will be integrated into a Recreation Resource Management Plan (RRMP).

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2.0 STUDY AREA

The study area for this analysis focuses on the study area and includes the recreation facilities, use areas, and water bodies at Lake Merwin, Yale Lake, and Swift Reservoir as well as the 6 river access sites below Merwin Dam, the Swift 2 Power Canal, and the Swift 2 Bypass Reach areas. This study area considers a 0.5-mile buffer zone surrounding each reservoir (Figure 2.0-1). In some cases, this buffer zone is also referred to as the study area (i.e., Lake Merwin study area).

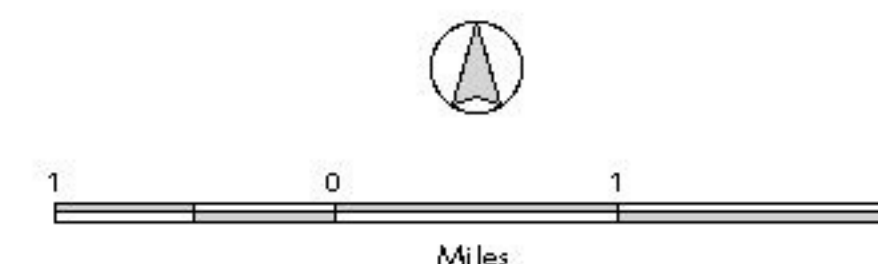
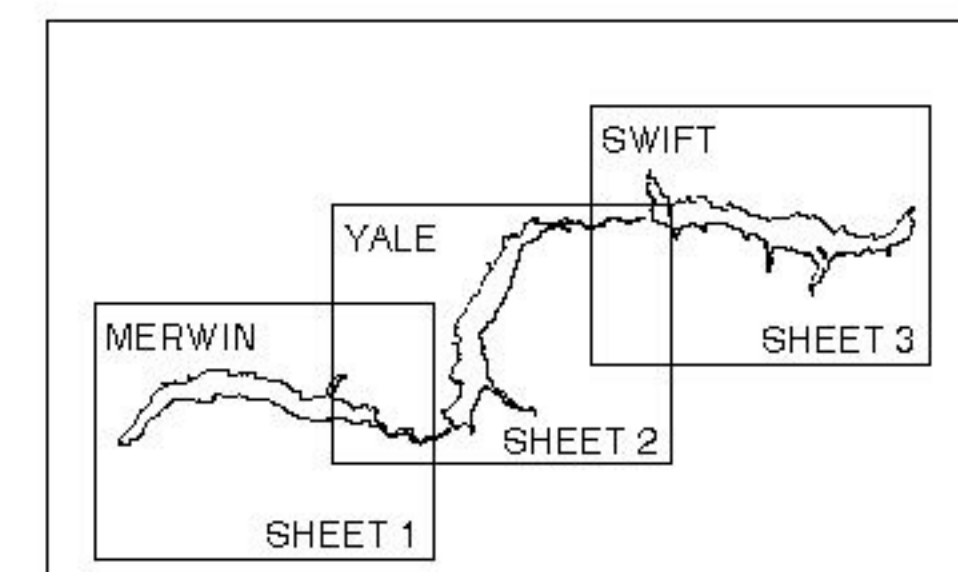
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Figure 2.0-1

Recreation Study Area

SHEET 1

- Study Area
- Recreation Site
- GPNF / MSHNVM
- State Land
- Transmission Line



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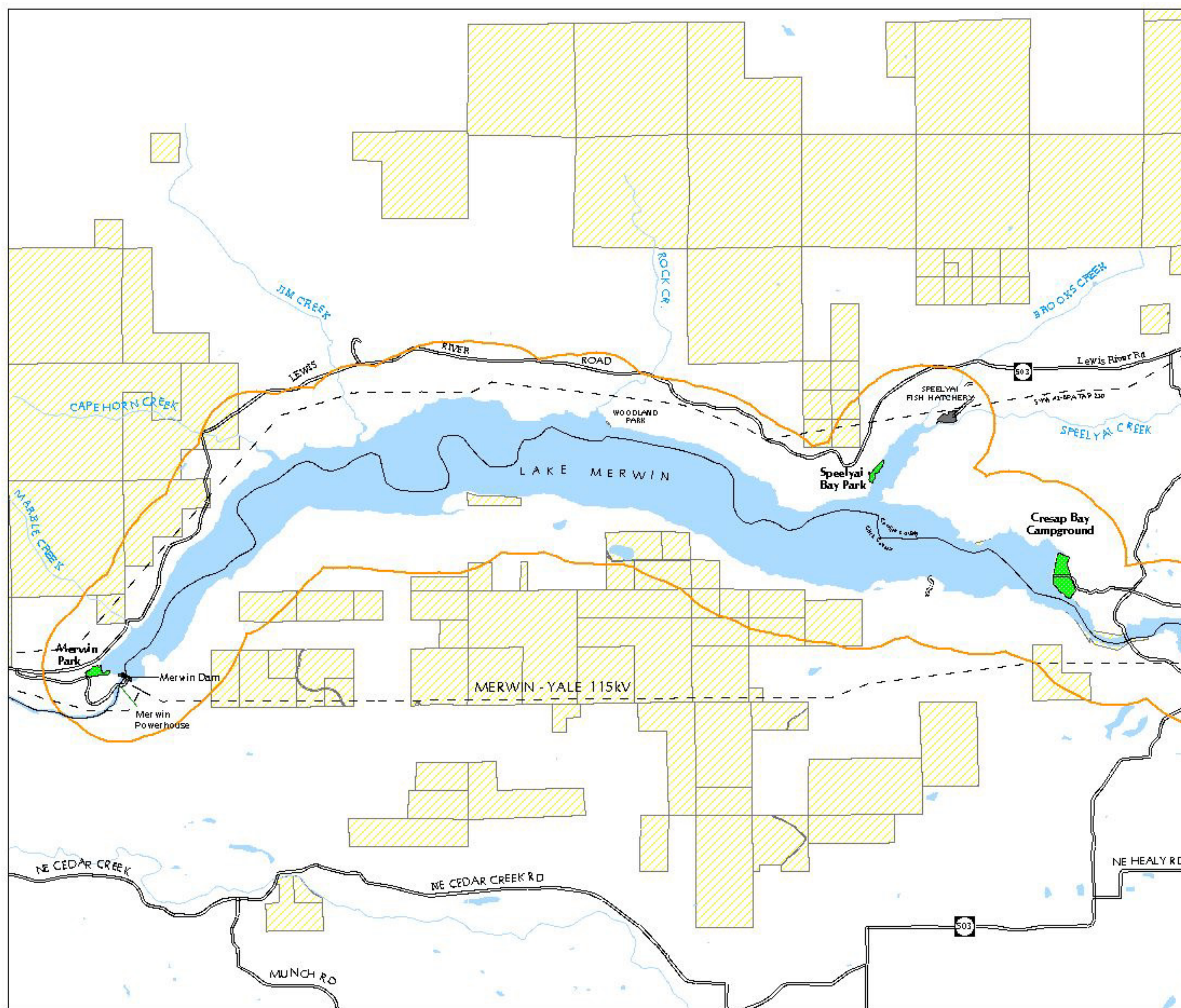





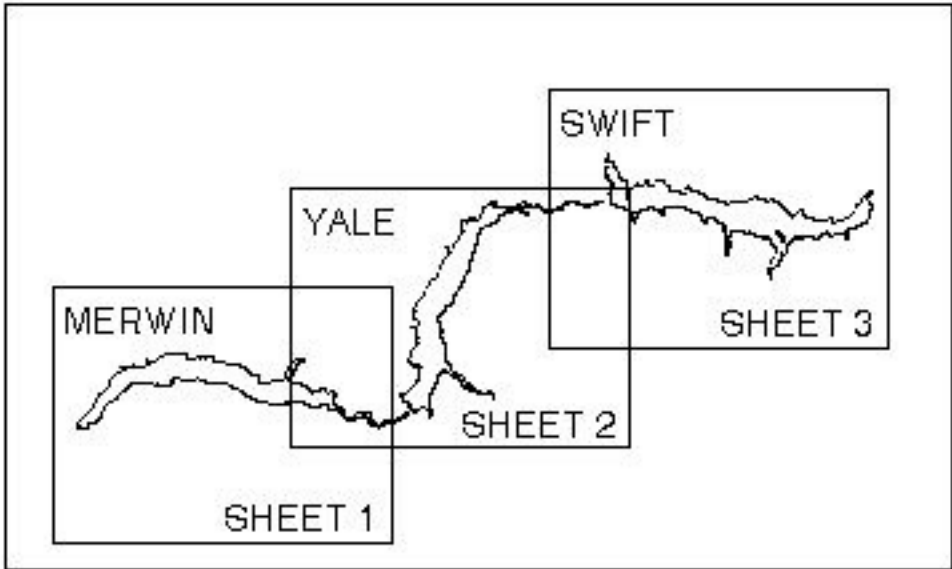


Figure 2.0-1

**Recreation
Study Area**
SHEET 2

-  Study Area
-  Recreation Site
-  GPNF / MSHNVM
-  State Land
-  Transmission Line



CONTOUR INTERVAL 80 FEET

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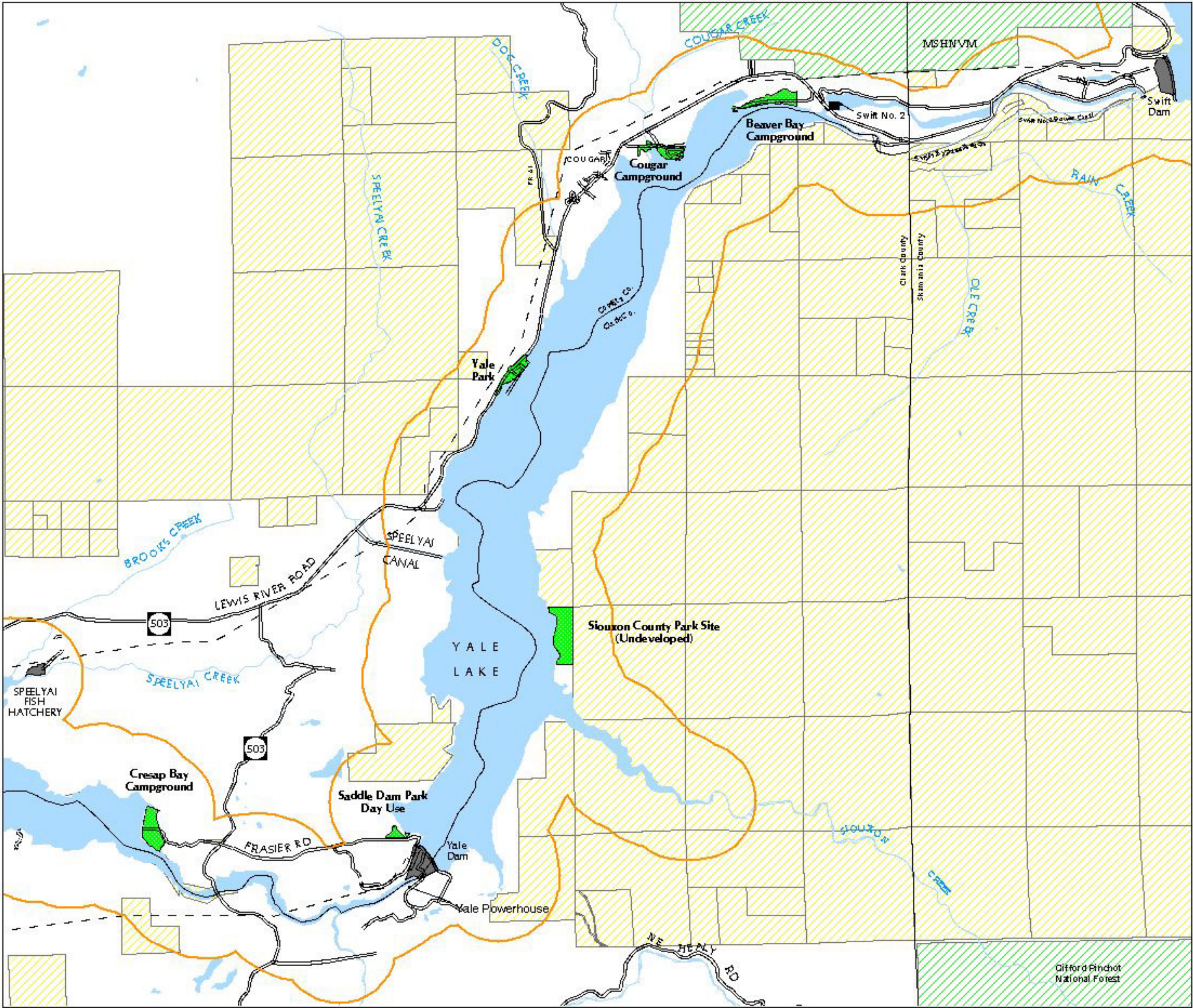





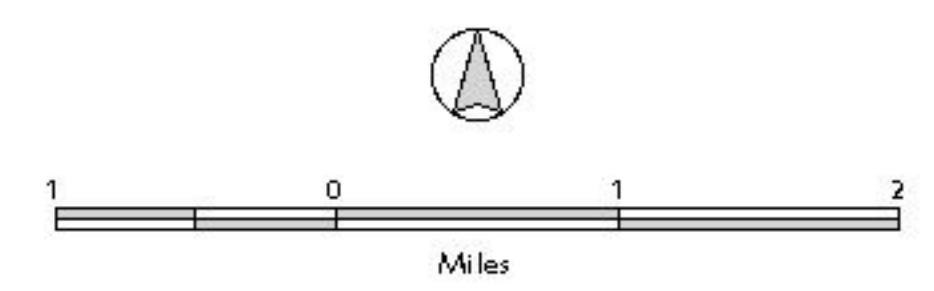
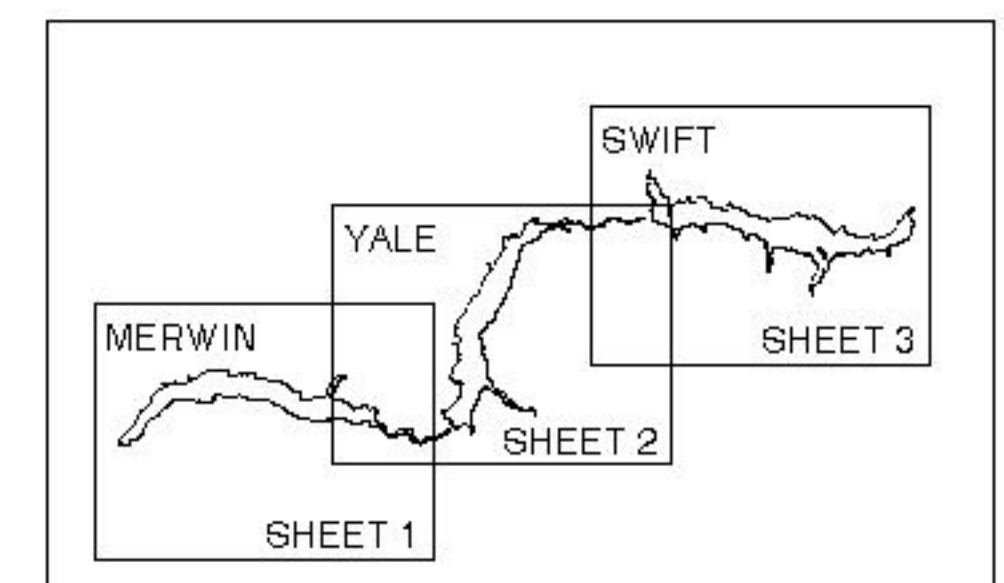


Figure 2.0-1

Recreation Study Area

SHEET 3

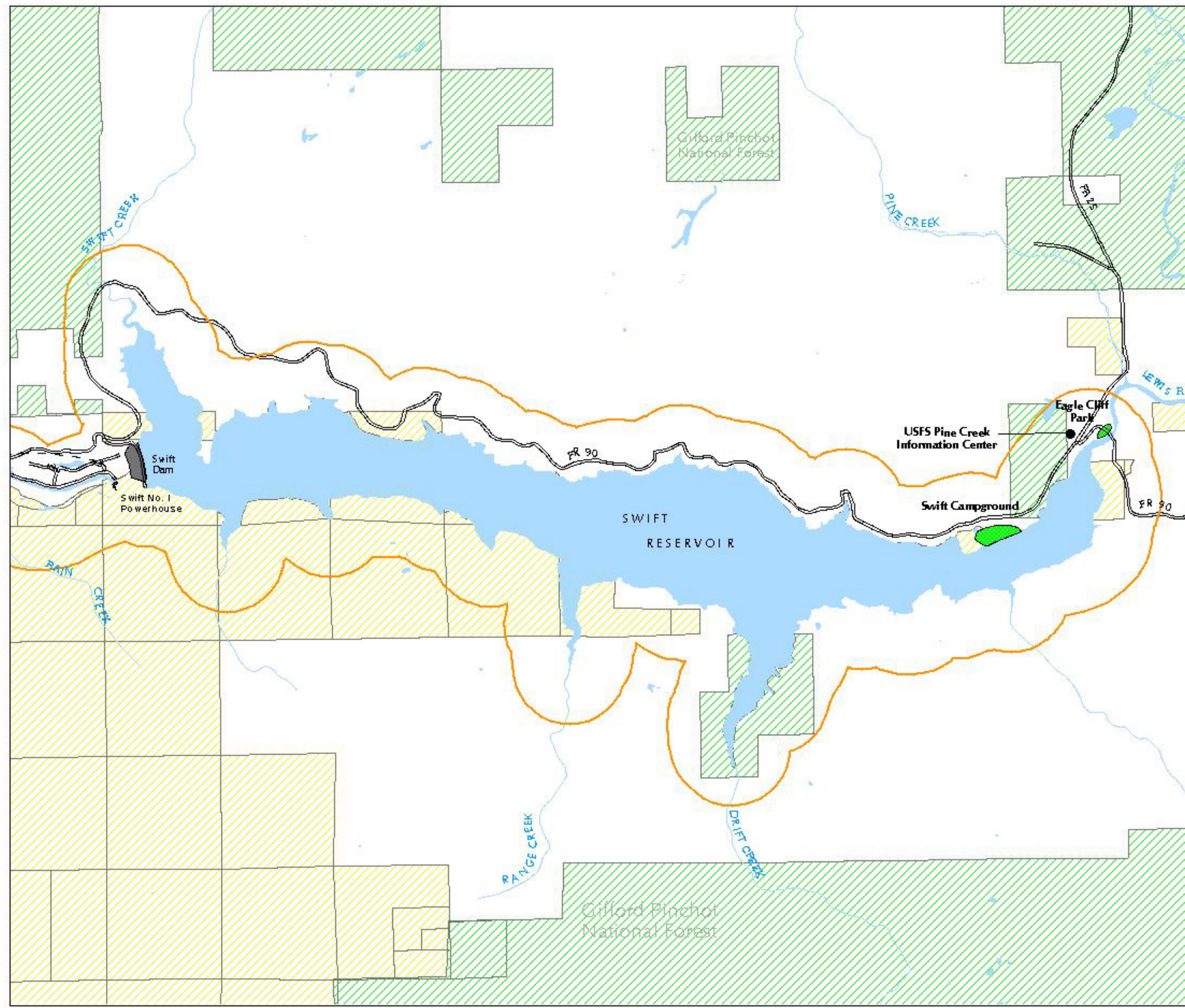
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-  Recreation Site
-  GPNF / MSHNVM
-  State Land
-  Transmission Line



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3.0 METHODS

This document synthesizes previous study results (EDAW 2000a, 2000b, and 2001) into a single report that analyzes, identifies, and projects existing and future recreation needs in the study area. The methodology is comprised of 3 parts:

- An analysis of overall “big picture” recreation needs in the study area over time (i.e., extent of new facilities that might be needed during the term of the new license (assumed to be 30 years) versus more focused needs on a site-by-site basis).
- Identification of focused recreation needs on a site-by-site basis, both existing (current to 2005) and future (2005 to 2035, in 10-year increments). This includes developed recreation facilities and undeveloped dispersed recreation sites.
- Development of Project-related recreation needs criteria to be considered during the relicensing process.

Many different types of sites, facilities, and use areas associated with various recreation activities were considered in this analysis. Facilities and sites related to the following activities were considered:

- RV and tent camping (at developed and dispersed undeveloped shoreline sites)
- Day use/picnicking (at developed facilities and dispersed undeveloped shoreline sites)
- Boating
- Swimming and sunbathing
- Visiting I&E facilities/programs/signs
- Non-motorized trail use (including hiking, walking, mountain biking, and equestrian use)
- Fishing (boat and bank)
- General use of open space (including hunting and wildlife observation/photography)

3.1 METHODOLOGY FOR ASSESSING OVERALL RECREATION NEEDS IN THE STUDY AREA

Overall “big picture” recreation needs in the study area were assessed using an analysis that compares and contrasts demand, supply, capacity, and opportunity/constraint factors to arrive at conclusions regarding overall recreation needs. Existing data for the study area from the demand and supply analyses, and the capacity and suitability analysis, are used in this analysis. This first subtask focuses on the overall “big picture” need for various types of facilities or opportunities, for example, without specifying where that need may specifically be met. This includes consideration of both developed and dispersed undeveloped recreation sites or use areas.

With respect to existing facility utilization, a capacity threshold was identified to account for peak season and peak month recreation use. As identified in the Draft Recreation Capacity and Suitability Analysis (EDAW 2001), a recreation facility is considered to be at capacity when utilization on a seasonal weekend basis is equal to 60 to 90 percent,

depending on the timeframe and facility type. Thus, any projected utilization over these percentages represents demand that is in excess of capacity for planning purposes. This method was used to determine the number of facilities (campsites and picnic tables for example) that would need to be provided in the future in order to meet projected demand.

It should be noted that all facilities related to projected demands may not actually be constructed due to resource constraints or potential impacts to the “desired” experience (i.e., potential over-development of an area considered primitive by visitors).

Overall recreation needs are identified and projected for the recreation activities in the study area. A number of inter-related factors are considered in this overall needs analysis. These include factors such as recreation facility occupancy, visitor survey responses, facility conditions, and others. Sources of data for these factors include:

- Recreation visitor survey responses;
- Visitor perceptions of crowding and crowding criteria;
- Projected increases in demand for various activities;
- Seasonal and weekend occupancy rates;
- Facility and use area capacity utilization;
- Physical and spatial arrangement of existing facilities and use areas;
- Existing facility conditions and accessibility guidelines and report recommendations (Access Board 1999);
- Suitability analysis depicting potential sites or areas;
- Opportunities for infill, redesign, or expansion of existing facilities;
- Management goals and objectives of published plans;
- Visual observations and observed impacts from existing use;
- Professional judgment; and
- Input from the Recreation Resource Group (RRG) and other stakeholders.

Overall recreation-related needs in the study area are also projected into the future (assumed to be 2005 to 2035) for a significant portion of the anticipated term of the new license. This analysis was performed by applying Washington Statewide Comprehensive Outdoor Recreation Plan (SCORP) projected increases in activity participation to the current utilization of the various recreation sites and facilities. This procedure was used to project the number of campsites, picnic tables, and boat launches that would be needed to meet projected future demand. Overall needs are further broken down by site in the Recreation Facility and Use Area Needs by Site section of this report. In practice, recreation use will need to be monitored over time because of various factors that may affect visitor use levels over such a long period of time (species listings, facilities coming on/off line in the region, management actions by adjoining property resource managers, changes in technology, natural disasters, and preferences in visitor activities and settings).

3.2 METHODOLOGY FOR IDENTIFYING RECREATION NEEDS BY SITE

The overall analysis noted above looked at the broader context of needs within the study area, generally by activity type. This subtask considers these broader overall needs plus other known existing needs at each site and identifies where they may be accommodated on a focused site-by-site basis, in conjunction with the results of the Draft Recreation Capacity and Suitability Analysis (EDAW 2001). Developed and dispersed sites are considered, as well as both private and public facilities. However, the emphasis of this analysis is on public recreation areas and facilities. Site-specific needs are identified through review and analysis of several data sources, including:

- Recreation survey responses about specific sites;
- Seasonal and weekend occupancy rates at specific sites with 60 to 90 percent utilization as the theoretical capacity limit (varies by time frame and activity type);
- Spatial arrangement of sites and design problems observed;
- Facility conditions and maintenance needs;
- Accessibility compliance and guideline recommendations at sites (Access Board 1999);
- Potential sites as identified in the geographic information system (GIS) based suitability analysis;
- Opportunities for infill, redesign, or expansion at each site;
- Observed impacts of use at each site;
- Professional judgment; and
- RRG and other stakeholder input.

The identification of future recreation needs is derived from the list of identified existing (defined as current to 2005) site-specific needs. This analysis projects overall recreation needs into the future (defined as 2005 to 2035) in 10-year increments, or phases. Where new recreation facilities may be considered in a given area to help satisfy demand, their anticipated implementation phases are projected. Primary indicators used in defining future needs for developed facilities are projected increases in demand over 30 years and anticipated capacity. Projected future recreation needs are estimated for each developed facility, use area, and activity type. This need is based on an understanding of existing needs, plus a projection of future use based on the Recreation Demand Analysis (EDAW 2000b) and the Draft Recreation Capacity and Suitability Analysis (EDAW 2001).

3.2.1 Assessing Recreation Facility Accessibility

Accessibility needs on a site-by-site basis are also considered. The Americans with Disabilities Act (ADA), signed into law in 1990, protects individuals with disabilities by specifying that adequate access to facilities be provided to the physically disabled, including recreation facilities. In 1991, Americans with Disabilities Act Accessibility Guidelines for Buildings and Facilities (ADAAG) were published. ADAAG guidelines, not standards, were specified for when designing or retrofitting facilities, including recreation facilities. Since then, design guidelines specifically for recreation facilities

have been documented in Universal Access to Outdoor Recreation - A Design Guide (PLAE 1993). These guidelines were developed in cooperation with the U.S. Forest Service (USFS), the agency that has taken the lead in addressing the needs of access in recreation settings.

A field assessment of recreation facilities in the study area was conducted as part of Recreation Supply Analysis (EDAW 2000a). The field assessment reviewed accessibility in several key areas, including: access to primary elements, elements in space and the recreation environment, parking areas, boat launches and boarding docks, access to recreation trails, campsites, and group sites. Recently, however, new draft proposed ADAAG guidelines (Access Board 1999) were developed and are now being used as interim accessibility guidelines for new facility construction and alterations to existing facilities in outdoor recreation areas. This new accessibility guidance document replaces the previous guidance used.

PacifiCorp also contracted with Access Opportunities to complete an ADA Assessment Report (Access Opportunities 1993). Many Projects identified in the report have already been completed by PacifiCorp (restroom upgrades). This report needs to be reviewed along with facilities to determine conformance with ADAAG. Based on conformance, this report should also continue to be used to identify campsites and other recreation facilities suitable for ADA upgrades.

To provide the reader with further background on this important evolving topic, the federal Outdoor Developed Areas Regulatory Negotiating Committee was established in 1997 and charged with developing proposed accessibility guidelines for trails, picnic and camping areas, and beaches. The Committee has been working on new guidelines and is presenting its report in phases to the U.S. Architectural and Transportation Barriers Compliance Board (Access Board). This phased report is the basis for proposed rules that are being published for public comment between 1998 and 2002. Final guidelines for accessible playgrounds were published in October 2000. The Access Board has also completed work on proposed guidelines for certain other recreation facilities, such as sports facilities, places of amusement, golf areas, and boating and fishing facilities. The Access Board has published these other guidelines for public comment. Draft proposed guidelines for trails, beaches, picnic, and camping areas were published in a report of the Outdoor Developed Areas Regulatory Negotiation Committee (Access Board 1999). The Access Board is now preparing a proposed rule based on this report. The proposed rule, once published, will be available for public comment. These guidelines will supplement the existing ADAAG by adding a new chapter on outdoor developed areas. When adopted, all of these new guidelines will provide design standards and technical criteria regarding the mandate to provide ADA-accessible recreation facilities in the United States. The draft proposed ADAAG guidelines for outdoor developed areas have not been adopted as regulations by law but are used as the "best available guidance" for compliance with ADA (pers. comm., P. Beatty, 2000). Building facilities, such as restrooms and parking, however, are specifically identified under the existing ADAAG and must be in compliance. The draft proposed ADAAG guidelines apply only to new facilities or altered portions of facilities. It is important to note that under the draft proposed guidelines, existing facilities are likely not affected until they are modified or require major maintenance. Once adopted, these new Access Board rules will provide

guidance for future improvements needed at recreation facilities in the study area to provide accessibility for persons with disabilities. Proposed recommendations in this report will need to be reassessed once the guidelines for outdoor developed areas are formally adopted by the Access Board in late 2001 or in 2002.

One of the new ADA guidelines pertains to developed picnic sites. Picnic tables and associated amenities provide a basic recreation opportunity for many people, allowing them to enjoy the outdoors, as well as friends and family. To the extent possible, picnic table design should allow people of all ages and abilities to sit together at the same table. Important elements to consider include number, location, seating for people using wheelchairs, table height, and an accessible route. Picnic tables are typically provided at developed recreation facilities, both at individual campsites and in common spaces at day use areas, boat launches, and group campsites. Under the draft proposed ADAAG guidelines accessible picnic tables shall be provided in accordance with Table 3.1-1 below.

Table 3.1-1 Minimum number of accessible picnic tables required.

Total Number of Picnic Tables PER Facility	Minimum Number of Accessible Picnic Tables Required Per Facility
1	1
2 or more	At least 50% (minimum 2)

Source: Access Board (1999)

In addition, at least 40 percent, but never less than 2, of the accessible picnic tables shall be connected to an accessible access route. Other related accessible picnic needs include trash receptacles, fire rings and grills, paths, parking, toilets, drinking fountains, and shade shelters when provided. An accessible access route is always required to an accessible facility.

Another activity type specifically addressed in the draft proposed ADAAG is developed camping. The draft proposed ADAAG guidelines include specifications for a minimum number of accessible campsites required within a campground. Under the draft proposed ADAAG guidelines, where campsites are provided, accessible campsites shall be provided in accordance with Table 3.1-2 below.

Table 3.1-2 Minimum number of accessible camping spaces required.

Total Number of Campsites Per Campground	Minimum Number of Accessible Campsites Required Per Campground
1	1
2 to 25	2
26 to 50	3
51 to 75	4
76 to 100	5
101 to 150	7
151 to 200	8

Source: Access Board (1999)

Furthermore, when other camping elements, such as parking areas, tent pads, picnic tables, fire rings and grills, drinking fountains and water faucets, and trash receptacles are provided in accessible campsites, they must be accessible as well. An accessible access route is always required to an accessible facility.

3.3 METHODOLOGY FOR ASSESSING PROJECT-RELATED RECREATION NEEDS

Not all needs identified in either the study area or site analyses should be assumed to be Project-related impacts. Associating recreation needs associated with the Project, or Project-related recreation needs, entails consideration of appropriate criteria. In this analysis, two criteria have been identified. This analysis does not attempt to apply these criteria to the list of needs, but rather describes them for later application by the RRG or other stakeholders. These 2 criteria include:

3.3.1 Direct Project Cause

One factor is the cause or type of facility, activity, or use area creating the need. To address this factor, the cause of the need should be identified. If the cause is associated with the Project, the need may be Project-related. Causes of Project-related needs may include recreation use or its impacts, either induced by the attraction of the reservoir (water-based activities and related shoreline use) or by increased access into areas that would not ordinarily have access as a result of Project roads. Activities that are not considered Project-related are assumed to include snow-related activities, hunting, caving, rock climbing, hang gliding, and visitation at adjacent federal and state recreation areas and attractions (Mount St. Helens National Volcanic Monument [Monument], Gifford Pinchot National Forest [GPNF], Merrill Lake, and the Siouxon Landscape Area) where those areas are the primary destination.

3.3.2 Proximity to the Project

A second factor is the geographic proximity of the recreation need to Project features, such as the dams, reservoir, Project recreation facilities, or within the FERC Project boundary. Needs associated with the Project may be based on proximity to Project features. If the need is close to a Project feature, such as along the shoreline or inside the FERC Project boundary, it may be identified as Project-related.

4.0 RESULTS AND DISCUSSION

Results and conclusions of this study are organized according to 3 sections. The Overall Recreation Needs in the Study Area section presents existing and future needs based on activity-type. The Recreation Facility and Use Area Needs by Site section specifically identifies needs at individual recreation sites including developed and dispersed undeveloped sites. The Project-Related Recreation Needs section presents the relevant criteria needed to assess whether specific needs presented in this report are Project-related.

4.1 OVERALL RECREATION NEEDS IN THE STUDY AREA

This section provides an analysis of overall “big picture” recreation needs within the study area by facility, activity, use area, or program type. Recreation resources analyzed include those identified in Section 3.0. Factors or indicators considered are organized into 4 categories: supply, demand, capacity, and suitability. Based on a comparison and review of these factors and professional judgment, as well as input from the RRG and other stakeholders, conclusions are presented for overall existing and future recreation needs in the study area. Site-specific needs are further addressed in the next section. Activities examined below include overall needs for:

- Camping (RV and tent; developed facility and dispersed undeveloped shoreline camping)
- Day use/picnicking (developed facility and dispersed undeveloped shoreline day use)
- Boating
- Swimming/sunbathing
- Interpretation and Education
- Non-motorized trail use
- Fishing (boat and bank)
- General open space activities (hunting and wildlife observation/photography)

Table 4.1-1 provides projections of campground site occupancy in 10-year increments through 2035. Several of the recreation campsites in the study area are projected to have seasonal occupancy levels that reach capacity prior to 2035. For these sites, the year in which projected seasonal occupancy is estimated to reach capacity is indicated in the table. Information from this table can be used to guide decision-making related to potential actions, as well as potential future monitoring activities related to site capacity.

Table 4.1-2 provides projections of day use occupancy in 10-year increments through 2035. A few of the day use sites in the study area are projected to have seasonal occupancy levels that reach capacity prior to 2035. For these sites, the year in which projected seasonal occupancy is estimated to reach capacity is indicated in the table. Information from this table can be used to guide decision-making related to potential actions, as well as potential future monitoring activities related to site capacity.

Table 4.1-1 Projected increase in annual and peak season occupancy at campgrounds in study area (2000-2035).

Project Study Area Site	Year 2000 Annual (Peak) Occupancy ¹	Projected Annual % Increase in Occupancy ²	Projected 2005 Annual (Peak) Occupancy	Projected 2015 Annual (Peak) Occupancy	Projected 2025 Annual (Peak) Occupancy	Projected 2035 Annual (Peak) Occupancy	Projected Date That 60% (90%) Capacity is Reached on Annual (Peak) Basis ³
Cresap Bay Campground	57% (80%)	2.46%	64% (90%)	82% (115%)	105% (147%)	133% (187%)	Present (2005)
Cougar Camp	64% (85%)	2.46%	72% (96%)	92% (122%)	118% (156%)	150% (199%)	Present (2002)
Beaver Bay Campground	41% (70%)	2.46%	46% (79%)	59% (101%)	75% (129%)	96% (164%)	2016 (2011)
Swift Forest Camp	29% (64%)	2.46%	33% (72%)	42% (92%)	53% (118%)	68% (150%)	2030 (2015)

¹ Based on the number of occupied sites during entire period that campground was open to public use (varies by campground). Percentage reflects average of all years between 1996 and 2000 to account for yearly variance based on weather, fees, and reservoir levels. Values in parentheses represent average weekly occupancy during the peak season months of July and August.

² Based on projected trends in tent camping participation.

³ Based on the assumption that capacity does not increase or decrease. Reflects date that capacity would theoretically be reached. Date may vary based on year to year variables such as weather, fees, and reservoir levels. Capacity thresholds vary: 60% is used for the timeframe that the facility is open to the public (season), and 90% is used for the July and August timeframe or peak season. Provided by EDAW, Inc.

Table 4.1-2 Projected increase in peak season weekend occupancy at day use areas in study area (2000-2035).

Project Study Area Site	Year 2000 Peak Season Weekend Occupancy ¹	Projected Annual % Increase in Occupancy ²	Projected 2005 Peak Season Weekend Occupancy	Projected 2015 Peak Season Weekend Occupancy	Projected 2025 Peak Season Weekend Occupancy	Projected 2035 Peak Season Weekend Occupancy	Projected Date That 75% Capacity is Reached on Peak Season Weekend Basis ³
Merwin Park	7%	2.20%	8%	10%	12%	15%	NA
Speelyai Bay	73%	2.11%	81%	100%	123%	152%	Present
Cresap Bay	80%	2.20%	89%	111%	138%	171%	Present
Saddle Dam Park	30%	2.97%	35%	47%	62%	84%	2030
Yale Park	28%	2.97%	31%	39%	49%	60%	NA
Cougar Camp	15%	2.97%	17%	23%	31%	42%	NA
Beaver Bay Campground	28%	2.46%	32%	40%	51%	66%	NA
Swift Forest Camp	23%	1.67%	25%	30%	35%	41%	NA
Eagle Cliff Park	10%	2.53%	11%	15%	19%	24%	NA

¹ Based on the number of occupied parking spaces on peak season weekends (July and August) in 1998.

² Based on projected trends in the primary activity at each site. These are swimming (Merwin Park, Cresap Bay), water-skiing (Speelyai Bay), picnicking (Saddle Dam Park, Yale Park, Cougar Camp day use area), tent camping (Beaver Bay campground day use area), fishing from shore (Swift Forest Camp day use area), and sightseeing (Eagle Cliff Park).

³ Based on the assumption that capacity does not increase or decrease. Reflects date that capacity would theoretically be reached. Date may vary based on year to year variables such as weather, fees, and reservoir levels. A lower percentage (75%) is being used to account for weather-related effects that particularly impact day use activities. Provided by EDAW, Inc.

4.1.1 Overall Camping Needs in the Study Area

Overall camping supply, demand, capacity, and suitability factors are presented below, followed by a discussion of overall needs. Camping needs analyzed in the study area include:

- Developed recreation vehicle (RV) and tent campgrounds.
- Dispersed undeveloped campsites (including boat-in campsites).

4.1.1.1 Camping Supply Factors

Important camping supply factors to consider are summarized below (see Recreation Supply Analysis [EDAW 2000a] for more detail, and Figure 2.0-1 for the location of recreation sites and facilities in the study area).

- There are a total of approximately 379 developed campsites in the vicinity of the study area operated by PacifiCorp and other private companies. Of these, PacifiCorp provides 259 campsites (68 percent) at 4 campgrounds in the study area. The remaining 120 campsites (32 percent) are provided by 3 private campgrounds (Lewis River RV Park, Cougar RV Park, and Lone Fir Resort and Trailer Park) within or near the study area. These private facilities serve visitors who seek campsites with RV hookups or who do not wish to camp near one of the Project reservoirs. Since PacifiCorp campgrounds do not have RV hookups, they do not compete directly with the private campgrounds for business. Each of the private campgrounds and 3 of the 4 PacifiCorp campgrounds have RV dump station facilities.
- Two of the campgrounds operated by PacifiCorp in the study area are located on Yale Lake, with one each on Lake Merwin and Swift Reservoir. The Lewis River RV Park is located downstream of Lake Merwin, while the Cougar RV Park and Lone Fir Resort and Trailer Park are located near Yale Lake in the town of Cougar. All of these campgrounds are located on the north or west shorelines of the reservoirs.
- There are 3 designated group sites in the study area with a total of 45 individual campsites. This includes 15 sites each at Beaver Bay (Yale Lake), Cougar Camp (Yale Lake), and Cresap Bay (Lake Merwin).
- Developed campsites are available on a fee-only basis. PacifiCorp charges a \$15 fee per day for campsites at Cresap Bay, Cougar Camp and Beaver Bay and a \$12 fee per day for campsites at Swift Forest Camp. Other additional fees apply related to numbers of vehicles and people. Just over two-thirds (69 percent) of campground visitors surveyed indicated that the fee schedule was okay.
- There are at least 93 dispersed shoreline sites surrounding the 3 Project reservoirs, some of which are used for dispersed camping. Additional dispersed camping areas are located in the Swift 2 Bypass Reach between Yale Lake and Swift Reservoir.
- There are no ADA-accessible campsites in the study area.

- Overall, most of the recreation elements at PacifiCorp campgrounds in the study area are in good condition. Some minor maintenance is needed at several facilities at Lake Merwin, primarily to picnic tables and boat launches. Many of the facilities at Yale Lake have been renovated, or will be renovated soon as a result of the recreation measures identified in the previous Yale License Application. Most facilities at Swift Reservoir are in good condition, with only minor maintenance needed.

4.1.1.2 Camping Demand Factors

Important camping demand factors to consider are summarized below (see Recreation Demand Analysis [EDAW 2000b] for more detail).

- Camping is one of the most popular activities in the study area. Nearly 7 out of every 10 visitors (69 percent) participated in some form of camping while visiting the study area. Camping was slightly more common among visitors to Yale Lake than those visiting Lake Merwin and Swift Reservoir. Almost one-third (30 percent) of visitors indicated that camping was their primary activity, the highest percentage among activities provided to respondents on each of the visitor surveys. This percentage was significantly higher for visitors to Yale Lake than those visiting Lake Merwin and Swift Reservoir. Overall, camping is an important activity to consider when analyzing needs and likely contributes to other needs as well.
- Visitors on a statewide basis prefer settings that are more primitive than the settings they use most frequently. This is particularly true of 2 activities that are popular in the study area: camping and water activities. Individuals prefer semi-primitive and primitive settings, but frequently choose roaded settings due to various constraints including time.
- Utilization of campgrounds in the study area is highest during weekends in July and August and on holiday weekends, and occasionally exceeds capacity. Utilization is significantly lower on weekdays and during the non-summer months. Overall utilization of the 4 PacifiCorp campgrounds on a season-long basis (entire period that campgrounds are open to public use) averaged 48 percent over the 1996-2000 period. While the occupancy rate on weekdays was only 32 percent, it averaged 60 percent on weekend days. The weekend average occupancy during July and August was much higher at 94 percent. Holiday weekend occupancy rates at these 4 campgrounds are highly dependent on weather; however, utilization can be expected to be near 100 percent on holiday weekends when the weather is sunny and warm, particularly on the 4th of July, Memorial Day, and Labor Day holiday weekends.
- While demand for camping is on the rise in the region, utilization of campgrounds in the study area has been variable since 1996. There are 2 potential reasons for this variability (user fees and weather), both of which are discussed below in further detail.
- Several of the campgrounds satisfy a unique niche. Cresap Bay Campground is the first campground in the study area that visitors encounter when travelling from the west. It is also the newest of the 4 campgrounds and features an overnight boat

moorage area for campers. For this reason, this is one of the most popular campgrounds in the area. Cougar Camp is also popular with visitors as this is the only tent-only campground in the study area, and has a more rustic feel than the other campgrounds. Beaver Bay Campground is not as popular as other campgrounds, and is commonly viewed by visitors as a second choice when Cougar Camp or Cresap Bay Campground are full. Swift Forest Camp is the most remote campground in the study area as it is farthest from Interstate 5. However, it is the only campground on Swift Reservoir and is popular with hunters and anglers during the spring and fall.

- Despite variability in campground utilization, demand for camping is increasing in the study area as the population of areas of visitor origin continues to increase. Annual increases in demand based on Washington Interagency Committee for Outdoor Recreation (IAC) data include: RV camping (2.50 percent), tent camping (2.46 percent), and group camping (1.95 percent). By 2005, demand for camping is expected to increase 10 to 13 percent from 2000 levels.
- Over the next 30 years (to 2035), demand for camping is projected to increase substantially: RV Camping (137 percent), tent camping (134 percent), and group camping (97 percent). Campgrounds and sites located in proximity to the water will be in the highest demand given the increasing demand for water-based recreation activities in general.
- Recreation visitation in the Upper Lewis River Valley is dynamic, with multiple destinations and attractions available to visitors. The Monument, an international attraction to the north, is a significant recreation area with visitation increasing 5 to 6 percent annually on both sides of the volcano. The number of visitors driving “the loop” around the volcano is also increasing as new interpretive centers and improved roads increase the access and improve the overall visitor experience. Ape Cave and Lava Canyon are popular areas on the south side of the Monument that are in close proximity to the study area. The GPNF is also a significant visitor destination. Over one-third (37 percent) of the visitors surveyed had plans to visit or already had visited other sites. Among this group of visitors, the 2 most commonly mentioned non-Project sites were the Monument (42 percent) and the GPNF (22 percent).
- Due to the popularity of water-based activities in the study area, weather conditions have a significant impact on seasonal and year-to-year visitation. Seasonal weather conditions result in the highest demand for camping occurring predominantly during a peak 14-week recreation season (Memorial Day to Labor Day). During this period, demand for camping is greatest during the drier months of July and August and on holiday weekends.
- Some shoulder season demand occurs earlier (April and May) due primarily to angler activity and later (September and October) due primarily to hunting activity. In response to visitor demand, PacifiCorp keeps Merwin Park, Yale Park and Speelyai Bay open all year. Swift Forest Camp (one loop) is kept open free of charge through October to accommodate hunters. All other campgrounds close after Labor Day, or shortly thereafter. However, some visitors during off-season periods, particularly

hunters, prefer dispersed undeveloped camping, rather than at PacifiCorp campground facilities.

- Overall visitation and demand for camping facilities are variable and weather dependent, due to the high rainfall in the area and cool temperatures. If the weather is poor, campground occupancy declines considerably, even during holiday weekends. The higher percentage of tent campers and the lack of hook-ups (electricity to heat RVs) also decreases camping demand when the weather is poor.
- Demand for camping facilities in the study area is evident when examining occupancy rates from recent years. Occupancy from the last 5 years is as follows: 1996: 53 percent; 1997: 46 percent; 1998: 44 percent; 1999 43 percent; and 2000: 41 percent. Weekday occupancy ranged from 27 percent to 43 percent, weekend occupancy from 56 percent to 74 percent, and holiday occupancy from 60 percent to 88 percent. During the 4-year period, Cougar Camp had the highest occupancy rate (68 percent), while Swift Camp had the lowest occupancy rate (28 percent). Cooler and wetter than normal weather in 1998 and 1999 may partially account for lower occupancy during these years. In 1999, a new day use fee program was instituted. This new program may have also affected campground occupancy, although campground fees have been in effect for many years.
- Of the visitors surveyed, over half (52 percent) had difficulty finding campsites. This level of difficulty indicates that some developed campgrounds are approaching capacity for the season, especially on peak weekends.
- Group campgrounds at Cresap Bay, Cougar Park, and Beaver Bay show similar utilization patterns. These 3 group facilities are all available on a reservation-only basis, with the reservation period for the peak use season beginning on March 1. The group campground at Cresap Bay is the most popular of the 3, and usually is reserved for the entire summer before Memorial Day each year. The group facilities at Cougar Park are for tent camping only and usually are reserved for every weekend between Memorial Day and Labor Day. The group facilities at Beaver Bay, which is the oldest of the 3, are also reserved for most weekends between Memorial Day and Labor Day. Both Cougar Camp and Beaver Bay group sites are typically available on weekdays and generally remain unoccupied during these periods. PacifiCorp staff receive up to 6 requests a week for the group facility at Cresap Bay after it has reached capacity, indicating a high demand for this facility. Although some of these users decide to make reservations at either Cougar Camp or Beaver Bay, these facilities do not provide the same experience as Cresap Bay, and Cougar Camp does not allow RVs in the group facilities due to its size.
- One-third of visitors come to the study area more than 6 times per year, with the majority (67 percent) coming 1 to 5 times per year.
- Most visitors live in relative proximity to the Lewis River corridor, with just under 92 percent living in the I-5 corridor area from Woodland, WA to Portland, OR. Over two-thirds of visitors (71 percent) are from Washington, with the remainder living primarily in the Portland, Oregon metropolitan area. The largest visitor group (44

percent) originated from Vancouver, WA. Over one-fourth of visitors in the survey were from the Longview-Woodland area. Just under one-fourth were from the Portland, OR area.

- There are an estimated 93 shoreline dispersed campsites located on the 3 reservoirs. Occupancy for the sites on Lake Merwin and Swift Reservoir (48 sites) is around 37 percent, while the occupancy of shoreline dispersed campsites on Yale Lake is not known. Other popular dispersed camping areas are located near the Swift No. 2 power canal, and in the area between Yale Lake and Swift Reservoir.
- Latent demand is the demand for facilities, activities, or experiences that are not currently available or being provided for in the study area. This does not include existing facilities for which visitors would prefer to see increased amounts such as additional restrooms or picnic tables. Due to the many developed and undeveloped recreational resources in the study area, there appears to be little latent demand for Project-related facilities and activities. The only 2 activities for which there may be latent demand are all-terrain vehicle (ATV) riding in the drawdown areas of the reservoirs, and the use of dispersed recreation areas.
- PacifiCorp currently operates group camping areas using a reservation system. Reservations are accepted beginning in March. The main campgrounds are available on a first come/first served basis. Just under two-thirds (63 percent) of all visitors expressed at least some interest in expanding the reservation system. Thus, while there may be some support for a partial reservation system, there would likely be less support for a full reservation system.
- Expanding existing campgrounds or building new facilities can both satisfy existing demand (relieves crowding at existing campgrounds) and can generate new demand (new facilities create new opportunities and may stimulate use). Key considerations include maintaining or improving the visitor experience while not degrading the ecological and social conditions in the area.

4.1.1.3 Camping Capacity Factors

Important camping capacity factors to consider are summarized below (see Draft Recreation Capacity and Suitability Analysis [EDAW 2001] for more detail).

- Facility Capacity – Facility capacity is the primary factor limiting use at most of the campgrounds in the study area. Campgrounds in the study area were utilized at an average of less than half (48 percent) of capacity during the full recreation season from the years 1996 to 2000. Average weekend utilization of campgrounds during this period was higher at 60 percent, while average peak season (July and August) weekend utilization was very high at 94 percent. Cougar Camp at Yale Lake had the highest overall utilization at 64 percent for the entire period and 99 percent for peak season weekends in July and August. Swift Camp at Swift Reservoir had the lowest overall utilization at 29 percent for the entire period and 92 percent for peak season weekends in July and August.

- **Physical Capacity** – Physical capacity is a limiting factor at Cresap Bay Campground and Beaver Bay Campground. However, there are relatively few locations where undeveloped dispersed boat-in camping is feasible aside from existing sites due to topography or adjacent land uses and ownership.
- **Social Capacity** – The primary indicator of social capacity is visitor perception of crowding. Perceived crowding is relatively low at all of the campgrounds in the study area. However, among these, the overall crowding score is the highest at Cougar Camp (3.0) (on a 9-point scale with 1 representing “not at all crowded” and 9 representing “extremely crowded”) and the lowest at Swift Camp (2.4). The overall crowding score for visitors surveyed at Lake Merwin and Swift Reservoir was 2.4, indicating that visitors only feel “slightly crowded.” The overall crowding score for visitors surveyed at Yale Lake was 2.9. This score is the highest of the 3 reservoirs and indicates that visitor perceptions of crowding are highest at this reservoir. This reflects the high utilization of facilities and the high number of watercraft observed on the surface of the water.
- **Ecological Capacity** – Issues related to ecological conditions are a concern at 2 of the campgrounds in the study area. At Beaver Bay there are potentially sensitive wetland areas located adjacent to the campground, along with shoreline erosion concerns. Cresap Bay is located within the Merwin Wildlife Area, which limits its season of operation. Topography limits any significant expansion of the site. Ecological capacity is a limiting factor at undeveloped dispersed camping areas where visitor use could cause adverse impacts on ecological and biological resources.
- **Capacity Summary** – Campgrounds in the study area are currently experiencing use levels representing varying degrees of capacity utilization. Use is approaching capacity at 2 campgrounds (Swift Camp and Beaver Bay), and exceeding capacity at the remaining 2 campgrounds (Cresap Bay and Cougar Camp). One of the most important overall conclusions that can be drawn from this analysis is that although facilities are often utilized at or in excess of their facility capacity, visitors still perceive relatively low levels of crowding. This may imply that visitors have become somewhat tolerant of high use levels or that high use levels are expected as part of the overall recreation experience. This lower level of perceived crowding could also reflect the fact that facilities, such as Cresap bay, are designed to minimize perceived crowding (vegetative screening, circulation patterns) even when utilization is at capacity.

4.1.1.4 Camping Suitability Factors

Important camping suitability factors are summarized below (see Draft Recreation Capacity and Suitability Analysis [EDAW 2001] for more detail). Several developed and dispersed areas were identified as potentially suitable for additional facility development, including new or expanded campground facilities. These areas are identified on the Recreation Development Suitability maps provided in the Draft Recreation Capacity and Suitability Analysis (EDAW 2001). Significant findings include the following:

- Several areas exist that may be considered for potential camping use or expansion. A GIS-based opportunities and constraints analysis (EDAW 2001) identified that the most suitable areas for potential facility development at existing developed areas include Cougar Camp and Swift Camp.
- The most highly suitable area that may be considered for potential new campground development that are currently undeveloped is the area south of Speelyai Canal on Yale Reservoir.
- Aside from areas that are currently utilized as undeveloped dispersed camping areas (including boat-in camping), there are few additional areas that are suitable for this type of camping. Suitability is limited by topography, ecological constraints, land ownership, and the pool level of the reservoirs. Portions of the Siouxon County Park site (undeveloped) may be considered suitable for the future boat-in camping use.

4.1.1.5 Overall Camping Needs

Based on a review of the above factors and indicators, overall camping needs and potential actions to address these needs have been identified in the study area. These are potential actions and should not be assumed to be PM&E measures. As such, the word “consider” is used throughout this section. Site-specific camping needs are discussed in the Recreation Facility and Use Area Needs by Site (Section 4.2) below. Overall camping needs and potential actions to satisfy them include:

- Consider maintenance and improvements to existing camping facilities. Facilities at several of the existing campgrounds are variable and are in need of maintenance, repair, or replacement. This includes restroom facilities, individual site facilities, and other facilities provided at specific campgrounds. Many of the maintenance and improvement needs at campground facilities on Yale Lake are currently being addressed as part of the measures recommended in the Yale License Application.
- Consider increasing the supply of camping facilities to meet current and future demand. Projected demand at individual campgrounds indicates that additional campsites would be needed in the study area to help accommodate future demand (specific types discussed below). These sites would likely be phased in over a 30-year period. An additional RV dump station facility should also be considered as demand increases and new campsites are provided. Because campground capacity is anticipated to be exceeded in the future, use should be monitored to determine when new facilities should be constructed or existing ones expanded. A monitoring program should be developed which identifies threshold criteria or triggering mechanisms. Preliminary threshold criteria may include the following: (1) a 60 percent seasonal capacity utilization (weekday and weekend), and (2) a 90 percent weekend occupancy rate during the peak season (July and August). These threshold levels should be exceeded for 2 years before actions are taken to ensure that the need is actual. It is anticipated that new developed campgrounds should be considered for at least one reservoir in the study area over the term of the new license. The location of this potential new campground will need to be coordinated with other resource needs considered in the relicensing process, principally big game wintering areas. These

combined needs should be addressed based upon further coordination and negotiations. Projected needs at individual campgrounds (specific number of sites), including proposed new campgrounds, are discussed in the Recreation Facility and Use Area Needs by Site section. Specific campground needs are considered below for the following types of sites: (1) PacifiCorp campgrounds (no RV hookups), (2) private campgrounds (RV hookups), (3) group camping facilities, and (4) shoreline dispersed campsites.

- PacifiCorp campgrounds (no RV hookups) – Projected demand at individual PacifiCorp campgrounds indicates that a total of 128 additional campsites would be needed in the study area to accommodate future demand. This includes consideration of the 15 campsites at Saddle Dam that were recently removed as part of renovation of the site as a day-use only area. Although these sites should be phased in over a 30-year period, consideration should be given to the addition of campsites in the near future as utilization of these facilities is already approaching or exceeds capacity. While several existing campgrounds (Cougar Camp and Swift Camp) could be expanded, consideration should also be given to the creation of a new campground.
- Private campgrounds (RV hookups) – There currently are 120 sites in the study area at private campgrounds that cater to RV campers. These sites are currently utilized at about 72 percent on a seasonal basis. This utilization would rise to 171 percent by 2035 based on trends in RV camping. Assuming that a seasonal occupancy of 60 percent is considered to be the capacity of these sites, as many as 133 new sites would be needed to accommodate projected future demand.
- Group camping facilities – There are currently 3 group camping facilities with a total of 45 sites operated by PacifiCorp in the study area. Projected demand indicates that as many as 3 new group campgrounds (45 additional sites) would be needed in the study area by 2035. This need would be best accommodated through the construction of 3 additional 15-site group camping facilities. Potential new group sites at or near existing campgrounds should be modernized and expanded first, if feasible. One or 2 potential new group campsites should be considered at Yale Lake in the near future. A third potential new group campsite may be considered at Swift Reservoir. The location of potential new group campsites will need to be coordinated with other resource needs, principally big game wintering areas.
- Shoreline dispersed campsites – There are currently at least 93 shoreline dispersed undeveloped campsites and day use sites in the study area. Demand projections indicate that as many as 57 new shoreline dispersed sites would be needed to accommodate future camping demand. However, the development of new sites is limited due to the lack of suitable areas, ecological constraints, and higher management costs. Due to the lack of new suitable sites, user demand for the existing shoreline dispersed undeveloped sites will remain high. Specific needs related to these sites are detailed below.

Given these campground needs, a series of development scenarios were evaluated to better understand the feasibility of developing additional

camping capacity. Before the scenarios were developed, the RRG formulated the following criteria to guide potential development:

- Cresap Bay Campground cannot expand because of physical constraints.
- Do not develop a new campground at a previously undeveloped site.
- Focus expansion around existing campgrounds.
- Maintain Cougar Park day use area. This is an important resource for the town of Cougar.
- If possible, pull camping back from the edge of the Beaver Bay wetland.
- Maintain quality of sites and camping experience.
- Focus on providing for tent and pickup campers (smaller sites without utility hook-ups).

Using these criteria, the RRG created and evaluated multiple scenarios. These scenarios explored placement of additional campsites at Cougar Campground and Swift Campground, the removal of sites adjacent to the Beaver Bay wetland, and a total Project area camping expansion of 128 campsites and 3 group campsites. Aerial photos were used to verify the development capacity of undeveloped land adjacent to existing facilities.

Only one of the scenarios evaluated met most of the design criteria and the targets for additional capacity. This scenario placed 78 new campsites at Cougar Campground, 50 new sites at Swift Campground, 2 new group sites at Cougar Campground, and 1 new group site at Swift Campground. The details of this scenario are listed below. Under this scenario, the goal of reducing the number of sites adjacent to the Beaver Bay wetland could not be achieved unless some sites were shifted to the shoreline area away from the wetlands. This scenario also used the maximum development potential at both Cougar and Swift Campgrounds, and it is possible that the actual maximum number of sites that could be developed is less once detailed designs are developed. A reasonable expansion expectation for Cougar and Swift Campgrounds is an increase of up to 100 new campsites and 3 additional group sites. Expansion beyond this would require the development of a new site or a transfer of the unmet need to the private sector in the Lewis River Valley. This scenario currently includes:

- Cresap Bay Campground – No change (58 sites and 1 group site)
- Beaver Bay Campground – No change (63 sites and 1 group site)
- Cougar Campground – 123 sites and 3 group sites (78 new sites, 45 existing sites, 2 new group sites, and 1 existing group site)
- Swift Campground – 143 sites and 1 group site (50 new sites, 93 existing sites, and 1 new group site)

In addition to this scenario, the RRG recommended developing 2 additional alternatives that used lower targets for new sites and could meet the goal of pulling back from the Beaver Bay wetland. Two potential alternatives are described below.

Alternative Scenario 1 (3 new group sites and 85 new campsites)

- Cresap Bay Campground – No change (58 sites and 1 group site)
- Beaver Bay Campground – 43 sites and 1 group camp (20 sites removed along the wetland and 1 group site)
- Cougar Campground – 123 sites and 2 group sites (78 new sites, 45 existing sites, 1 new group site, and 1 existing group site)
- Swift Campground – 120 sites and 2 group sites (27 new sites, 93 existing sites, and 2 new group sites)

Alternative Scenario 2 (3 new group sites and 67 new campsites)

- Cresap Bay Campground – No change (58 sites and 1 group site)
 - Beaver Bay Campground – 4 group sites (15 sites removed adjacent to the wetland, remaining campsites converted to 3 new group sites, and 1 existing group site)
 - Cougar Campground – 135 sites and 1 group site (90 new sites, 45 existing sites, and 1 existing group site)
 - Swift Campground – 133 sites (40 new sites and 93 existing sites)
- Consider better publicity/information concerning existing facilities. Much of the demand for camping in the study area is focused on campground facilities at Cougar Camp and Cresap Bay. Increased visitor awareness of campground facilities at Beaver Bay and Swift Camp could help to reduce demand and alleviate the immediate need for additional campsites in the study area.
 - Consider ADA compliance at all existing and new facilities. In 1992, PacifiCorp conducted a detailed assessment of recreation access needs in compliance with ADA guidelines for universal access. As a result, PacifiCorp has made several significant improvements to restroom facilities and parking access at its developed recreation facilities. New ADAAG guidelines from the Access Board will determine how many campsites should be accessible in a campground based on the total number of sites (see Table 3.1-1). As improvements are made to existing campgrounds, accessibility should be provided based on these new ADAAG guidelines. In addition, all facilities (including parking spurs, tent pads, picnic tables, fire rings, drinking fountains and water faucets, trash receptacles, and paths to other accessible facilities) at campsites designated as accessible must adhere with new and forthcoming ADAAG guidelines. New campground facilities should also adhere with these guidelines. Specific improvements needed at existing campgrounds are identified in the Recreation Facility and Use Area Needs by Site section.

- Consider hardening sites and monitoring visitor use at shoreline dispersed boat-in campsites. As detailed above, the demand for these sites will remain high in the future. Visitor use at a few dispersed campsites appears to be approaching or is at capacity due to impacts observed, such as vegetation damage, sanitation problems, litter, erosion, fire hazard, and personal safety issues. However, at many other shoreline sites, few impacts were observed and the sites appear to recover by themselves. To help meet boat-in camping demand and to help resolve shoreline use impacts, existing shoreline campsites (and possible other new sites suitable for boat-in use) will need increased management. Some sites should be targeted for hardening to better accommodate visitor use at these sites without negatively impacting the desired visitor experience.

Potential improvements include designating and developing 5 to 15 boat-in campsites each on Lake Merwin and Swift Reservoir, and approximately 20 boat-in campsites on Yale Lake. Sanitation, litter, fire hazard, and safety concerns will need to be addressed through proper design, maintenance, and management. Sites should be clustered in appropriate areas to minimize impacts and maintenance and development costs. Potential sites on Lake Merwin could be relocated to Yale Lake to facilitate efficient management. As improvements are made, universal access should be considered for some of these campsites if practicable and feasible. These developed campsites, as well as the remaining existing dispersed shoreline sites (day use and overnight), will need to be monitored and patrolled by marine and/or shoreline patrols. The location of these boat-in campsites will need to be coordinated with other resource needs, principally big game wintering area and raptor habitat. Sanitation may be addressed by providing compost toilets, floating restrooms, and/or temporary boat moorages at key locations. Specific shoreline dispersed campsite needs are identified in Section 4.2, Recreation Facility and Use Area Needs by Site.

- Consider implementing an expanded reservation system. Surveys indicate that 63 percent of visitors have at least some level of interest in a partial (not full) reservation system. The current partial reservation system should be expanded over time, if possible, to allow campers the opportunity to reserve a greater portion of the campsites. Group campsite reservations would remain unchanged. A portion of the developed campsites (25 to 50 percent for example) should be available by reservation only. Managers will likely need to experiment with this new program and adjust it over time as needed. A full reservation system may be desirable sometime in the future. This system may have the effect of spreading out visitation over a longer period of time, minimizing traffic problems along SR 503, and will give campers who make a reservation and drive longer distances assurance that there will be available campsites when they arrive.

4.1.2 Overall Day Use/Picnicking Needs in the Study Area

Overall picnicking supply, demand, capacity, and suitability factors are presented below, followed by a discussion of overall needs.

4.1.2.1 Picnicking Supply Factors

Important picnicking supply factors to consider are summarized below (see Recreation Supply Analysis [EDAW 2000a] for more detail, and Figure 2.0-1 for the location of recreation sites and facilities in the study area).

- There are 9 developed picnic areas in the study area with a total of 270 tables. Most (180) of the picnic tables are located at day use areas along Lake Merwin, such as Merwin Park. Picnic sites with fire rings or BBQs are available at only 3 locations (Saddle Dam, Yale Park, and Eagle Cliff). Five locations (Beaver Bay, Cougar Park, Merwin Park, Cresap Bay, and Swift Camp) have playground equipment.
- There are at least 93 shoreline dispersed sites located on the 3 reservoirs in the study area, many of which are used for day use and picnicking by boaters. Recreational use of shoreline dispersed sites at Lake Merwin indicates that day use is the primary activity at 62 percent of the 24 dispersed shoreline sites. Day use is the primary activity at 38 percent of the 24 sites at Swift Reservoir. There are 45 dispersed sites located along the shoreline of Yale Reservoir; however, utilization data for these sites has not yet been obtained.
- In 2000, PacifiCorp charged \$2 per car (up to 5 passengers) for use of all day use areas and a \$3 launch fee per watercraft. These fees cover a portion of the operating costs. Yearly passes are available to provide a discount. Unlimited day use passes cost \$60; \$30 for local residents and seniors. A non-peak day use pass good only on weekdays and after 4 p.m. on weekends costs \$30 and \$15 for local residents and seniors.
- No ADA-accessible developed or dispersed picnic sites currently exist at any of the PacifiCorp campgrounds on the 3 Project reservoirs. However, every PacifiCorp recreation facility has at least 1 restroom that meets ADA requirements, except for Eagle Cliff.
- Overall, most of the recreation elements at PacifiCorp day use facilities on the 3 Project reservoirs are in good condition. Some minor maintenance is needed at some of the facilities at Lake Merwin, primarily to picnic tables and boat launches. Many of the facilities at Yale Lake have been improved or will be in the near future as part of the measures identified in the previous Yale License Application. Most facilities at Swift Reservoir are in good condition, with only minor maintenance needed.
- One of the goals of the Cowlitz County Comprehensive Park Plan (Cowlitz County 1994) is to promote tourism by developing picnic areas and providing other related services.

4.1.2.2 Picnicking Demand Factors

Important day use/picnicking demand factors to consider are summarized below (see Recreation Demand Analysis [EDAW 2000b] for more detail).

- Picnicking is a common activity among visitors to the study area. Nearly half of all visitors (45 percent) indicated that they were picnicking during their visit to the study area. Fifty-six percent of area residents indicated that they picnic in the study area. Picnicking was slightly more common among visitors to Yale Lake than those visiting Lake Merwin and Swift Reservoir. Only 4 percent of visitors indicated that picnicking was their primary activity. Overall, picnicking is an important activity to consider when analyzing needs and likely contributes to other needs as well.
- Utilization of day-use areas is high during weekends in July and August and on holiday weekends, however, use does not usually exceed capacity. Overall day-use area utilization is much lower than for campgrounds in the study area. Utilization is significantly lower on weekdays and during the non-summer months.
- Demand is moderate for undeveloped dispersed picnicking in the study area. There are many dispersed areas with good public access (vehicular), however, demand is low for picnicking in these areas. There is relatively high demand among boaters for undeveloped dispersed boat-in picnicking opportunities in the study area, as boaters frequently go ashore and have picnics.
- Demand for picnicking is increasing as the population of areas of visitor origin continue to increase. The annual increase in demand for picnicking based on IAC data is 2.97 percent. By the year 2005, demand for picnicking will increase 16 percent from 2000 levels.
- Demand for picnicking will continue to significantly increase beyond 2005. By the year 2035 picnicking will increase 179 percent.
- Overall visitation and demand for picnicking facilities is variable and weather dependent, due to the high level of rainfall in the area and cool temperatures. If the weather is poor, day use area occupancy declines considerably, even during holiday weekends.
- Unlike campgrounds, day-use facilities are generally used on weekends, for shorter periods of time (a few hours or less), and typically during good weather conditions (picnicking, swimming, and sunbathing require warm, sunny days). As a result, capacity utilization of day-use facilities, such as picnic areas, is much lower as compared to campgrounds. These sites are typically vacant or lightly used during most of the year, with the exception of warm, sunny weekend days when they are more heavily utilized. The primary concern is to have adequate parking and other facilities for these briefer peak periods of time.
- Parking capacity utilization at day-use sites during the weekends was 2 to 4 times greater than the season as a whole. There are peak use weekend days when parking capacity is inadequate to handle the influx of day users, particularly during periods of very hot weather. On these particular days in July and August, visitors must be turned away at the entry gates or must remain in lines before they may enter PacifiCorp's facilities. This situation occurs at Saddle Dam, Yale Park, and Cresap Bay. Overflow parking and lines of vehicles have been known to create traffic

congestion problems along SR 503 or SR 503 Spur. During these days, generally around 5 days a year (depending on summer weather), additional parking and launch facilities are needed to handle the heavy surge of visitors. This is a growing problem that is likely to increase in intensity and repeat itself year after year as the region's population increases.

- A component of demand is the additional use that could potentially be induced by the construction of new facilities. Thus, while new facilities would help meet existing demand, they may also generate new demand. Key considerations include maintaining or improving the visitor experience and building new facilities only up to sustainable levels.
- Visitation at picnic facilities was fairly low during the entire season. Part of the reason is that most visitors surveyed were camping and conducted their picnic-related activities at their campsite. The average number of picnickers at all developed sites was only 9 persons at one time. The average number of visitors just relaxing, however, was much higher at 27 persons at one time. The average number of rest-stop visitors was also low at only 4 persons at any one time. These average levels of use remained fairly constant all season (1998), except for a drop in June due to poor weather conditions. It should be noted that these picnicking levels were determined prior to the implementation of a day use fee in 1999.
- Demand for rest-stop visits, such as at Yale Park and Cougar Park, can be estimated by looking at demand for sightseeing. Sightseeing statewide is increasing in demand at 2.53 percent annually. This level, however, is about half of the 5 to 6 percent annual increases in visitation that is occurring at the nearby Monument. It is expected that the 1999 day use fee has also reduced rest-stop visits at PacifiCorp's facilities.
- Among visitors to Lake Merwin and Swift Reservoir who indicated a desire for additional facilities in the study area, 12 percent desired additional playgrounds.

4.1.2.3 Picnicking Capacity Factors

Although visitor use levels at day use/picnicking facilities were generally low to moderate during the season in the study area, demand for picnicking is projected to increase over the next 30 years. Important day use/picnicking capacity factors to consider are summarized below (see Recreation Capacity and Suitability Analysis [EDAW 2001] for more detail).

- Facility Capacity – Facility capacity was considered a limiting factor at all of the day use facilities, particularly at Cresap Bay.. The number of available parking spaces is the most common facility capacity issue at day use facilities in the study area. In total, however, day use areas in the study area were utilized at only a quarter (26 percent) of capacity during the period of 1996 to 2000. Cresap Bay had the highest overall seasonal utilization at 80 percent for the entire period while Merwin Park had the lowest overall seasonal utilization at 7 percent for the entire period.

- **Physical Capacity** – Physical capacity is not a limiting factor at most picnicking sites as there is space available for additional picnicking facilities at existing sites. Two exceptions are Merwin Park and Speelyai Bay where most of the area is already built-out. While Merwin Park and Speelyai Bay are primarily boat launches, both have day use/picnicking components. Physical capacity is also a limiting factor at undeveloped dispersed picnic areas due to topography and the limited number of suitable shoreline sites.
- **Social Capacity** – Social capacity is not a limiting factor at picnicking facilities in the study area as visitor perceptions of crowding are relatively low.
- **Ecological Capacity** – Ecological capacity is not a limiting factor at most picnicking facilities in the study area. However, the proximity of Cresap Bay and Saddle Dam to the Merwin Wildlife Area limits any significant expansion of these sites. In addition, the proximity of Cougar Camp to Cougar Creek limits the use of the creek area during sensitive timeframes due to Bull Trout spawning.
- **Capacity Summary** – Of the 10 day use recreation facilities assessed in this analysis, use levels at most facilities (8 facilities or 80 percent) were below or approaching their capacity. Two facilities where use levels exceed capacity are Speelyai Bay (day use) and Cresap Bay (day use). The exceeding of capacity at these 2 facilities are likely to be boating related as boat trailers restrict parking availability and access to the adjoining picnic facilities.

4.1.2.4 Day Use/Picnicking Suitability Factors

Important day use/picnicking suitability factors are summarized below (see Draft Recreation Capacity and Suitability Analysis [EDAW 2001] for more detail). To meet future demand, several developed and dispersed areas were identified as highly suitable for additional facility development, including new or expanded picnicking facilities. These are identified on the Recreation Development Suitability maps provided in the Draft Recreation Capacity and Suitability Analysis. Significant findings include the following:

- A GIS-based opportunities and constraints analysis determined that highly suitable areas for potential facility development infill for picnic sites may include Cougar Camp and Swift Camp.
- Other areas of high suitability for potential new picnic area development that are currently undeveloped may include the area south of Speelyai Canal on Yale Lake.
- Aside from areas that are currently utilized as undeveloped dispersed shoreline day use/picnicking areas (including boat-in day use), there are few additional shoreline sites that are suitable for this type of use. Suitability is limited by topography, land ownership, and the pool level of the reservoirs. However, some existing sites may be hardened to better accommodate influxes of day use visitors along the shorelines.

4.1.2.5 Overall Picnicking Needs

Based on a review of the above factors and indicators, overall picnicking needs and potential actions to address these needs have been identified in the study area. It should not be assumed that these are proposed PM&E measures. Site-specific picnicking needs are discussed in Section 4.2, Recreation Facility and Use Area Needs by Site. Potential actions to satisfy overall picnicking needs include:

- Consider maintenance and improvements to existing day use/picnicking facilities. Facilities at several of the existing day use areas are variable and are in need of maintenance, repair, or replacement. This includes restroom facilities, picnic tables, trash receptacles, and playground equipment where applicable. Older day-use sites will need to be modernized over time. Older restrooms, including drain fields that have not been modernized, will need to be renovated. Existing day-use sites should be modernized first, if feasible. Many of the maintenance and improvement needs at the facilities on Yale Lake are currently being addressed as part of the measures recommended in the Yale License Application.
- Consider increasing the supply of picnicking facilities to meet future demand. Since parking spaces are the primary limiting factor at picnicking/day use facilities, it is important to consider the need for these facilities.
 - Projected demand at individual picnic areas indicates that a total of 94 additional parking spaces with tables would be needed in the study area to accommodate future demand through 2035, if current use of picnicking facilities were at capacity. This is based on the data in Table 4.1-2 which indicates that occupancy on a peak season basis will exceed the 75 percent capacity threshold at 3 sites by 2035 (Speelyai Bay, Saddle Dam Park and Cresap Bay). However, use should be monitored to determine potential needs at other sites. Additional toilet and parking facilities should also be considered as demand increases and new facilities are provided. The location of this potential new day-use site will need to be coordinated with other resource needs, principally big game wintering areas. Recent changes to parking capacity at Saddle Dam Park may also effect these projections.
 - During the term of the new license, demand for picnicking is estimated to increase approximately 179 percent. The current season-long average number of persons who are picnicking, relaxing, and using restrooms at one time is approximately 36. It is estimated that this average number of people will increase to approximately 100 within 30 years. Peak use days during weekends and in July and August will see much higher visitation levels with several hundred visitors at one time. Based on this increase, a new shoreline developed day-use site should be considered with at least 12 picnic tables and open space with shade for relaxing. Additional picnic facilities will be needed at other sites and will be determined based on determined capacity thresholds at each site over time.
- Consider monitoring visitor use of undeveloped dispersed boat-in picnic areas. Use of all dispersed undeveloped shoreline boat-in areas used for picnicking and day use should be monitored over time. Additional management actions should be considered

to minimize impacts. Use levels at a few of these dispersed sites appears to be reached due to ongoing impacts observed and discussed such as vegetation damage, sanitation, litter, erosion, fire hazard, and personal safety. Many other sites, however, appear to recover by themselves. During the term of the new license, boat-in day-use picnicking demand will increase as boating and picnicking demand increases. To help satisfy future boat-in day-use picnicking needs and to resolve existing shoreline use impacts, approximately 20 developed shoreline day-use sites should be phased in over time. This would include approximately 10 sites at Yale Lake and 5 each at Lake Merwin and Swift Reservoir. Picnic sites should be clustered in appropriate areas where existing use is greatest, to minimize impacts and maintenance costs. The clustered boat-in picnic sites should include a picnic table and fire ring and would be pack-it-in/pack-it-out type for litter control. Sanitation may be addressed by providing compost toilets, floating restrooms and/or temporary boat moorage at key locations.

- Consider ADA compliance at all existing and new facilities. In 1992, PacifiCorp conducted a detailed assessment of recreation access needs in compliance with ADA guidelines for universal access. As a result, PacifiCorp has made several significant improvements to restroom facilities and parking access at its developed recreation facilities. New ADAAG guidelines from the Access Board will determine how many picnic sites with tables should be accessible at a facility based on the total number of picnic tables provided. As improvements are made to existing picnic areas, accessibility should be provided based on these new ADAAG guidelines. In addition, all facilities (including parking spurs, picnic tables, fire rings, water faucets, trash receptacles, and paths to other accessible facilities) at picnic sites designated as accessible should adhere with the forthcoming ADAAG guidelines. New picnic facilities should also adhere with these guidelines. Specific improvements needed at existing picnic areas are identified in the Recreation Facility and Use Area Needs by Site section.

4.1.3 Overall Boating Needs in the Study Area

Overall boating-related supply, demand, capacity, and suitability factors to consider are presented below, followed by a discussion of overall needs. Boating facility needs that were analyzed in the study area include:

- Boat launches, ramps, courtesy loading docks, and boarding floats
- Parking for vehicles with trailers
- Marina slips/moorage facilities
- Boat fuel docks
- Floating restrooms
- Boat sanitation facilities (pumpouts/dump stations)

4.1.3.1 Boating-Related Supply Factors

Important boating-related supply factors to consider are summarized below (see Recreation Supply Analysis [EDAW 2000a] for more detail, and Figure 2.0-1 for the location of recreation sites and facilities in the study area).

- PacifiCorp operates 10 boat launches in the study area at Island River Access, Cedar Creek River Access, Haapa River Access, Beaver Bay, Saddle Dam, Cougar Camp, Speelyai Bay Park, Cresap Bay, Swift Camp, and Yale Park. There are a total of 19 ramp lanes at these locations. There are 6 boat docks including those at Speelyai (2), Saddle Dam Park (1), Beaver Bay (1), Cougar Camp (1), and Yale Park (2). Informational signs are located at all locations. All ramps are concrete or concrete ties. Hand launching of non-motorized craft is possible at Merwin River Access and Lewis River Hatchery Access.
- In 2000, PacifiCorp charged \$2 per car (up to 5 passengers) for use of all day use areas and a \$3 daily launch fee for all types of motorized watercraft and sailboats.
- PacifiCorp provides parking for approximately 1,300 vehicles and vehicles with trailers. Most spaces are provided at Merwin Park (500) and Yale Park (280).
- Lake Merwin is 12 miles long and covers 4,404 surface acres at a full pool elevation. The reservoir provides approximately 32 miles of shoreline. Yale Lake is 10 miles long, covers 3,800 surface acres and has 27 miles of shoreline at full pool elevation. Swift Reservoir is 12 miles long with a water surface area of 4,620 acres at full pool elevation. Shoreline length at full pool is approximately 35 miles.
- At full pool, all boat launches in the study area meet the standard 3-foot minimum water depth requirement at the toe of the ramp. The deepest ramp on Lake Merwin is at Cresap Bay, while the deepest ramp on Yale Lake is at Yale Park. There is only one ramp on Swift Reservoir.
- The pool elevation of each of the 3 Project reservoirs is voluntarily held high when possible by PacifiCorp during the recreation season - Memorial Day to Labor Day weekend.
- Lake Merwin summer recreation season pool elevations vary from 235 feet msl to 239.6 feet msl during the peak summer season. During the off-season, the pool level typically drops to 235 feet msl (4.6 ft. less). However, the pool level may be occasionally drawn down to 200 feet msl (39.6 ft. less) for maintenance. The minimum launch elevations at the ramps on Lake Merwin are: Cresap Bay Boat Launch 210.0 feet msl, and Speelyai Bay Boat Launch 233.0 feet msl. With a recreation season full pool level of 239.6 feet msl, and an off-season minimum of 235 feet msl (excluding a maintenance draw down), these boat launches can be accessed fully during the summer recreation season and during much of the off-season.
- Pool level at Yale Lake varies from approximately 470 feet msl during the off-recreation season at drawdown to a maximum of 490 feet msl; PacifiCorp maintains a recreation pool level of between 480 and 490 feet msl during the recreation season to accommodate boaters. During the off-season, the pool level is typically lowered to 470 feet msl (10 to 20 ft. less) for flood control purposes. However, the pool level may occasionally be drawn down to 460 feet msl (20 to 30 ft. less) for maintenance. The Cougar Camp launches do not operate adequately at minimum recreation pool (480 feet msl). Minimum launch elevations of ramps include: Saddle Dam (478 feet),

Yale Park (472 feet), Cougar Camp (486 feet), and Beaver Bay (476 feet). The Yale Park ramp operates to 470 feet msl (if debris is cleared).

- If possible, PacifiCorp maintains the Swift Reservoir pool level between 990 feet msl and 1,000 feet msl during the recreation season. During the off-season, the pool level is lowered to 970 feet msl (30 ft. less). However, the pool level may occasionally be drawn down to 930 feet msl (70 ft. less) for maintenance and flood control purposes. The lowest launch elevation of the boat ramp at Swift Camp is 975.0 feet msl. This ensures that this launch can be accessed during the recreation season.
- There are no marine sanitation sites (pump outs, dump stations) in the study area that are available for public use. There are also no floating restrooms in the study area.
- There are no fuel docks in the study area.
- There are no marina slips in the study area that are available for use by the general boating public. There are several marina slips near the campground at Cresap Bay, however, these are only for use by visitors camping overnight at Cresap Bay Campground.
- Two boat launch facilities in the study area are fully ADA-accessible (Cresap Bay and Saddle Dam), though neither have the most current loading/unloading grab bars on the docks.
- Facilities are in good condition at 4 of the boat launches and need repair at 6 of the boat launches.

4.1.3.2 Boating-Related Demand Factors

Important boating related demand factors to consider are summarized below (see Recreation Demand Analysis [EDAW 2000b] for more detail).

- The level of boater participation among visitors surveyed in the study area includes: power boating (28 percent), non-motorized boating (14 percent), and jetskiing/PWC use (14 percent). Powerboating was indicated as a primary activity by 8 percent of visitors, jetskiing/PWC use by 6 percent of visitors, and non-motorized boating was the primary activity of less than 1 percent of visitors.
- The predominant watercraft used in the study area are powerboats, accounting for 81 percent of boats observed at Lake Merwin, 65 percent of the total boats counted at Yale Lake, and 79 percent of the total boats counted at Swift Reservoir. The next most common watercraft used were personal watercraft (PWCs), which accounted for 15 percent of the use observed at Lake Merwin, 21 percent at Yale Lake, and 11 percent of the boats counted at Swift Reservoir. Canoes accounted for 10 percent of the use observed at Swift Reservoir, whereas they were not as common at Lake Merwin (3 percent) or Yale Lake (less than 1 percent).

- The number of boats on Yale Lake during a typical sailboat Regatta weekend are higher (worst case). During Regattas (2 to 4 times per year), the high number of sailboats (up to 50) pushes the total number of boats on the reservoir up to 170 (overall reservoir surface area density of 20 to 22 acres/boat).
- Water-based recreation opportunities are in high demand. Annual increases in demand include: power boating (2.02 percent), sailing (2.42 percent), and non-motorized boating (2.36 percent).
- During the term of the new license or 30 years, demand for boating and water-based recreation activities will increase substantially including: water skiing (108 percent), sailing (131 percent), windsurfing (106 percent), lake power boating/PWC use (101 percent), boat-fishing (84 percent), and lake non-motorized boating (126 percent). The IAC indicates that water-based recreation, along with trails, are in very high demand in the state and region.
- Complaints by visitors at Yale Lake were relatively low. Only 5 percent of survey respondents indicated that boat launches need to be improved. Most of these comments were directed at the Saddle Dam launch prior to reconstruction (renovated in 2001 to modern standards). It should be noted, however, that the pool level was high when most visitors were surveyed, which could bias the results. When the pool level was lower, more problems would likely be encountered by boaters.
- Most visitors at sites in the Merwin and Swift survey did not have conflicts or complaints regarding the behavior of other area visitors. Just under over three-quarters indicated that they had no complaints, while 23 percent answered this question affirmatively. Visitors who said that they had experienced conflict with others were asked to indicate the nature of the conflict. From the list of all conflicts, 27 percent pertained to water-based activities. The most common water-based activities complaint at the Merwin and Swift sites was about PWC users (14 percent), followed by boat speeds/noise (5 percent), boat speeds too fast in no wake zones (4 percent), boat ramp conflicts (2 percent), and general boating conflicts (2 percent).
- Launch wait times were generally low at most sites, indicating adequate capacity. Just over two-thirds (67 percent) of survey participants at Merwin and Swift responded that they did not wait, while one-third (33 percent) said that they had a wait of some length. Waiting times averaged 13 minutes for survey participants. The range of waiting time ran from under 5 minutes to 35 minutes. A follow-up question asked visitors who waited if they thought this was a problem, and 61 percent felt that it wasn't, 10 percent said it was somewhat, and 29 percent indicated that it was a problem. Many of the concerns were expressed by Saddle Dam boat launch visitors prior to its reconstruction and the addition of a second ramp lane at this location. Complaints at this location are likely much lower now.
- Eighteen percent of boaters on Lake Merwin had to wait to use a boat launch during their visit. Of those who waited, 33 percent waited less than 5 minutes while 19 percent waited more than 20 minutes. This percentage of visitors and the wait time is

considered reasonable. However, peak use periods on summer weekends see very high use levels at boat launches and longer wait times.

- Thirty-one percent of boaters on Yale Lake had to wait to use a boat launch during their visit. Of those who waited, 36 percent waited less than 5 minutes while 12 percent waited more than 20 minutes.
- Sixteen percent of boaters on Swift Reservoir had to wait to use a boat launch during their visit. Of those who waited, 33 percent waited less than 5 minutes while 17 percent waited more than 20 minutes.
- The character of waiting time at boat ramps in the 1996-97 Yale study was similar to sites at Merwin and Swift, with 69 percent of boaters at Yale Lake indicating that they did not have to wait to put their watercraft in the water. Boaters at Saddle Dam and Beaver Bay (fewer lanes) had to wait the longest, indicating lesser capacity.
- About three-fourths of visitors at campgrounds do not feel that it is a problem when boaters put in or take out their boats at the campgrounds in the survey. However, just under 23 percent felt that the problem was slight to moderate, while 3 percent indicated that they felt that boat launches in campgrounds are a big problem.
- Visitors in the 1996-97 Yale study were less disturbed by boat launch activity in or near campgrounds, with 90 percent indicating that they weren't disturbed. Six percent at Yale study sites indicated that they were slightly disturbed by nearby boat ramps.
- During the peak recreation season when most of the surveys were administered, pool levels did not affect most boaters. Most (70 percent at Yale Lake and 84 percent at Merwin and Swift) survey respondents indicated that the pool level did not affect their boating experience. Of the 30 percent at Yale Lake who indicated that they were affected, most (33 percent) problems related to ramp length or condition at Saddle Dam (now renovated in 2001) and Cougar Camp. The 16 percent who indicated problems at Merwin and Swift primarily pointed to logs and other debris as the largest problem. It should be noted that the survey was not conducted when the pool level was very low.

4.1.3.3 Boating-Related Capacity Factors

Important boating-related capacity factors to consider are summarized below (see Draft Recreation Capacity and Suitability Analysis [EDAW 2001] for more detail).

- Facility Capacity – Facility capacity is the primary factor limiting use at the boat launches in the study area. Seasonal parking capacity for boating appears adequate, except during extreme use days (up to 5 days per year) when boating and day-use site parking needs compete. On average during the season, parking capacity utilization at launch sites was relatively low. Overall utilization for day use parking areas is 24 percent. Facility capacity is also a limiting factor during lower pool levels when

many of the boat launches cannot be used, as their ramps are not of adequate length and/or depth.

- **Physical Capacity** – Existing boat launch parking space is limited at all sites, however, this is primarily a facility capacity issue. At many sites some additional space could be developed for parking. Boating-related capacity can also be assessed by examining the physical capacity of the surface of the reservoirs. Although physical capacity is a limiting factor on each reservoir, the average number of boats on peak season weekends is below the theoretical physical capacity. The average number of boats is closest to capacity at Yale Lake, followed by Lake Merwin and then Swift Reservoir.
- **Social Capacity** – Social capacity is not a limiting factor at any of the boat launches in the study area. Wait times are not significant at any of the launches and visitors do not appear to feel crowded at launches.
- **Ecological Capacity** – Ecological capacity is a limiting factor at 2 sites (Saddle Dam Park and Cresap Bay) due to the proximity of the Merwin Wildlife Area to these sites.
- **Capacity Summary** – Use levels at most of the boat launches in the study area are approaching or exceeding their capacity. Functionality is also limited at these facilities during the off-season as a result of low pool levels that prohibit boat launching.

4.1.3.4 Boating-Related Suitability Factors

Important boating-related suitability factors are summarized below (see Draft Recreation Capacity and Suitability Analysis EDAW 2001) for more detail). A few areas were identified as suitable for additional facility development, including new or expanded boating facilities. All potential boat launch facility expansion or construction must consider water depth, wind (and resulting wave action), and suitable access and parking area. These are identified on the Recreation Development Suitability maps provided in the Recreation Capacity and Suitability Analysis. Significant findings include the following:

- Suitable areas for consideration of possible new boat launch facility improvements include Yale Park, Merwin Park, Speelyai Bay, and Beaver Bay.
- Other areas of high suitability for potential new boat launch facility development that are currently undeveloped include the area south of Speelyai Canal and the west end of Swift Reservoir along the northern shoreline.

4.1.3.5 Overall Boating-Related Needs

Based on a review of the above factors and indicators, overall boating-related needs and potential actions to address these needs have been identified in the study area. It should not be assumed that these are proposed PM&E measures. Site-specific boating-related

needs are discussed in Section 4.2, Recreation Facility and Use Area Needs by Site. Potential actions to satisfy overall boating-related needs include:

- Consider maintenance and improvements to existing boating-related facilities. Facilities at several of the existing boat launch facilities are in need of maintenance, repair, or replacement. Although the primary need is associated with boat ramp lanes, other considerations include toilets, boarding floats and docks, and parking.
- Consider increasing the supply of boating-related facilities to meet current and future demand. Utilization of 2 boat launch facilities is expected to exceed capacity within the next 30 years, while use at others facilities will likely approach or be at capacity. There are 6 aspects of boating-related facility demand to consider: (1) boat ramp lanes, (2) vehicle and trailer parking areas, (3) marine sanitation devices (pump outs and dump stations), (4) marina and moorage facilities, (5) fuel docks, and (6) floating restrooms or temporary moorage at key locations. Factors that influence where these types of facilities could be provided include use levels, water depth, access, wind (and the resulting waves), and geographic distribution.
- **Boat Ramp Lanes** – Projected future demand suggests that construction of additional boat ramp lanes should be considered. Assuming that utilization will exceed 75 percent (during peak season weekends) at 3 day use areas with boat launches by 2035 (see Table 4.1-2), 3 to 4 additional boat ramp lanes could be needed over this period (note that 1 lane was recently added to the Saddle Dam Park boat launch). However, additional parking could be needed at the 2 sites that exceed 75 percent. Additional lanes (and parking facilities) could be added to existing facilities in these areas and new boat launch facilities could also be constructed. New boat launch facilities should also possibly be considered on Lake Merwin at Merwin Park and at Swift Reservoir (new site) to more evenly distribute access and use.
 - Lake Merwin – Options include adding an access point at the west end of the lake at Merwin Park (1 to 2 lanes) to better distribute use and shorten trips. Also consider adding another ramp lane at Speelyai Bay.
 - Yale Lake – Options include adding additional parking at Yale Park in the near term by formalizing parking spaces and expanding the area to the west. Additional boating facilities may also be considered at Beaver Bay with a redesign of this facility. Improvements at Saddle Dam Park in 2001 have already been completed. In addition, a new undeveloped site may be improved for boating south of Speelyai Canal. The location of this potential new boat launch site will need to be coordinated with other resource needs, principally big game wintering areas.
 - Swift Reservoir – Consider adding a deep water boat launch at the west end of the reservoir along the northern shoreline to extend fishing access in shoulder seasons and during times of reservoir draw down.
- **Other Boating-Related Facilities** – Projected future demand also indicates that additional vehicle and trailer parking will be needed. This would include considering

the expansion of current parking areas at PacifiCorp boat launches. In addition, sanitation facilities for boaters should be considered. Options include (1) boater access to temporary moorage facilities at boat launches where visitors could access existing land-based facilities, (2) access to on-shore compost toilets in dispersed use areas, and/or (3) access to floating restrooms that are available during the summer recreation season only.

- Consider lengthening boat ramp lanes in the study area. None of the boat ramps in the study area can be used at extreme low pool such as during periods of maintenance. Flood-control operations on Swift also prohibit use of boat ramps during certain periods of time. Consider providing 1 boat ramp on each reservoir that can be accessed at low pool levels on a year-round basis. Ramps that should be lengthened to function adequately at various pool levels on each reservoir include: Speelyai Bay Park (Lake Merwin), Yale Park (Yale Lake), and the development of a deep-water launch at Swift (Swift). The older existing boat launches will need to be modernized over time. Additional maintenance should be considered to routinely clear debris from the end of the boat ramps, including large rocks, silt, and woody debris.
- Consider low pool boat launch on Swift Reservoir. PacifiCorp is presently conducting a feasibility study for construction and operation of a new boat launch on Swift Reservoir, which would provide access during drawdowns. The existing boat launch at Swift Camp cannot provide access during low pool levels.
- Consider increasing reservoir marine patrol and management presence. With a Projected doubling of the numbers of boats and PWC in the future (2035), additional management presence will be needed beyond the current 2 days/week during the peak season. Increased enforcement of boating regulations (including speed limits and no-wake zone enforcement) is needed as boating use levels increase. Marine Patrols should be increased over time, particularly during July and August. Other actions should also be taken as needed to address boating activities. In the future, zoning (temporal or spatial) of various types of watercraft may need to be considered if health and safety issues warrant such actions.
- Consider ADA compliance at some existing and new facilities. New ADAAG guidelines that have been adopted by the Access Board need to be implemented, such as details related to docks, gangways, and boat entry. In addition, at least 1 fully accessible boat launch should be provided on each reservoir. All facilities (including boarding floats, docks, parking spaces, toilets, water faucets, trash receptacles, and paths to other accessible facilities) at boat launches designated as accessible should adhere with ADAAG guidelines. New boating-related facilities should also adhere to these guidelines.

4.1.4 Overall Swimming and Sunbathing Needs

Overall swimming and sunbathing supply, demand, capacity, and suitability factors are presented below, followed by a discussion of overall needs.

4.1.4.1 Swimming and Sunbathing Supply Factors

Important swimming and sunbathing supply factors to consider are summarized below (see Recreation Supply Analysis [EDAW 2000a] for more detail, and Figure 2.0-1 for the location of recreation sites and facilities in the study area).

- Eight of the developed day use sites (except Eagle Cliff) have swim areas with floating booms, sandy beaches, signs, and safety apparatus. The facilities are in good condition. No lifeguards are provided
- In addition to the developed reservoir shoreline sites, there are dispersed use areas along each of the 3 reservoirs where swimming occurs. Some of the more popular locations include areas southwest of the Swift No. 2 power canal off of Lewis River Road and the vicinity of a bridge along the IP Road that crosses the Lewis River. Cougar Creek and an undeveloped cove at Cougar Camp are also areas where swimming occurs. In addition, many other areas that are only accessible by boat are popular swimming areas.
- None of the developed swimming areas have ADA-accessible access to the water.

4.1.4.2 Swimming and Sunbathing Demand Factors

Important swimming and sunbathing demand factors to consider are summarized below (see Recreation Demand Analysis [EDAW 2000b] for more detail).

- Swimming/sunbathing is the second most popular activity behind camping at Yale Lake and the third most popular activity behind relaxation and spending time with family and Lake Merwin and Swift Reservoir. Overall, 67 percent of visitors participate in swimming/sunbathing while in the study area. However, only about 11 percent of visitors indicated that swimming was their primary activity.
- The current use of swim/beach day-use areas generally indicates the level of demand. The average number of swimmers and sunbathers using swim areas and adjacent sandy beaches during holiday and non-holiday weekends at Yale Lake was 48 people. The average number of swimmers and sunbathers was lower at Lake Merwin (27 people) and Swift Reservoir (8 people). Cresap Bay day use area was the most popular area for swimming at all survey sites, with an average of 38 people counted at beach areas on survey dates.
- Demand for swimming/sunbathing is increasing in the region, primarily as a product of population growth. The projected annual increase in demand for swimming based on IAC data is 2.20 percent. Over the next 30 or more years (to 2035), demand for swimming is projected to increase by 114 percent.
- Like other activities, use levels are dependent upon good weather conditions; temperature, rain and wind are key factors. As a result, July and August are the primary use months.

- About 4 percent of survey respondents wanted improved beach access with more swimming areas and sandy beaches. The distance to a swimming area was important to many (70 percent) visitors surveyed.

4.1.4.3 Swimming and Sunbathing Capacity Factors

Important swimming and sunbathing capacity factors to consider are summarized below (see Draft Recreation Capacity and Suitability Analysis [EDAW 2001] for more detail). Significant findings include the following.

- The overall utilization of day use/picnicking facilities is closely tied to capacity as it relates to swimming and sunbathing. Refer to the Overall Picnicking Needs in the Study Area section for a complete discussion of capacity factors as they relate to picnicking/day use areas.

4.1.4.4 Swimming and Sunbathing Suitability Factors

Important swimming and sunbathing suitability factors to consider are summarized below (see Draft Recreation Capacity and Suitability Analysis [EDAW 2001] for more detail). Several developed and dispersed areas were identified as highly suitable for additional facility development, including new or expanded swimming areas. Significant findings include the following:

- According to a GIS-based opportunities and constraints analysis (EDAW 2001) and professional judgement, suitable areas for development of swimming areas include formalizing a small cove at Cougar Camp as a swim area and/or constructing a new swim area at a new developed recreation area south of Speelyai Canal at Yale Lake.

4.1.4.5 Overall Swimming and Sunbathing Needs

Based on a review of the above factors and indicators, potential actions to address overall swimming and sunbathing-related needs have been identified in the study area. It should not be assumed that these are proposed PM&E measures. Site-specific swimming and sunbathing-related needs are discussed in Section 4.2, Recreation Facility and Use Area Needs by Site. Potential actions to help satisfy overall swimming and sunbathing-related needs include:

- Consider maintenance and improvements to existing swimming areas. Facilities at several of the existing swimming areas are in need of maintenance, repair, or replacement. All swimming areas at developed sites should have area delineators/floating booms, safety signs, and other apparatus to improve the visitor swimming experience in the study area and overall safety.
- Consider increasing the supply of swimming-related facilities to meet current and future demand. Swimming is currently one of the most popular activities in the study area, and participation is projected to increase 114 percent by 2035. A new designated swimming area should be considered to meet this demand. However,

improvement of existing areas and increased visitor awareness of their location may help to better distribute swimming area visitors.

- Consider creation of a fully accessible swimming area. New ADAAG guidelines from the Access Board will likely be adopted in 2001 to 2002. At least 1 fully accessible developed swimming area should be provided in the study area, with the consideration of at least 1 on each reservoir. All facilities (including parking spaces, restrooms, water faucets, trash receptacles, and paths to other accessible facilities) at swimming areas designated as accessible should adhere with the forthcoming ADAAG guidelines. This should include an accessible path to the edge of the water, but not necessarily below the surface of the water. The existing facilities at Merwin Park and Cresap Bay are best suited for this type of improvement.

4.1.5 Overall Interpretation and Education Needs in the Study Area

Overall interpretation and education (I&E)-related supply, demand, capacity, and suitability factors are presented below, followed by a discussion of overall needs. Interpretive program and facility needs that were analyzed in the study area include:

- Signs and kiosks
- Viewpoints
- Nature trails
- Hydroelectric facility tours
- Educational programs and campfire talks

4.1.5.1 Interpretation and Education Supply Factors

Important I&E supply factors to consider are summarized below (see Recreation Supply Analysis [EDAW 2000a] for more detail, and Figure 2.0-1 for the location of recreation sites and facilities in the study area).

- No significant interpretive facilities exist now in this study area, such as interpretive signs and kiosks, viewpoints or overlooks, and nature trails. There are no hydroelectric facility tours and no signs exist that explain hydroelectric Project operations. The study area is also lacking a comprehensive I&E program or plan.
- At Cresap Bay Campground, a series of trails connect this area with the day use and boat launch facilities. In addition to these is a 1.5 mile trail that heads east then north before circling back to the day use area. This trail will eventually be developed with interpretive features (signs, brochure). This trail is not ADA accessible.
- Beaver Bay Campground is scheduled for several phases of improvements beginning in 2000 and reaching completion in 2006. These include the construction of a Wetland Interpretive Trail (2001-2002).
- Re-construction of the boat launch at Saddle Dam Park occurred in 2001. Site improvements will also eventually include new interpretive materials and signs.

- PacifiCorp has contracted with the USFS to provide campfire talks during the summer months. This program is very successful and is well attended by campers. The success of this program tends to indicate a strong demand for I&E programs. These talks are currently conducted at a small amphitheater seating area located at Cresap Bay and Swift Camp.
- The Monument and USFS are adept at providing I&E education programs and services and may be best suited to meet the needs of many of the visitors in the region. WDFW and DNR are also capable of providing similar services and programs.

4.1.5.2 Interpretation and Education Demand Factors

Important I&E demand factors to consider are summarized below (see Recreation Demand Analysis [EDAW 2000b] for more detail).

- Visiting interpretive displays is very high in demand in the region (3.12 percent annual increase in demand). Other related activity demand increases are: nature study/wildlife observation (2.67 percent), outdoor photography (2.94 percent), and sightseeing and exploring (2.53 percent).
- Through 2035, demand for I&E activities will increase substantially including: visiting interpretive displays (193 percent), nature study/wildlife observation (152 percent), outdoor photography (175 percent), and sightseeing and exploring (140 percent).
- The Lewis River corridor offers multiple sightseeing and learning opportunities, many of which feature interpretive or educational facilities. Almost half (45 percent) of all survey respondents at Yale Lake indicated that they had plans to or have already visited other locations during their trip. Of the 45 percent, most (34 percent) of these respondents listed the Monument (including Ape Cave, Windy Ridge, Lava Canyon, etc.) as their primary destination. The GPNF was also mentioned by 15 percent of visitors as their primary destination. This is important because many of these areas feature I&E facilities and programs.
- Visitors at Merwin and Swift sites were asked if they planned to visit any recreation areas during their visit to the Lewis River Valley other than the site where they were contacted. A majority of visitors (71 percent) surveyed at Merwin and Swift sites indicated that they planned on remaining at or near the site where they were contacted. About half (49 percent) of visitors who did not plan on remaining at or near the site where they were surveyed indicated that the Monument (including Ape Cave and Lava Canyon) was one of their primary destinations as part of their visit. This is important because many of these areas feature I&E facilities and programs.
- One of the goals of the Cowlitz County Comprehensive Park Plan (Cowlitz County 1994) is to promote tourism by development of viewpoints, interpretive information, and other related services.

- One of the priorities of the Skamania County Park and Recreation Comprehensive Plan (Skamania County 1991) is to enhance tourism as a replacement of lost timber industry jobs, including interpreting historic resources.
- Some of the goals of the Lewis River Valley Strategic Action Plan (Action Plan Committee 1995) are to increase the number of cultural events in Cougar, designate SR 503 as part of a state scenic byway loop, and create kokanee and elk viewing and interpretive areas near Cougar including Cougar Creek and elk wintering meadows.
- It is notable that visiting interpretive centers represents the largest increase of any activity in the region (increase of 193 percent by 2035). This information is particularly relevant to the broader study area, as the Monument is one of the state's and the nation's most significant tourist attractions and features many interpretive facilities. Although the majority of visitation to the Monument occurs to the north along SR 504, access to the volcano's southern flank is provided by the Lewis River Road and FR 90 through the study area. Interpretive locations, such as Ape Cave and Lahar Canyon, are just outside the study area, and access to Windy Ridge is possible from the Project via "the loop." Approximately 4.7 million visitors went to the Monument in 1995. According to the USFS, projected increases in visitation to the Monument as a whole are estimated to be as high as 5 to 6 percent per year (pers. comm., D. Siegel, USFS, the Monument, November 19, 1996). Increases of this magnitude are relevant to the southeast portion of the Monument as well as the Lewis River Projects.

4.1.5.3 Interpretation and Education Capacity Factors

Facility capacity is the most likely limiting factor for the only I&E program in the study area, the campfire talks. Since these programs are quite popular, the limited supply of facilities could limit future use.

4.1.5.4 Interpretation and Education Suitability Factors

Important I&E suitability factors to consider are summarized below (see Draft Recreation Capacity and Suitability Analysis (EDAW 2001) for more detail). Most of the developed and dispersed recreation areas are highly suitable for additional facility development, including new or expanded interpretive facilities or signs. Significant findings include the following:

- All existing recreation facilities in the study area have sufficient space available for the provision of new or expanded I&E facilities, particularly signs or kiosks, which are small and take up very little space.
- Many of the areas identified as having high suitability for other types of facilities (campgrounds, picnicking facilities; boat launches) would also be suitable for new interpretive facilities or signs.

4.1.5.5 Overall Interpretation and Education Needs

Based on a review of the above factors and indicators, potential actions to address overall I&E-related needs have been identified in the study area. It should not be assumed that these are proposed PM&E measures. Site-specific I&E-related needs are discussed in Section 4.2, Recreation Facility and Use Area Needs by Site section. Potential actions to satisfy overall I&E-related needs include:

- Consider new I&E facilities. Most of the sites in the study area are highly suitable for facilities such as signboards and kiosks. In addition, sites such as the Swift overlook, a roadside pullout near Swift Dam, are currently underutilized in terms of visitor use and interpretation potential. Consider the addition of I&E facilities in the study area to meet both current and future demand. New facilities and programs could interpret the hydroelectric Project, cultural resources, geology, natural resources, and the pre-dam history of the area.
- Consider ADAAG compliance at all existing and new facilities. New ADAAG guidelines developed by the Access Board should be followed for all existing and new interpretation and existing facilities. This should include exhibits, parking areas, paths to facilities, and toilets/restrooms, and any other facilities provided in conjunction with I&E facilities.
- Consider developing an I&E plan and program in the RRMP. The study area is currently lacking a comprehensive I&E plan or program. These needs should be addressed in the RRMP.
- Consider Upgrading the existing amphitheater seating area for ranger campfire talks. Consider relocating and upgrading the existing small amphitheater seating area at Cougar Park for campfire talks, environmental education programs, and group uses. The size should accommodate about 50 people with expansion capability for larger groups as needed. A similar facility should be considered for construction at other campgrounds in the study area.
- Consider Providing Nature Trail Opportunities. Where appropriate, consider potential self-guided nature trails at or near campgrounds. Areas of opportunity may include the Beaver Bay wetland, areas around Cresap Bay, at Merwin Park to the Marble Creek Tail, and at Cougar Camp (but avoiding Cougar Creek).

4.1.6 Overall Trail Needs in the Study Area

Overall trail-related supply, demand, capacity, and suitability factors are presented below, followed by a discussion of overall needs. Only non-motorized recreational trail facility needs were analyzed in the study area.

4.1.6.1 Trail Supply Factors

Important trail-related supply factors to consider are summarized below (see Recreation Supply Analysis [EDAW 2000a] for more detail, and Figure 2.0-1 for the location of recreation sites and facilities in the study area).

- At Merwin Park, the 0.5-mile Marble Creek Trail travels east along an old roadbed. There is a trail sign and a gate at the east end of Merwin Park. This existing trail follows the shoreline to a viewing platform at Marble Creek. The viewing platform and associated chain-link fence are dilapidated; both need replacement or removal. The trail is not ADA-accessible.
- The Cresap Bay Nature Trail is a 1.5 mile trail that heads east then north before circling back to the day use area. This trail will eventually be developed with interpretive features (signs, brochure). This trail is not ADA accessible, but could be easily modified.
- Although not officially designated as hiking or biking trails, Lewis River Road and the IP Road are often used by bikers and hikers. During the 1996 recreation surveys, and more recently, large groups of bicyclists were observed cycling around the lake using Lewis River Road and the IP Road. Equestrians have also been observed using the IP road and other routes.
- PacifiCorp maintains shoreline trail segments at some of its campgrounds and day-use areas, including Beaver Bay and Cougar Park. In many cases these trails provide access to the reservoir and other portions of the campground. In addition, there is a short trail (0.4 mile) along Cougar Creek, accessed from Cougar Park on the opposite (north) side of Lewis River Road.
- The longest trail in the study area is located on the western shore of Yale Lake, connecting an area on Frasier Road near Saddle Dam with Speelyai Canal. This trail, approximately 4 miles long, is popular with equestrians and, to a lesser extent, hikers and mountain bikers. As the trail meanders through primarily forested areas and is steep in some locations, it is seldom used by anglers. Several small spur trails, however, provide access to the shoreline.
- Many informal unmarked trails appear to function adequately for those who use them and know about them. Informal walking can occur at all sites and along the shoreline in most areas.
- Most (96 percent) walkers/hikers surveyed were satisfied (rated good to perfect) with their walking experience. All (100 percent) mountain bikers/road bikers rated their experience as good to perfect. Many visitors went to the Monument and/or GPNF where many other hiking opportunities exist. As a result, the reported high level of satisfaction may have likely resulted from experiences outside of the study area in the Monument or GPNF.

- There are no formal motorized trails in the study area. There are also no designated mountain bike trails or road bike paths or routes in the study area. However, mountain biking and motorized trail use does occur in dispersed, undeveloped areas of the study area, principally along the IP Road.
- A short angler access trail was recently developed at the Thompson Creek River access Site below Merwin Dam. This quarter-mile trail provides access between a parking area and the shoreline.
- Informal angler access trails exist along the Swift 2 Power Canal. Anglers use existing roads and bridges to gain access to the canal for fishing.
- A few user-defined trails exist in the Swift 2 Bypass Reach, primarily in the area of the IP Road bridge. Most of these trails are very short and provide access to the river for fishing, swimming, tubing, and sunbathing.
- Existing timber management roads on Project lands are open to recreational and are presently used by hikers, bikers, and equestrians.

4.1.6.2 Trail Demand Factors

Important non-motorized trail-related demand factors to consider are summarized below (see Recreation Demand Analysis [EDAW 2001] for more detail).

- Visitors surveyed at Yale Lake listed hiking/walking as their third most common (51 percent) activity that they participated in during their visit. Participation in mountain biking and road bicycling was lower at only 17 percent for each. Few (<4 percent) listed trail use as a main activity, likely due to the lack of designated trails known to visitors.
- Visitors surveyed at Merwin and Swift sites listed hiking walking as their sixth most common (35 percent) activity that they participated in during their visit. Mountain biking and road bicycling was 14 percent. No one listed trail use as a main activity.
- Sixty-one percent of area residents indicated that they participate in hiking/walking in the study area. Most of this use is likely in the form of walking to and from recreation sites.
- Several existing undesignated trails are generally lightly used. The IP Road route is used on occasion by road bicyclists, equestrians, mountain bikers, 4WD/ATV riders, anglers, and hikers. The Frasier Road/Saddle Dam to Speelyai Canal trail is used by smaller groups of equestrians and a few hikers and mountain bikers. At the Swift No. 2 Power Canal, anglers regularly use trails following the canal. The Yale-Merwin transmission line ROW has been suggested by Clark County as a potential trail route (Clark County 1994b); however, there is no known use of this route at this time. Along Cougar Creek is an informal angler access trail used for fishing and dispersed camping that gets regular use. Pedestrians walk from the town of Cougar to Cougar Park/Camp using primarily the shoulder of the highway.

- Across the state and the region, trail-related recreation opportunities are generally in high demand now and are expected to be in the future. Annual increases in demand include: day hiking (2.73 percent), off-road vehicle use (4WD, ATV) (2.31 to 2.59 percent), bicycling (2.98 percent), mountain biking (2.61 percent), and horseback riding (1.69 percent). Over 30 years, demand for these activities is expected to increase substantially including: day hiking (157 percent), off-road vehicle use (4WD, ATV) (122 to 145 percent), bicycling (180 percent), mountain biking (146 percent), and horseback riding (80 percent). One of the 2 greatest needs according to the IAC is trail opportunities due to this high demand (hiking, bicycling, and walking). The IAC sees new trail development as a top priority for the state, especially trails along water bodies and rivers.
- Partial goals of the Siouxon Landscape Plan (DNR 1996) include expansion of trail opportunities (equestrian, hiking, and mountain biking), development of trail maintenance agreements and plans, meeting future recreation needs, maintaining vehicle access (but at a reduced cost) and providing for hunting opportunities and access on DNR-managed lands in the Siouxon area.
- Partial goals of the ILM Plan (WDFW 1995) include providing recreation opportunities (mainly hunting and fishing), providing public access, securing open space, and minimizing wildlife-recreation conflicts. Damaging activities, such as ATV riding, snowmobiling, and horseback riding, should not be allowed, according to the ILM Plan, in sensitive areas including caves, riparian zones, and big game wintering areas.
- The Clark County Park, Recreation, and Open Space Plan (Clark County 1994a) and the Clark County Trail and Bikeway System Plan (Clark County 1994b) indicate the need for new trail opportunities. Potential trail improvements in these plans include: (1) potential development of the IP Road into a non-motorized trail with 2 rest areas/toilets which would help create a regional trail from La Center, Washington to the Monument, and (2) potential use of the existing Yale-Merwin transmission line ROW as a trail corridor.
- The Lewis River Valley Action Plan (Action Plan Committee 1995) identifies priorities including a new trail from the town of Cougar to Cougar Park/Camp, opportunities for day hikes from Cougar to Beaver Bay, creation of nature trails, and creation of wildlife viewing areas along Cougar Creek and elk wintering areas.

4.1.6.3 Trail Capacity Factors

Due to the lack of developed trails resources in the study area, and the lack of information on use levels of the few existing trails, there is no relevant information concerning trail-related capacity factors.

4.1.6.4 Trail Suitability Factors

Important trail-related suitability factors to consider are summarized below. Although overall suitability is limited by topography and land ownership patterns, several areas are suitable for potential new non-motorized trails. Significant findings include the following:

- Results from phase one of the Draft Trails Feasibility Study Summary Report (in process) indicate that a spine trail from Saddle Dam to Eagle Cliff Park may be feasible. Along Lake Merwin, various trail segments may be feasible, however, a trail along the entire length does not appear to be feasible due to several constraints. The study states that such a trail must be coordinated with wildlife managers and should consider temporal use restrictions to reduce potential conflicts in wildlife habitat areas, particularly along Lake Merwin.
- The existing roadway right-of-way along SR 503 and SR 503 Spur is limiting if a bike path or lane was to be considered along the highway.
- The current IP Road paved surface is deteriorating and the 3 bridges are narrow and have minimal railings. A slide has partially blocked the road in one location. A washout has removed a portion of the road in another location. Heavy truck traffic during logging is a potential problem. Unfortunately, many overlaying easements create a complicated and confusing situation concerning rights to use the road. Ownership of the bridges is another issue needing further research. Despite these problems, the IP Road remains a tremendous trail opportunity.
- Dispersed recreation use in wildlife habitat areas is a potential concern; however, visitor use levels are very low when wildlife are present because of poor weather conditions and closed recreation facilities. New trail development and management must be coordinated with wildlife managers.
- Overall suitability for trail-related resources in the area is somewhat limited by land ownership and use patterns (extensive private/active forest lands), as well as steep topography in some areas.
- Retention or expansion of wildlife and fish habitat is an important factor in the study area, especially as related to trails and potential trail corridors. This topic is specifically discussed in the ILM Plan (WDFW 1995). The objectives of the ILM Plan are to develop an integrated plan for cooperatively managing fish and wildlife resources on a landscape basis for the next 20 years. The plan's goals are to establish acceptable biological limits for recreation opportunities consistent with aquatic and wildlife populations, provide for fishing opportunities and access, minimize recreation fish/wildlife conflicts, and protect critical habitat areas. These goals, in addition to other ecological constraints, could impact the potential development and routing of new trails in the study area.
- Potentially suitable areas for new non-motorized trail development include:

- Merwin Park to Cape Horn Creek.
- Rock Creek to Cresap Bay, or possible segments thereof.
- Saddle Dam Park to Eagle Cliff Park including the IP Road.
- Cougar Park or Beaver Bay to Lava Flow – potential to connect to Monument or Ape Cave.
- Frasier Road/Saddle Dam to Speelyai Canal.
 - Town of Cougar to Cougar Camp and then on to Beaver Bay.

4.1.6.5 Overall Trail Needs

Based on a review of the above factors and indicators, potential actions to address overall trail-related needs have been identified in the study area. It should not be assumed that these are proposed PM&E measures. Site-specific trail-related needs are discussed in Section 4.2, Recreation Facility and Use Area Needs by Site. Potential actions to satisfy overall trail-related needs include:

- Consider new trail opportunities in the study area. Consider new non-motorized trail development at suitable locations. Potential trail segments include Merwin Park to Cape Horn Creek, Rock Creek to Cresap Bay (or portions thereof), Saddle Dam Park to Eagle Cliff Park including the IP Road, Cougar Park or Beaver Bay to Lava Flow and possibly the Monument, Frasier Road/Saddle Dam to Speelyai Canal, and Cougar to Beaver Bay.
- Continue to investigate potential trail use of the IP Road. Continue to investigate opportunities and mechanisms to potentially develop a formal non-motorized trail along the IP Road for use by hikers, walkers, road bicyclists, mountain bikers, anglers, and equestrians. Investigate potential implementation of a cooperative agreement between Clark County, PacifiCorp and DNR to possibly construct, operate, and maintain the trail and 2 rest areas/toilets at either end of Yale Lake. Investigate ways to possibly increase management presence along the trail route by the Clark County Sheriff's Department and/or private security contractors. Investigate potential safety hazards due to user conflicts and natural hazards at times. Use of the IP Road for new trail opportunities is discussed in further detail in the Draft Trails Feasibility Study Summary Report (in process).
- Consider the construction of ADA-accessible trails in the study area. There are currently very few existing accessible paths in the study area. Accessible paths or trails should be considered as part of improvements to existing campgrounds and day use facilities as well as the construction of new facilities.
- Consider implementing a trail sign program. Consider providing signs for formalized trail routes at all PacifiCorp developed sites and in the town of Cougar to communicate trail opportunities to visitors.
- Consider improving trail access at the Swift 2 Power Canal and Bypass Reach. Currently there are no developed trails at the Swift No. 2 Power Canal and Bypass

Reach, yet anglers use undeveloped trails, walkways, or roadways to access bank-fishing areas. Consider improving trail access in this area to meet ADA guidelines. Consider providing signs to communicate trail opportunities to visitors, as well as possible dangers associated with the Swift 2 Power Canal and Bypass Reach.

- Consider a coordinated management effort that addresses ORV and ATV use in the study area. A few sites in the study area currently attract ORV and ATV users, such as along the IP Road and in reservoir draw down areas. The ecological impacts of these continued uses warrant additional management actions.

4.1.7 Overall Fishing Needs in the Study Area

Overall fishing-related supply, demand, capacity, and suitability factors are presented below, followed by a discussion of overall needs. Fishing activity and facility needs analyzed in the study area include:

- Fishery management
- Access piers and docks
- Fish cleaning facilities

4.1.7.1 Fishing Supply Factors

Important fishing-related supply factors to consider are summarized below (see Recreation Supply Analysis [EDAW 2000a] for more detail, and Figure 2.0-1 for the location of recreation sites and facilities in the study area).

- There are no designated angler access piers or docks, no ADA-accessible fishing opportunities, and no fish cleaning facilities. Fishing is prohibited from boarding floats, however, 1 dock at Cougar Park is used for this purpose.
- Portions of the reservoirs' shoreline and the lower river are fairly accessible to bank anglers except where steep topography prohibits access. Only a few fishing access trails have been developed by anglers as most fish are caught by boat.
- Launch wait times were generally low. Saddle Dam and Beaver Bay had longer wait times (fewer lanes). Boat launch renovations at Saddle Dam Park should reduce wait times at this site.
- The fishery is managed by WDFW. Yale Lake is considered to have a very good kokanee fishery. Fish are managed under an agreement between PacifiCorp and WDFW. Hatcheries are located in the Lewis River Valley. Three Lewis River hatcheries are funded by PacifiCorp. The Speelyai hatchery (Lake Merwin) is funded by PacifiCorp and Cowlitz PUD.
- Most fish caught are kokanee (73 percent), followed by rainbow trout (23 percent) and cutthroat trout (4 percent). The mean catch rate is 0.3 fish/hour per person. Most anglers are boat anglers. Boat anglers caught 96 percent of the kokanee landed, and 44 percent of the cutthroat trout and 23 percent of the rainbow trout landed.

- Cowlitz PUD and PacifiCorp, in cooperation with the USFS and WDFW, jointly provide an annual fishing derby at the Swift 2 Power Canal. The fish are stocked for this purpose.

4.1.7.2 Fishing Demand Factors

Important fishing-related demand factors to consider are summarized below (see Recreation Demand Analysis [EDAW 2000b] for more detail).

- At Lake Merwin and Swift Reservoir, 24 percent of visitors indicated that they fish from shore while 22 percent indicated that they fish from a boat. Over a third (37 percent) of visitors at Yale Lake went fishing, however, specific distinctions were not made in this survey between the 2 types of fishing. At Lake Merwin and Swift Reservoir, 7 percent of visitors indicated that fishing from a boat was their primary activity, while 3 percent indicated that fishing from shore was their primary activity. At Yale Lake, 10 percent of visitors indicated that fishing was their primary activity.
- Sixty-one percent of area residents indicated that they fish from a boat. This was also the number 1 primary activity in the study area among area residents. Forty-one percent of area residents fish from shore, with 3 percent indicating that this was their primary activity.
- Fishing is increasing in demand annually at 1.91 percent for boat angling and 1.67 percent for bank angling. Over 30 years, demand will increase 90 percent for boat angling and 76 percent for bank angling.
- The number of fishing licenses issued in the Cowlitz and Clark county areas exceeds the state average. About 64 percent of visitors come from these 2 counties.
- At Yale Lake, anglers used a variety of methods to catch fish: 40 percent of anglers surveyed were wading or bank fishing, 32 percent were boat and bank fishing, and 28 percent were boat fishing only (60 percent total used a boat). At Lake Merwin and Swift Reservoir, visitors were evenly distributed among bank and boat anglers, with 38 percent indicating that they were fishing from a bank or wading, 33 percent fishing from a boat only, while 29 percent were fishing from both during their visit
- Due to the popularity of water-based activities in the study area, weather conditions have a significant impact on seasonal and year-to-year visitation. Seasonal weather conditions result in the highest demand for camping occurring predominantly during a peak 14-week recreation season (Memorial Day to Labor Day weekends). During this period, demand for camping is greatest during July and August and on holiday weekends.
- Fishing demand is also strong earlier (April and May) in the year compared to other activities. In response to visitor demand, PacifiCorp maintains a longer operating season at several sites including Eagle Cliff Park, Merwin Park, Yale Park, Speelyai Bay, and Swift Camp.

4.1.7.3 Fishing Capacity Factors

Important fishing-related capacity factors to consider are summarized below (see Draft Recreation Capacity and Suitability Analysis [EDAW 2001] for more detail). Significant findings include the following:

- The ILM Plan (WDFW 1995) goals seek to: (1) develop an integrated plan for cooperatively managing fish on a landscape basis for the next 20 years, (2) establish acceptable biological limits for recreation opportunities consistent with aquatic populations, (3) provide for fishing opportunities and access, (4) minimize recreation/fish conflicts, and (5) protect critical habitat areas.
- Boat anglers use the entire reservoir area, but tend to concentrate in areas away from boat launches where fewer boats are located, particularly the eastern or southern shorelines of each reservoir. Bank anglers may use much of the shoreline for fishing, but tend to concentrate in areas with road access near creeks entering the reservoir, developed recreation sites, and day-use dispersed sites.
- Most anglers (85 percent) indicated that the pool level did not affect their fishing experience. This is to be expected since the surveys were conducted mostly when the pool level was high.

4.1.7.4 Fishing Suitability Factors

Important fishing-related suitability factors to consider are summarized below (see Draft Recreation Capacity and Suitability Analysis [EDAW 2001] for more detail). Most of the existing facilities have sufficient space available to consider the addition of fishing-related facilities such as piers, and docks). Significant findings include the following:

- Many of the areas identified as having high suitability for other facilities (campgrounds, picnicking facilities, boat launches) would be suitable for new fishing-related facilities (piers and docks).
- Most existing boat launch facilities, campgrounds, and other access points have adequate space available for piers and docks.

4.1.7.5 Overall Fishing Needs

Based on a review of the above factors and indicators, potential actions to address overall fishing-related needs have been identified in the study area. It should not be assumed that these are proposed PM&E measures. Site-specific fishing-related needs are discussed in Section 4.2, Recreation Facility and Use Area Needs by Site. Potential actions to satisfy overall fishing-related needs include:

- Consider providing ADA-accessible fishing piers in the study area. There are currently no fishing piers in the study area. At least 1 fishing pier should be provided on each reservoir to meet current and future demand for bank fishing. If new fishing

piers are installed, they should be constructed to adhere with forthcoming ADAAG guidelines for fully accessible piers.

- Consider continued fishery management programs. Good recreational fishing opportunities currently exist at the 3 reservoirs, the Swift 2 Power Canal, and below Merwin Dam. To meet future demand, continued and/or expanded fishery management programs will be needed to maintain and enhance the sport fishery. Consider providing information (signs, brochures) to the public detailing the location of existing public shoreline access points.
- Consider improving fishing access in the Swift 2 Power Canal and Bypass Reach. There are currently no developed recreational facilities associated with the Swift 2 Power Canal and Bypass Reach, though the area receives consistent use by bank anglers. Barrier free fishing access trails and platforms should be considered to accommodate existing use and to provide additional improved facilities to meet future demand. Consider formalizing existing undeveloped parking areas in safe locations and providing an ADA accessible restroom.
- Consider needs identified under boating. As most anglers are boat anglers, consider needs identified in Section 4.1.3, Overall Boating Needs in the Study Area.

4.1.8 Overall Open Space Needs

Overall recreation open space-related supply, demand, capacity, and suitability factors are presented below, followed by a discussion of overall needs. General open space activities analyzed include:

- Hunting
- Wildlife/nature observation and photography

4.1.8.1 Open Space Supply Factors

Important open space-related supply factors to consider are summarized below (see Recreation Supply Analysis [EDAW 2000a] for more detail).

Most of the land in the study area is natural open space used for wildlife habitat, timber production, and hydropower production. Hunting is allowed on some public lands and private lands with permission. Hunting is also allowed on undeveloped PacifiCorp lands where safe. PacifiCorp also coordinates with specific groups for hunting shoots by disabled persons in specific areas.

4.1.8.2 Open Space Demand Factors

Important open space-related demand factors to consider are summarized below (see Recreation Demand Analysis [EDAW 2000b] for more detail).

- Hunting and wildlife/nature observation were not perceived to be common activities among peak season visitors, thus participation information is not known. However, 33 percent of fall season visitors participated in hunting, with 26 percent indicating

that this was their primary activity. Only 2 percent of area residents indicated that they hunt in the area, with only 1 percent indicating that this was their primary activity.

- Open space lands surrounding the reservoirs receive relatively low levels of use because of steep topography, steep cut banks, and dense forest cover. These lands are owned and managed by PacifiCorp, DNR, and other private landowners.
- According to the IAC, annual increases in demand for related activities include: nature study/wildlife observation (2.67 percent), outdoor photography (2.94 percent), sightseeing and exploring (2.53 percent), big game hunting (1.53 percent), bow hunting (1.09 percent), and bird hunting (0.88 percent).
- Over 30 years (by 2035), demand is projected to increase by the following percentages: nature study/wildlife observation (145 percent), outdoor photography (168 percent), sightseeing and exploring (134 percent), big game hunting (68 percent), bow hunting (45 percent), and bird hunting (35 percent).
- The number of hunting licenses issued in the Cowlitz and Clark county areas exceeds the state average. About 64 percent of visitors surveyed came from these 2 counties.

4.1.8.3 Open Space Capacity Factors

Important open space-related capacity factors are summarized below (see Draft Recreation Capacity and Suitability Analysis (EDAW 2001) for more detail). Significant findings include the following:

- The number of access roads with locked gates in the study area, the large areas of private ownership in the area, and various habitat concerns in the area represent important capacity considerations in the study area.
- Hunting-related capacity is limited to specific seasons, specific areas, and within certain harvest limits established by WDFW for the various management units and game.
- Overall facility and social capacity issues are not limiting factors in the study area. However, sensitive ecological areas found in open space lands could limit capacity in the future. In addition, land ownership configurations and recent land sales and new development restrict uses of natural open space.
- One of the goals of the Siouxon Landscape Plan (DNR 1996) is to provide quality hunting opportunities and continued public access.
- Objectives of the ILM Plan (WDFW 1995) include, among others: (1) development of an integrated plan to cooperatively manage wildlife on a landscape basis for the next 20 years, (2) establishment of acceptable biological limits for recreation opportunities consistent with wildlife populations, (3) provision for hunting and

fishing opportunities and access, (4) minimizing recreation/wildlife conflicts, and (5) protecting critical habitat areas as open space.

4.1.8.4 Open Space Suitability Factors

Due to the dispersed and undeveloped nature of open space-related recreational use, some areas could have low suitability due to land ownership configurations, surrounding land sales and land development, and sensitive ecological areas found in some areas.

4.1.8.5 Overall Open Space Needs

Based on a review of the above factors and indicators, potential actions to address overall open space-related needs have been identified in the study area. It should not be assumed that these are proposed PM&E measures. Site-specific open space-related needs are discussed in Section 4.2, Recreation Facility and Use Area Needs by Site. Potential actions to satisfy overall open space-related needs include:

- Consider maintaining adequate open space lands. When combined with surrounding state and federal lands, an adequate supply of Project land for open space-related recreation activities appears to exist. As the surrounding private areas develop, however, the quantity and quality of the remaining open space may diminish for open space recreation purposes. Consider planning for long-term retention of open space to meet both future recreational open space needs and wildlife habitat needs. Consider focusing recreation development only in areas that are highly suitable and retaining the rest as natural open space to retain a semi-primitive experience and for hunting and wildlife observation and photography.
- Consider providing designated wildlife viewing areas. There are currently no designated wildlife viewing areas in the study area. Due to the increasing demand in wildlife viewing over the next 30 years, these types of areas should be provided. One or more Watchable Wildlife sites may be developed for this purpose.
- Consider improving wildlife viewing areas in the Swift 2 Bypass Reach. There are currently no developed wildlife viewing facilities associated with the Swift 2 Power Canal and Bypass Reach. Due to the demand in wildlife viewing and photography over the next 30 years, these types of areas should be provided. One or more Watchable Wildlife sites with trails may be developed for this purpose.

4.2 RECREATION FACILITY AND USE AREA NEEDS BY SITE

The previous section addressed overall “big picture” needs in the study area. This section addresses existing and future recreation needs on a site-by-site basis by reservoir. It should be noted that these are not proposed PM&E measures. As such the word “consider” is used in this section. These detailed needs are also summarized in Table 4.2-1.

While not PM&E measures, the needs identified in this analysis were compared to potential recreation actions that may become PM&Es. The potential recreation actions were developed by the RRG after Mark Stenberg (PacifiCorp), Jim Eychaner (IAC), and

Chuck Everett (EDAW) had identified broad categories of recreation actions. These broad categories were then discussed in meetings with the RRG and developed into specific recreation actions for sites in the Project area. A comparison was then done between the potential actions proposed by the RRG and the recreation needs discussed in this analysis (and identified in the Recreation Capacity and Suitability Analysis). The results of this comparison are detailed in Attachment A.

Recreation needs are organized and presented below for each reservoir by campgrounds, day use/picnic areas, boating-related facilities, trails and interpretation, and undeveloped dispersed use areas. Each site or use area is discussed in detail. Unless specified otherwise, it is assumed that the general character and overall level of development at each site will be consistent with the existing conditions and type of recreation experience. Lake Merwin and the river access sites below Merwin Dam are discussed first, followed by Yale Lake, Swift Reservoir, and the Swift 2 Power Canal and Bypass Reach.

4.2.1 Lake Merwin and below Merwin Dam

This section discusses specific needs at the various sites and facilities on Lake Merwin and below Merwin Dam including campgrounds, day use/picnic areas, boating-related facilities, trails, interpretive facilities, and dispersed use areas. Site specific actions or facilities addressed include: (1) the campground at Cresap Bay; (2) day use/picnic areas at Merwin Park and Cresap Bay; (3) boating facilities at Cresap Bay, Speelyai Bay and possibly at Merwin Park; (4) potential new trails; and (5) management of 24 shoreline dispersed use sites.

4.2.1.1 Campgrounds

Cresap Bay Campground

The newest facility on Lake Merwin, Cresap Bay Campground is the only campground on the reservoir. This 58-site campground is the first PacifiCorp campground that visitors approaching from the west or south encounter. This facility includes a 15-site group camp as well as a boat moorage area for campers. Cresap Bay is typically only open from Memorial Day through Labor Day due to its location within the Merwin Wildlife Management Area. There are few existing needs at this campground since it is a relatively new facility.

Existing facility and use area needs

- Consider site improvements to adhere with ADAAG. Based on the current number of campsites (58), 4 fully accessible campsites would need to be provided.

Future facility and use area needs

- Consider providing additional campsites at Yale Lake and surrounding private RV resorts to help meet future demand. Cresap Bay Campground cannot be expanded. Specific alternatives for distributing campsites and group sites are discussed in Section 4.1.1.

- Consider the creation of an additional 15-site group camping area at Yale Lake or Swift Reservoir to meet future demand.
- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant site information

- This facility is relatively new and was well designed. The facilities are not in need of any significant repair or maintenance.
- On a seasonal basis, an average of 33 of the 58 (57 percent) sites are occupied. This occupancy rate rises to 80 percent for all days during July and August, the peak use seasons in the study area, and 93 percent for weekend days during those months. During the 1999 season, utilization of the campground was at 100 percent only once, but was greater than 90 percent on 20 days. The seasonal utilization rate is not projected to reach 100 percent until 2024 if capacity remains unchanged.
- Recreational use of this facility is considered to be at capacity, and exceeds capacity on weekends during the peak season. The primary limiting factors at this campground are the number of facilities, specifically the number of available campsites, and the surrounding Merwin Wildlife Area, which is an ecological limiting factor. While considered to be at capacity, this facility can accommodate higher use levels because of its newer design compared to other older campgrounds.
- PacifiCorp staff receives up to 6 requests a week for the group facility at Cresap Bay after it has reached capacity. This indicates that demand is high for this type of activity and facility.
- The campground is currently bordered on 2 sides by steep slopes and Lake Merwin. Expansion of this facility is severely constrained.
- The average crowding score at this site is 2.7 (scale of 1 to 7). Although this is a relatively low visitor perception of crowding, this score is slightly higher than the average for all visitors to Lake Merwin (2.4).

4.2.1.2 Day Use/Picnic Areas

Merwin Park

Merwin Park is the oldest PacifiCorp facility in the study area, and is also the first recreation facility that visitors approaching from the west encounter. This large, 16-acre day use area contains a large lawn area, new restroom facility, playground, swimming beach, and 135 picnic tables. There are several existing needs at this site, primarily focused on improving existing facilities rather than the provision of new facilities. Site managers should consider monitoring use levels in the future.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
Operation and Maintenance				
Project Recreation Facilities and Use Areas	<ul style="list-style-type: none"> Consider implementing an Operations and Maintenance Plan in the RRMP. This program may include standards for roads, utilities, facilities, and landscape maintenance. Consider additional visitor management controls in the project area at recreation facilities, undeveloped dispersed sites, and on the reservoirs' surface water. 	<ul style="list-style-type: none"> Update the Operations and Maintenance Plan every five years and implement. 	<ul style="list-style-type: none"> Update the Operations and Maintenance Plan every five years and implement. 	<ul style="list-style-type: none"> Update the Operations and Maintenance Plan every five years and implement.
Overnight Campgrounds				
Cresap Bay	<ul style="list-style-type: none"> Consider site improvements to adhere with ADAAG; 4 fully accessible campsites would need to be retrofitted. 	<ul style="list-style-type: none"> Consider providing additional campsites at Yale Lake and surrounding private RV resorts. Consider the creation of an additional 15-site group camping area at Yale Lake or Swift Reservoir. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
Cougar Campground - Alternative 1 (Renovation of existing campground no expansion of capacity.)	<ul style="list-style-type: none"> Consider site improvements to adhere with ADAAG. 3 fully accessible campsites would need to be retrofitted. Consider abandoning two shoreline campsites or installing shoreline protection to reduce shoreline erosion. Evaluate need to modernize gray water sumps. 	<ul style="list-style-type: none"> Consider installing interpretive facilities. Consider renovating some of the campsites, including those along the shoreline. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Cougar Campground Alternative 2 (Expansion of Capacity)	<ul style="list-style-type: none"> Evaluate need to modernize gray water sumps. No actions 	<ul style="list-style-type: none"> Consider expansion of the campground. Sites could be added to the north of the existing loop and/or in the area created by possible relocation of the day use area. New site creation would begin in this period and could be phased over the following two periods. Consider the creation of an additional group camping area (approx. 15 sites). Consider installing interpretive facilities. Consider renovating some of the campsites, including those along the shoreline. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Campground size is assumed to be larger than the current level. Creation of at least some of the sites identified in previous period is assumed to occur during this period. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Campground size is assumed to be larger than the current level. Creation of at least some of the sites identified in previous period is assumed to occur during this period. Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
Beaver Bay – Alternative 1 (Continue Camping and Enhance Wetlands)	<ul style="list-style-type: none"> Consider site improvements to adhere with ADAAG; 5 fully accessible campsites would need to be retrofitted. Evaluate need to modernize gray water sumps. 	<ul style="list-style-type: none"> Consider renovation and redesign of the campground, including restroom facilities. Renovation would focus on the main circulation system, providing additional buffer and vegetation between campsites, and hardening and delineating sites, increasing the wetland buffer area, and developing shoreline campsites again. Consider construction of a wetland interpretive trail and repair/replacement of site furnishings as needed. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Beaver Bay - Alternative 2 (Site Converted to Day Use Only)	<ul style="list-style-type: none"> No actions 	<ul style="list-style-type: none"> Consider possible removal of campground to provide for a larger day use area. Demand would be accommodated by constructing a new campground or expansion at Cougar Campground. 	<ul style="list-style-type: none"> No actions. Campground replaced by day use area. 	<ul style="list-style-type: none"> No actions. Campground replaced by day use area.
Beaver Bay - Alternative 3 (Expanded Day-Use and Boating Facilities, Convert Remaining Camping to Group Camps.)	<ul style="list-style-type: none"> No actions 	<ul style="list-style-type: none"> Consider renovation and redesign of the campground to create approximately three group camps. Renovation would focus on the main circulation system, providing additional buffer and vegetation between campsites, and hardening and delineating sites, increasing the wetland buffer area. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
		<ul style="list-style-type: none"> Consider renovating restroom facilities. Consider construction of a wetland interpretive trail and repair/replacement of site furnishings as needed. Consider improving the boat ramp to two lanes with boarding floats and expanded boat trailer parking. Consider periodically monitoring use levels to determine if thresholds have been reached. 		
Swift Camp	<ul style="list-style-type: none"> Consider site improvements to adhere with ADAAG. 5 fully accessible campsites would need to be retrofitted. Consider increased maintenance of campsites and other facilities. Consider replacement of the gray water sumps. 	<ul style="list-style-type: none"> Consider expansion of the campground to meet Projected demand. Consider keeping restroom facilities open during the shoulder season months, particularly if use levels increase during this period. Consider expansion of the existing campfire program area. Consider the creation of an additional group camping area (approx. 15 sites). Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
New Campground	<ul style="list-style-type: none"> No actions. 	<ul style="list-style-type: none"> Consider construction of a new campground. New site creation would begin in this period and could be phased over the following two periods. 	<ul style="list-style-type: none"> Consider the creation of additional sites, assumed to be a portion of the total identified in the previous period. 	<ul style="list-style-type: none"> Consider the creation of additional sites, assumed to be a portion of the total identified in the previous period.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
		<ul style="list-style-type: none"> Consider the creation of two or three group camping areas (15 sites). Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. Consider the creation of an additional group camping area (15 sites). 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Day Use Areas				
Merwin Park	<ul style="list-style-type: none"> Consider installing signage that complies with current ADA requirements at the accessible restroom. Consider maintenance to the playground equipment, picnic tables, drinking fountains, and access road. Consider developing an ADA accessible swimming area at Merwin Park. Consider developing an ADA accessible fishier pier or float a Merwin Park or other suitable location on lake Merwin. Consider site improvements to adhere with ADAAG. If the current number of picnic sites is retained, 68 fully accessible tables would need to be provided. Alternatively, reduce existing table to meet current demand and adjust number of accessible tables accordingly. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. Consider installing a group reservation picnic shelter area. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Speelyai Bay Park	<ul style="list-style-type: none"> Consider installing signage that complies with current ADA requirements at the accessible restroom. Consider maintenance or replacement of worn picnic tables. 	<ul style="list-style-type: none"> Consider providing additional parking areas along the access road to the facility. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
	<ul style="list-style-type: none"> Consider improving the interior of restroom building to adhere with ADAAG. Consider site improvements to adhere with ADAAG. 13 fully accessible tables would need to be provided. 			
Cresap Bay (day use area)	<ul style="list-style-type: none"> Consider site improvements to adhere with ADAAG. 10 fully accessible tables would need to be provided. Consider developing an ADA accessible swimming area at Merwin Park. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Saddle Dam Park	<ul style="list-style-type: none"> Consider day-use site improvements to adhere with ADAAG. Based on the current number of picnic tables (10), 5 fully accessible tables would need to be provided. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Yale Park	<ul style="list-style-type: none"> Consider site improvements to comply with draft proposed ADAAG guidelines. 22 fully accessible tables would need to be provided. Consider developing an ADA accessible fishing pier or float at Yale Park or other suitable location on Yale Lake. Consider formalizing and expanding the parking area. Consider opening the dump station during daytime hours (existing dump station may not have adequate queuing distance for safe use from SR503). Complete Measures from Yale Application. 	<ul style="list-style-type: none"> Consider providing additional picnic tables. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
	•			
	•		•	•
Cougar Park	<ul style="list-style-type: none"> Consider site improvements to comply with draft proposed ADAAG guidelines. 8 fully accessible tables would need to be provided. 	<ul style="list-style-type: none"> As part of the I&E plan, consider upgrading the existing amphitheater seating area by constructing a small 50-person amphitheater with expansion capability near Cougar Creek for campfire talks and other educational or group opportunities. Consider site improvements such as new interpretive facilities. Consider formalizing the parking area to improve efficiency. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Beaver Bay Park Alternative 1 (Renovations to site with no expansion of capacity.).	<ul style="list-style-type: none"> Consider site improvements to comply with draft proposed ADAAG guidelines. 3 fully accessible tables would need to be provided. 	<ul style="list-style-type: none"> Consider providing a new restroom facility and the development of a wetland interpretive trail. (Trail planning is underway.) Consider minor expansion to parking area. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Beaver Bay Park – Alternative 2, Expansion of site into area created by modification of	<ul style="list-style-type: none"> No actions. 	<ul style="list-style-type: none"> Consider expanding the day use area to the east to address current and future demand. Consider providing a new restroom facility. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
campground.		<ul style="list-style-type: none"> Consider expanding the parking area, especially if the day use area is enlarged. Consider construction of a group reservation picnic shelter. Consider creating a buffer between site and adjacent wetlands. Consider improvements to the swimming area. Consider periodically monitoring use levels to determine if thresholds have been reached. 		
Swift Camp (day use area)	<ul style="list-style-type: none"> Consider site improvements to adhere with forthcoming ADAAG guidelines. 3 fully accessible tables would need to be provided. Consider increased maintenance in the day use area. 	<ul style="list-style-type: none"> Consider formalizing the parking area to improve efficiency. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Eagle Cliff Park	<ul style="list-style-type: none"> Consider site improvements to comply with draft proposed ADAAG guidelines. 5 fully accessible tables would need to be provided. Consider repair of informational signs, restrooms, and fire rings and general maintenance of picnic tables. Consider renovating existing day-use area west of the bridge. Consider removing day-use area west of the bridge and replacing with small picnic area and vault toilet in small flat area immediately to the east of the existing parking area. Consider resurfacing the parking area. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
Boating-Related Facilities				
Speelyai Bay Boat Launch	<ul style="list-style-type: none"> Consider installing signage that complies with current ADA requirements at the accessible restroom. Consider site improvements to comply with draft proposed ADAAG guidelines (including boat launch facilities). Consider improving restroom interior to comply with ADAAG. 	<ul style="list-style-type: none"> Consider providing additional parking areas along the access road to the facility. Consider replacing and extending the boat launch to provide year-round access to the reservoir and raise to modern standards. Consider constructing a new boat launch at Merwin Park to relieve congestion at the Speelyai Bay boat launch. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Cresap Bay Boat Launch	<ul style="list-style-type: none"> Consider minor modifications to the boarding floats. 	<ul style="list-style-type: none"> Consider providing additional parking along the access road to the facility. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Saddle Dam Park Boat Launch	<ul style="list-style-type: none"> No actions. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Yale Park Boat Launch	<ul style="list-style-type: none"> Consider site improvements to adhere with ADAAG. Consider lengthening at least 1 lane of the boat ramp. Consider formalizing and expanding the parking area. Consider replacing the boarding floats. Complete Measures from Yale 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
	Application.			
Cougar Camp Boat Launch	<ul style="list-style-type: none"> Consider lengthening at least 1 lane of the boat ramp. Consider formalizing the parking area to improve efficiency. Consider replacing the boarding floats. Consider site improvements to adhere with ADAAG. 	<ul style="list-style-type: none"> Consider installing boat moorage facilities for campers Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Beaver Bay Boat Launch	<ul style="list-style-type: none"> Consider repairing and stabilizing the side slopes at the boat launch. Consider replacing the boarding floats. Consider site improvements to adhere with ADAAG. 	<ul style="list-style-type: none"> Consider the construction of an additional boat launch lane (increase total to 2 lanes). Consider expanding the parking area, especially if the day use area is enlarged. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Swift Camp Boat Launch	<ul style="list-style-type: none"> Consider site improvements to adhere with ADAAG. Consider formalizing the parking area near the boat launch/day use area to improve efficiency. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
New Boat Launch Facilities	<ul style="list-style-type: none"> No actions. 	<ul style="list-style-type: none"> Consider a new boat launch with 2 lanes at Merwin Park. Additional support facilities such as boarding floats, parking, and ADA-facilities should also be considered. Consider a new boat launch with 1 lane on Swift Reservoir. Potential location would be on the north shore, mid-reservoir. Additional support facilities such as boarding floats, parking, and 	<ul style="list-style-type: none"> Consider periodically monitoring use levels at new boat launch facilities to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels at new boat launch facilities to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
		ADA-facilities should also be considered.		
Non Motorized Trails and Interpretation & Education				
Lake Merwin	<ul style="list-style-type: none"> Consider implementing the results of the trail feasibility study. Focus on trail segments with low impacts to natural resources and local residents on the Merwin's north shore. Consider modifications to the Cresap Bay Nature Trail to include interpretive features (signs, brochures). Consider implementing a trail sign program as trails are developed. 	<ul style="list-style-type: none"> Consider providing ADA-accessible recreation trails at developed sites as they are renovated. Consider short loop trails at each major recreation site. Consider additional longer trails that would connect to the spine trail. 	<ul style="list-style-type: none"> No actions. 	<ul style="list-style-type: none"> No actions.
Yale Lake	<ul style="list-style-type: none"> Consider implementing the results of the trail feasibility study. Focus on the IP Road. Consider developing a nature trail at the Beaver Bay wetlands. Consider developing a Watchable Wildlife Site at the Beaver Bay wetlands. Consider implementing a trail sign program as trails are developed. 	<ul style="list-style-type: none"> Consider providing ADA-accessible recreation trails at developed sites as they are renovated. Consider short loop trails at each major recreation site. Consider developing a trail from Cougar Camp to Beaver Bay. 	<ul style="list-style-type: none"> No actions. 	<ul style="list-style-type: none"> No actions.
Swift Reservoir	<ul style="list-style-type: none"> No actions. 	<ul style="list-style-type: none"> Consider providing ADA-accessible trail opportunities. Consider implementation of the Trail Feasibility Study. 	<ul style="list-style-type: none"> No actions. 	<ul style="list-style-type: none"> No actions.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
Undeveloped Dispersed Use Shoreline Sites				
Lake Merwin	<ul style="list-style-type: none"> Consider providing periodic site cleanup. Consider increased management presence including law enforcement patrols. Consider prohibiting dispersed overnight boat-in camping in some locations due to environmental concerns. Consider designating and developing 6 overnight shoreline campsites and 5-shoreline day use areas. Potential development could include the installation of tent pads, composting toilets or floating restrooms, picnic tables, fire rings, and boat moorage dock. Enforcement and management of use at these sites should be increased. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future. Consider the designation of a non-motorized boating area upstream from the “no wake” buoys at Cresap Bay. If needed, work with the counties to pass ordinances making this area a non-motorized use area only. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future.
Yale Lake	<ul style="list-style-type: none"> Consider providing periodic site clean up. Consider increased management presence including law enforcement patrols. Consider prohibiting dispersed overnight boat-in camping at some locations on Yale Reservoir due to ecological concerns (litter, human waste) and increase management of the shoreline. Consider designating and developing 20 overnight shoreline campsites and 10-shoreline day use sites. Potential development could include the 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future. As an alternative, consider prohibiting dispersed overnight boat-in camping on Merwin and provide replacement capacity on Yale and Swift. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
	installation of tent pads, composting toilets or floating restrooms, picnic tables, fire rings, and boat moorage dock. Enforcement and management of use at these sites should be increased.			
Swift Reservoir	<ul style="list-style-type: none"> Consider providing periodic site cleanup. Consider increased management presence including law enforcement patrols. Consider prohibiting dispersed overnight boat-in camping at some locations on Swift Reservoir due to sanitation concerns (litter, human waste) and increase management of the shoreline. Consider designating and developing 13 overnight shoreline campsites, and up to 2-shoreline day use sites. Potential development could include the installation of tent pads, compost toilets or floating restrooms, picnic tables, fire rings, and boat moorage dock. Enforcement and management of use at these sites should be increased. Note: What if island was included and six sites from Merwin where moved to Yale and Swift? 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future.
Lower River Recreation Sites				
Merwin River Access	<ul style="list-style-type: none"> Consider repairing boat launch for launching of small fishing boats. Consider additional signage to make site easier to locate from primary access roads. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
Lewis River Fish Hatchery River Access	<ul style="list-style-type: none"> Consider installing portable toilets (ADA-accessible). Consider additional signage to make site easier to locate from primary access roads. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Cedar Creek River Access	<ul style="list-style-type: none"> Consider repairing or replacing the vault toilets (consider ADA-accessibility). Consider additional signage to make site easier to locate from primary access roads. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. Consider obliterating two old boat ramps that are not being used. Consider repairing erosion control measures around boat ramp. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Haapa River Access	<ul style="list-style-type: none"> Site recently renovated. No actions. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Island River Access	<ul style="list-style-type: none"> Consider installing permanent vault toilets. 	<ul style="list-style-type: none"> Consider upgrading boat ramp & parking. Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Johnson Creek Access	<ul style="list-style-type: none"> Site recently renovated. No actions. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.
Swift 2 Power Canal and Bypass Reach Recreation Sites				
Power Canal and Bypass Reach	<ul style="list-style-type: none"> Consider providing ADA-accessible fishing access at the power canal. Consider formalizing existing undeveloped parking areas at the power canal. Consider improving trail access to meet ADA guidelines and providing interpretive signs to communicate trail opportunities at the power canal. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached. 	<ul style="list-style-type: none"> Consider periodically monitoring use levels to determine if thresholds have been reached.

Table 4.2-1. Existing and Future Recreation Needs by Site in the Lewis River Study Area, Current to 2035 (cont.)

Sites and Activities	Existing Needs	Projected Future Needs		
	2001-2005	2005 to 2015	2015 to 2025	2025 to 2035
	<ul style="list-style-type: none"> Consider installing ADA-accessible toilets at the power canal. Consider providing and/or designating trails for hunting and wildlife observation in the bypass reach consistent with resource values. Consider providing a Watchable Wildlife site adjacent to FR 90 overlooking the bypass reach, or other suitable location nearby. 			

Existing Facility and Use Area Needs

- Consider maintenance of the playground equipment, picnic tables, and drinking fountains.
- Consider maintenance to access road.
- Consider improvements to the grass parking area, including replacement of missing wheelstops.
- Consider installing signage that complies with current ADA requirements at the accessible restroom.
- Consider site improvements to adhere with ADAAG. Based on the current number of picnic tables (135), 68 fully accessible tables would need to be provided if they remain.

Future Facility and Use Area Needs

- Consider installing a group picnic shelter area.
- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Current utilization (7 percent) at this site is very low. It is unlikely that utilization will exceed the 75 percent peak season weekend threshold within the next 30 years if conditions remain unchanged.
- The most common activities at Merwin Park are swimming and relaxing. Picnicking is the next most common activity. Other recreation activities were not commonly observed at this site.
- Use of this facility could be potentially limited by the number of available picnic tables and parking spaces, however, these are currently utilized at levels below capacity. Data from 1998 studies indicates that an average of 37 out of 500 (7 percent) parking spaces are occupied on an average day.
- A typical limiting factor for a facility such as this would be facility capacity, particularly the number of available parking spaces. However, with 500 spaces, facility capacity is not a limiting factor at the present time, but could be in the future. Physical or spatial capacity, at some time in the future, could potentially limit use if the facilities are ever fully utilized. Overall, since the site is generally built out, physical expansion is considered limited.
- Aside from some small areas of shoreline erosion, there are few ecological concerns at this site.

- The average crowding score at this facility was only 1.7 (scale of 1 to 7), the second lowest of facilities included in this analysis.

Cresap Bay (Day Use Area)

This is the newest day use area on Lake Merwin, as well as the most heavily used day use facility in the study area. There is a swimming area, 20 picnic tables, restroom facilities, and a short trail. There are few existing needs at this site, primarily focused on providing ADA-accessible facilities. Site managers should consider monitoring use levels in the future.

Existing Facility and Use Area Needs

- Consider site improvements to adhere with ADAAG. Based on the current number of picnic tables (20), 10 fully accessible tables would need to be provided.

Future Facility and Use Area Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- This site is in the vicinity of the Merwin Wildlife Area which limits any significant expansion of the site, both physically or temporally.
- Cresap Bay Day Use Area is the most popular area for swimming in the study area.
- This facility is relatively new, and the facilities are not in need of any significant repair or maintenance.
- According to data from the 1998 visitor survey, an average of 80 percent of the parking spaces at this facility are utilized during an average seasonal weekend day. This is the highest utilization level of any facility, day or overnight, in the study area. As many as 200 vehicles have been documented at this facility during peak holiday periods. Once the parking area is at capacity, visitors park along the access road to the facility.
- Some of the popularity of this facility is likely due to the fact that Cresap Bay is still relatively new and is in good condition. The peak season weekend utilization rate has already exceeded the 75 percent threshold.
- Current levels of recreational use at this facility exceed capacity, particularly on peak season weekends. High utilization of the current facilities, specifically the parking lot, indicates that use is exceeding capacity. Extensive informal overflow parking occurs along the access road during these times.

- The average perceived crowding score for visitors to this site was 2.7 (scale of 1 to 7), higher than the average score for Lake Merwin (2.4); however, this score still reflects only slight levels of crowding.

Speelyai Bay (Day Use Area)

This year-round facility is a popular location for picnicking, swimming, and relaxing, as well as boating. There are 25 picnic tables, restroom facilities, and a swimming beach at this site. There are several existing needs at this site, primarily focused on improving existing facilities rather than the provision of new facilities. Site managers should consider additional parking facilities in the future.

Existing Facility and Use Area Needs

- Consider maintenance or replacement of worn picnic tables.
- Consider installing signage that complies with current ADA requirements at the accessible restroom. Also, consider improving the interior of the restroom building to adhere with ADAAG.
- Consider site improvements to adhere with ADAAG. Based on the current number of picnic tables (25), 13 fully accessible tables would need to be provided.

Future Facility and Use Area Needs

- Consider providing additional formal parking areas along the access road to the facility.
- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Facility capacity at Speelyai Bay is primarily focused on the number of parking spaces. Data from 1999 indicates that peak season weekend utilization at this site was 73 percent, just below the threshold level set at 75 percent. As a result, this site is now considered to be at or above capacity.
- This relatively small facility is bounded by the lake on the south and east and steep topography on the north and west. Some potential exists for additional formal parking areas along the access road to the facility. Physical limitations prevent significant enlargement of the existing parking area.
- Current levels of recreational use at this facility sometimes exceed parking capacity, particularly on peak season weekends. High utilization of the current facilities, specifically the parking lot, indicates that use is exceeding capacity. During peak holiday periods, as many as 245 vehicles have been observed at this facility (overflow

condition), representing nearly 3 times the actual facility capacity of Speelyai Bay. Extensive informal overflow parking occurs along the access road during these times.

- The average crowding score at this site is 2.4 (scale of 1 to 7), representing a relatively low visitor perception of crowding.

4.2.1.3 Boating-Related Facilities

Cresap Bay (Boat Launch)

The boat launch at Cresap Bay is the newest launch on Lake Merwin and is very popular among boaters due to the new condition of the facilities. There are 22 boat trailer parking spaces at this site and the facilities at the ramp are nearly ADA-accessible (grab bars are needed on the boarding floats). Although the ramp lanes at this site are long and deep, Cresap Bay is only open from late May until the second week of September due to the proximity of the Merwin Wildlife Area. There are no existing needs at this site, due to the relatively new condition of the boat launch. Site managers continue to monitor use at the boat launch.

Existing Facility and Use Area Needs

- Consider minor modifications to the boarding floats.

Future Facility and Use Area Needs

- Consider providing additional formal parking along the access road to the facility.
- Consider periodically monitoring use levels to determine when thresholds have been reached.

Relevant Site Information

- This 2-lane boat launch has a minimum launch elevation of 210 feet msl, which makes it fully accessible during the period when the site is open.
- This facility is not in need of any significant repair or maintenance.
- According to data from the 1998 visitor survey, an average of 80 percent of the parking spaces at this facility were utilized during an average seasonal weekend day. This is the highest utilization level of any facility, day or overnight, in the study area. As many as 200 vehicles have been documented at this facility during peak holiday periods. Once the parking area is at capacity, visitors park along the access road to the facility.
- Some of the popularity of this facility is likely due to the fact that Cresap Bay is still relatively new and is in good condition. The peak season weekend utilization rate has already exceeded the 75 percent threshold level set as its capacity.

- Current levels of recreational use at this facility exceed capacity, particularly on peak season weekends. High utilization of the current facilities, specifically the parking lot, indicate that use is exceeding capacity. Extensive informal overflow parking occurs along the access road during these times.
- The average perceived crowding score for visitors to this site was 2.7 (scale of 1 to 7), higher than the average score for Lake Merwin (2.4); however, this score still reflects only slight levels of crowding.

Speelyai Bay (Boat Launch)

The boat launch at Speelyai Bay is the first boat launch in the study area that visitors approaching from the west encounter. Located adjacent to the day use area, this 2-lane boat launch has 56 boat trailer spaces and a restroom facility. There are several existing needs at this site, primarily focused on improving existing facilities rather than the provision of new facilities. Site managers should consider additional parking facilities in the future as well as lengthening of the boat ramp lanes.

Existing Facility and Use Area Needs

- Consider maintenance to the dock associated with the boat ramp.
- Consider restroom modifications to comply with the existing ADAAG related to the interior layout and hardware placement.
- Consider site improvements to comply with draft proposed ADAAG guidelines (including boat launch facilities).

Future Facility and Use Area Needs

- Consider providing additional formal parking areas along the access road to the facility.
- Consider extending the boat launch to provide year-round access to the reservoir and potentially adding a second ramp lane at this location.
- Consider periodically monitoring use levels to determine if thresholds have been reached.
- Consider constructing a new boat launch at Merwin Park to relieve congestion at the Speelyai Bay boat launch.

Relevant Site Information

- Facility capacity at Speelyai Bay is primarily focused on the number of parking spaces. Data from 1999 indicates that peak season weekend utilization at this site is

73, just below the 75 percent threshold capacity level. Use levels at this site are considered to be at or exceeding capacity at this time.

- This relatively small facility is bounded by the lake on the south and east and steep topography on the north and west. Some potential exists for additional parking areas along the access road to the facility, however, physical limitations prevent significant enlargement of the existing parking area.
- Current levels of recreational use at this facility sometimes exceed capacity, particularly on peak season weekends. High utilization of the current facilities, specifically the parking lot, indicates that use is exceeding capacity. During peak holiday periods, as many as 245 vehicles have been observed at this facility (overflow condition), representing nearly 3 times the actual facility capacity of Speelyai Bay. Extensive informal overflow parking occurs along the access road during these times.
- The average crowding score at this site is 2.4 (scale of 1 to 7), representing a relatively low visitor perception of crowding.
- The boat launch at Speelyai Bay has a minimum launch elevation of 233 feet msl, and thus can be accessed fully during the summer recreation season. Depending on water levels; however, the boat launch may not provide boating access during the winter months.

4.2.1.4 Non-Motorized Trails

The only formally developed trail facilities at Lake Merwin are a 1.5-mile trail at Cresap Bay and a short quarter-mile trail from Merwin Park that leads to Marble Creek. There are currently no interpretive facilities at these trails. Several undeveloped user defined trails exist, particularly in the Merwin Wildlife Area.

Existing Facility and Use Area Needs

- When completed, consider implementing the results of the Trail Feasibility Study. Focus on trail segments from Merwin Park to Cape Horn and from Rock Creek to Cresap Bay, or portions of these trail segments.
- Consider modifications to the Cresap Bay Nature Trail to include interpretive features (signs, brochures).
- Consider implementing a trail sign program as trails are developed.

Future Facility and Use Area Needs

- Consider providing ADA-accessible recreation trails at developed sites as they are renovated.

Relevant Site Information

- Regional demand data indicates that the existing and future demand for hiking will remain high.
- There are few developed hiking opportunities directly adjacent to Lake Merwin, however, recent improvements at Cresap Bay have created a 1.5 mile trail that begins in the park (Cresap Bay Nature Trail).
- There are numerous short trails at the PacifiCorp campgrounds and day use sites on the reservoir that provide access to the shoreline or other portions of the facilities.
- Merwin Park has a short quarter-mile trail along the north shore that goes to a waterfall at Marble Creek.

4.2.1.5 Dispersed Shoreline Use Areas

Many visitors use the reservoir shorelines at Lake Merwin for dispersed use such as hiking, fishing, boat-in camping, and day use picnicking. Shoreline sites lack any development such as restroom facilities or picnic tables. Fires are not permitted except in designated signed locations or in developed campgrounds.

PacifiCorp has identified and mapped approximately 24 separate dispersed shoreline sites used primarily for dispersed day-use picnicking. There is some overnight camping at several of these sites. Specifically, about 6 of the sites could be used for camping since they are larger and flatter than the other sites. The remainder of the sites show signs of day-use only or are not suitable for overnight use. No water or toilet facilities are available at these sites.

Most (21 of 24) of the documented dispersed sites are only accessible by boat. The majority of the sites are located at the eastern end of the reservoir with sites clustered near the developed facilities of Cresap Bay and Speelyai Bay. These are also the most heavily used sites, particularly those on the shoreline between Cresap Bay and the point across from Speelyai Bay.

Existing Use Area Needs

- Consider providing periodic site cleanup.
- Consider increased management presence including law enforcement patrols.
- Consider designating and developing as many as 6 shoreline campsites and 5 shoreline day use sites. Potential development could range from only a fire ring/cooking grill to the installation of picnic tables, fire rings, sanitation facilities, and possibly a formalized tie-up point. Enforcement and management of use at these sites should be increased over time as needed. The visitor experience at these sites should remain semi-primitive.

- Consider prohibiting dispersed overnight boat-in camping or day use in some locations on Lake Merwin due to environmental concerns (fire, vegetation damage, wildlife harassment, litter, and human waste). Provide increased management of the shoreline as needed.

Future Use Area Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached or if an increased management response will be required in the future.

4.2.1.6 River Access Sites Below Merwin Dam

There are 6 river access sites (Merwin, Lewis Hatchery, Cedar Creek, Haapa, Island, and Johnson Creek) below Merwin Dam on the Lewis River. These sites provide beach fishing access opportunities and boat launches on the lower river below the Project. All of the access points have small, gravel parking areas and access to the river. Two of the access points (Island and Cedar Creek) have developed, concrete boat ramps, while 3 (Haapa, Merwin Hatchery, and Lewis River Hatchery) have undeveloped, gravel ramps. The Johnson Creek Access does not have a boat ramp. Most of the river access points are in need of general maintenance, particularly to boat launch facilities and associated access roads.

Merwin River Access

Existing Facility Needs

- Consider repairing boat launch for launching of small fishing boats.
- Consider additional signage to make site easier to locate from primary access roads.

Future Facility Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Most visitors use this site for day use activities.
- Many visitors at this site are anglers and are attracted to this site by its convenient river access. According to data from the 1998 visitor survey, most anglers have used this site in prior years.
- Boat launch facilities and access roads to this site are in need of general maintenance.

Lewis River Fish Hatchery Access

Existing Facility Needs

- Consider installing portable toilets (ADA-accessible).
- Consider additional signage to make site easier to locate from primary access roads.

Future Facility Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Most visitors use this site for day use activities.
- Many visitors at this site are anglers and are attracted to this site by its convenient river access. According to data from the 1998 visitor survey, most anglers have used this site in prior years.
- Boat launch facilities and access roads to this site are in need of general maintenance.

Cedar Creek River Access

Existing Facility Needs

- Consider repairing or replacing the vault toilets (consider ADA-accessibility).
- Consider additional signage to make site easier to locate from primary access roads.

Future Facility Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.
- Consider obliterating two old boat ramps that are not being used. Consider repairing erosion control measures around boat ramp.

Relevant Site Information

- Most visitors use this site for day use activities.
- Many visitors at this site are anglers and are attracted to this site by its convenient river access. According to data from the 1998 visitor survey, most anglers have used this site in prior years.
- Boat launch facilities and access roads to this site are in need of general maintenance.

Haapa River Access

Existing Facility Needs

- Site recently renovated. No actions.

Future Facility Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Most visitors use this site for day use activities.
- Many visitors at this site are anglers and are attracted to this site by its convenient river access. According to data from the 1998 visitor survey, most anglers have used this site in prior years.

Island River Access

Existing Facility Needs

- Consider installing permanent vault toilets.

Future Facility Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.
- Consider upgrading boat ramp & parking.

Relevant Site Information

- Most visitors use this site for day use activities.
- Many visitors at this site are anglers and are attracted to this site by its convenient river access. According to data from the 1998 visitor survey, most anglers have used this site in prior years.
- Boat launch facilities and access roads to this site are in need of general maintenance.

Johnson Creek Access

Existing Facility Needs

- Site recently renovated. No actions.

Future Facility Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Renovations to this site were completed in 2000.
- There is a gravel parking area with 10 spaces and a quarter-mile access trail to the confluence of the Johnson Creek and the Lewis River at this site.
- The site is used primarily by day use, bank anglers.

4.2.2 Yale Lake

This section discusses specific needs at the various sites and facilities on Yale Lake including campgrounds, day use/picnic areas, boating-related facilities, trails, interpretive facilities, and dispersed use areas. Site specific facilities addressed include: (1) campgrounds at Beaver Bay and Cougar Camp, and a potential new campground site; (2) day use/picnic areas at Beaver Bay, Saddle Dam, Cougar Camp, and Yale Park; (3) boating facilities at Saddle Dam, Beaver Bay, Cougar Camp, and Yale Park; (4) trails; and (5) approximately 45 shoreline dispersed use sites.

4.2.2.1 Campgrounds

Cougar Camp

This 45-site campground is the most popular camping facility in the study area. Cougar Camp is a tent-only facility in a forested area on the lake, giving the site a rustic natural feel that is popular with visitors. There is also a 15-site group facility at the campground. There are several existing needs at this site, including improving existing facilities. The potential exists to substantially expand camping capacity at this site into surrounding areas away from Cougar Creek. Site managers should consider further expansion of the campground in the future.

Existing Facility and Use Area Needs

- Consider site improvements to comply with draft proposed ADAAG guidelines. Based on the current number of campsites (45), 3 fully accessible campsites would need to be provided.
- Consider the development of additional campsites at Cougar Camp to help address identified needs in the entire study area, including additional ADA-accessible campsites to meet current and future visitor demand.
- Evaluate need to modernize gray water sumps.
- Consider minor repair of the access road.
- Consider abandoning 2 shoreline campsites or installing shoreline protection to reduce shoreline erosion at these sites.

Future Facility and Use Area Needs

- Consider installing interpretive facilities.
 - Consider possible expansion of the campground toward SR 503 to meet current and future visitor demand, including additional ADA-accessible campsites. Specific alternatives for distributing campsites and group sites are discussed in Section 4.1.1.
- Consider the creation of an additional 15-site group camping area.
- Consider renovating some of the campsites, including those along the shoreline.
- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- As the most popular campground in the study area, recreation use of this facility exceeds capacity, particularly on weekends during peak use months. In reviewing 4 years of data gathered during the weekend days of July and August, this facility averaged nearly 100 percent utilization.
- On a seasonal basis, an average of 64 percent of the sites are occupied. This occupancy rate rises to 85 percent for all days during July and August, the peak use season in the study area, and 99 percent for weekend days during those months. During the 1999 season, utilization of the campground was at 100 percent 12 times, and was greater than 90 percent on a total of 24 days. The seasonal and peak season weekend utilization threshold rates are already exceeded or have been reached.
- Cougar Camp is bordered on the east by Yale Lake and on the west by SR 503. PacifiCorp does own areas both north and south of the area that could be considered for expansion of the existing facilities.
- There are small areas of shoreline erosion caused by visitors accessing the lakeshore.
- The average perceived crowding score among visitors to this site was 3.0 (scale of 1 to 7). This is just above the average for all facilities at Yale Lake (2.9) and indicates that visitors feel slightly crowded.
- Substantial expansion capacity area exists adjacent to Cougar Camp that could support up to 3 to 4 new campground loops.

Beaver Bay

This 63-site campground is situated in a linear fashion along the shoreline of Yale Lake and is well screened from the highway. However, there is little screening between sites, which may contribute to the fact that occupancy of this campground is lower than at

Cougar Camp and Cresap Bay. There are several existing needs at this site, primarily focused on improving existing facilities and providing for ADA-accessibility. This site cannot be expanded due to physical and ecological constraints.

Existing Facility and Use Area Needs

- Consider site improvements to adhere with existing and forthcoming ADAAG.
- Evaluate need to modernize gray water sumps.
- Consider repairing some campsite picnic tables and playground equipment.

Future Facility and Use Area Needs

- Consider repair/replacement of site furnishings as needed.
- Consider possible renovation of the campground, focusing on the main circulation system, providing additional buffer and vegetation between campsites, and hardening and delineating sites - possibly reducing the number of sites, increasing the buffer area along the wetland, and developing shoreline campsites again.
- Consider possible removal of campground to provide for a larger day use area. Demand would be accommodated by constructing a new campground elsewhere (south of Speelyai Canal) or by expanding existing Cougar Camp and Swift Camp.
- Consider renovating the remaining 2 older restrooms as a part of the redesign effort.
- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Significant wind and wave erosion has occurred along the shoreline. In addition, a wetland area is located adjacent to the campground.
- On a seasonal basis, an average of 26 of the 63 (41 percent) sites are occupied. This occupancy rate rises to 70 percent for all days during July and August, the peak use seasons in the study area, and 96 percent for weekend days during those months. During the 1999 season, utilization of the campground was at 100 percent on 2 occasions, and was greater than 90 percent on a total of 15 days. The seasonal utilization rate is not projected to reach 100 percent over the next 30 years if capacity remains unchanged.
- This facility is bordered on the south by Yale Lake and on the north by SR 503. PacifiCorp does own other land adjacent to the campground that could be used if necessary for the creation of additional campsites.

- The average perceived crowding score among visitors to this site was 2.9 (scale of 1 to 7). This is the same as the average for all facilities at Yale Lake (2.9) and indicates that visitors feel slightly crowded.

4.2.2.2 Day Use/Picnic Areas

Saddle Dam Park (Day Use Picnic Area)

This newly renovated day use area is the southern-most facility on Yale Lake. It includes 10 picnic tables (including 2 ADA-accessible tables), restroom facilities, and a swimming area. Renovation of this site included the removal of 15 campsites, thus, the demand for these sites has shifted from campers to boaters. There are no existing needs at this site given the fact that it is newly renovated. Site managers should consider additional ADA-accessible facilities in the future as well as monitoring use levels.

Existing Facility and Use Area Needs

- No actions.

Future Facility and Use Area Needs

- Consider site improvements to adhere with existing and forthcoming ADAAG. Based on the current number of picnic tables (10), 5 fully accessible tables would need to be provided along an accessible route.
- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- This facility has recently been converted from a boat launch campground (15 campsites) and day use area, to a boat launch and day use-only facility. Camping use of this facility will likely shift to other overnight facilities in the study area over time. The day use area at Saddle Dam features a parking area, restroom, boat launch, swim beach, and picnic area directly adjacent to Saddle Dam.
- The average perceived crowding score among visitors to this site was 2.8 (scale of 1 to 7). This is slightly lower than the average for all facilities at Yale Lake (2.9) and indicates that visitors only feel slightly crowded.
- Potential expansion of the site is very limited, both physically and temporally, by the proximity of the Merwin Wildlife Area. Although the facility was recently renovated, there is additional PacifiCorp-owned land adjacent to the day use area that could be used for minor expansion of the day use area.
- There is an unsigned trail in the vicinity of the day-use site that is used by equestrians riding to the Speelyai Canal area and back; the trailhead is approximately 0.4 mile from the dam along Frasier Road.

- Saddle Dam Park is particularly popular with jetski/PWC users and power boaters. The launch has a minimum launch elevation of 478 feet msl during the full range of the recreation pool (480 to 490 feet msl). Thus, the launch is accessible during the entire recreation season.

Yale Park (Day Use Picnic Area)

Yale Park is one of the most visible day use areas in the study area as it is located directly adjacent to the SR 503 Spur. This site is the only day use area on Yale Lake that is open year-round. There is a large grass area, swimming area, 44 picnic tables, and parking for as many as 280 vehicles in the gravel parking lot. There are several existing needs at this site, primarily focused on improving existing facilities and providing for ADA-accessibility. Site managers should consider enlarging the parking area to the west, providing additional picnic tables as demand warrants, and monitoring use in the future.

Existing Facility and Use Area Needs

- Consider formalizing the parking area to improve parking efficiency. Expand the parking area to the west.
- Consider maintenance and/or repair of the main picnic grass area and some informational signs.
- Consider opening the dump station during daytime hours.
- Consider site improvements to comply with draft proposed ADAAG guidelines. Based on the current number of picnic tables (44), 22 fully accessible tables would need to be provided on an accessible route.

Future Facility and Use Area Needs

- Consider re-opening and possibly reconfiguring the RV dump station located directly across Lewis River Road from Yale Park.
- Consider periodically monitoring use levels to determine if thresholds have been reached.
- Consider providing additional picnic tables at this site as demand warrants.

Relevant Site Information

- Data from 1998 indicates that an average of 28 percent of the parking spaces at this site were utilized on weekend days throughout the season. During peak holiday periods, the number of vehicles can be 2 to 4 times greater than this figure. Many of these visitors are boaters who use the boat launch at Yale Park. This site is at capacity during several days (approximately 5) in the summer and is closed to further vehicular access due to traffic back-ups onto the SR 503 Spur at these times. The

seasonal utilization rate at this site is not expected to exceed 100 percent within the next 30 years, although it will be at capacity during several days per year.

- Yale Park is bordered on the east by Yale Lake and on the west by the SR 503 Spur. However, PacifiCorp does own area south of the developed area that could be considered for expansion of the existing facilities.
- Yale Park is particularly popular for fishing and picnicking.
- The average perceived crowding score among visitors to this site was 3.1 (Scale of 1 to 7), which is the second highest perceived crowding score among all of the facilities in the study area. This is higher than the average for all facilities at Yale Lake (2.9) but still indicates that visitors only feel slightly crowded.
- Recent traffic backups have been reported at the pay booth. PacifiCorp has worked with Thousand Trails, the site manager, to expedite traffic to avoid backups onto the SR 503 Spur.

Cougar Camp (Day Use Area)

This day use facility is located across Cougar Creek from the campground at Cougar Camp. Cougar Camp now refers to both the campground and the day use area (formerly Cougar Park). Facilities at this site include a large protected swimming area, 15 picnic tables, restrooms, playground, and parking for up to 80 vehicles. There are several existing needs at this site, primarily focused on improving existing facilities and providing for ADA-accessibility. Site managers should consider enlarging and possibly relocating the campfire program area, providing additional interpretive facilities, and monitoring use in the future.

Existing Facility and Use Area Needs

- Consider maintenance and/or repair of the main picnic grass area, playground, and some informational signs.
- Consider site improvements to comply with draft proposed ADAAG guidelines. Based on the current number of picnic tables (15), 8 fully accessible tables would need to be provided along an accessible route.

Future Facility and Use Area Needs

- Consider upgrading the existing campfire program area by constructing a small 50-person amphitheater with expansion capability away from Cougar Creek for campfire talks and other educational or group opportunities.
- Consider site improvements such as new interpretive facilities.
- Consider formalizing the parking area to improve efficiency.

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Seasonal utilization at this site has been low (15 percent). Data from 1998 indicates that an average of 12 out of 80 parking spaces were utilized on weekend days throughout the season. During peak periods, however, the number of vehicles can be 2 to 4 times greater than this figure. This seasonal utilization rate is not expected to exceed 100 percent within the next 30 years.
- The day use area is bordered on the east and west by Yale Lake and on the north by SR 503. PacifiCorp does own areas both east and south of the area that could be considered for expansion of the existing facilities.
- The average perceived crowding score among visitors to this site was 2.5 (scale of 1 to 7), the lowest perceived crowding score among all of the day use facilities on Yale Lake.
- Across from Lewis River Road (north), there is a short 0.4-mile trail along Cougar Creek that leads to several dispersed campsites, an old cabin or home foundation, and a fishing area.
- The septic drainfield was repaired in 1998 and roadway and bridge improvements completed in 1999. Minor road renovations at this site are scheduled to begin in 2001 and last until 2002. A feasibility study for the lengthening of the boat ramp is scheduled to begin in 2002.

Beaver Bay (Day Use Area)

This small day use area is located at the western end of the campground at Beaver Bay. Facilities at this site include a small swimming area, playground, 6 picnic tables, and parking for up to 40 vehicles. There are several existing needs at this site, primarily focused on improving existing facilities and providing for ADA-accessibility. Site managers should consider enlarging the day use area and parking area in the future.

Existing Facility and Use Area Needs

- Consider maintenance of the playground equipment and picnic tables.
- Consider site improvements to comply with draft proposed ADAAG guidelines. Based on the current number of picnic tables (6), 3 fully accessible tables would need to be provided along an accessible route.

Future Facility and Use Area Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Data from 1998 indicates that an average of 28 percent of parking spaces were utilized on weekend days throughout the season. During peak holiday periods, the number of vehicles can be 2 to 4 times greater than this figure. Most of these visitors stay at the adjacent campground, however, the facility is also used by other day users including boaters.
- While seasonal utilization at this site is relatively low (28 percent), facility capacity is a factor due to its small size. It is unlikely, however, that the seasonal utilization rate will exceed 100 percent within the next 30 years.
- The average perceived crowding score among visitors to this site was 3.6 (scale of 1 to 7), which is the highest of all of the facilities in the study area. This is considerably higher than the average for all facilities at Yale Lake (2.9). This level of crowding indicates that visitors feel moderately crowded. One factor contributing to this high level of perceived crowding is that the site is small and visitors may begin to perceive crowding well before the parking lot has reached capacity.
- There are a few small areas of shoreline erosion near the day use area, however, they are not a major concern except at the boat launch. The day use area is adjacent to a wetland area that limits expansion.

4.2.2.3 Boating-Related Facilities

Saddle Dam Park (Boat Launch)

This newly renovated 2-lane boat launch facility includes a boarding float and parking for at least 80 vehicles with trailers. The boat launch is located directly adjacent to the day use area at Saddle Dam. ADA access and picnic table improvements are needed in the picnic area. There are no other existing needs at this site, due in part to the recent renovations. Site managers should consider monitoring use in the future.

Existing Facility and Use Area Needs

- No actions

Future Facility and Use Area Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Although the facility at Saddle Dam was recently renovated, there is additional PacifiCorp-owned land adjacent to the day use area that could be used for further expansion.
- The new boat launch at Saddle Dam has 2 lanes (475 feet msl at toe of ramp). Use of the Saddle Dam Boat Launch becomes problematic when the reservoir level approaches or drops below the current minimum ramp elevation. The minimum launch elevation is 478 feet msl, two feet below the lower boundary of the potential operating range of 480 feet msl to 490 feet msl during the summer.
- The reconfigured parking area has parking for 90 vehicles with and 25 vehicles without trailers. Additionally, there is an overflow parking area with 30 spaces for vehicles with trailers.
- Site capacity has been more than adequate this year (2001). Visitors may not be aware of the recent renovations; thus, use is projected to increase in the future.

Yale Park (Boat Launch)

This 4-lane boat launch is the deepest ramp on Yale Lake and is accessible for most of the year. Facilities at this popular launch include boarding floats and parking for up to 280 vehicles. This launch is visible from the SR 503 Spur and is directly adjacent to the day use area at Yale Park. There are several existing needs at this site, primarily focused on improving existing facilities. Site managers should consider monitoring use in the future.

Existing Facility and Use Area Needs

- Consider lengthening at least 1 lane of the boat ramp and increasing low pool maintenance (clearing debris of ramp lanes) to provide year-round boating access to Yale Lake.
- Consider formalizing the parking area to improve efficiency and expand the parking area to the west.
- Consider replacing the boarding floats.
- Consider site improvements to adhere with ADAAG.

Future Facility and Use Area Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- The boat launch at Yale Park provides the primary boat access to the lake; the long concrete ramp lanes accommodate lower lake levels (473 feet msl), are open year round, are easy to access, have available parking, and are along Lewis River Road (SR 503 Spur). The Yale Park boat launch at 470 feet msl (468.7 feet msl at toe of ramp) can be used if an entire boat trailer is extended off of the ramp lane.
- Data from 1998 indicates that an average of 28 percent of the parking spaces at this site were utilized on weekend days throughout the season. During peak holiday periods the number of vehicles can be 2 to 4 times greater than this figure. Many of these visitors are boaters who use the boat launch. This site is at capacity during several days (approximately 5) in the summer and is closed to further vehicular access due to traffic back-ups onto the SR 503 Spur at these times. The seasonal utilization rate at this site is not expected to exceed 100 percent within the next 30 years, however, several days at full capacity can be expected each year.
- Yale Park is bordered on the east by Yale Lake and on the west by the SR 503 Spur. However, PacifiCorp does own area south of the developed area that could be considered for some expansion of the existing facilities.
- The average perceived crowding score among visitors to this site was 3.1 (scale of 1 to 7), which is the second highest perceived crowding score among all of the facilities in the study area. This is higher than the average for all facilities at Yale Lake (2.9) but still indicates that visitors only feel slightly crowded.

Cougar Camp (Boat Launch)

This 2-lane boat launch is located directly adjacent to the campground. The launch is popular with sailboaters (regattas) due to its protected location in a cove. The site is also popular with visitors who are camping at the adjacent campground. There are several existing needs at this site, primarily focused on improving existing facilities. Site managers should consider monitoring use in the future.

Existing Facility and Use Area Needs

- Consider lengthening at least 1 lane of the boat ramp if feasible (to be studied in 2002) and increasing ramp maintenance at periods of low pool elevation.
- Consider formalizing the parking area to improve parking efficiency.
- Consider replacing the boarding floats.
- Consider site improvements to adhere with ADAAG.

Future Facility and Use Area Needs

- Consider installing boat moorage facilities for campers.
- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- This facility is surrounded by the campground and the reservoir itself. PacifiCorp does own adjacent lands that could be utilized in the development of a larger facility. There also is space, but possibly not depth, for the development of a larger boat launch if desired.
- Data from 1998 indicates that an average of 25 percent of the parking spaces at this site were utilized on weekend days throughout the season. During peak holiday periods, the number of vehicles can be 2 to 4 times greater than this figure and the parking area will be full during sailing regattas.
- Most visitors to this facility are boaters and are attracted to this site by the sheltered boat launch. However, the parking area is also used as overflow for vehicles from Cougar Camp. This reduces capacity for boaters.
- The average perceived crowding score among visitors to this site was 3.1 (scale of 1 to 7), the third highest perceived crowding score among all of the facilities in the study area. This is higher than the average for all facilities at Yale Lake (2.9) and indicates that visitors feel slightly crowded.
- Use of Cougar Camp Boat Launch becomes problematic when the reservoir level approaches or drops below the current minimum ramp elevation. The minimum launch elevation is 486 feet msl, 6 feet above the lower boundary of the potential operating range of 480 feet msl to 490 feet msl during the summer.

Beaver Bay (Boat Launch)

This 1-lane boat launch is located adjacent to the day use area at Beaver Bay. Facilities at this site include a boarding float and parking for up to 40 vehicles. There are several existing needs at this site, primarily focused on improving existing facilities. Site managers should consider expanding the parking area and monitoring use in the future.

Existing Facility and Use Area Needs

- Consider repairing and stabilizing the side slopes at the boat launch that are failing.
- Consider replacing the boarding floats.
- Consider site improvements to adhere with draft proposal ADAAG guidelines.

Future Facility and Use Area Needs

- Consider the construction of an additional boat launch lane.
- Consider expanding the parking area.
- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Use of the Beaver Bay Boat Launch becomes problematic when the reservoir level approaches or drops below the current minimum ramp elevation. The minimum launch elevation is 476 feet msl, four feet below the lower boundary of the potential operating range of 480 feet msl to 490 feet msl during the summer. The launch cannot be used year-round as the pool elevation is dropped to 470 feet msl during the non-peak season.
- Data from 1998 indicate that an average of 11 of the 40 (28 percent) parking spaces were utilized on weekend days throughout the season. During peak holiday periods, the number of vehicles can be 2 to 4 times greater than this figure. Most of these visitors stay at the adjacent campground; however, the facility is also used by other day users, including boaters. Overall, current utilization is relatively low.
- Bordered by the campground on the east, PacifiCorp owns additional land to the west of the day use area that could be considered for expansion of the existing facilities.
- Visitor perceptions of crowding at this site are higher than at other facilities in the study area, as well as higher than the average for all visitors surveyed at Yale Lake. The average perceived crowding score among visitors to this site was 3.6, which is the highest of all of the facilities in the study area. This is considerably higher than the average for all facilities at Yale Lake (2.9) and indicates that visitors feel moderately crowded.

4.2.2.4 Trails

There are several user defined trails on Yale Lake, including the longest trail in the study area (Frasier Road/Saddle Dam Park to Speelyai Canal). Visitors also frequently use the IP Road for motorized and non-motorized travel. There are no interpretive facilities or nature trails on Yale Lake.

Existing Facility and Use Area Needs

- When completed, consider implementing the results of the Trail Feasibility Study (in progress). Focus on trail opportunities along the IP Road and the Frasier road/Saddle Dam Park to Speelyai Canal user defined trail.
- Consider implementing a trail sign program as trails are developed.

- Consider developing nature trail at the Beaver Bay wetlands.

Future Facility and Use Area Needs

- Consider providing ADA-accessible recreation trails at developed sites as they are renovated.
- Consider developing a trail from Cougar Camp to Beaver Bay.
- Consider developing a trail from either Cougar Camp or Beaver Bay to the Lava Flow in the Monument.

Relevant Trails Information

- Although Yale Lake lacks designated trails, there are some user defined trails in the immediate vicinity and in the surrounding area. These trails are owned and maintained by a variety of entities, including PacifiCorp and other private owners, the DNR, and the USFS.
- Although not officially designated as hiking or biking trails, Lewis River Road (west shore) and the IP Road (east shore) are often used by bikers and hikers. During the 1996 recreation surveys and in following years, large groups of bicyclists were observed cycling around the lake using Lewis River Road and the IP Road.
- PacifiCorp maintains shoreline trail segments at some of its campgrounds and day-use areas, including Beaver Bay and Cougar Camp. In many cases these trails provide access to the reservoir and other portions of the campground. In addition, there is a short trail (0.4 mile) along Cougar Creek, accessed from Cougar Park on the opposite side of Lewis River Road (north).
- The longest trail in the study area is located on the western shore of Yale Lake, connecting an area on Frasier Road near Saddle Dam with Speelyai Canal. This user defined trail, approximately 4 miles long, is popular with equestrians and, to a lesser extent, hikers. As the trail meanders through primarily forested areas and is steep in some locations, it is seldom used by anglers. Several small spur trails, however, provide access to the water.

4.2.2.5 Dispersed Use Shoreline Areas

In 2000, PacifiCorp identified and mapped approximately 45 separate undeveloped shoreline sites on Yale Lake used for dispersed day-use picnicking and overnight camping; most sites are on the southern/eastern shoreline, particularly in the vicinity of Siouxon Creek and Siouxon Flats. Dispersed use occurs on both sides of the reservoir. These sites typically have a fire ring of rocks, an area to beach or anchor a small boat, and flatter areas for picnicking or pitching a tent. No water or toilet facilities are available at these sites.

Most shoreline dispersed sites are primarily accessed by boat, although the IP Road provides some access along the southern/eastern shore of the reservoir. During peak season weekends, up to 38 vehicle camps have been observed along the IP Road. Concentrations of dispersed sites are found in the vicinity of a point east of Yale Dam, up Siouxon Creek on the east side of the reservoir, along the IP Road and at Siouxon Flats and Siouxon County Park (undeveloped) (also on the east side of the reservoir), and at a few locations on the west side of the reservoir, primarily south of Speelyai Canal. Though campfires are no longer permitted, most of the documented sites have user-constructed fire rings, room for 1 or 2 tents, and provide an area for short-term boat moorage; a few sites have rope swings, ladders, and other makeshift amenities. Other sites, particularly along the east side of the lake at Siouxon Flats (Siouxon County Park and the shoreline to the north), offer stretches of beach that can accommodate larger parties (several dozen people), with room for several tents and boats at one time.

Although not considered facilities, utilization of these undeveloped dispersed sites located along the shoreline of Yale Lake is an important determinant of capacity. It is anticipated that given the higher number of watercraft observed on the surface of the water during weekends in July and August, utilization of these 45 shoreline dispersed sites is relatively high. Results from an ecological assessment of these sites further confirms this conclusion as many of the sites have barren soil, as well as areas of shoreline erosion that suggest occasionally higher use levels.

Existing Use Area Needs

- Consider providing periodic site cleanup at dispersed shoreline sites.
- Consider increased management presence including law enforcement patrols at dispersed shoreline sites.
- Consider designating and developing as many as 20 hardened shoreline campsites and 10 hardened shoreline day use sites. Potential development could range from fire grills only to the installation of picnic tables, fire rings, sanitation facilities, and possibly a formalized tie-up point. The desired semi-primitive user experience needs to be considered prior to site hardening. Enforcement and management of use at these sites should be increased.
- Consider prohibiting dispersed overnight boat-in camping and day use in some locations on Yale Lake due to ecological concerns (erosion, fire, vegetation damage, litter, and human waste) and provide increased management of the shoreline.

Future Use Area Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future.

4.2.3 Swift Reservoir

This section discusses specific needs at the various sites and facilities on Swift Reservoir including campgrounds, day use/picnic areas, boating-related facilities, trails, interpretive facilities, and dispersed use areas. Site specific facilities addressed include: (1) the campground at Swift Camp; (2) day use/picnic areas at Swift Camp and Eagle Cliff Park; (3) boating facilities at Swift Camp; (4) trails; and (5) approximately 24 shoreline dispersed use sites.

4.2.3.1 Campgrounds

Swift Camp

This 93-site campground is the only camping facility on Swift Reservoir. Located at the eastern end of the reservoir, Swift Camp is at least partially open from April to November, and is popular with anglers and hunters during the off-season months. Due to the large number of sites, and the length of the season at this site, utilization of Swift Camp is lower than any of the other campgrounds in the study area. There are several existing needs at this site, primarily focused on improving existing facilities. Site managers should consider the creation of additional campsites and possible renovation of this facility in the future.

Existing Facility and Use Area Needs

- Consider site improvements to comply with draft proposed ADAAG guidelines. Based on the current number of campsites (93), 5 fully accessible campsites would need to be provided along accessible access routes.
- Consider increased maintenance of some campsites and other facilities in the campground such as the RV dump station, water faucets, and restroom facilities.
- Consider replacement of the graywater sumps.

Future Facility and Use Area Needs

- Consider the development of additional campsites, including at least 1 additional ADA-accessible campsite to meet current and future visitor demand. The number of new campsites will depend upon expansion and infill capability at Cougar Camp and decisions made at Yale Lake regarding possible expansion at Cougar Camp and/or at a new campground location. Specific alternatives for distributing campsites and group sites are discussed in Section 4.1.1.
- Consider keeping campground and restroom facilities open during the shoulder season months, particularly as use levels increase during the off-season months.
- Consider expansion of the existing campfire program area.
- Consider the creation of an additional group camping area.

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- On a seasonal basis, an average of 27 of the 93 (29 percent) sites are occupied, making this the least utilized of the campgrounds in the study area. This occupancy rate rises to 64 percent for all days during July and August, the peak use season in the study area, and 92 percent for weekend days during those months. During the 1999 season, utilization of the campground was at 100 percent only 1 time, and was greater than 90 percent on a total of 9 days. The seasonal utilization rate is not projected to reach 100 percent over the next 30 years if capacity remains unchanged.
- This facility is bordered by FR 90 on the north and by Swift Reservoir on the south. However, additional lands adjacent to the existing campground could be utilized for future expansion to the west if desired.
- Visitor perceptions of crowding are relatively low at this facility, but many visitors indicated having conflicts or complaints regarding other visitors. The average crowding score for visitors contacted at this site was 2.4 (scale of 1 to 7), which is the same as the average for all visitors contacted at Swift Reservoir (2.4). However, 52 out of the 206 (25 percent) visitors contacted at this facility indicated having one or more conflicts or complaints regarding other visitors (1998).
- Most of the facilities at Swift Camp are in need of some maintenance. Specifically, most of the campsites and other facilities in the campground such as the RV dump station, water faucets, and restroom facilities are in need of maintenance. In addition, most of the grey water sumps in the campground are deteriorating (some are cracked) and are in need of repair.
- Aside from small areas of shoreline erosion, ecological concerns are not a limiting factor at this site.
- Typically, Swift Camp opens in late April to accommodate anglers, with the peak recreation season occurring from late May (Memorial Day weekend) to early September (Labor Day weekend). A portion of the site (1 loop) remains open until the close of the hunting season; however, the permanent restrooms are closed and portable toilet facilities are temporarily installed after mid-September until mid-November.

4.2.3.2 Day Use/Picnic Areas

Swift Camp (Day Use Area)

Located directly adjacent to the western end of the campground, this small day use area is popular with campers who are staying at Swift Camp. Facilities at this site include a playground, swimming area, and 6 picnic tables. There are few existing needs at this site, primarily focused on improving existing facilities.

Existing Facility and Use Area Information

- Consider site improvements to adhere to the draft proposed ADAAG guidelines. Based on the current number of picnic tables (6), 3 fully accessible tables would need to be provided with an accessible access route.
- Consider increased maintenance in the day use area.

Future Facility and Use Area Information

- Consider formalizing the parking area to improve efficiency and prohibit indiscriminant vehicular use in the surrounding area and lake bed.
- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Data from 1998 indicates that an average of 46 of the 200 (23 percent) parking spaces were utilized on weekend days throughout the season (Table 4.1-1). During peak periods, as many as 223 vehicles have been observed at this facility (opening day of fishing season). The seasonal utilization rate is not projected to reach 100 percent over the next 30 years if capacity remains unchanged.
- Many of these visitors are boaters and are attracted to this site by the boat launch, the only public launch on Swift Reservoir.
- Located at the western end of a small peninsula, this facility is surrounded on 3 sides by water, with the campground forming the remaining boundary. The existing area has a large amount of undeveloped open space associated with the driftwood holding area. As a result, the physical space available to potentially expand the facility is large.
- The average crowding score for visitors contacted at this site was 2.3 (scale of 1 to 7), which is slightly below the average for all visitors contacted at Swift Reservoir (2.4).
- Most of the facilities at this site are in need of some maintenance. Specifically, the parking area is poorly defined and in need of more active management.

Eagle Cliff Park

This small park is located along the Lewis River just upstream of its outlet at Swift Reservoir. Eagle Cliff Park is popular among anglers, who use it as an access point to fishing sites upstream. This site was partially destroyed during the 1996 floods, particularly the areas at the western end of the site. Due to the 1996 floods and very low use levels, site managers should consider possible redesign and renovation of this facility in the future.

Existing Facility and Use Area Needs

- Consider possibly removing and relocating the western picnic area to a smaller area upstream of the existing parking area.
- Consider site improvements to comply with draft proposed ADAAG guidelines. Based on the current number of picnic tables (9), 5 fully accessible tables would need to be provided along an accessible route. This need may change after a redesign has been completed.
- Consider repair of the informational signs, restroom, and fire rings and general maintenance of the picnic tables. Consider repair and replacement of these facilities or close them entirely to public use as part of the site redesign effort.
- Consider regrading and regravelling the parking area.

Future Facility and Use Area Needs

- Consider possible redesign and renovation of the site, specifically the western sections. Consider alternative uses in the western section, or close it to the public.
- Consider periodically monitoring use levels to determine if thresholds have been reached. Integrate these activities with fish and wildlife management actions.

Relevant Site Information

- Data from 1998 indicates that an average of 10 percent of the parking spaces at this site were utilized on weekend days throughout the season. During peak holiday periods, the greatest number of vehicles observed at this facility was 14. Overall, current utilization is low. The seasonal utilization rate is not projected to reach 100 percent over the next 30 years if capacity remains unchanged.
- Many of the visitors at this site are anglers and are attracted to this site by its convenient river access.
- This site is bisected by FR 90 and is situated directly on the Lewis River. PacifiCorp owns additional property adjacent to the facility that could be used for potential expansion if desired.
- Visitor perceptions of crowding are low at this facility. The average crowding score for visitors contacted at this site was 2.0 (scale of 1 to 7), which is lower than the average for all visitors contacted at Swift Reservoir (2.4), and the fourth lowest of the facilities included in this analysis.
- This site was partially destroyed during the 1996 flood event, and is still awaiting redesign and renovation. Much of the site is currently in disrepair and is being overgrown by vegetation, as a result of the flood. The parking area is rough and is in need of replacement.

4.2.3.3 Boating-Related Facilities

Swift Camp (Boat Launch)

This facility is the only boat launch open to the public that is located on Swift Reservoir. Located directly adjacent to the campground and day use area, this launch is popular with visitors who are staying at the campground and with local residents. Facilities at this site include a 2-lane boat launch, boarding floats, and a large gravel parking area that can accommodate up to 200 vehicles. There are few existing needs at this site, primarily focused on improving existing facilities. Site managers should consider ADA-accessibility and monitoring use in the future.

Existing Facility and Use Area Needs

- Conduct feasibility studies to determine if a new boat launch can be developed in the western portion of the reservoir with access to FR 90 that can provide boat access during a much longer period of time.
- Consider formalizing the parking area near the boat launch/day use area to improve efficiency and prohibit vehicle access to the shoreline.
- Consider improving the boat launch to modern standards and adhere to ADAAG guidelines.

Future Facility and Use Area Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached.

Relevant Site Information

- Data from 1998 indicates that an average of 46 of the 200 (23 percent) parking spaces were utilized on weekend days throughout the season (Table 4.1-1). During peak holiday periods, as many as 223 vehicles have been observed at this facility (opening of fishing season). The seasonal utilization rate is not projected to reach 100 percent over the next 30 years if capacity remains unchanged.
- The average crowding score for visitors contacted at this site was 2.3 (scale of 1 to 7), which is slightly below the average for all visitors contacted at Swift Reservoir (2.4).
- Many of the boat launch features have been renovated in recent years. However, the parking area is poorly defined and in need of more active management.
- The minimum launch elevation is 975 feet msl, which is within the potential operating range of 990 feet msl to 1000 feet msl during the summer. However, this launch may not be accessible in the fall when pool levels on Swift Reservoir can fall as low as 970 feet msl, with a minimum elevation of 930 feet msl possible during

maintenance or flood control operations. As a result, this boat launch has limited use outside of the summer recreation season.

4.2.3.4 Non-motorized Trails

Aside from short user defined trails developed by anglers, there are no developed public trails and no interpretive facilities located on Swift Reservoir. Many years ago, a trail existed along the southern side of the reservoir with access to Drift Creek. This trail no longer exists.

Existing Facility and Use Area Needs

- No actions.

Future Facility and Use Area Needs

- Consider providing ADA-accessible trail opportunities within Swift Camp.
- When completed, consider implementing the recommendations of the Trail Feasibility Study (in process) for the Swift Reservoir trail segment.

Relevant Trails Information

- There are no developed hiking opportunities directly adjacent to Swift Reservoir.
- Preliminary results from the Trail Feasibility Study (on going) being conducted as a component of the Recreation Capacity Suitability Analysis indicate that a spine trail, or portions thereof, stretching from the IP road at Yale Lake to Eagle Cliff Park may be feasible using existing logging roads. The study states that such a trail must be coordinated with wildlife managers. The most feasible trail segment at Swift Reservoir is located along the south side of the reservoir and traverses private and State-owned land. This section is outside the Project boundaries.

4.2.3.5 Dispersed Use Areas

PacifiCorp has identified and mapped approximately 24 separate dispersed shoreline sites used for camping and day use. Just under half of the sites could be characterized as large sites, with camping possible at nearly all of the 24 sites. All of the sites are primarily accessed by boat, with a few of the sites on the north side of the reservoir that are accessible by vehicle via logging roads. Most of the dispersed sites have a fire ring of rocks, an area to beach or anchor a small boat, and a flatter area for pitching a tent and for picnicking. No water or toilet facilities are available at these sites.

The majority of these sites are located in the eastern end of the reservoir with 10 sites clustered in the Drift Creek area on the south shore. Although these sites can only be accessed by boat, they are the largest and most heavily used sites on the reservoir because they are the most sheltered from the wind. Portions of the Drift Creek area are managed by the USFS (GPNF). This area is sensitive due to habitat and wildlife values. The

USFS has indicated that 8 sites will be allowed to remain and that these sites should be hardening and receive increased management.

Although not facilities, utilization of dispersed sites located along the shoreline of Swift Reservoir is an important consideration. Data obtained during 1998 indicates that an average of 39 percent of the 24 sites were occupied during peak use weekends. The maximum occupancy observed was 50 percent on peak use weekends. The most popular sites were those located on the cove and island near Drift Creek. Four sites in this cove were occupied more than 80 percent of the time.

Existing Use Area Needs

- Consider increased management presence at the shoreline dispersed sites including additional law enforcement patrols and periodic site cleanup.
- Consider designating and developing as many as 13 shoreline campsites and 2 hardened shoreline day use sites. Potential development could range from fire rings/grills only to the installation of picnic tables, fire rings, sanitation facilities, and possibly a formalized tie-up point. Enforcement and management of use at these sites should be increased.

Future Use Area Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached and if an additional management response will be required in the future.

4.2.4 Swift 2 Power Canal and Bypass Reach

This section discusses needs at the various sites and facilities at the Swift 2 Power Canal and Bypass Reach including campgrounds, day use/picnic areas, boating-related facilities, trails, and dispersed use areas. Site specific facilities addressed include: (1) formalization of existing undeveloped parking areas; (2) provide improved wildlife viewing; (3) provide improved trail access; (4) provide an ADA accessible restroom facility; and (5) improve fishing access.

4.2.4.1 Campgrounds

There are no existing developed campground facilities at the Swift 2 Power Canal and Bypass Reach. No new campgrounds are suitable in these areas.

4.2.4.2 Day Use/Picnic Areas

There are no existing developed picnic/day use facilities at the Swift 2 Power Canal and Bypass Reach. No new developed picnic areas are suitable in these areas.

4.2.4.3 Boating-Related Facilities

There are no existing boating-related facilities at the Swift 2 Power Canal and Bypass Reach. No new boating facilities are suitable in these areas.

4.2.4.4 Trails

There are no existing formal developed trails and associated interpretive opportunities located at the Swift 2 Power Canal And Bypass Reach.

Existing Facility and Use Area Needs

- Consider formalizing and improving user defined angler trails at the Swift 2 Power Canal to meet ADA-accessibility guidelines and providing informational interpretive signs to communicate trail opportunities and safety restrictions in the area.
- Consider providing improved wildlife viewing opportunities along the proposed spine trail through the edge of Bypass Reach between Yale Lake and Swift Reservoir.

Future Facility and Use Area Needs

- Consider periodically monitoring trail use levels to determine if thresholds have been reached or if an additional management response will be required in the future.

Relevant Trails Information

- There are no developed hiking trails at the Swift 2 Power Canal and Bypass Reach.
- Formalized trails at the Swift 2 Power Canal will improve the overall quality of the recreation experience and will help keep trail users in appropriate and safe areas.

4.2.4.5 Dispersed Use Areas

The Swift 2 Power Canal area receives consistent use by bank anglers. PacifiCorp has also identified several dispersed undeveloped shoreline sites in the bypass Reach area. The IP Road bridge area is used by visitors who are swimming, sunbathing tubing, fishing, and tent camping. No water or toilet facilities are available at the sites.

Existing Use Area Needs

- Consider developing a parking area at the Swift 2 Power Canal in a safe location.
- Consider installing an ADA-accessible toilet at the Swift 2 Power Canal.

Future Use Area Needs

- Consider periodically monitoring use levels to determine if thresholds have been reached or if a management response will be required in the future.

4.3 PROJECT-RELATED RECREATION NEEDS CRITERIA

This analysis has recommended several existing and future recreation needs in the study area. As a first step in determining which of these needs are Project-related and which ones are not, this section has defined 2 criteria for consideration during the relicensing process: (1) direct Project cause, and (2) proximity to Project features. These 2 criteria are discussed below.

4.3.1 Direct Project Cause

Recreation demand in the Upper Lewis River Valley is dynamic with multiple destinations and attractions available to visitors. The Monument, an international attraction to the north, is a significant recreation area with visitation increasing 5 to 6 percent annually on both sides (north and south) of the volcano. Numbers of visitors driving “the loop” around the volcano are increasing as new interpretive centers have opened to the north and east and as new roads are constructed. Nearby Ape Cave and Lava Canyon are particularly noteworthy attractions. The GPNF is also a significant visitor destination. Visitors in the valley also travel between the 3 Lewis River Project reservoirs.

Surveys were conducted at recreation facilities along the 3 Project reservoirs, as well as at several dispersed (undeveloped) recreation use areas adjacent to the Project. These survey results help to document the proportion of recreation visitors that are Project-related and the proportion drawn by other attractions in the area. Survey participants at developed Project recreation facilities were asked to indicate their main destination on their trip and if they planned to visit any recreation areas during their visit to the Lewis River Basin other than the site where they were contacted. A majority of visitors (71 percent) surveyed at Merwin and Swift sites indicated that they planned on remaining at or near the site where they were contacted. The remaining survey respondents (29 percent) indicated that visiting other sites was part of their travel plans. Over half (55 percent) of those surveyed at Yale Lake said that they would remain solely at Yale Lake during their visit. The remaining “mobile” respondents (45 percent) indicated that they had plans to visit or had already visited other locations during their trip.

Of the “mobile” visitors at Yale Lake, primary destinations include the Monument (34 percent), GPNF (15 percent), Lake Merwin (19 percent), Swift Reservoir (17 percent), and other (15 percent). About 1 out of 5 (22 percent) visitors surveyed at Yale Lake (49 percent of 45 percent) indicated that their primary destination was the Monument or GPNF. Of the “mobile” visitors at Merwin and Swift, primary destinations included the Monument (49 percent), GPNF (29 percent), Yale Lake (37 percent), Lake Merwin (30 percent), and Swift Reservoir (27 percent). About 1 out of 5 (23 percent) visitors surveyed at Merwin and Swift (79 percent of 29 percent) indicated that their primary destination was the Monument or GPNF.

As a result, approximately 22 percent of existing and future camping demand at Yale Lake and 23 percent at Merwin and Swift can be attributed to the attraction of the Monument and GPNF and not due to the attraction of the 3 PacifiCorp reservoirs. Since the USFS does not provide developed camping facilities along the SR 503 Spur/FR 90 corridor near the Project, Monument and GPNF visitors, particularly those driving the

loop, must sometimes use PacifiCorp campgrounds, thereby reducing the facility capacity available to visitors whose primary destination is 1 of the 3 PacifiCorp reservoirs.

To account for the ongoing and future impacts of Monument and GPNF visitors on PacifiCorp developed facility capacity, future campground needs should be coordinated with the GPNF and the Monument. In addition, a shared responsibility may be considered by all parties as a means to help satisfy federal land-related visitor demand in the Upper Lewis River Valley. The impact of Monument and GPNF visitors on PacifiCorp developed facilities should be considered in future discussions and negotiations during the relicensing process.

Alternatively, USFS staff have indicated that visitors to 1 of the 3 PacifiCorp reservoirs sometimes camp within the Monument or GPNF when developed campgrounds are full during peak use times. Survey participants at undeveloped dispersed recreation sites in the vicinity of the Project were also asked to indicate their main destination on their trip. Fifty-seven percent of visitors in the survey reported that their main destination was either in the Monument, Department of Natural Resources (DNR) lands, or USFS-managed lands. Visitors' main destinations associated with each of the Project reservoirs accounted for only 5 to 10 percent of the survey sample. Yale Lake was the primary destination for 10 percent of participants, while Swift and Merwin reservoirs accounted for 5 percent each. However, the volume of dispersed area visitors on USFS managed lands who can be attributed to the Project is much smaller than the volume of visitors at PacifiCorp facilities who can be attributed to the Monument and GPNF.

4.3.2 Proximity to Project Features

For recreation needs to be Project-related, they should be in proximity to Project features. Project features include lands and facilities within the FERC Project boundary. Many of the existing and future needs listed in Table 4.2-1 generally fall within this criterion; however, some trail corridors outside of this area would not be considered Project-related. Some of these trail corridors or segments may be the responsibility of adjoining property owners and federal and state land management agencies. Other potential needs (listed previously or not) that are not considered Project-related include needs specifically related to hunting, snow-related activities, caving, rock climbing, hang gliding, and visitation to non-Project regional attractions, such as the Monument and GPNF.

5.0 REFERENCES

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ATTACHMENT A

POTENTIAL RECREATION ACTIONS

COMPARED TO IDENTIFIED RECREATION NEEDS

ATTACHMENT A
Potential Recreation Actions Compared to Identified Recreation Needs

Action #	READ Action Description	Action is Confirmed or Not Confirmed in the Recreation Needs Analysis and the Recreation Capacity and Suitability Analysis
REC-R1	<i>Develop and implement a Recreation Resource Management Plan (RRMP). Plan components will likely include: A facility development plan, operations and maintenance plan, recreation use monitoring plan, resource integration and coordination plan, and an adaptive management plan.</i>	CONFIRMED: Overall need for RRMP stated in objectives and FERC requirements. Actions to be used to develop alternatives for consideration by the RRG and others and integrated into the RRMP as appropriate as part of the Plan's programs.
REC-R2	<i>Implement additional visitor management controls in the Project Area.</i>	CONFIRMED: Increased enforcement is discussed in boating and dispersed site needs and is proposed as part of the RRMP.
REC-R3	<i>Additional accessible facility accommodations are provided in day-use areas and the campgrounds in the Project Area to accommodate accepted standards in the implementation of the Americans with Disabilities Act (ADA).</i>	CONFIRMED: Both day use areas and campground ADA needs are identified.
REC-R4	<i>Develop and implement an Interpretation and Education (I&E) program in the Project Area.</i>	CONFIRMED: I&E needs are detailed in I&E section of Recreation Needs Analysis, as well as in Recreation Facilities and Use Area sections. Other resources areas have identified needs also.
REC-R5	<i>Provide additional primitive access to the shoreline at Lake Merwin (e.g. low amenity boating and fishing sites).</i>	NOT CONFIRMED: Additional primitive means to access the shoreline was not identified as a need. Improvements at existing developed sites were identified. Possible conflict with the MWMP, Terrestrial Goals and Aquatic Goals.
REC-R6	<i>Provide family and group recreation opportunities and picnic shelters at Lake Merwin, Yale Lake and Swift Reservoir with appropriate levels of site amenities (Cresap Bay Group Camp, as example).</i>	CONFIRMED: Group day use picnic shelters should also be developed (none exist now).
REC-R7	<i>Make available land at Yale Lake or Lake Merwin for public resort-style developments. (Similar to other state park resorts)</i>	NOT CONFIRMED: New resorts on the reservoirs themselves were not identified as a need. Private RV resorts in the Lewis River corridor are assumed to absorb some of the demand in the future.
REC-R8	<i>Support constructing a pedestrian walkway on Yale Bridge when it is modified or replaced by Washington DOT.</i>	CONFIRMED: Trails are in high demand. This route is considered in the Trail Siting and Feasibility Study and a new wider bridge would improve user safety.

REC-R9	<i>Continue to allow wildlife viewing and fishing in the Bypass Reach of the Lewis River consistent with resource values.</i>	CONFIRMED: Recommendations for the Bypass Reach support continued dispersed day use recreational fishing and wildlife observation. The I&E program may also include informational signs, wildlife viewing stations, and trails in this area. This actions does conflicts with operational safety needs.
REC-R10	<i>Increased trail opportunities at Merwin. Extend the existing Marble Creek trail to Cape Horn Creek. Resulting trail would be a non-motorized multi-use 2.5 mile trail along Merwin Reservoir from Merwin Park across Marble Creek to Cape Horn Creek. The Marble Creek crossing will require a bridge. Approximately 1 mile of this trail is existing.</i>	CONFIRMED: Trails are in high demand. The extension of Marble Creek Trail to Cape Horn Creek is identified in the Lake Merwin Needs section.
REC-R11	<i>Increased trail opportunities at Merwin. A trail segment that begins east of Rock Creek and goes to Speelyai Bay. This trail would use existing timber and transmission line access roads. Trail heads would be possible just east of Rock Creek off of SR 503 and approximately 1/4 mile off of SR 503 along the access road to Speelyai Bay.</i>	CONFIRMED: Trails are in high demand. This trail is identified in the trail needs section of the analysis.
REC-R12	<i>Increased trail opportunities at Merwin. A trail that begins at Speelyai Hatchery and goes to Cresap Bay. This trail requires construction of new trails and use of existing timber management roads. Trailhead locations could be at Speelyai Hatchery and just inside of the registration booth at Cresap Bay. A bridge to cross Speelyai Creek would be required.</i>	CONFIRMED: Trails are in high demand. This trail is identified in the trail needs section of the analysis.
REC-R13	<i>Increased trail opportunities at Yale. A non-motorized trail utilizing the IP (Yale) Road. Utilization of this road segment for non-motorized use will require development of trailheads and possibly sanitation facilities at the trailheads and along the trail. This segment provides linkage to the proposed Siouxon Creek Trail. Trails heads would be required at both ends.</i>	CONFIRMED: Trails are in high demand. This trail is identified in the trail needs section of the analysis.
REC-R14	<i>Increased trail opportunities at Yale. A multi-use non-motorized trail that begins in Cougar Park and uses primitive roads south of Cougar Creek.</i>	CONFIRMED: Trails are in high demand. This trail is identified in the Yale Lake trail needs section of the analysis.

REC-R15	<i>Increased trail opportunities at Swift Reservoir. At this time, the most feasible non-motorized trail segment appears to take advantage of existing forest roads along the south side. This recreation trail would likely connect the Yale IP road to Eagle Cliff Park.</i>	CONFIRMED: Trails are in high demand. This potential trail is identified in the trail needs section and is discussed in the Swift Reservoir trail needs section of the analysis.
REC-R16	<i>Boating facilities are improved to accepted standards at Lake Merwin and Yale Lake.</i>	CONFIRMED: A need was identified to lengthen and modernize existing boat launches on Lake Merwin (Speelyai Bay) and Yale Lake (Yale Park), as well as ADA modifications to boat launches on both reservoirs. These needs were identified in the boating-related needs section of the analysis.
REC-R17	<i>Support the designation of a non-motorized boating area upstream from the no wake buoys at Cresap Bay.</i>	CONFIRMED: This action is generally supported by the desire and need for a wide range of recreation experiences. No non-motorized boating areas are currently provided.
REC-R18	<i>Consider providing a new primitive access point at Yale Bridge for non-motorized watercraft.</i>	CONFIRMED: The option of a hand launch boat put-in/take-out at Canyon Creek on Lake Merwin was identified in the studies of Canyon Creek.
REC-R19	<i>Allow for a somewhat higher density of watercraft use at Yale reservoir and provide for additional launch capacity.</i>	CONFIRMED: Improvements to boat launches and parking at Yale Park and Beaver Bay, and possibly Cougar Park, were identified in the boating-related needs sections as ways to achieve additional launch capacity on Yale Lake. Saddle Dam Park boat launch improvements have already been completed.
REC-R20	<i>A new deep-water boat launch is constructed at a new location on Swift Reservoir.</i>	CONFIRMED: A new boat launch is discussed in the boating-related needs section and is currently under consideration at the west end of Swift Reservoir on the northern shoreline.
REC-R21	<i>Except for requirements by Federal and/or State regulations/policies regarding flood control, drought conditions, and fish passage/habitation issues, Swift Reservoir water levels to be maintained within 5 feet of full pond for the duration of the annual fishing season or at least between May 15 and October 31 with the objective/goal of providing use for water recreation, fishing, boat moorage, fire suppression needs, safety, economic benefits for local businesses as well as other tangible and intangible benefits to local workers and residents.</i>	NOT CONFIRMED: Typical reservoir pool levels and operating ranges are discussed, but specific pool level requirements are not identified in the analysis. PacifiCorp currently maintains a high pool level during the primary recreation season for public access (Memorial Day to Labor Day) if water is available. This action refers specifically to access to private docks at Northwoods.

REC-R22	<i>Overnight boat-in camping would be allowed and actively managed on the Lake Merwin shoreline. There would be increased management of the shoreline and possible site hardening to protect resources in the area.</i>	CONFIRMED: This action is discussed as a management option in the Lake Merwin dispersed site needs section of the analysis.
REC-R23	<i>Eliminate boat-in camping along Merwin shoreline.</i>	CONFIRMED: This action is discussed as a management option in the Lake Merwin dispersed site needs section of the analysis (only 6 sites). Opportunities must be preserved on other reservoirs to absorb use.
REC-R24	<i>Overnight boat-in camping would be allowed and actively managed on the Yale Lake shoreline. There would be increased management of the shoreline and possible site hardening to protect resources in the area.</i>	CONFIRMED: This action is discussed as a management option in the Yale Lake dispersed site needs section of the analysis.
REC-R25	<i>Overnight boat-in camping at shoreline sites would be allowed and actively managed on Swift Reservoir shoreline. There would be increased management of shoreline and possible site hardening to protect resources in the area. Development of boat in camping opportunities on island is a possible alternative.</i>	CONFIRMED: This action is discussed as a management option in the Swift Reservoir dispersed site needs section of the analysis.
REC-R26	<i>Substantially expand camping capacity (single and group use) at Yale Lake (and not at other reservoirs). New campsites will provide the same level of amenities as existing camps with the focus on tent, camper and small trailer or small RV use. Utilities will not be provided at campsites. Expanded camping opportunities include new short walking trails associated with the campgrounds.</i>	CONFIRMED: Campground expansion (Cougar Camp) and short hiking trails, as discussed in the Yale Lake needs section, are identified as ways to meet increased demand for camping. Reconfiguration of Beaver Bay is also an option.
REC-R27	<i>Keep one campground open year 'round at Yale Lake.</i>	NOT CONFIRMED: Opportunities for visitors to extend the recreation season are identified, but year-round campground use was not identified as a need by any user groups, except in the RRG.
REC-R28	<i>Provide convenience camping structures at Yale Lake, such as yurts or cabins.</i>	CONFIRMED: Would likely be used during the summer. Questionable whether they would encourage shoulder season use if coupled with extended campground operating seasons.
REC-R29	<i>Provide minor expanded camping capacity at Swift Reservoir and related opportunities at the existing facility. Expanded camping opportunities include new short walking trails associated with the campgrounds.</i>	CONFIRMED: Minor campground expansion and the addition of short hiking trails are discussed in the Swift Reservoir needs section.

REC-R30	<i>Provide convenience camping structures at Swift Reservoir, such as yurts or cabins that are available for use through the end of the normal Swift Camp operation schedule (end of November).</i>	NOT CONFIRMED: Current use is limited to a relatively narrow timeframe because of weather and available recreation opportunities. It is questionable if convenience camping structures were made available along with extended operating times if they would be used.
REC-R31	<i>Formalize existing undeveloped parking, provide an accessible toilet and barrier free fishing access, and provide improved trail access at the Swift #2 Power Canal and powerhouse.</i>	CONFIRMED: All of these actions were identified as needs in the Swift #2 Power Canal area.
REC-R32	<i>Ensure that Project lands now open to the public remain open to the public, including access to habitat lands.</i>	CONFIRMED: Current Project lands used for open space-related activities (wildlife observation, hunting, photography, etc.) appear to be adequate. A reduction of open space available for public use may impact users, depending on location. However, wildlife and safety concerns must also be considered.
REC-R33	<i>Ensure that recreation sites now identified as "voluntary" become part of the recreation plan under the new license.</i>	CONFIRMED: All "voluntary" recreation sites (Merwin Park, Speelyai Bay Park, Saddle Dam Park, Yale Park, Cougar Camp Day Use Area and Campground, Beaver Bay Campground, and Swift Camp) are included in the Recreation Needs Analysis and should be part of the recreation plan under the new license. Loss of a site(s) would be an impact and affect Project area visitors.
REC-R34	<i>Provide partial or full RV hook up sites at a portion of the campsites at Yale Lake. These could be new or renovated sites.</i>	NOT CONFIRMED: Partial or full RV hookup sites were identified as a need for private RV parks in the Lewis River corridor, but not for Project campgrounds along the shoreline.
REC-R35	<i>Extend the season at one Yale Lake Campground.</i>	CONFIRMED: Swift Camp is currently open in the fall season for hunters in the upper Swift Reservoir area. Extending the campground season to accommodate shoulder season hunters and anglers was also identified as an option at Yale Lake.
REC-R36	<i>Develop options to accommodate upper Swift recreation use and moorage between the end of April and the end of October.</i>	NOT CONFIRMED: This action is similar to REC-R21 and refers to private boat moorage at Northwoods. Access in this area by boat was affected by the Mount St. Helens eruption and debris accumulation.
REC-R37	<i>Acquire additional land base as needed to facilitate recreational facility expansion both initially and over time to meet projected expansion needs.</i>	NOT CONFIRMED: The acquisition of new PacifiCorp-owned lands was not identified in the Capacity and Suitability Analysis. Adequate land appears to be available to accommodate future recreation development needs in the Project area.

REC-R38	<i>Actively discourage recreation use in the Lewis River Bypass Reach.</i>	NOT CONFIRMED: Discouraging all recreational use in the Bypass Reach was not identified as a need in the analysis. At the same time, Project safety concerns do limit use to dispersed day use activities. Increased management presence was also noted as a need.
REC-R39	<i>Formalize Saddle Dam Trailhead parking to allow for horse trailer parking outside of "Y".</i>	CONFIRMED: Trails are in high demand. Equestrian-related trail use in this area is an established use. This need will be addressed in the Trail Siting and Feasibility Study.
REC-R40	<i>Provide additional day use opportunities and appropriate sanitation facilities at the sites below Merwin Dam.</i>	CONFIRMED: Improvements to all or some of the 6 river access sites below Merwin Dam, including appropriate sanitation facilities and ADA accessible features, were identified.
REC - R41	<i>Ensure that licensees have the ability to use all tools and methods necessary to best manage public recreation and access while retaining all rights and privileges under federal statutes and regulations governing recreation.</i>	CONFIRMED: This action relates to the programs to be included in the RRMP. These programs have not been developed yet. However, an adaptive management approach will be considered.
REC - R43	<i>Five river access sites are provided below Merwin Dam as part of the Merwin License. These sites provide fishing access, general day-use and boat access to the Lewis River below Merwin Dam. These sites are: Island Access (bank access and boat ramp); Haape (small boat and bank access); Cedar Creek Access (boat ramp and bank access); Lewis River Fish Hatchery Access (bank access); Merwin River Access (small boat and bank access) and Johnson Creek Access (bank access). Cresap Bay Campground and Day-use area is also a Merwin License requirement. This facility provides camping, day-use, boat launching and an overnight moorage.</i>	CONFIRMED: All 6 Project river access sites are addressed in the needs analysis. All sites are needed to meet existing and future recreation needs in the Project area.

REC - R44	<i>On Lake Merwin, two facilities were voluntarily constructed and maintained: Merwin Park, which provides day-use, swimming and bank access for fishing; and Speelyai Bay Park, which provides bank fishing access, day-use and swimming, and a paved boat ramp. On Yale Lake, the following facilities were voluntarily constructed and maintained and provide day-use, bank fishing access, and boat ramps at each location: Saddle Dam Park, Yale Park, and Cougar Park Day-use. Saddle Dam Park was recently renovated as an implementation condition of the Yale License Application. Two campgrounds were voluntarily constructed on Yale Lake and include Cougar Campground and Beaver Bay Campground. On Swift Reservoir, Swift Campground was voluntarily constructed and maintained along with a boat ramp on lands leased from the state. Fishing access is also provided at the Swift No. 2 Power Canal.</i>	CONFIRMED: All identified "voluntary" facilities are discussed in the Recreation Needs Analysis. All sites are needed to meet existing and future recreation needs in the Project area. Also see REC-R33.
REC-R45	<i>Renovate the Eagle Cliff recreation facility to repair flood damage and improve attractiveness of the facility for use. Two concepts were proposed for renovation: 1) abandon facilities downstream from bridge and develop small picnic area with a vault toilet adjacent and upstream from existing parking area on higher ground; and 2) Renovate existing day-use area downstream of bridge and improve connection to parking area through increased direction signage and improved pathways.</i>	CONFIRMED: These options are discussed for renovation of the existing Eagle Cliff recreation site. Other option may be considered.
REC-R46	<i>Establish a visitor contact center/interpretive facility in the Yale Valley area.</i>	CONFIRMED: Better dissemination of visitor facility and service information was identified as a need. Such a center or facility is one option to meet this need. In addition, it could become part of an Interpretation and Education (I&E) Plan for the Project area.

REC-R47	<i>Licensees provide a commensurate share of the cost of the annual administration, operation, and maintenance and periodic replacement of facilities related to project induced recreation use occurring on national forest system lands, including but not limited to campgrounds, dispersed sites and fishing sites.</i>	NOT CONFIRMED: The USFS identified dispersed sites to be surveyed surrounding the Project. Survey results showed a 10 - 20 percent relationship of dispersed site visitors to the Project. At the same time, 20 - 25 percent of visitors to the Project area identified USFS or Monument lands as their destination. While there are relationships going both ways, USFS - Monument visitors are by far the much larger group, so the larger impact is on the Projects.
		RECREATION ACTIONS FROM THE NEEDS ANALYSIS NOT DETAILED IN THE READ ACTIONS
	<i>Not a specific action. Components are included in REC - R26, R28, R29 and R30. Also the Recreation Capacity and Suitability Study includes options for locating expanded camping.</i>	The Needs Analysis discusses different options for accommodating future campsite expansion involving Cougar Camp, Beaver Bay, Swift Camp, and a potential new campground. The options detail mixing and matching day use and campground needs at different locations.
	<i>Create new Proposed Action, REC - R45</i>	The Needs Analysis discusses renovation of the Eagle Cliff facility including concentrating day use activities north of the parking area and removing flood damaged facilities south of the highway.
	<i>This is a component of REC - R16. Add these specifics into the notes for REC - R16.</i>	The Needs Analysis discusses lengthening a boat launch lane at each reservoir to accommodate year-round reservoir access. Sites identified include Speelyai Bay on Merwin, Yale Park on Yale Lake, and a new launch site on Swift Reservoir.
	<i>This is a component of REC - R3. Include these specific examples into the notes for REC-R3.</i>	The Needs Analysis discusses providing ADA accessible fishing piers or floats. Potential locations include the powercanal for trout fishing and the access sites below Merwin for riverine fishing opportunities.
	<i>This is a component of REC - R4. Include these specific examples into the notes for REC-R4.</i>	The Needs Analysis discusses providing Watchable Wildlife sites. Two sites were identified - Beaver Bay wetland and the Swift bypass reach - a pull off from FR 90 with a view of the bypass area.
	<i>This is a component of REC - R3. Include these specific examples into the notes for REC-R3.</i>	The Needs Analysis discusses providing ADA accessible swimming areas. Two existing sites to be modified include Merwin Park and Cresap Bay day use areas.

Attachment B
Comments and Responses on Draft Report

This section presents stakeholder comments provided on the draft report, followed by the Licensees' responses. The final column presents any follow-up comment offered by the stakeholder and in some cases, in italics, a response from the Licensees.

Commenter	Volume	Page/ Paragraph	Statement	Comment	Response	Response to Responses
WDFW - KAREN KLOEMPKE	6b	REC 06 App. 1-39	Consider implementing an expanded reservation system. Reserved sites.	Consider having from 25% and up to 50% available for reservations. If they fill up that's good, but if they are not used allow "drop in people" to use them.	Twenty-five to 50 percent was given as an example of the potential range of campsites available by reservation. It should be further explained that any unused reserved sites would become available on a first-come-first-serve basis, though only after all the non-reserve sites were full.	
WDFW - KAREN KLOEMPKE	6b	REC 06 App. 1-63; Sec. 4.1.6.5.	REC 6 App. 1-63; Sec. 4.1.6.5	The comments in the letter of April 2001, from WDFW listing concerns regarding trail segments on Merwin, are still pertinent. They are repeated here for your convenience along with new comments. <ul style="list-style-type: none"> “A number of stream crossings and potential impacts to wetland-associated species along this route are also of concern – the northeast Merwin area presently supports a diversity of species that are sensitive to disturbance (pileated woodpecker, osprey, bald eagle, waterfowl spp.) which is precisely the reason they occur in these less- 	Many wildlife disturbance issues can be mitigated through seasonal use restrictions in areas of sensitivity (if necessary) or by maintaining adequate distance from sensitive areas. Phase II of the Trail Feasibility Study addressed comments received regarding wildlife disturbance issues; however, because an exact trail alignment was not determined, actual impacts are unknown. Many areas can provide adequate wildlife habitat while still allowing visitors an opportunity for recreation. Non-motorized trail use in the Project area is	

Commenter	Volume	Page/ Paragraph	Statement	Comment	Response	Response to Responses
				<p>developed parcels.”</p> <ul style="list-style-type: none"> There are continued concerns regarding the “potential unavoidable conflicts” with nesting sites and created snags. Location of trail near “well-used game trail corridors” could cause added stress to wildlife in the area. <p>“WDFW proposed an alternative along the ROW, south of Merwin Reservoir. This route is evidently also supported by Clark County. The main argument against investigating this route further seems to involve the unsatisfactory aesthetic experience that exists along the powerline corridor and the potential for vandalism of transformers. It appears that the Merwin portion of the proposed trail cannot be situated such that it will not conflict seriously with one or more parties.”</p>	a potential recreation measure that, if implemented, will need to be balanced with other resource needs throughout the license application process and, ultimately, through the term of the new license.	
WDFW - KAREN KLOEMPKE	6b	REC 06 App. 1-63; Sec. 4.1.6.5	Continue to investigate potential trail use of IP Road.	<p>The comments in the letter of April 2001, from WDFW listing concerns regarding the Yale/IP road route, are still pertinent. They are repeated here for your convenience.</p> <ul style="list-style-type: none"> “The issue of whether access along the IP road is supported by DNR and other easement-holders is yet to 	Please refer to the previous response.	

Commenter	Volume	Page/ Paragraph	Statement	Comment	Response	Response to Responses
				<p>be formally resolved. WDFW would like written assurance that sighting a trail along this route is supported by all concerned entities.”</p> <ul style="list-style-type: none"> ▪ “The southern end of Yale at the beginning of the proposed route is of particular concern regarding the potential for wildlife disturbance: A wetland area frequented by a number of species known to be sensitive to disturbance¹ and several eagle and osprey roost areas and nests occurs along this section. In addition, as the IP road route continues north along Yale, several stream crossings occur as well as a number of additional osprey activity areas. Although the trail itself is mostly-paved and well armored, it must be expected that riders will need to water their horses at points along this route. The streams are much more accessible than the reservoir, potentially impacting these sensitive areas. More investigation into seasonal-use restrictions and potential 		

Commenter	Volume	Page/ Paragraph	Statement	Comment	Response	Response to Responses
				<p>impact assessment is warranted.”</p> <ul style="list-style-type: none"> ▪ “During an April 5, 2001 visit by WDFW along the proposed IP road route, a common loon and an osprey flushed 2.5 miles south of the IP bridge. Near this same point a recent rockslide covered the entire road highlighting the need for more in-depth assessment of bank stability along this route.” ▪ Concern of disturbance of eagle nest at southwest corner of Drift Creek cove. 		
				<p>1 EDAW. 1998. TES and priority species observation in Final Technical Report for terrestrial resources, Yale Hydroelectric Project #2071, PacifiCorp, Portland, OR.</p>		