Recreation Needs Analysis (RSP 13)

Henry M. Jackson Hydroelectric Project
FERC No. 2157

October 2008

Prepared for:

Public Utility District No. 1 of Snohomish County

Everett, WA

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Executive Summary

Federal Energy Regulatory Commission (FERC) guidelines identify the requirement to prepare a Recreation Needs Analysis as part of a hydroelectric project license application. The Henry M. Jackson Hydroelectric Project (Project)(FERC Project No. 2157) Recreation Needs Analysis (RSP 13) informs stakeholders, as well as the Public Utility District No. 1 of Snohomish County (District) and City of Everett (City), by synthesizing recreation- and public use-related information collected during relicensing. The Recreation Needs Analysis also defines recreation needs that may be considered for implementation during a new license term; however, the results should not be interpreted as potential protection, mitigation, and enhancement (PM&E) measures. The Recreation Needs Analysis results will be considered along with the results of other relicensing studies to develop potential PM&E measures that take into account all resource needs, not only recreation and public access.

The Recreation Needs Analysis consists of four primary components: Supply, Demand, Capacity, and Needs (including a non-motorized trail assessment). Pertinent summary results from each of these components include the following:

Recreation Supply Analysis

- District Recreation Opportunities – The existing supply of District-managed developed recreation sites in the Project area (definitions of the Project boundary, Project, and study area are provided in Section 2.1) offer multiple recreation opportunities, including flat-water boating (on Spada Lake), fishing, picnicking, sightseeing, resting and relaxing, walking and hiking (within recreation sites and along Project roads), mountain biking (along Project roads), whitewater boating (on the Sultan River), and photography and wildlife observation, among others.

- Study Area Recreation Opportunities – In the larger study area, there are numerous other recreation opportunities on lands managed by Washington Department of Natural Resources (DNR) and U.S. Forest Service (USFS), including hiking, camping, hunting, and rock climbing, among others.

- Regional Recreation Opportunities – The areas in and around Snohomish and King Counties (considered the Project region) are rich in recreation opportunities. Some of these opportunities are similar to those available in the study area, while others are different. Of particular importance to ongoing and future recreation management in the Project area, the region provides a diversity of recreation opportunities, some of which are available and appropriate in the Project area.

- Recreation Responsibilities – The District is one of many recreation providers in the region. As such, it is not the District's sole responsibility to provide all types of recreation opportunities. Instead, the Project area provides a range of appropriate recreation opportunities, given Project constraints (e.g., water quality protection, operations, etc.) and location.

- Study Area Use Factors – The study area's proximity to major population centers, as well as the beautiful/distinctive setting (mid-elevation forests surrounding the reservoir; a rustic forested river canyon) and low levels of use likely help attract visitors to the area. Conversely, water quality-related regulations and restrictions limit recreation use levels.

Recreation Demand Analysis

- Existing Study Area Use Estimates – Existing study area recreation use is estimated at approximately 8,500 recreation days per year (based on 2-year Recreation Visitor Survey [RVS]-related data collection period). At Spada Lake, use tends to be highest during the summer months (June-August), while use tends to be more evenly distributed throughout the year along the Sultan River and at Lost Lake.

- Primary Activities in the Study Area – At Spada Lake (recreation sites accessed via Olney Pass, including DNR's two trails), sightseeing (average of 1,449 annual recreation days [RD] during 2-year RVS data collection period or approximately 22 percent of annual use at Spada Lake) and hiking (average of 1,603 annual RD during 2-year RVS data collection period or approximately 25 percent of annual use at Spada Lake) accounted for the highest participation estimates, while fishing (average of 500 annual RD during 2-year RVS data collection period or approximately 27 percent of annual use along the Sultan River) and hiking (average of 435 annual RD during 2-year RVS data collection period or approximately 24 percent of annual use along the Sultan River) accounted for the highest participation estimates at Sultan River and Lost Lake. Many visitors to both Spada Lake and Sultan River/Lost Lake indicated "multiple" primary activities on the completed visitor registration forms collected during the 2-year RVS-related data collection period. The high number of "multiple" activity visitors indicates the importance the study area plays in providing a range of recreation opportunities, not just one primary activity.

- Regional Estimates of Demand – National and state-level estimates of recreation demand indicate that participation in most outdoor activities is anticipated to increase over the term of the new FERC license (primarily as a result of expected population growth). Regional increases in outdoor activities will likely influence recreation use levels in the study area. At the state level, the Washington Recreation and Conservation Office (RCO) estimates that nature activities and linear activities (e.g., walking, hiking, bicycling, etc.) will both experience large increases in participation levels over the next 20 years (IAC 2003).

- Projected Future Recreation Use Levels in the Study Area – Future recreation use in the study area is projected to range (based on regional participation trends and anticipated population changes) from approximately 11,000 recreation days (low scenario) to about 18,800 recreation days (high scenario) by 2061 (the anticipated 50-year maximum term of the new FERC license). This represents an increase of about 30 to 123 percent over existing use levels.

- Potential Effects of Future Recreation Use Levels – Higher use levels in the future may result in increased pressure on existing study area recreation sites and use areas. New recreation opportunities (e.g., sites, facilities, etc.), changes in the existing configuration of recreation sites and public access (e.g., hike/bike instead of vehicle access, road closures, etc.) and/or changes in management strategies (e.g., visitor regulations) may then be needed to accommodate this increased use over time (see Capacity Analysis).

Recreation Capacity Analysis

- Current Project Area Capacity Estimate – In general, current recreation and public use levels throughout the Project area are considered below capacity (i.e., use levels do not create/result in unacceptable ecological/biophysical, social, and/or management impacts).

- Anticipated Future Capacity – Even with robust growth in recreation activity participation, use levels at existing developed recreation sites in the Project area are not anticipated to reach and/or exceed capacity in the future.

- Limiting Factors – While use levels are considered below capacity at this time (and will likely remain within acceptable levels during the anticipated license term), both ecological/biophysical and management capacity are considered recreation- and public use-related limiting factors. Ecological/biophysical and management capacity are considered limiting factors because of the District's water quality protection measures required by the City of Everett and Washington State Department of Health and associated recreation use regulations and restrictions. As noted in the Capacity Analysis, this is not to imply that use regulations and restrictions are unacceptable and should be modified (there are multiple factors that influence recreation use levels in the Project area); rather it is an acknowledgement of the outcome that these actions have on recreation use levels in the Project area.

Non-Motorized Trails Assessment

- Study Area Trails – Currently, there are no District-managed official, developed recreation trails in the study area, though informal trails generally provide river access at the Sultan River access sites. In the study area, DNR provides two non-motorized trails (Boulder Lake and Greider Lakes) and study area roads are also used as de-facto trails (motorized and non-motorized uses).

- Potential Trails – Several potential regional trails have previously been identified (e.g., IAC 1991 State Trails Plan), some of which pass near and/or through the study area (the District is not responsible for the development of regional trails outside the Project boundary). Other potential trails in the study area have also been identified by interested stakeholders. These stakeholder-identified trails tend to be focused on providing access to existing recreation opportunities, such as sites along the Sultan River.

- Trail Demand – While there are multiple trail opportunities in the Project region, demand for these types of opportunities appears to be growing (at both the state and national levels). As a result, the RCO has indicated that new trail development should be a priority in the state.

- DNR Study Area Plans – DNR recently created the Morning Star Natural Resource Conservation Area (NRCA) by combining the three existing NRCAs located to the north, east, and south of Spada Lake. DNR also plans to abandon the South Shore Road based on economics and their business practices. The abandonment will take place under the state's Forest Practice Act's Road Maintenance and Abandonment Plan process. DNR plans to develop new trails to access their existing Greider Lakes and Boulder Lake trails in the study area (trail and trailhead locations have not been determined to date). Mountain bikes would likely not be allowed on these new trails (DNR policy prohibits bikes in NRCAs unless an exception is granted). While the designation of the Morning Star NRCA increases the availability of trail opportunities in the study area, abandonment by the DNR of South Shore Road would result in hiking and/or biking access only to the District's existing developed recreation sites along the southern shoreline of Spada Lake.

- Pilchuck Mainline Road (DNR) – DNR currently allows non-motorized uses (hiking, biking, and equestrian) on the Pilchuck Mainline (PK-ML) Road. No changes related to allowable uses and/or designation as an official trail are anticipated on this road. This is currently the only public access route to the North Shore Recreation Site north of Culmback Dam.

- USFS Study Area Plans – The USFS has a long-term strategy to "trade out" their lands in the Sultan River gorge. In the near-term, the USFS recognizes the importance of a lightly developed river access trail off of Forest Road 6122, as well as the provision of continued reasonable access to mineral claims along the river. Additionally, the USFS is interested in creating a north/south connection across the river (since public access is currently not allowed across Culmback Dam). The USFS plans to coordinate any planned access and trail improvements along the Sultan River with the District's relicensing efforts.

- Stakeholder Trail Input – There is a desire among stakeholders (who participated in the trails-related workshop) to maintain access routes to existing recreation opportunities in the study area, including the District's developed recreation sites along Spada Lake, the DNR's trails, the Static Point climbing area, and various locations along the Sultan River, among others. While vehicular access is still important, non-motorized trail access to many of these opportunities seems appropriate for most stakeholders.

- Potential New Study Area Trails – To help compensate for the potential loss of recreation opportunities at Spada Lake associated with the DNR's abandonment of South Shore Road, new trails are being considered during the anticipated license term. DNR has stated that, at minimum, they would convert the South

Shore Road into a trail for access to their Boulder and Greider recreation sites. Additional, potential new trails in the study area (i.e., the development of District-managed trails) could be sited and developed so as to provide continued water quality and other ecological protections, as well as continued Project security.

Recreation Needs Analysis

- Activity Needs – Overall, there are many opportunities for visitors to the study area to participate in a range of appropriate outdoor activities given current and anticipated future water quality protection measures. During the anticipated new license term, the District's recreation resources would benefit from the continued provision of and improvement/enhancement of many of the current Project-related activities, including reservoir boating, fishing, sightseeing, hunting, picnicking, wildlife viewing, resting and relaxing, mining/prospecting, walking/hiking, mountain biking, interpretation and education, and whitewater boating. All of these activities are day use only. Overnight use and activities are not allowed in the study area due to water quality protection measures. This is unlikely to change during the new license term as water quality protection will continue to be a priority for the City of Everett and Washington State Department of Health.

- Facility Development Needs – In general and based on current research, new recreation facility development is not nor will it likely be a high priority need during the new license term given current and anticipated future use levels in the study area. However, DNR's planned abandonment of South Shore Road may require the District to investigate expanding and/or developing new recreation sites on Spada Lake (the planned abandonment will not impact the Sultan River/Lost Lake access sites). Potential recreation facility expansion or development would likely be based on the District's and DNR's decisions regarding future management and segmentation of South Shore Road.

- Operations and Maintenance Needs – Currently, the District's recreation sites and use areas are generally well maintained. Changes to current O&M practices are generally not needed at this time and are not anticipated in the future except for the Trout Farm Road River Access Site. Under the new license, the District should continue to provide routine O&M at Project-related recreation sites.

  While changes to the current O&M practices and schedule are not anticipated, Project operations may be modified to enhance whitewater boating opportunities on the Sultan River below Culmback Dam. The results of the Flow Recreation Study (RSP 14) indicate that whitewater boating opportunities on the Sultan River could be provided (or enhanced) if appropriate flows and/or access trails/facilities are provided.

- Programmatic Needs – There are no significant programmatic needs; however, there are several Project-related programmatic needs that could enhance recreation opportunities in the study area. These programmatic needs include

periodic recreation use and impact monitoring, access improvements (specific to gate schedules), and enhanced interpretation and education opportunities.

Based on the results of the Supply, Demand, Capacity, and Needs Components, three preliminary recreation-related alternatives were developed to help meet Project-related needs during the anticipated new license term. These alternatives are displayed in Table ES-1. Potential recreation-related actions under each alternative are categorized by type of need: (1) Facility Development, (2) Operations and Maintenance, and (3) Programmatic. Each type of need is also divided by geographic area (Spada Lake and Sultan River/Lost Lake).

None of the actions listed in Table ES-1 should be considered proposed PM&E measures yet. Instead, the preliminary actions listed in the table should be used to help guide development of recreation-related PM&E measures (all appropriate resource relicensing study results should be considered during the development of recreation-specific PM&E measures). Ultimately, recreation resource PM&E measures need to address the primary recreation needs that have been identified in this analysis, which include: 1) maintain and/or enhance quality recreation opportunities, 2) improve access to recreation sites, use areas, and other opportunities, and 3) where appropriate, provide new trail development and opportunities. Meeting these priority needs during the new license term will help ensure the continued provision of safe public access and satisfying recreational experiences, while ensuring Project security and water quality protection.

Table ES-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Theme: Generally continue existing recreation management in the study area, with non-motorized trail enhancements.	*Theme: Enhance District-managed recreation opportunities to account for changes along the South Shore Road (and potential loss of some District-managed sites) and increased land-based access along the Sultan River. The overall management goal is to provide opportunities that are compatible with water quality protection measures, the distinctive setting (environmental/ biophysical conditions), and the relatively uncrowded recreation experience.*	*Theme: Similar to Alternative B, but with different enhancement-related actions. The overall management goal is to provide opportunities that are compatible with water quality protection measures, the distinctive setting (environmental/ biophysical conditions), and the relatively uncrowded recreation experience.*
FACILITY DEVELOPMENT ACTIONS		
<u>Spada Lake</u>		
• No new recreation facility development. Retain existing recreation sites at Spada Lake including Olney Pass, North Shore, South Fork, South Shore, and Nighthawk. • Close the Bear Creek Recreation Site to vehicular access (new trailhead development at Nighthawk). Develop non-motorized (no equestrian use) trail between Nighthawk and Bear Creek recreation sites. • Consider a controlled, non-motorized-	• Explore and implement a recreation site development option, based on South Shore Road management decision (assumes that at a minimum the District will maintain South Shore Road to at least the South Fork Recreation Site). Options include: <u>*Option 1:*</u> Formally close and rehabilitate District's developed recreation sites along South Shore Road (including South Shore, Nighthawk, and Bear Creek), except the South Fork Recreation	• Formally close and rehabilitate the District's developed recreation sites along the South Shore Road (including South Fork, South Shore, Nighthawk, and Bear Creek). Develop a potential recreation site along the southwestern shoreline of Spada Lake, pending the results of a site suitability and feasibility studies (environmental, economic, and engineering). The potential recreation site may provide a developed boat launch, picnic areas, parking, and

Table ES-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
only crossing of Culmback Dam to provide access to the North Shore Recreation Site and the DNR's Pilchuck Mainline Road. Potential controlled pedestrian access across Culmback Dam is predicated on safe visitor access and dam security needs.	Site. Enhance the existing South Fork Recreation Site by developing an improved boat ramp and increased parking to accommodate existing use levels from the District's existing South Shore Road recreation sites. *Option 2:* Formally close and rehabilitate Nighthawk and Bear Creek recreation sites. Retain South Fork and South Shore recreation sites. • Expand single vehicle parking at either Olney Pass, South Fork, or South Shore (depending on recreation site option above) to help accommodate additional DNR trail-related parking (assumes new DNR trailhead will be located at one of these sites; DNR would be responsible for the development of the trailhead and trail). • Formally close and rehabilitate the North Shore Recreation Site. • In the future and if feasible, potentially expand parking (both single vehicle and vehicle-with-	other site features. The potential recreation site may also be designed so as to accommodate existing use levels at the District's current sites along South Shore Road. • Reconfigure and expand Olney Pass access site to accommodate additional parking related to new DNR trailhead at this site (assumes that new DNR trailhead would be located at an existing District-managed recreation sites and that DNR would be responsible for the development of the trailhead and trail). • In the future, consider developing a parking area (near the existing gate on Culmback Dam Road or the FR 6122 intersection) to allow for potential controlled pedestrian-only access across Culmback Dam to the North Shore Recreation Site (see Programmatic Needs). Provision of controlled pedestrian access would be dependent on a safe visitor experience and District security needs, among other considerations.

Table ES-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
	trailer) at District-managed recreation sites based on monitoring results (see Programmatic Needs).	
	Sultan River and Lost Lake	
• No new recreation facility development. Retain existing river access sites including Diversion Dam Road, Horseshoe Bend, Old Gaging Station Road, Powerhouse, and Trout Farm. Retain access opportunities at Lost Lake.	• Provide interpretive opportunities (natural resources, historic/cultural resources, Project operations, etc.) at the existing river access sites. • Enhance Trout Farm Road River Access (see Programmatic Needs). • In the future and based on periodic monitoring (see Programmatic Needs), formalize river access sites (designated parking and trails) to help protect sensitive natural and/or cultural resources. • In the future and based on periodic monitoring (see Programmatic Needs), designate and formalize appropriate access trails to Lost Lake to help protect sensitive resources (or consider other management actions related to use levels).	Same as Alternative B, plus: • Develop enhanced public access to the Sultan River below Culmback Dam at specific river access sites.

Table ES-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
OPERATIONS and MAINTENANCE (O&M) ACTIONS		
Spada Lake		
• Continue to provide periodic O&M at the District's developed recreation sites at Spada Lake. • Maintain South Shore Road from Olney Pass to Nighthawk (South Shore Road closed beyond Nighthawk per DNR's planned abandonment strategy).	• Continue to provide periodic O&M at the South Fork and South Shore recreation sites, depending on recreation site development option (see Facility Development Needs). • Maintain the South Shore Road from Olney Pass to the South Fork or South Shore recreation sites, depending on recreation site development option (South Shore Road would be closed beyond South Fork or South Shore per DNR's planned abandonment strategy).	• Maintain South Shore Road from Olney Pass to potential recreation site, if this new site is accessed via the South Shore Road (South Fork Road would be closed beyond the new recreation site per DNR's planned abandonment strategy). • Provide periodic maintenance at potential recreation site, located at an appropriate area along southwestern shoreline of Spada Lake (if feasible). • Continue to provide periodic O&M at the North Shore Recreation Site.
Sultan River and Lost Lake		
• Continue to provide periodic O&M at the District's river access sites and Lost Lake.	Same as Alternative A, plus: • Provide increased O&M (site cleanup, official presence, etc.) partnering opportunities (e.g., with the City of Sultan, American Whitewater, etc.) at the Trout Farm River Access Site.	Same as Alternative B, plus: • Provide periodic whitewater boating flows, if determined to be feasible considering other resource needs during PM&E measure development. Whitewater boating flow details, including timing and volume of flows, will be developed (as a component of a potential PM&E measure) if

Table ES-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
		recreational flows are determined to be appropriate. Potential options for whitewater boating flows that may be considered during PM&E measure development include (among others): *Option 1:* Provide potential recreation flow releases in coordination with other resource needs (fish flows, flushing flows, maintenance, testing). *Option 2:* Provide potential recreation flow releases based on allocation of volume or costs. *Option 3:* Provide potential recreation flow releases per a multi-year trial and assessment period.

Table ES-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
PROGRAMMATIC ACTIONS		
Spada Lake		
• Continue to use visitor registration cards at Olney Pass to help monitor visitor use levels. • Continue to monitor and inform visitors at the District's developed recreation sites at Spada Lake.	Same as Alternative A, plus: • Allow controlled (permitted) overnight parking at Olney Pass, South Fork, or South Shore recreation sites (depending on recreation development site option – see Facility Development Needs) to accommodate DNR trail users (depends on location of DNR trailhead, but assumes it will be one of these sites). • Provide new and enhanced I&E-related opportunities. • Periodically monitor recreation-related impacts (ecological/biophysical, social) at District-managed recreation sites at Spada Lake.	Same as Alternative A, plus: • Allow overnight parking (controlled) at Olney Pass to accommodate DNR trail users (assumes DNR trailhead will be at this site). • Assess options for providing controlled pedestrian-only access across Culmback Dam to the North Shore Recreation Site. • In the future and if controlled pedestrian access is allowed across Culmback Dam, consider allowing group day use opportunities (e.g., boy scouts, etc.), through a formalized reservation system, at the North Shore Recreation Site.
Sultan River and Lost Lake		
• Continue to monitor and inform visitors at river access sites.	Same as Alternative A, plus: • Periodically (minimum of every 6 years) monitor recreation-related impacts (ecological/biophysical, social) and use levels at river access sites and Lost Lake.	Same as Alternative B, plus: • Explore options for increased access (times during day when gates are open) to river access sites, especially along Lake Chaplain Road and Diversion Dam Road during planned

Table ES-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
	• Provide new and enhanced I&E-related opportunities.	flows and/or boatable events (if deemed feasible during PM&E measure development). • Explore options for public access to the Sultan River at the Powerhouse from 116th Road Extended. • Explore options for improved communications regarding natural and/or planned flow events.

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Acronyms and Abbreviations

ADA	Americans with Disabilities Act
BAOT	boats-at-one-time
City	City of Everett
CFR	Code of Federal Regulations
cfs	cubic feet per second
DFW	Washington Department of Fish and Wildlife
District	Public Utility District No. 1 of Snohomish County
DNR	Washington Department of Natural Resources
FERC	Federal Energy Regulatory Commission
FR	Forest Road
IAC	Interagency Committee for Outdoor Recreation
I&E	interpretation and education
ILP	Integrated Licensing Process
NPS	National Park Service
NRCA	Natural Resource Conservation Area
NSRE	National Survey on Recreation and the Environment
OFM	Washington Office of Financial Management
OHV	off-highway vehicle
OIF	Outdoor Industry Foundation
PAD	Pre-Application Document
PAOT	people-at-one-time
PM&E	protection, mitigation, and enhancement
Project	Henry M. Jackson Hydroelectric Project
RCO	Washington Recreation and Conservation Office
RD	recreation days
RM	River Mile
ROW	right-of-way
RRMP	Recreation Resource Management Plan
RVS	Recreation Visitor Survey
SCORP	Statewide Comprehensive Outdoor Recreation Plan
USFS	U.S. Forest Service
VAOT	vehicles-at-one-time
WHMP	Wildlife Habitat Management Plan
WROS	Water Recreation Opportunity Spectrum

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Recreation Needs Analysis

1.0 STUDY OBJECTIVES AND DESCRIPTION

Federal Energy Regulatory Commission (FERC) guidelines identify the requirement to prepare a Recreation Needs Analysis as part of a hydroelectric project license application. The Henry M. Jackson Hydroelectric Project (Project)(FERC Project No. 2157) Recreation Needs Analysis helps inform stakeholders, as well as the Public Utility District No. 1 of Snohomish County (District) and City of Everett (City) by synthesizing recreation- and public use-related information collected during relicensing. Note: the District and City are Co-licensees under the current license. The District will be the sole licensee under the anticipated new FERC license.

The Recreation Needs Analysis also defines recreation needs that may be considered for implementation during a new license term; however, the results should not be interpreted as potential protection, mitigation, and enhancement (PM&E) measures. The Recreation Needs Analysis results will be considered along with the results of other relicensing studies to develop potential PM&E measures that take into account all resource needs, not only recreation and public access.

Title 18 (Conservation of Power and Water Resources) of the Code of Federal Regulations (CFR) stipulates that a hydroelectric project license application must contain the following related to recreation resources (Subchapter B, Part 4, Subpart F, Section 4.51 of 18 CFR):

> "Report on recreational resources. The report must discuss existing and proposed recreational facilities and opportunities at the project. The report must be prepared in consultation with local, state, and regional recreation agencies and planning commissions, the National Park Service, and any other state or Federal agency with managerial authority over any part of the project lands. Consultation must be documented by appending to the report a letter from each agency consulted indicating the nature, extent, and results of the consultation. The report must contain:
>
> (i) A description of any existing recreational facilities at the project, indicating whether the facilities are available for public use;
>
> (ii) An estimate of existing and potential recreational use of the project area, in daytime and overnight visits;
>
> (iii) A description of any measures or facilities recommended by the agencies consulted for the purpose of creating, preserving, or enhancing recreational opportunities at the project and in its vicinity (including opportunities for the handicapped), and for the purpose of ensuring the safety of the public in its use of project lands and waters;

(iv) A statement of the existing measures or facilities to be continued or maintained and the new measures or facilities proposed by the applicant for the purpose of creating, preserving, or enhancing recreational opportunities at the project and in its vicinity, and for the purpose of ensuring the safety of the public in its use of project lands and waters, including an explanation of why the applicant has rejected any measures or facilities recommended by an agency and described under paragraph (f)(5)(iii) of this section; and

(v) The following materials and information regarding the measures and facilities identified under paragraphs (f)(5) (i) and (iv) of this section:

(A) Identification of the entities responsible for implementing, constructing, operating, or maintaining any existing or proposed measures or facilities;
(B) A schedule showing the intervals following issuance of a license at which implementation of the measures or construction of the facilities would be commenced and completed;
(C) An estimate of the costs of construction, operation, and maintenance of any proposed facilities, including a statement of the sources and extent of financing;
(D) A map or drawing that conforms to the size, scale, and legibility requirements of §4.39 showing by the use of shading, cross-hatching, or other symbols the identity and location of any facilities, and indicating whether each facility is existing or proposed (the maps or drawings in this exhibit may be consolidated); and

(vi) A description of any areas within or in the vicinity of the proposed project boundary that are included in, or have been designated for study for inclusion in, the National Wild and Scenic Rivers System, or that have been designated as wilderness area, recommended for such designation, or designated as a wilderness study area under the Wilderness Act."

The Recreation Needs Analysis addresses these FERC regulations through the review and compilation of results from other component recreation-related analyses (Supply Analysis, Demand Analysis and Capacity Analysis) conducted within the Project area and vicinity. It identifies both existing and future recreation needs related to the Project over the term of the new license (anticipated to be 30 to 50 years). This analysis will be used to develop appropriate protection, mitigation and enhancement measures and a corresponding proposed plan for recreation resources called the Recreation Resource Management Plan (RRMP) which will be filed with FERC for approval. The RRMP will update the existing Final Project Recreation Plan (District 1991).

Agencies, Tribes, and other stakeholders were provided with multiple opportunities to provide input and comments on the results of the Recreation Needs Analysis. As the draft results sections of each of the study components described here were completed, they were provided to agencies, tribes, and stakeholders for review. Comments received from these reviewers and corresponding District responses, including revisions to the study results, are provided in Appendix A.

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2.0 BACKGROUND INFORMATION

The current Project license has a term of 50 years and expires in May 2011. The District and City, as current Co-licensees of the Project, are using the Integrated Licensing Process (ILP) to obtain a new FERC license. As part of the ILP, the Co-licensees proposed a Recreation Needs Analysis to determine recreation needs over the next 30 to 50 years. The Recreation Needs Analysis study plan was approved by FERC in October 2006, as part of the overall suite of studies in the Revised Study Plan (Co-licensees 2006a).

The Pre-Application Document (PAD), filed with FERC in December 2005 to begin the ILP, provides an overview of existing recreation conditions in the Project area and vicinity (Co-licensees 2005). This Recreation Needs Analysis expands on the information presented in the PAD and addresses existing and anticipated future recreation needs in the Project area. This section describes the applicable background information that was used to guide the Recreation Needs Analysis. This background information includes a definition of the study area, existing water quality protection measures and associated public use restrictions, a summary of applicable resource management goals, and the project nexus.

This section also reviews and describes the current water quality and watershed protection regulations and policies affecting the Project that, by necessity, must restrict public use of waters to non-body-contact activities, prohibit overnight uses around Spada Lake, and limit the types of watercraft (non-combustion engines only) that may be used on Spada Lake. Further, this component will discuss public access restrictions related to dam security and road closures, as well as areas where the public can access Project lands and waters.

2.1 Study Area Definition

The current Project includes those lands and waters within the existing FERC Project boundary (Figure 2-1). None of the existing developed recreation sites and use areas (except those portions of the shoreline below elevation 1,460 feet and the reservoir surface area) are within the current FERC Project boundary.

For recreation related relicensing purposes, the Project area is defined as all lands and waters within and adjacent to the FERC Project boundary, including Wildlife Habitat Management Plan [WHMP] lands, (which include the Lost Lake area that is used for recreation activities that are compatible with WHMP objectives), and the affected reach of the Sultan River below Culmback Dam (Co-licensees 2005). The Project area also includes the following District- and City-managed developed recreation sites and informal river access sites (Figure 2-1):

<u>Spada Lake Recreation Sites:</u>

- Olney Pass (Recreation Site 1)
- South Fork (Recreation Site 2)

- South Shore (Recreation Site 3)
- Nighthawk (Recreation Site 4)
- Bear Creek (Recreation Site 5)
- North Shore (Recreation Site 8)

Sultan River Public Access Sites:

- Diversion Dam Road River Access
- Horseshoe Bend River Access
- Old Gaging Station Road River Access
- Powerhouse River Access
- Trout Farm Road River Access

As noted previously, none of these recreation sites are within the current FERC Project boundary, though portions of the shoreline below elevation 1,460 feet at some of the Spada Lake recreation sites (South Fork, South Shore, and Nighthawk) are within the current FERC Project boundary (Co-licensees 2005).

For purposes of the Recreation Needs Analysis, the study area includes the Project area (as described above), as well as lands in the Project vicinity (defined as lands adjacent to or in proximity to the Project area) that are not owned and managed by either the District or the City. However, the focus of the Recreation Needs Analysis and any subsequent PM&E measures is on Project area recreation resources. As such, the District cannot make potential management commitments for other entities responsible for land management in the study area (e.g., Washington Department of Natural Resources [DNR], U.S. Forest Service [USFS], etc).

The Recreation Supply component of the analysis utilizes an expanded regional area of interest that includes comparable recreation opportunities that may act as potential substitute sites for visitors to the study area.

2.2 Water Quality Protection Measures

Spada Lake and the Sultan River are components of the City's municipal drinking water supply system. The City has diverted water from the Sultan River since 1917 for municipal water supply. Completed in 1964, Stage I construction of Culmback Dam created the reservoir called Spada Lake for additional water storage for the City, as well as, power generation for the District (Co-licensees 2005). Therefore, the shoreline surrounding Spada Lake and the reservoir itself are managed to ensure that water quality is maintained for the municipal supply. The City and District, with the support of the Washington Department of Health, developed use restrictions in the form of regulations that apply to the reservoir, its shorelines, and the watershed as a whole (areas of the Sultan Basin managed by the Co-licensees). These regulations are described in District Directive Number 73, FERC license article 44, and Snohomish County Codes 12.08.030 (prohibition of watercraft with internal combustion motors on Spada Lake) and 12.28.020 (no swimming in Spada Lake). Each of these regulations is provided in Appendix B. Additional water quality protection-related documentation is provided in Appendix C.

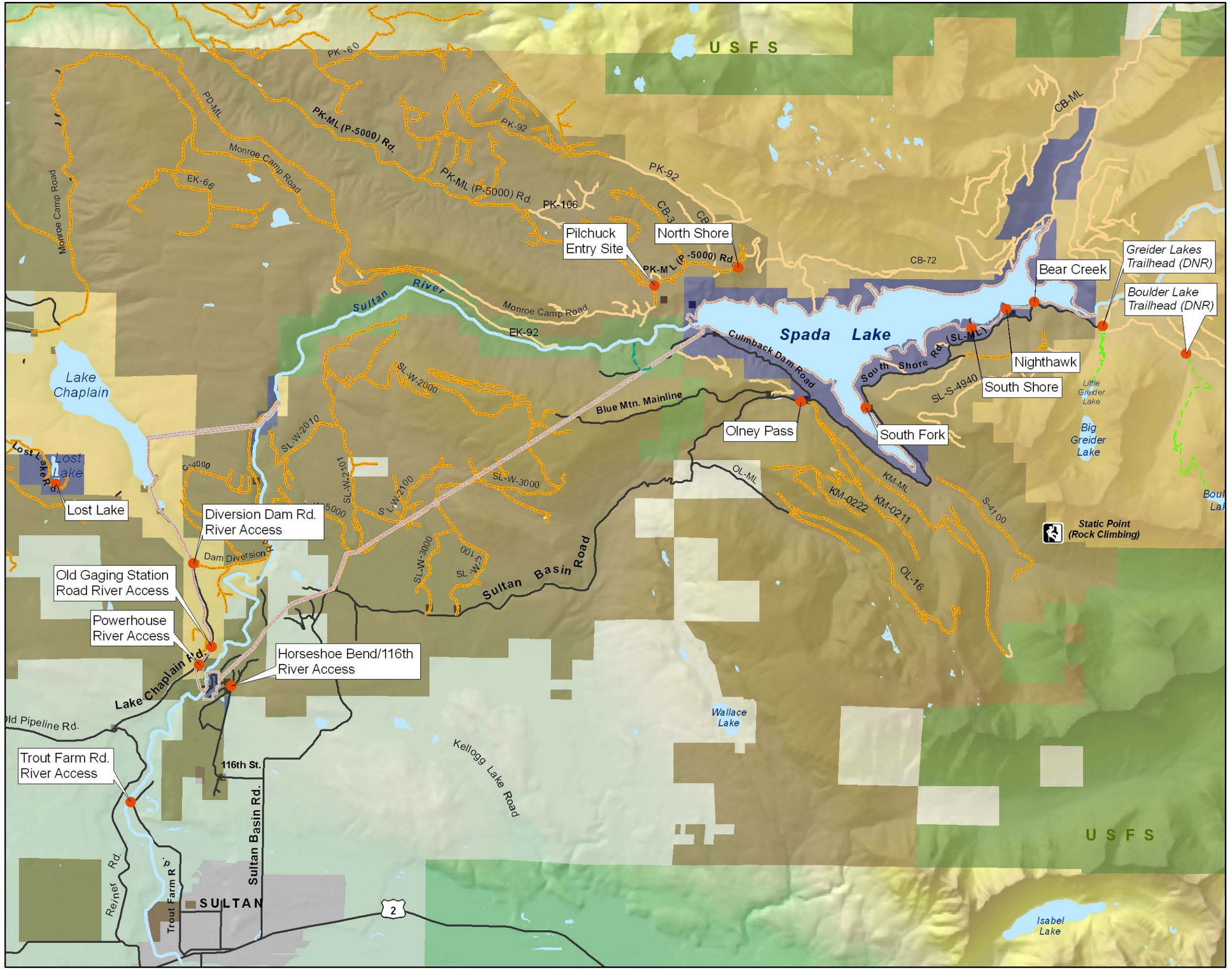

Figure 2-1
Recreation Sites and Use Areas in the Study Area

Henry M. Jackson Hydroelectric Project
FERC No. 2157

Legend

- Study Area Recreation Sites
- Developed Trails - Hike Only
- User Defined - Hike Only
- Gates

Road Use

- Abandoned
- Gated Forest Management Road
- Street Legal

USFS Designated Roads

- Unimproved Road
- Light Duty Road
- USFS Delineated Trail

- FERC Boundary
- Open Water
- Streams and Rivers

Land Ownership

- City of Everett
- DNR
- DNR-NRCA
- Easement
- US Forest Service
- Other
- Snohomish PUD

0 1 2 Miles

PUD

EDAW | AECOM

Modified: July 2008

Back of Figure 2-1.

The existing water quality regulations seek to balance water quality protection with public use opportunities and include the following:

- Spada Lake is a non-contact reservoir (i.e., activities that involve bodily contact, such as swimming, are not allowed);
- Only non-motorized and non-combustion engine watercraft may be used on Spada Lake;
- Public access is allowed along the Spada Lake shoreline, unless noted otherwise in Directive 73, and at designated recreation areas (listed in Section 2.1);
- Bank fishing is permitted only along the south shore of the reservoir, from the North Fork of the Sultan River west to the section line between Sections 29 and 28;
- Launching or landing boats is permitted only from designated recreation sites along the south shore (South Fork, South Shore, and Nighthawk); and
- Overnight camping is prohibited in the Sultan Basin on those lands controlled by the Co-Licensees.

Additionally, current Project operations and management have been designed to accommodate and prioritize water quality concerns. Water quality protection will continue to be a priority during the anticipated new license term. Additional information regarding current and future water quality control measures will be detailed in the appropriate sections of the FERC license application for the Project.

2.3 Resource Management Goals

The primary intent of the Recreation Needs Analysis is to identify potential existing and future recreation actions that may help address Project needs over the term of the new FERC license. These potential actions may become recreation-related PM&E measures in future stages of the relicensing effort. Additionally, addressing Project-related needs may also help meet recreation needs in the study area, as defined by other entities responsible for recreation management in the region and/or state including the National Park Service (NPS), Washington Recreation and Conservation Office (RCO – previously the Interagency Committee for Outdoor Recreation [IAC]), USFS, DNR, and Snohomish County. Specific recreation resource management goals that may be met in part through implementation of potential Project-related PM&E measures resulting from this analysis, as well as other relicensing studies are summarized as follows:

<u>NPS Goals Related to the Project</u>:

NPS, while not directly responsible for managing recreation opportunities in the study area, has the authority to consult with FERC and the Co-licensees concerning the Project's affects on outdoor recreation resources under the Federal Power Act (18 CFR

4.38(a), 5.41(f) (4)-(6), and 16.8(a)), the Outdoor Recreation Act (Pub Law 88-29), and the NPS Organic Act (39 Stat. 535). It is the policy of the NPS to represent the national interest regarding recreation, and to assure that hydroelectric projects subject to relicensing recognize the full potential for meeting present and future public outdoor recreation demands, while maintaining and enhancing a quality of environmental setting for those projects. Investigating current and anticipated future opportunities to improve public access and trails is consistent with NPS policy and FERC guidelines.

RCO Goals Related to the Project:

Based on the Statewide Comprehensive Outdoor Recreation Plan (SCORP)(IAC 2002), the RCO "recommends that non-federal hydropower project operators enhance inventory with trails and paths for walking and bicycling, manage dispersed shoreline camping, improve access for on-water recreation, and improve opportunities for nonconsumptive interaction with nature including fish and wildlife. In instances where the license holder has provided recreation land or facilities to other agencies, IAC recommends that the license holder also provide maintenance and operation assistance."

Furthermore, in their request for a Recreation Needs Analysis, the RCO also provided the following list of Project-specific goals:

- Control public access to minimize potential impacts to water quality, including the City's drinking water supply, while providing improved access for water-based recreation activities;
- Recycle unnecessary or hard-to-maintain roads to low-impact trails for walking, hiking, and bicycling (enhance recreational opportunities with new trails, walkways, and paths for pedestrian and bicycle use);
- Minimize environmental affects of recreation by emphasizing low-impact recreation activities;
- Provide additional opportunities for non-consumptive recreation activities (e.g., wildlife viewing, photography, etc.);
- Improve operations and maintenance at existing and new recreation sites; and
- Potential trail development should respond to known trends in outdoor recreation.

USFS Goals Related to the Project:

Based on Mt. Baker-Snoqualmie National Forest Land and Resource Management Plan (USFS 1990), relevant goals include:

- Provide a system of trails with routes, construction standards, and maintenance standards that complement the resource capabilities and management objectives of the area served with minimum impact on soil, water, visual and other sensitive values;
- On National Forest System lands, provide a broad spectrum of trail travel opportunities including trails at various elevations, trails in diverse settings, and trails suitable to various kinds of users and modes of travel;

- Achieve a unified trail system on and adjacent to the National Forest, and assure that the National Forest trail system complements management of adjacent land and vice-versa;
- Trails may be provided where soil, vegetation, and other environmental factors are suitable for such uses; and
- Each trail shall be managed to a particular "primary objective" (user type).

DNR Goals Related to the Project:

Based on DNR policies and Natural Resource Conservation Area (NRCA) management objectives, relevant goals include the following.

DNR policies and goals regarding recreation on state trust lands (DNR 2004) include:

- Provide recreation and public access opportunities on 2.2 million acres of state trust lands;
- Appropriate recreation and public access opportunities on DNR-managed lands must be safe for the public, compatible with trust asset management activities, designed to protect resources and the environment, and provide a quality experience for the user; and
- Recreation and public access opportunities must be compatible with the primary purpose of DNR-managed lands (revenue to support school construction and other public institutions) and must be consistent with good stewardship of the environment.

NRCA management objectives and goals (DNR 2005) include:

- Protect threatened, endangered and sensitive plant and animal habitat;
- Provide opportunities for environmental education; and
- Provide opportunities for low impact recreation and public use (public use allowed where it will not negatively affect the area's protected resources).

DNR has combined the three existing NRCAs (Greider Ridge, Mt. Pilchuck, and Morning Star) in the vicinity of the Project into one new consolidated Morning Star NRCA (pers. comm., S. Kurkowski 2007). As a component of this consolidation, the DNR has proposed converting portions of the South Shore Road within the Morning Star NRCA to a hiking trail (independent of the NRCA consolidation, the DNR also plans to abandon South Shore Road), as NRCA policy prohibits other trail uses. The DNR's planned combination of these three NRCAs and anticipated management-related changes are discussed in more detail in Section 4.4.

Snohomish County Goals Related to the Project:

Based on Snohomish County Comprehensive Parks and Recreation Plan (Snohomish County 2006), there are no specific goals or objectives in the Snohomish County Comprehensive Parks and Recreation Plan regarding the Project or the Sultan River. The

Comprehensive Parks and Recreation Plan does set forth a vision of creating a regional park system, including trails, waterfront access, special use areas, and resource lands.

2.4 Nexus to Project

The Project has direct and indirect effects on recreation resources within and adjacent to the Project boundary and in the affected reach of the river below Culmback Dam (and vice versa). These effects include providing public access to natural open space areas within and surrounding the Project for a variety of recreation activities and access to and use of the river and Spada Lake for recreation purposes. The Co-licensees developed and operate several public day use recreation facilities on Spada Lake, at Lost Lake, and at river access sites below Culmback Dam. The Project controls river flows for power generation, flood control, and fishery resource protection and enhancement below Culmback Dam. These Project effects, as well as public use restrictions related to the protection of the City's pre-existing municipal water supply system (which would continue to be in effect even if the hydroelectric project were not there) must be considered during relicensing. The results from the Recreation Needs Analysis will help inform stakeholders and the Co-licensees by synthesizing the information collected during relicensing and defining existing and future recreation needs that can reasonably be addressed by the Project and that may be considered for implementation during a new license term. Section 5.0 describes additional Project nexus issues that were considered during the development of potential recreation actions to help meet identified needs.

3.0 METHODS

Overall, the Recreation Needs Analysis investigates Project-specific recreation supply, demand, and capacity, and estimates current and future recreation needs in the context of local and regional supply of recreation opportunities. The Recreation Needs Analysis also examines existing and projected demand to determine if the existing Project recreation sites and facilities are fulfilling their intended purpose.

Each of the study components is described below in detail. The results of this analysis will be directly used in the future development of a proposed RRMP for the Project, an update of the Final Project Recreation Plan (District 1991). Development of a RRMP is considered a management plan and not a study and will be submitted to FERC as a draft RRMP.

3.1 Recreation Supply Analysis

The Recreation Supply Analysis is the first component of the Recreation Needs Analysis. In this component analysis, existing recreation inventory information was reviewed, compiled and updated. The results of this analysis describe the inventory and condition status of existing study area recreation facilities, including compliance with the Americans with Disabilities Act (ADA). Recreation facilities were observed in the field to determine their current condition. Maintenance practices at these facilities were also identified.

Points of existing public access and trails in the study area were defined and existing maps and other figures were updated, as necessary. The focus of the study area access assessment was on access to public recreation opportunities, both at Spada Lake and along the Sultan River. While there are private in-holdings and mining claims in and/or accessed via the study area that may be used for recreational purposes, access to these private areas and opportunities was generally beyond the scope of this assessment. As such, this type of access to private areas and opportunities was not assessed, nor is it a focus of potential needs in the study area (Section 4.4). However, the District is committed to providing safe and reasonable access to private landowners and mining claim holders now and throughout the anticipated term of the new license (note: the City does not allow the possession of mining equipment on City property, including during access across City-managed lands).

This analysis also inventoried Project lands for sites and use areas that may be used for dispersed recreational activities (i.e., activities that do not require developed/hardened recreation facilities). The presence of user-defined trails and fire-rings, compacted or eroded soil, trampled vegetation, litter/sanitary problems, and other typical recreation-related impacts in non-developed areas were used as key indicators of potential dispersed recreational use areas and sites. If identified, these features were mapped and described.

3.2 Recreation Demand Analysis

The second component of the Recreation Needs Analysis was to identify visitor participation and demand for recreation activities that are pertinent to the Project and how this demand is anticipated to change over the term of the new license. Recreation use data from the Recreation Visitor Survey (RVS)(Co-licensees 2006b), as well as past visitor registration data from Olney Pass and completed FERC Form 80s, were reviewed to assess current participation and trends in the study area. Regional information about recreation participation and demand was obtained from various sources, such as the SCORP, to help predict changes in participation and demand for outdoor recreation activities currently associated with the study area. Existing study area visitor information, collected via the RVS, was compared with national and regional recreation activity demand forecasts from recent publications to help identify any similarities and differences, if any, between visitors to the study area and visitors to other regional recreation areas. The demand component of the Recreation Needs Analysis also identifies current and potential future unmet demand for activities, if any, in the Project area.

3.3 Recreation Capacity Analysis

This third component of the Recreation Needs Analysis provides an overall assessment of the types and levels of recreational use in the study area to determine if use levels are compatible with the capacity of existing study area recreation facilities. Maintaining use levels within a recreation site's capacity is important in terms of protecting natural, cultural, and recreation resources, as well as "helping to assure public safety, providing predictability to private sector permittees and local communities, allocating opportunities among public and private sector providers, contributing to planning at a local or regional ecosystem scale, and helping to assess the consequences of management alternatives" (Haas 2002).

Recreation carrying capacity has been defined in a number of ways, but a useful definition is "the level of use beyond which impacts exceed standards" (Shelby and Heberlein 1986). In previous years, four types of capacity (ecological, physical/spatial, facility, and social) were commonly assessed during recreation capacity analyses (Shelby and Heberlein 1986). However, recent methodology enhancements have focused on three types of capacity (biophysical/ecological, social, and management) (Haas 2002). Physical/spatial and facility capacities are now commonly included as components of management capacity.

This primarily qualitative analysis focused on the capacity of existing developed recreation facilities in the study area (as identified in the Recreation Supply Analysis). The capacity analysis used results from the previous recreation analyses (Supply and Demand), as well as other recreation-related information sources, such as the RVS, to develop capacity conclusions and includes assessments of the following types of capacity:

- Biophysical/Ecological Capacity – Impacts on the ecosystem, such as impacts to wetlands or riparian communities, observed soil erosion, vegetation damage, and observed trash accumulation and sanitary problems, among others. By design, developed/hardened recreation sites typically have fewer ecological concerns compared to dispersed use areas.

- Social Capacity – Social impacts to a visitor's recreation experience, such as perceived crowding, actual and/or perceived conflict, and overall satisfaction, among others.

- Management Capacity – Impacts related to management decision-making, such as physical capacity (the number of people who can use a site at one time), spatial capacity (the ability to enhance a site through new amenities, enlarge a site beyond its existing boundaries, and/or construct new recreation sites), law enforcement, and visitor safety, among others.

The concept of recreation carrying capacity was originally developed out of biological models that attempted to determine the capability of a given environment (e.g., range, pasture) to sustain a specific number of animals over time. As such, undue attention has been placed on developing a specific number of visitors that represents the ideal carrying capacity of a recreation facility. While density-related information is an important factor in capacity, in actuality, many management issues regarding recreation carrying capacity decision-making are not necessarily density dependent; rather, recreation carrying capacity issues are also related to the ecological, social, and managerial aspects of recreational opportunities (McCool 1996). Visitor use should thus be evaluated "in relationship to its potential effect on natural, cultural, aesthetic, and recreation resources, as well as overall visitor experience" (CDPR 2002).

The full suite of recreation carrying capacity types were assessed at each developed recreation site in the study, as well as for the study as a whole. For each site and the study area, qualitative and quantitative data were used to identify ecological, social, and/or management capacity impacts and establish an existing capacity parameter (expressed in qualitative terms including "below," "approaching," "at," or "exceeding" capacity). Additionally, one or more capacity types were indicated as primary limiting factors for each site. To summarize this analysis, recreation sites and major use areas were also prioritized from highest to lowest capacity concern.

3.4 Recreation Needs Analysis

This final component provides a comprehensive synthesis and analysis of Project-related recreation needs and opportunities over the term of the new license, based on the results of the previous analyses (supply, demand and capacity). In this analysis, existing recreation needs were identified and future needs were projected for increments of time (e.g., 10-year periods) over a 30- to 50-year timeframe (the anticipated term of the new FERC license). Recreation needs were assessed for existing and potential future recreation activities and developed recreation facilities in the study area. Recreation needs identified in the study area were also coordinated with other resource study results

available to date, such as terrestrial and cultural, to help identify and minimize potential resource conflicts, if any. Security, safety and water quality policies and requirements were also reviewed relative to existing and future recreation needs during this study component.

Specific components of this analysis include:

- An overall assessment of recreation needs in the study area over time by activity and/or facility type (i.e., estimate of the number of total picnic sites, parking spaces, trails, access points, etc. needed in the future based on demand); and

- An identification of existing and future (in 10-year increments) developed and dispersed (if any) recreation needs on a site-by-site basis.

As part of this process, the Recreation Needs Analysis includes a review of any lost or degraded recreational opportunities associated with Project security measures. On June 28, 2006, FERC issued an "Order Modifying and Amending Recreation Plan" for the Project (Appendix D). This FERC Order authorizes continued restrictions on public access related to Recreation Site 6 at Culmback Dam and requires relocation of certain informational exhibits. However, it also indicates that the Commission's action "would not preclude a comprehensive review of the project's recreation needs and resources during the relicensing process." Therefore, alternatives were considered that address recreation needs in the study area while acknowledging the need for specific security measures that may affect public access and use in certain areas of the Project lands and waters.

A Non-Motorized Recreational Trail Location and Development Assessment was also a component of the Recreation Needs Analysis. This assessment evaluated the feasibility of a potential non-motorized trail or trail system associated with the Project. This trail assessment consisted of five tasks including:

- Desk-Top Review – this first task involved a review of existing trail and road information for the study area and adjoining region, aerial photographs, and the RCO's Washington State Trails Plan (1991), among other existing sources of information. Potential trail route options and connections in the study area, based on this review, were mapped and summarized.

- Trail Focus Group Workshop – results of the above analysis were discussed at a trail focus group workshop (Appendix E). The purpose of this workshop was to review the results of the desk-top review and to solicit preliminary comments regarding other potential trail route options, specific trail types and locations proposed to meet user group needs, road to trail conversions (if any), trailhead facilities, trail operations and maintenance issues and needs, etc. Workshop participants were invited from a list of key trail-related organizations that use the study area now or may use it in the future, plus key resource managers from the USFS and DNR. Materials were provided to organizations that were unable to attend this workshop for their review and comment.

- Field Assessment – a field assessment of the identified potential trail route options (as summarized from the desk-top review and trail workshop) was completed to verify on-site conditions and help identify opportunities and constraints to potential trail development and linkages. Engineering-related studies were not an anticipated result of this task, but may be identified for future analysis.

- Trail Option Evaluation – pending the results of the desk-top review and field assessment, as well as other Recreation Needs Analysis results (Supply, Demand, and Capacity), the potential trail route options were evaluated using exclusionary and evaluative criteria, such as estimated cost, potential resource impacts, availability of road access, connections to other trail systems, and meeting management goals and user needs, among others. A set of preliminary preferred trail options was developed (where appropriate and needed based on previous study analyses and results).

- Proposed Trail and Trailhead Actions – following the previous tasks, modifications to potential preferred trail route options were considered and a set of proposed trail and trailhead actions was developed and incorporated into the potential recreation needs alternatives. The results of the Non-Motorized Recreational Trail Location and Development Assessment included maps and supporting text depicting current and potential trail routes and systems and trailheads. Preliminary cost estimates associated with developing potential new trails and trailheads, converting older roads to non-motorized trail use, and bringing trail segments up to specified design standards were also developed.

A set of proposed action alternatives were included in the Recreation Needs Analysis. These proposed actions included up to three alternatives. Proposed trail actions (described above), if any, were integrated into these broader recreation resource alternatives. In addition, potential alternatives to address Project recreation needs while addressing Project security measures were also considered.

Two focus group workshops were held to review and comment on these alternatives. The first focus group workshop was with agency and tribal representatives. Following this focus group workshop, modifications to the set of proposed actions were made. Next, a public focus group workshop was held to solicit comments from both the general public and from specific recreation user groups who were invited to attend. Recreation user group participants were invited from a list of key recreation user groups and organizations that use the study area now, or may potentially use it in the future.

Following these two focus group workshops, comments were reviewed and a proposed set of actions to address Project-related recreation needs (existing and future) was finalized by the District (note: the District will be the sole licensee under the anticipated new FERC license). Proposed actions that others may consider implementing were also defined, as appropriate. This proposed set of recreation resource actions (also referred to as protection, mitigation, and enhancement measures) will be considered during the development of a draft RRMP for the Project. This draft RRMP will only include those

actions proposed for implementation by District. The draft RRMP will be filed for FERC approval and upon approval, the District will finalize the RRMP.

4.0 RESULTS

4.1 Recreation Supply Analysis

This section describes recreation resources (e.g., sites, use areas, facilities, etc.) in the study area. Additionally, this section also provides an assessment of public access to recreation resources in and accessed via the study area, as well as an overview of regional recreation opportunities that may serve as substitute sites for study area visitors.

4.1.1 Study Area Recreation Resources

Project waters are managed primarily for water quality and supply; fisheries protection, mitigation and enhancement; flood control; and hydropower production. Spada Lake and Lake Chaplain store drinking water used by 75 to 80 percent of the residents and businesses of Snohomish County; as such, recreation uses that may impact water quality are restricted. However, the District and City provide developed recreation sites and use areas (i.e., sites and use areas with hardened, built recreation facilities) in several locations of the study area. These sites and use areas are located along the shoreline of Spada Lake, at Lost Lake, and along the Sultan River below the Diversion Dam. Except for shoreline areas at Spada Lake, none of the District's or City's recreation sites are within the current FERC Project boundary. Additionally, several other public agencies provide recreation opportunities in the study area. These study area recreation sites, use areas, and facilities including those managed by the District, City, and others, are described below.

Both the District and the City discourage dispersed recreation use around Spada Lake, in the interest of protecting water quality. Dispersed use is defined as recreation activities at non-developed sites and use areas. Dispersed recreation use along the shoreline of Spada Lake is highly uncommon, as access by boat is specifically prohibited by District Directive Number 73 (Appendix B). Public use is prohibited along the eastern shoreline from the North Fork of the Sultan River northward to Williamson Creek, the entire north shore of Spada Lake, and the western shoreline from Culmback Dam (including the dam) southeast to the line between Sections 28 and 29. Some dispersed use, such as hunting, wildlife observation, and mushroom collecting, among others, is known to occur on WHMP lands, including around Lost Lake (Figure 2-1). However, no areas of significant recreation impact were identified during relicensing studies. While there is the potential for dispersed recreational use in other parts of the Project area, no significant evidence of this type of use (e.g., user-defined trails, fire rings, cleared use areas [little to no ground cover, impacted soil], user-constructed facilities, etc.) has been identified during relicensing studies (including the Recreation Needs Analysis and other resource studies) within the FERC Project boundary. Dispersed use and related impacts were not investigated on lands managed by other entities (e.g., DNR, USFS, etc.) within the study area given the District's lack of management responsibility on these lands.

4.1.1.1 Co-Licensee-Managed Recreation Sites, Facilities and Use Areas in the Study Area

District-managed recreation sites, facilities, and use areas in the study area are described below by location (Spada Lake, Lost Lake, Sultan River) and previously illustrated on Figure 2-1. Unless noted otherwise, recreation site information is summarized based on descriptions provided in the PAD (Co-licensees 2005). District staff maintain (e.g., trash collected, restrooms cleaned, etc.) all District-managed developed recreation sites at Spada Lake on a weekly basis when they are open to the public. During the summer months (June-August), recreation sites are maintained more frequently, if needed, subject to Co-licensee staff availability. Given the current maintenance schedule and relatively low levels of visitor use (Section 4.2), most District-managed recreation sites and facilities are in good condition.

Lake Chaplain, managed by the City of Everett as a terminal reservoir for the production of drinking water, is not a part of Project hydroelectric operations. Public access is prohibited within the Lake Chaplain hydrographic boundary to protect the security of the reservoir and to control potential impacts to water quality.

4.1.1.1.1 Spada Lake

Spada Lake was created as a water supply reservoir in 1965 when Stage I of Culmback Dam was built. Stage II construction of Culmback Dam, including the addition of hydroelectric facilities, enlarged the reservoir in 1984. Spada Lake currently has approximately 17 miles of shoreline and a normal surface water area of 1,870 acres. The District owns all lands under and surrounding Spada Lake (the FERC Project boundary extends to the 1,460 feet contour elevation). During summer months, normal full pool of Spada Lake is 1,445 feet msl, while during the winter, normal pool is 1,420 feet msl.

To protect water quality, Spada Lake is a non-contact reservoir (no bodily contact with water). As such, swimming, wading, and inflatable devices are not allowed on the reservoir. Additionally, current restrictions prohibit the use of watercraft with combustion engines; however, non-motorized boats (kayaks, canoes, row boats, sailboats, etc.) or boats with electric motors are permitted. Additionally, overnight camping is not allowed at Spada Lake to further help protect water quality. Regulations regarding public use and recreation at Spada Lake are provided in Appendix B.

Currently, there are seven developed recreation sites at Spada Lake (Figure 2-1). These sites include:

- Olney Pass (Recreation Site 1)
- South Fork (Recreation Site 2)
- South Shore (Recreation Site 3)
- Nighthawk (Recreation Site 4)
- Bear Creek (Recreation Site 5)
- Pilchuck Entry (Recreation Site 7)
- North Shore (Recreation Site 8)

None of these sites are within the current FERC Project boundary, though portions of the shoreline at the South Fork, South Shore, and Nighthawk recreation sites are within the boundary (elevation 1,460 feet).

Eight sites were originally designated and opened to the public by the District in 1991; however, Culmback Dam Viewpoint (Recreation Site 6), located at Culmback Dam, was closed to public access in late 2001 because of increased security measures (see District Directive Number 73 – Appendix B). On June 28, 2006, FERC issued an "Order Modifying and Amending Recreation Plan" for the Project, which authorizes continued restrictions on public access at the Culmback Dam Viewpoint and requires relocation of certain informational exhibits (FERC 2006)(Appendix D). The signs were relocated and are now a feature at Olney Pass (Recreation Site 1).

With the exception of Olney Pass, the other recreation sites at Spada Lake are open to public use from approximately mid-April through the end of October to generally coincide with Washington Department of Fish and Wildlife (DFW) established fishing seasons. This is also the period when weather conditions are favorable for ordinary passenger vehicle access along South Shore Road to the recreation sites. Olney Pass is open throughout the year; however, the other recreation sites are gated and the South Shore Road is typically not plowed during winter months, limiting access and recreation opportunities from approximately November through mid-April. Visitors occasionally use South Shore Road for cross-county skiing and snowshoeing during the winter months.

Table 4-1 provides a summary of key facilities and opportunities available at recreation sites at Spada Lake. In addition to the opportunities provided at these developed recreation facilities, Spada Lake provides opportunities for boating (non-combustion engine only), fishing, wildlife observation and photography, and other non-contact activities. South Shore Road also provides opportunities for sightseeing, driving for pleasure, off-highway vehicle (OHV) use (on road only), hiking, bicycling, wildlife observation and photography, and cross-country skiing and snowshoeing (winter only), among others.

Table 4-1. Recreation Sites, Facilities, and Opportunities at Spada Lake.

Site/Distance from Olney Pass	Parking (# of Spaces)[1]	Picnic Facilities (# of Tables)	Boat Launch	Restrooms[2]	Other Site Amenities	Recreation Opportunities[3]
Olney Pass (Site 1) / NA	6	-	-	2	• Visitor information boards • Registration forms • Benches • Trash receptacles	• Access • Information

Table 4-1. Recreation Sites, Facilities, and Opportunities at Spada Lake.

Site/Distance from Olney Pass	Parking (# of Spaces)[1]	Picnic Facilities (# of Tables)	Boat Launch	Restrooms[2]	Other Site Amenities	Recreation Opportunities[3]
South Fork (Site 2) / 3.2 miles	26	13	Car-top only[4]	4	• Cooking grills • Fire pits • Signage • Benches • Trash receptacles	• Picnicking • Sightseeing • Rest and relaxation • Shoreline fishing • Boating • Photography and wildlife observation
South Shore (Site 3) / 5.2 miles	26 6 vehicle with trailer	-	1-lane gravel boat ramp[5]	2	• Benches • Signage • Trash receptacles	• Boating • Shoreline fishing • Sightseeing • Photography and wildlife observation • Rest and relaxation
Nighthawk (Site 4) / 5.8 miles	26 16 vehicle with trailer	13 (4 covered)	1-lane concrete boat ramp[6]	4	• Cooking grills • Fire pits • Signage • Trash receptacles • Internal access trails	• Picnicking • Shoreline fishing • Boating • Rest and relaxation • Photography and wildlife observation • Sightseeing • Walking/hiking
Bear Creek (Site 5) / 6.4 miles	10	-	-	2	• 2 scenic overlooks • Benches • Signage • Trash receptacles	• Sightseeing • Photography and wildlife observation • Rest and relaxation
Pilchuck Entry (Site 7) / NA	-	-	-	-	• Signage	• Access

Table 4-1. Recreation Sites, Facilities, and Opportunities at Spada Lake.

Site/Distance from Olney Pass	Parking (# of Spaces)[1]	Picnic Facilities (# of Tables)	Boat Launch	Restrooms[2]	Other Site Amenities	Recreation Opportunities[3]
North Shore (Site 8) / 3.1 miles	28[7]	9 (2 covered)	-	2	• Signage • Internal access trails • Cooking grills • Fire pits • 2 scenic overlooks	• Picnicking • Sightseeing • Photography and wildlife observation • Rest and relaxation • Walking/hiking

[1] Parking indicates number of single vehicle parking spaces (unless noted otherwise).

[2] Restrooms indicates the number of vault toilet stalls available at each site.

[3] Recreation opportunities include primary activities that are supported at each site, among others.

[4] The car-top boat launch at South Fork is not usable below a reservoir elevation of 1,400 feet.

[5] The boat launch at South shore is not usable below a reservoir elevation of 1,415 feet.

[6] The boat launch at Nighthawk is not usable below a reservoir elevation of 1,425 feet.

[7] While parking spaces are provided at the North Shore Recreation Site, vehicular/motorized access to this site is currently restricted.

In general, ADA compliant facilities are provided at the South Fork, South Shore, Nighthawk, and Bear Creek recreation sites. Those facilities include accessible parking spaces, paths, restrooms, and picnic tables. However, none of the boat launches provide ADA compliant access (via accessible paths, boarding floats, etc.). The North Shore Recreation Site also has ADA compliant facilities (parking, paths, restrooms, picnic tables), but can only be accessed via foot or bike, thus limiting the potential for ADA-related use at the site. The two entry sites (Olney Pass and Pilchuck Entry) do not have ADA compliant facilities.

Both Olney Pass and Pilchuck Entry are primarily access sites only (i.e., they do not provide recreation opportunities beyond access to other Project area and vicinity recreation sites). Given both Co-licensee and DNR access/use restrictions, there is currently no public vehicular/motorized access at the Pilchuck Entry site and Site 8 (North Shore). The DNR's Pilchuck Mainline Road (P-5000) used to provide vehicular access (off-highway vehicles only) for visitors accessing the Project area. The DNR closed this road to public vehicular access in 2005 due to growing environmental and public safety concerns. As previously discussed, the District has restricted public access across Culmback Dam since September 11, 2001. These closures have resulted in no public vehicular access to the North Shore Recreation Site, which is currently hike- or bike-in only from the north (approximately 13.5 miles from the first gate).

4.1.1.1.2 Lost Lake

The 205-acre Lost Lake Tract was purchased by the District to fulfill conditions of the WHMP. The Lost Lake Tract is not within the current FERC Project boundary, but is within the Project and study areas. It includes a 14-acre natural lake (Lost Lake) and associated wetlands, as well as the surrounding forested uplands (Figure 2-1). Since habitat management is the primary purpose of this tract, much of the recreational value is related to its more remote, natural resource-based opportunities. To preserve wildlife habitat values and other natural resources, public access to the tract is hike-in only and there are no developed recreation facilities, no ADA compliant facilities, and there are no officially designated access trails. Hikers can reach the Lost Lake Tract by walking westward from the gate on the Lake Chaplain Road south of the City's water treatment facility or from DNR-managed land south or west of the Tract (with prior landowner approval). Hiking distances can vary from less than 1.5 miles to up to 5 miles in length and no developed trails are provided. Access through City-managed property within the hydrologic boundary of Lake Chaplain is prohibited. Recreational opportunities include wildlife observation and photography, hiking, fishing, hunting, and picnicking. Boating on Lost Lake is allowed in small, non-motorized watercraft that can be carried in and out by visitors. Camping is not allowed. There is a floating fishing platform at the lake that was constructed by the Snohomish Sportsman's Club and District to allow better and safer fishing access from the shore and to protect the adjacent floating bog habitat.

4.1.1.1.3 Sultan River

Below Culmback Dam, public access and associated recreation opportunities are limited due in part to topography, land ownership, and instream flows. However, in 1991 the District and City developed five public access sites along the Sultan River below the Diversion Dam (river mile [RM] 9.7) to meet recreation management plan requirements resulting from the increase in elevation of Culmback Dam that was completed in 1984. Recreation opportunities along the Sultan River and at the river access sites include sightseeing, fishing, and whitewater boating, among others.

There are no developed river access sites along the upper reach of the Sultan River (from Culmback Dam to the Diversion Dam) and access in general to this reach is limited. The river may be accessed at approximately RM 14.3 via a user-defined trail off of Forest Road (FR) 6122; however, neither the Co-licensees nor the USFS maintain or encourage general public use of this access route.

In general, other than the provision of access (existing roads and/or informal river access trails) and signage, there are no developed recreation facilities, including ADA compliant facilities, at the Sultan River access sites (unless noted otherwise below). The five Sultan River access sites include the following (upstream to downstream)(Figure 2-1):

- Diversion Dam Road River Access – the Diversion Dam Road, accessed via Lake Chaplain Road, provides pedestrian and non-motorized vehicle access to the western riverbank (river right) of the Sultan River between approximately RM 7.3 and 6.5. The public may also access the river near the Diversion Dam at RM 9.7 by following Diversion Dam Road to its terminus; however, multiple gates,

distance (approximately 3 miles), and District and City use restrictions (no public use within 400 feet of the Diversion Dam) limit public access and use near the Diversion Dam. There is parking for approximately 10 vehicles on the Lake Chaplain road shoulder near the primary gate entrance to the Diversion Dam Road.

- Horseshoe Bend River Access – Horseshoe Bend River Access provides riverbank access at approximately RM 6.8 (river left). The site is accessed via 116th Street and parking is available along the power pipeline right-of-way (ROW). User-defined trails provide access from the parking area along the pipeline ROW, to the river (approximately 1 mile). When the gate at 116th Street is closed, visitors may walk/hike the approximately 3 miles to this access site.

- Old Gaging Station Road River Access – the Old Gaging Station Road (approximately 1 mile from gate to river) provides pedestrian and non-motorized vehicle access to the western riverbank (river right) at RM 4.8 via Lake Chaplain Road. There is a parking for 10 or more vehicles along the Lake Chaplain road or at the Powerhouse River Access parking area near the Old Gaging Station Road.

- Powerhouse River Access – the Powerhouse River Access is located at RM 4.3, directly across from the powerhouse on the western riverbank (river right) of the Sultan River. A parking area for this site is provided along Lake Chaplain Road for approximately 20 vehicles. A gated access road (to prevent public vehicular access) provides access from the parking area to the river (approximately ½ mile).

- Trout Farm Road River Access – located north of the city of Sultan on Trout Farm Road along the eastern riverbank (river left) at RM 2.5, this river access site is the furthest downriver Co-licensee-provided site along the Sultan River. The site consists of a paved parking area for approximately 8 vehicles along Trout Farm Road, as well as a gated gravel road that provides access to the river. Due to public safety and law enforcement concerns, the gate is closed with a combination lock which can be opened by prearrangement. The riverbank at this site is used as a put-in and take-out for non-motorized, primarily muscle-powered watercraft.

None of these river access sites are within the current FERC Project boundary.

Access to river sites via Lake Chaplain Road (river right) is normally provided on a daily basis, year-round between 6:00 a.m. and 6:00 p.m., but may be restricted depending on District and City operations and security needs. Access to river sites via 116th Street is provided year-round on a daily basis, but may also be restricted depending on District and City operations and security needs.

In addition to the recreation access sites along the Sultan River, Lake Chaplain Road serves as a de facto recreation area, especially for local residents who use the road for walking, hiking, bike riding, and sightseeing, among other activities. Undeveloped access to Lost Lake is also possible via this road.

4.1.1.2 Other Recreation Sites, Facilities, and Use Areas in the Study Vicinity

In addition to the Co-licensees, the USFS and DNR manage lands in the study area and the region. Most USFS- and DNR-managed lands and roads are open to dispersed recreation use, except where posted otherwise (typically due to public safety and/or environmental impact concerns). Some USFS- and DNR-managed lands and roads can be accessed via study area roads. The only developed recreation sites in the study area include two DNR trails: Greider Lakes Trail and Boulder Lake Trail (Figure 2-1). Both of these trails are outside of the FERC Project boundary, but can only be accessed via the Project along South Shore Road. A summary of the facilities and opportunities available at each of DNR's developed trails is provided below.

- Greider Lakes Trail and Trailhead – the Greider Lakes Trailhead is located approximately 1 mile east of Bear Creek (Recreation Site 5) along South Shore Road. The trailhead consists of a gravel parking area for approximately 10 to 15 vehicles, a single vault toilet, signage and a small information kiosk (including a registration log), and a short loop trail with interpretive signs. The main trail is approximately 3.1 miles long and provides access to Big and Little Greider lakes. Fishing and camping (tent sites) opportunities are available along the shorelines of both lakes. Additionally, the DNR provides portable toilets at Greider Lakes during the summer recreation season.

- Boulder Lake Trail and Trailhead – the Boulder Lake Trailhead is located approximately 1.2 miles east of the Greider Lakes Trailhead. The section of road between the two trailheads is rough and not well maintained. The DNR is planning to abandon this section of road. Once abandoned, Boulder Lake trail users will have to hike in from the Greider Lakes Trailhead. The existing Boulder Lake Trailhead consists of a gravel parking area for about eight to 10 vehicles, a portable toilet, signage, and a small information kiosk (including a registration log). The main trail is approximately 2.5 miles in length and provides access to Boulder Lake. As with Greider Lakes, fishing and camping (tent only) opportunities are available along the shoreline of Boulder Lake. Portable toilets are also provided on a seasonal basis.

While access to each of these trails via South Shore Road is generally available during the same period of time as the District-managed recreation sites on Spada Lake (mid-April through end of October), the trails are only open to use from approximately June 15 through October 15 because of snow at higher elevations. South Shore Road also provides access to Static Peak, a climbing area on DNR-managed lands, via an abandoned logging road near the South Fork of the Sultan River. The DNR does not maintain an official trail and there are no developed recreation facilities associated with the climbing opportunities at Static Point.

On USFS-managed lands along the Sultan River, there are 17 mining claims between Culmback Dam and the Powerhouse. These mining claims provide commercial and recreational gold panning and prospecting opportunities. Many of the claims are used by

individuals, though some are used by members of two mining associations, Washington Miners Prospectors Association and Boeing Employees Everett Prospectors Society. These opportunities are considered private (only available to claim holders) and thus the USFS does not specifically provide developed road access or public recreation facilities associated with them. Mining claims along the Sultan River are generally accessed via user-defined and maintained trails off of FR 6122, as well as the Monroe Camp Road. The Flow Recreation Analysis (RSP 14) provides additional detail regarding mining opportunities and access along the Sultan River. Additionally, access and claim holder concerns as they relate to the effects of continued Project operation will be considered during the relicensing process.

4.1.1.3 Federally Designated Wilderness Areas, Trail, and Wild and Scenic Rivers

There are no federally designated Wilderness areas, trails, and/or Wild and Scenic rivers in the study area. The 102,673-acre Henry M. Jackson Wilderness, created by the 1984 Washington Wilderness Act, is located approximately five miles east of the Project within the Mt. Baker-Snoqualmie National Forest. The newly designated Wild Sky Wilderness, signed into law in 2008, is also located within the Mt. Baker-Snoqualmie National Forest immediately to the east/southeast of the Henry M. Jackson Wilderness. The Pacific Crest National Scenic Trail passes within 20 miles of the Project. Additionally, portions of the Skykomish River (the Sultan River flows into the Skykomish River), from its source to the confluence with the Snoqualmie River, as well as the North and South forks, are eligible for federal designation as part of the Wild and Scenic River system, though have not been formally designated to date.

4.1.2 Study Area Public Access

U.S. Highway 2 is the primary travel route to access the Project, including recreation sites and use areas. This highway connects communities along the Skykomish River with the Interstate 5 (I-5) corridor to the west and the Wenatchee Valley to the east. County roads intersect U.S. 2 and provide access to the Sultan River basin, including the Project. Figure 4-1 displays the road system in the study area. Roads in the study area are owned and maintained by a variety of entities including Snohomish County, DNR, USFS, the District, and the City. Primary public access routes to the study area, including recreation sites and use areas, are summarized below by area (Spada Lake and Sultan River/Lost Lake).

4.1.2.1 Spada Lake Public Access

The County-maintained Sultan Basin Road extends from U.S. 2 north toward Spada Lake from the city of Sultan. This road is paved for approximately 10.2 miles and graveled for the remaining 3 miles to Olney Pass. County roadway maintenance ends at Olney Pass where the road forks, with one fork leading to the south shore of Spada Lake (South Shore Road), and the other fork leading northwest to Culmback Dam (Culmback Dam Road). Olney Pass is approximately 37 miles from the city of Everett and provides access to the recreation sites and use areas at Spada Lake, including the DNR trailheads.

South Shore Road and Culmback Dam Road are part of the DNR's Spada Lake Main Line (DNR SL-ML). These roads are graveled and provide vehicular access to study area recreation sites and use areas, in addition to Project hydroelectric facilities. In addition to providing vehicular access, these roads are used for hiking, biking, and OHV use. DNR is primarily responsible for maintaining South Shore Road (although the Co-licensees and DNR have shared maintenance duties and costs of this road, DNR has indicated that it will no longer do so after 2008), while the District is primarily responsible for maintaining Culmback Dam Road (as far as District property extends).

South Shore Road (DNR SL-ML) provides public vehicular access along the southern shoreline of Spada Lake. This road provides access to the primary Project-related recreation sites and use areas and also the DNR's Greider Lakes and Boulder Lake Trailheads. From Olney Pass, the first recreation site (South Fork) is located approximately 3.1 miles to the east along South Shore Road. After South Fork, Project area visitors may continue on to the other Co-licensee-managed recreation sites (South Shore, Nighthawk and Bear Creek) and/or the DNR's trailheads. The first of the DNR trailheads (Greider Lakes) is located approximately 7.2 miles from Olney Pass.

The District has an informal cost-share agreement with DNR for the maintenance of South Shore Road. DNR plans to decommission the South Shore Road in a phased program and convert it to trail use. To date, DNR has not finalized specific decisions regarding actions and timing for the South Shore Road decommissioning and is relying on the Project relicensing process to help inform its decision making. Conversion of all or a portion of this primary road to trail use only, and what recreational uses are allowed along its length, would affect public access in the Project area including access to District-managed recreation sites included in the Project license and use areas along the southern shoreline of Spada Lake. The potential decommissioning of all or a portion of South Shore Road, as well as potential effects of this action on public access and recreation is discussed in more detail in Sections 4.3, 4.4, and 5.0.

Culmback Dam Road was gated at Olney Pass for security reasons, as it provided vehicular access to and across Culmback Dam. As of spring 2005, the Culmback Dam Road gate at Olney Pass was opened and a second gate was placed on the road just beyond FR 6122 (approximately 0.3 mile from Culmback Dam). Public access is allowed along Culmback Dam Road to FR 6122, but not allowed beyond the gate to the dam. Section 4.1.1.1 provides additional information regarding access at Spada Lake.

FR 6122 is an approximately 1.5-mile-long road that provides access to USFS-managed land, mineral claims, and dispersed/undeveloped recreation use areas along the Sultan River. The river may be accessed at approximately RM 14.3 via a user-defined trail off of FR 6122; however, neither the Co-licensees nor the USFS maintain or encourage general public use of this access because of site conditions. A landslide has blocked vehicular access at one location along this route. The USFS recently refurbished the trail and rerouted portions of it for easier access to the river.

To the north of Culmback Dam, DNR's Pilchuck Mainline Road (P-5000) currently provides restricted public access to Pilchuck Entry (Recreation Site 7) and the North

Shore site (Recreation Site 8). Generally following the Pilchuck River towards Spada Lake and North Shore, the Pilchuck Mainline Road used to provide vehicular access along the northern shoreline of Spada Lake towards Williamson Creek. The road segment from North Shore to Williamson Creek was formally abandoned by DNR in 1999. Use along Pilchuck Mainline Road is still permitted to North Shore; however, as of November 2005, DNR closed this road to all motorized use due to growing environmental and public safety concerns. Pedestrian and biking access is still allowed along this segment of the road. The Pilchuck Mainline Road currently provides the only public access to the District's North Shore site, given the closure of Culmback Dam to all public access.

4.1.2.2 Sultan River/Lost Lake Public Access

Lake Chaplain Road, which may be accessed via the cities of Monroe and Sultan off of U.S. 2, provides paved public access to recreation sites and use areas along the western riverbank of the Sultan River, as well as hike-in only access to Lost Lake (Figure 4-1). This road, maintained and owned by the City for access to Lake Chaplain and its associated water filtration facilities, is open to public use between 6:00 a.m. and 6:00 p.m. Public access within the Lake Chaplain hydrographic boundary is not permitted due to security and water quality protection regulations.

Along the eastern riverbank of the Sultan River, public access is provided at several locations, including from FR 6122 (see Section 4.1.2.1), 116th Street , and Trout Farm Road in the city of Sultan, among others.

4.1.3 Project Region Recreation Resources

Over 4 million people live within about a 2 hours drive of the Project. As such, the Project has the potential to attract significant levels of visitor use; however, study area recreation sites are not the only recreation opportunities in the region. To fully understand the supply of recreation opportunities in the study area, it is important to place the Project in the proper regional context. The PAD described regional recreation opportunities and destinations within an approximate 2-hour drive of the study area (Co-licensees 2005). These regional recreation opportunities range from locally-managed sites (e.g., Osprey Park, Sportsmans Park, etc.) to federally managed sites (e.g., Mount Baker Snoqualmie National Forest, Pacific Crest National Scenic Trail, etc.). Additionally, the regional recreation opportunities described in the PAD include both developed and dispersed (undeveloped) camping, day use (e.g., picnicking, sightseeing, etc.), hiking, fishing, and whitewater boating, among others, some of which may act as substitute opportunities to those found in the study area.

The RVS also assessed regional recreation opportunities via the recreation questionnaire (Co-licensees 2006). Based on results from the visitor questionnaire, approximately 72 percent of study area visitors indicated that they had visited at least one regional recreation area/site in the past 12 months. Table 4-2 displays summarized results from this question.

Table 4-2. Regional Recreation Areas/Sites Visited by Study Area Visitors.

Regional Recreation Area/Site[1]	Percent[2]
Wallace Falls State Park	41%
Lake Roesiger County Park	28%
Greider Lake	27%
Osprey Park	16%
Reese Park	16%
Boulder Lake	15%
Other[3]	15%
Sportsmans Park	16%
Beaver Plant Lake	9%
Twin Falls Lake	8%
Upper Ashland Lake	7%
Cutthroat Lake	7%
Lower Ashland Lake	6%

[1] The list of regional recreation areas/sites provided in the visitor questionnaire was derived from the regional assessment in the PAD.

[2] Percentage totals to more than 100 percent as visitor questionnaire participants could check multiple regional areas/sites.

[3] Other responses included the Skykomish River, Jay Lake, Show Lake, Heather Lake, Marsh Creek, Lake Kellog, and Stevens Pass, among others.

Source: Based on information provided in the RVS (Co-licensees 2006).

Furthermore, when asked why they preferred one regional recreation area over another, visitors provided the following summarized responses (Co-licensees 2006):

- Great opportunity for specific activities (including hiking, fishing, and whitewater boating, among others)
- High scenic quality of the area
- Less crowded/opportunities for solitude
- Only regional site visited
- Close to home
- Good facilities
- Easy/better access

These responses indicate several of the motivations that influence a visitor's decision making process regarding which recreation area/site to visit, potentially including study area recreation areas and sites.

Figure 4-1
Primary Study Area
Public Access Routes

Henry M. Jackson
Hydroelectric Project
FERC No. 2157

Legend

- Study Area Recreation Sites
- HIKE ONLY
- USER DEFINED; HIKE ONLY
- Gates

Road Use

- Abandoned
- Gated Forest Management Road
- Street Legal

USFS Designated Roads

- Unimproved Road
- Light Duty Road
- USFS Delineated Trail
- FERC Boundary
- Open Water
- Streams and Rivers

Land Ownership

- City of Everett
- DNR
- DNR-NRCA
- Easement
- US Forest Service
- Other
- Snohomish PUD

0 1 2 Miles

EDAW | AECOM

Modified: July 2008

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The PAD regional assessment and the RVS results capture part of the Project's regional context, though neither assessed potential substitute recreation sites (i.e., sites that provide similar opportunities to those found in the study area) based on visitor origin. A visitor's willingness to travel to a specific destination is based on many factors (e.g., travel time, opportunities, facilities, setting, etc.), including those listed above. For purposes of this assessment, travel time/distance was assumed to be the primary driver in a visitor's decision-making process regarding recreation area selection; as such, potential substitute sites were assessed based on the origins of visitors to the study area. This section describes the results of this assessment.

4.1.3.1 Visitor Origins

The RVS collected and summarized important data and information about visitors and visitor use in the study area (Co-licensees 2006). The origins of visitors to the study area were derived from postal Zip Codes that were provided on visitor registration forms (note: postal Zip Codes were also collected via the visitor questionnaire; visitor registration form postal Zip Codes were very similar those from the visitor questionnaire).

Based on postal Zip Codes provided on the visitor registration forms, nearly all visitors to the study area are from Washington. At recreation sites and use areas at and/or accessed via Spada Lake, approximately 98 percent of visitors are from Washington. Nearly 99 percent of visitors at sites and use areas along the Sultan River and Lost Lake are also from Washington. Additionally, the majority of visitors to the Project area and/or sites accessed via the Project are from Snohomish or King counties. At Spada Lake (including sites accessed via South Shore Road), nearly 60 percent of visitors are from Snohomish County and about 36 percent are from King County. At Sultan River and Lost Lake sites, 77 and 21 percent of visitors are from Snohomish and King counties, respectively.

Nearly two-thirds of visitors to the study area were from five cities in Snohomish and King counties. These cities include:

- Sultan (Snohomish County)
- Monroe (Snohomish County)
- Snohomish (Snohomish County)
- Everett (Snohomish County)
- Seattle (King County)

For purposes of this analysis, these cities were assumed to be the primary cities of origin of visitors to the study area.

4.1.3.2 Potential Substitute Recreation Sites

Substitutability in regards to a recreation site or opportunity generally means "the extent to which one recreation [site] might be a satisfactory substitute for another" (Manning 1999). For purposes of this analysis, substitute recreation sites can be thought of as alternative sites in the Project region that may provide similar opportunities to those

currently found in the study area. The use of the term "substitute" site is not meant to imply that the District will direct study area visitors to these sites.

Regional recreation opportunities and destinations were assessed based on the average travel distance from the primary cities of origin of visitors (listed in Section 4.1.3.1) to the study area. For purposes of this analysis, these travel distances (or radii) included the following:

- Sultan – 15 mile travel radius
- Monroe – 20 mile travel radius
- Snohomish – 25 mile travel radius
- Everett – 30 mile travel radius
- Seattle – 50 mile travel radius

Figure 4-2 displays the primary cities of origin of visitors to the study area, as well as the approximate travel radius (distance) for each city to other regional recreation opportunities and destinations (represented as circles on the figure). Those cities located closer to the study area (e.g., Sultan, Monroe, etc.) have smaller travel distances (and associated circles on Figure 4.2) than those cities farther from the study area, which have larger travel distances. In general, as travel distance increases, the number of potential regional recreation opportunities and substitute sites also increases (for cities included in this assessment).

The assessment of regional recreation opportunities and destinations by city of origin is not intended to be an exhaustive analysis of all recreation sites and use areas in the region. Rather, it is intended to focus on the primary substitute sites that may provide alternatives for study area visitors. Additionally, the focus of the assessment was on regional recreation areas that provide similar opportunities to those found in the study area, including water-based activities (e.g., non-motorized boating, whitewater boating, fishing, etc.) and land-based activities (e.g., picnicking, hiking, sightseeing, mountain biking, wildlife viewing, OHV use, hunting, etc.). The assessment also considered regional recreation areas with opportunities that are not available in the study area, including motorized (combustion engine) boating, swimming/beach activities, and camping. These additional opportunities were also considered as they may influence a visitor's decision to visit a particular area.

Table 4-3 lists regional recreation opportunities and destinations by city of origin for study area visitors. Table 4-4 lists regional whitewater boating destinations also by city of origin (whitewater boating opportunities are presented separately due to the specialized nature of the activity). Unless noted otherwise the recreation areas listed for each visitor origin in Tables 4-3 and 4-4 include those of the previous listed cities of origin. For example, city of Snohomish recreation areas include those listed under the city, as well as those listed under Sultan and Monroe.

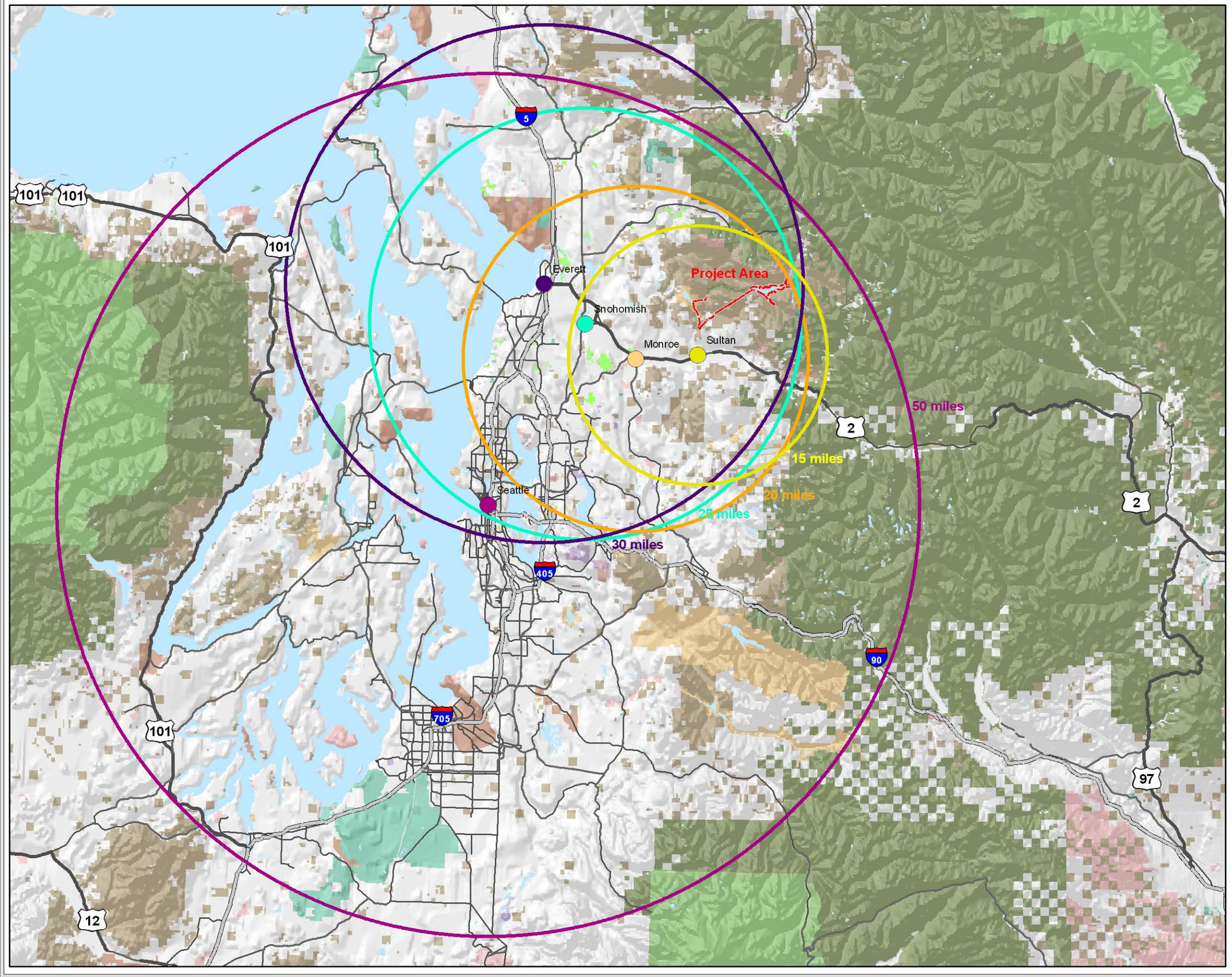

Figure 4-2
Primary Cities of Origin of Study Area Visitors and Approximate Travel Distances

Henry M. Jackson Hydroelectric Project
FERC No. 2157

Legend

Project Area FERC Boundary

City of origin for the majority of visitors to the Study Area*
- Seattle
- Everett
- Snohomish
- Monroe
- Sultan

Distance visitors travel to Study Area recreation facilities*
- Seattle, 50 miles
- Everett, 30 miles
- Snohomish, 25 miles
- Monroe, 20 miles
- Sultan, 15 miles

Open Water
Interstate
U.S. Highway
State Highway/Route

Public Lands
- US Forest Service
- National Park Service
- Other Federal Lands
- Native American Lands
- County Public Lands
- City Public Lands
- University Public Lands
- DNR Lands
- Snohomish County Parks

* Based on RVS results (Co-licensees 2006b)

0 9 18 Miles

PUD

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Modified: July 2008

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Table 4-3. Potential Substitute Recreation Areas in the Project Region by Visitor Origin.[1]

Visitor Origin/ Developed Recreation Area[2]	Water-Based Opportunities						Land-Based Opportunities								
	Motorized Boating	Non-Motorized Boating	Whitewater Boating	Fishing	Swimming/ Beach Activities	Other	Picnicking	Camping	Hiking	Sightseeing	Mountain Biking	Wildlife Viewing	OHV-use	Hunting	Other
Sultan															
Sportsman's Park	X	X										X			
Lake Roesiger County Park		X		X	X		X	X	X						
Cottage Lake Park (King County)		X		X	X		X								
Wallace Falls State Park & Big Eddy		X	X	X	X	Waterfall	?	?	X		X	X			Rock Climbing
Sultan River Park				X	X										
Al Borlin Park				X			X		X						
Lake Tye Park				X			X		X						Sports Fields
Lord Hill Regional Park									X			X			
Bob Heirman Wildlife Park				X		River Access	X		X			X			
Flowing Lake County Park				X	X	Boat Launch	X	X							
Skykomish River Park							X								Sports complex; walking trail
Rudolph Reese City Park							X		X						Sports Fields
Lake Isabel									X						
Osprey Park									X		X				Sports Fields, Play equipment
Greider Ridge NRCA (Grieder Lakes Trail, Boulder Lake Trail)								X	X						
Twin Falls Lake									X						
Ashland Lakes								X	X						
Beaver Plant Lake									X						
Cut throat Lake									X						
Mt. Pilchuck NRCA								X	X						

Table 4-3. Potential Substitute Recreation Areas in the Project Region by Visitor Origin.[1]

Visitor Origin/ Developed Recreation Area[2]	Water-Based Opportunities						Land-Based Opportunities								
	Motorized Boating	Non-Motorized Boating	Whitewater Boating	Fishing	Swimming/ Beach Activities	Other	Picnicking	Camping	Hiking	Sightseeing	Mountain Biking	Wildlife Viewing	OHV-use	Hunting	Other
Monroe															
Snohomish River Estuary (multiple boat launches)		X		X								X			
Lake Cassidy/Lake Martha		X		X	X		X								Playground
Lake Stevens (Boat Launch, North Cove, Swim Beach)	X	X			X		X								
Blackman's Lake (Fergeson; Hill Parks)	X	X		X			X								Play Fields
Willard Wyatt Park	X	X		X	X		X								
Saint Edward State Park	X	X		X	X		X		X		X	X			Play Fields, horse trails
Juanita Beach Park	X	X		X	X		X								Play Fields
O. O. Denny Park		X			X		X								
Stillaguamish River recreation sites (Turlo, Verlot, Gold Basin)		X	X	X			X	X	X	X		X			
Lake Connor Park (Private)		X		X	X		X	X	X						RV facilities
Beaver Lake Park		X		X			X		X						
Pine Lake Park		X		X	X		X								Play Fields; Play equipment
Langlois Lake	X	X		X											
Wagner Lake	X	X		X											
Tolt River - John MacDonald Park (King County)				X			X	X	X		X				Sports Fields
Meadowdale Park						Beach combing	X		X		X	X			
Sunset Park				X	X	Beach	X								

Table 4-3. Potential Substitute Recreation Areas in the Project Region by Visitor Origin.[1]

Visitor Origin/ Developed Recreation Area[2]	Water-Based Opportunities						Land-Based Opportunities								
	Motorized Boating	Non-Motorized Boating	Whitewater Boating	Fishing	Swimming/ Beach Activities	Other	Picnicking	Camping	Hiking	Sightseeing	Mountain Biking	Wildlife Viewing	OHV-use	Hunting	Other
						Access									
Snoqualmie Wildlife Area				X			X		X			X		X	
Mt. Pilchuck State Park							X	X	X			X			
Robe Canyon Historic Trail						River Access			X						
Southwest County Olympic View Park									X						
Soaring Eagle Regional Park									X						
Snohomish															
Kayak Point Park	X	X		X			X	X	X						Wind surfing
River Meadows Park	X	X		X			X	X	X						
Lake Sammamish State Park	X	X		X	X		X		X			X			Play Fields
Luther Burbank Park	X	X		X	X		X								Play Fields
Wenberg State Park	X	X		X	X		X					X			
Bosworth Lake	X	X		X											
Gissberg Twin Lakes Park				X	X		X		X (Walking)						
Lake Goodwin Park					X		X		X						
Portage Creek Wildlife Reserve							X		X			X			
Boulder River Wilderness									X						
Lake Serene Trail									X						
Everett															
Skagit Wildlife Area		X							X			X		X	
Edgewater Park	X	X						X							Sports Fields
Loma, Crabapple, Shoecraft , Sunday and Howard Lakes	X	X		X											
Walker Valley (DNR)									X				X		

Table 4-3. Potential Substitute Recreation Areas in the Project Region by Visitor Origin.[1]

Visitor Origin/ Developed Recreation Area[2]	Water-Based Opportunities						Land-Based Opportunities								
	Motorized Boating	Non-Motorized Boating	Whitewater Boating	Fishing	Swimming/ Beach Activities	Other	Picnicking	Camping	Hiking	Sightseeing	Mountain Biking	Wildlife Viewing	OHV-use	Hunting	Other
Trails (Mt. Washington, Spar Tree, Alexander)									X						
Little Mountain Park							X		X	X					
Seattle															
Lake Keechelus	X	X		X				X	X			X			
Kanaskat-Palmer State Park		X	X	X			X		X		X	X			
Nolte State Park		X		X	X		X		X		X				
Flaming Geyer State Park		X	X	X	X		X		X		X				Horse Trails
Tolmie State Park	X	X		X	X	Diving	X		X			X			
Lake Wilderness Park		X		X	X		X		X						Sports Fields
Lake Sawyer Park	X	X		X	X										
Whitney Bridge Park	X	X													
Lake Tapps North Park	X	X			X		X		X						
Lake Geneva Park	X	X					X								Play Fields
Lake Killarney	X			X			X		X			X			
Shady Lake	X			X											
Shadow Lake	X			X											
Lake Desire	X			X											
McIntosh Lake	X	X		X											
Summit Lake	X	X		X											
Point Defiance Park		X					X		X						
Saltwater State Park				X	X	Diving	X	X	X		X	X			
Dash Point State Park				X	X		X	X	X		X	X			
Scatter Creek Wildlife Area				X			X		X			X		X	
Olallie State Park				X					X		X	X			Rock Climbing

Table 4-3. Potential Substitute Recreation Areas in the Project Region by Visitor Origin.[1]

Visitor Origin/ Developed Recreation Area[2]	Water-Based Opportunities						Land-Based Opportunities								
	Motorized Boating	Non-Motorized Boating	Whitewater Boating	Fishing	Swimming/ Beach Activities	Other	Picnicking	Camping	Hiking	Sightseeing	Mountain Biking	Wildlife Viewing	OHV-use	Hunting	Other
West Hylebos Park									X						
Federation Forest State Park							X		X			X			
Lake Youngs Trail									X		X				
Mt. Baker Snoqualmie National Forest			X	X	X		X	X	X	X	X	X	X	X	
Deception Falls							X		X	X		X			
Snoqualimie Pass							X	X	X		X	X			Skiing
Alpine Lakes Wilderness Area				X	X			X	X	X		X		X	
Squak Mountain, Cougar Mountain Parks									X		X				
Tiger Mountain State Forest							X		X		X	X			Paragliding
Mt. Si NRCA							X		X						Rock Climbing
Green Mountain and McDonald Ridge State Forest									X		X				
Iron Horse Trail State Park									X		X				Rock Climbing

[1] Visitor origin is based on information collected during the RVS (Co-licensees 2006).

[2] Unless noted otherwise, recreation areas for each Visitor Origin include those from each of the above Visitor Origins (e.g., Snohomish recreation areas also include those for Sultan and Monroe).

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Table 4-4. Potential Substitute Whitewater Boating Reaches in the Project Region by Visitor Origin.[1]

Visitor Origin/River[2]	Reach	Class[3]	Length (miles)	Season of Use[4]
Sultan				
North Forth Skykomish	Jackson Wilderness to Bear Creek	II – V	10.0	Spring; best during peak snowmelt
North Forth Skykomish	Bear Creek to SF confluence	IV	12.5	Spring; best during peak snowmelt
Pilchuck River	P-5000 above Boulder Creek to Menzel Lake Rd	III+	6.0	November to April
Silver Creek	Quartz Creek to NF Sky	IV – V	1.5	November through March
Skykomish River	Index to RR Bridge	III +	4.5	November to early July
Skykomish River	Railroad Bridge to Big Eddy	II	2.5	All year
Skykomish River	Big Eddy to Monroe	I-II	16.2	All year
Skykomish River, S. Fork	Baring to Sunset Falls	V+	4.1	All year
Snoqualmie, North Fork	Big Creek to Spur 10 Bridge	III	6.3	November to May
Snoqualmie, North Fork	Spur 10 Bridge to 428th St. Bridge	V+	6.5	November to June; best spring
Sultan River	Spada to Powerhouse	III – IV+	11.0	During Culmback Dam release or heavy rains
Sultan River	PH to Fishing Access	III – IV+	2.0	All year
Tolt, North Fork	above Yellow Creek to SF Tolt	IV – V+		November through March
Tolt, South Fork	Bridge to conf. w. NF	V	5.9	November through March
Trout Creek	to NF Sky	V+	2.0	November through April
Wallace	Bridge below Wallace Falls to Sultan	II	6.0	November through June
Monroe				
Canyon Creek	Confluence to Hampton Tree Farm Bridge	IV-V	6.2	November through April
Canyon Creek	Hampton Tree Farm Bridge to Fishing Access	II+	4.0	November through April

Table 4-4. Potential Substitute Whitewater Boating Reaches in the Project Region by Visitor Origin.[1]

Visitor Origin/River[2]	Reach	Class[3]	Length (miles)	Season of Use[4]
Canyon Creek	Fishing Access to S. Fork Stillaguamish	IV-V	1.3	November through March
Stillaguamish	Deer Creek to Mallardy Creek	II	6.5	November to June
Stillaguamish	Mallardy Creek to Verlot	III+	9.0	November through May
Stillaguamish	Verlot to Granite Falls	V	12.3	November through May
Stillaguamish, S. Fork	Granite Falls to Jordan	II	9.1	November through May
Snohomish				
Jim Creek	Naval Station to S. Fork Stillaguamish	II	7.0	-
Everett				
Deer Creek	Bridge at Rick Creek to mouth	IV-V+	11.0	-
Pilchuck Creek	Lake Cavanaugh Road to Pilchuck Creek Campsite	IV	4.4	November through early April
Pilchuck Creek	Pilchuck Creek Campsite to Highway 9 bridge	III – IV	5.5	November through early April
Pilchuck Creek	Highway 9 Bridge to I-5 Bridge	II – III	6.1	November through early April
Stillaguamish, N/ Fork	Moose Creek to Oso	II	25.7	November to June
Seattle				
Boulder	Boulder Falls to mouth	III-V+	5.0	-
Beckler	Rapid River to S. Fork Skykomish	II-III	7.3	November through May
Carbon	Fairfax to 177th St. East	V	9.0	Before or after snowmelt; best in July or August
Carbon	177th St. East to Puyallup River	II	9.0	-
Cedar River	Landsburg bridge to Maplewood	II	15.5	November to late spring

Table 4-4. Potential Substitute Whitewater Boating Reaches in the Project Region by Visitor Origin.[1]

Visitor Origin/River[2]	Reach	Class[3]	Length (miles)	Season of Use[4]
	Roadside Park			
Clear Creek	Eightmile Creek to Abestos Creek Falls	IV	2.0	Rainy season
Clearwater	Bridge to confluence with White River	III	4.0	-
Dingford Creek	bl. Goat Creek to MF Snoq	V+	1.3	-
Duwamish	King County Park behind Boeing	I – II	0.1	-
Foss	FR 68 Bridge to Hwy 2	IV+	4.9	November through early June
Green	Green River Gorge	III – IV	5.0	November through March
Green	Headworks to Kanaskat-Palmer State Park	II+	3.5	November into early May
Green	Flaming Geyser State Park to 212 Way SE Bridge	II	2.8	All year
Miller, East Fork	Along FR 6412	V	1.0	Peak snowmelt; best late May to mid-June
Miller, East Fork	To NE Old Cascade Highway	IV	4.8	Peak snowmelt; best late May to mid-June
Miller, West Fork	u/s of Miller Rd Bridge	V+	2.5	Snowmelt; April through mid-June
Money Creek	Upstream Money Creek Rd. Bridge	IV – V	2.9	Rainy and peak snowmelt; best late May to mid-June
Nisqually	McKenna to Yelm Hydro Plant	III	7.0	November to May
Pratt	Kaleetan Creek to MF Snoq	IV	6.0	Peak snowmelt
Puyallup	Kapowsin Road Bridge to Highway 162	II	9.0	Peak snowmelt; best May to June
Raging River	Hwy 18 to Preston	III+	3.0	November through March
Raging River	Preston to Fall City	III+	5.0	November through March

Table 4-4. Potential Substitute Whitewater Boating Reaches in the Project Region by Visitor Origin.[1]

Visitor Origin/River[2]	Reach	Class[3]	Length (miles)	Season of Use[4]
Rapid	Road end to Beckler River	IV	3.6	Snowmelt; June
Skykomish S. Fork	Beckler River to bridge above Baring	II	9.5	All year
Snoqualmie, Middle Fork	Taylor River to Concrete bridge	II	7.5	November through June
Snoqualmie, Middle Fork	Hardscrabble Creek to Burnboot	V	4.0	Late summer
Snoqualmie, Middle Fork	Burnboot to Taylor	IV	10.3	
Snoqualmie, Middle Fork	Concrete Bridge to Tanner	III – IV	7.0	November through May
Snoqualmie, Middle Fork	Tanner to North Bend	II	4.5	November through June
Snoqualmie, South Fork	I-90 Exit 52 to Denny Creek	IV – V	1.5	-
Snoqualmie, South Fork	Twin Falls State Park to 436th St. Bridge	II+	5.0	November through June
Snoqualmie	Snoqualmie Falls to Plum's Landing	II+	1.0	All year
Squire Creek	Road to downstream	V	3.0	-
South Prairie Creek	E. Fork to Spiketon Rd.	V	6.6	November through March
South Prairie Creek	Lower Burnett to above Carbon River	II+	5.8	November through March
Taylor	bl. Matren Creek to MF Snoq	IV	3.0	April through June
White	Buckley to Auburn	II	12.5	Snowmelt; best May and June

[1] Visitor origin is based on information collected during the RVS (Co-licensees 2006).

[2] Unless noted otherwise, river reaches for each Visitor Origin include those from each of the above Visitor Origins (e.g., Snohomish river reaches also include those for Sultan and Monroe).

[3] The International Scale of River Difficulty includes the following classes:

- *Class I - Fast moving with riffles and small waves; few or no obstructions.*
- *Class II - Straightforward rapids with waves up to 3 feet; wide, clear channels evident without scouting.*
- *Class III - Rapids with moderate, irregular waves that can swamp open canoes; strong eddies and currents.*
- *Class IV - Powerful, turbulent and predictable rapids; large, unavoidable waves and holes or constricted passages.*

Table 4-4. Potential Substitute Whitewater Boating Reaches in the Project Region by Visitor Origin.[1]

Visitor Origin/River[2]	Reach	Class[3]	Length (miles)	Season of Use[4]

- *Class V - Extremely long, obstructed or violent rapids with exposure to added risk; possible large, unavoidable waves and holes or steep, congested chutes.*
- *Class VI - These runs have almost never been attempted and often exemplify the extremes of difficulty, unpredictability and danger.*

[4] *Typical season of use is provided for those rivers/river reaches for which a season could be identified in the literature (*Bennett and Bennett 1998*).*

Source: American Whitewater 2007, Bennett and Bennett 1998.

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As can be seen from Tables 4-3 and 4-4, there are many regional recreation areas available to visitors from the primary cities of origin of study area visitors (the lists of recreation areas and opportunities in Tables 4-3 and 4-4 are not comprehensive, but an approximate list of many of the potential substitute/alternative recreation areas in the region). For land- and water-based recreation opportunities (Table 4-3), the number of potential substitute recreation areas for each city of origin includes the following:

- City of Sultan – 20 recreation areas, including 9 that offer water-based opportunities,
- City of Monroe – 42 recreation areas, including 26 that offer water-based opportunities,
- City of Snohomish – 53 recreation areas, including 34 that offer water-based opportunities,
- City of Everett – 59 recreation areas, including 37 that offer water-based opportunities, and
- City of Seattle – 92 recreation areas, including 58 that offer water-based opportunities.

All five cities of origin also provide a range of whitewater boating opportunities, including reaches that provide class I to V+ whitewater (Table 4-4). The number of potential substitute river reaches and miles of river for each city of origin includes the following:

- City of Sultan – 16 river reaches and 97 river miles of whitewater opportunities,
- City of Monroe – 23 river reaches and 145.4 river miles of whitewater opportunities,
- City of Snohomish – 24 river reaches and 152.4 river miles of whitewater opportunities,
- City of Everett – 29 river reaches and 205.1 river miles of whitewater opportunities, and
- City of Seattle – 66 river reaches and 400.5 river miles of whitewater opportunities.

The regional recreation areas listed in Tables 4-3 and 4-4 offer a similar range of opportunities to those found in the study area. Given the multitude of regional recreation areas, the majority of study area recreation opportunities are not likely place dependent (i.e., there is no functional activity dependence on the study area's setting). However, it should be noted that the recreation sites and opportunities listed in Tables 4-3 and 4-4, while they may represent potential substitute sites based on travel distance, do not take into account visitor preferences for specific types of settings and/or facilities, place attachment (i.e., an emotional and/or symbolic relationship between a visitor and a specific setting/place), current use levels and capacity concerns, or other social characteristics that influence a visitor's decision to visit a particular recreation area, including the study area. In particular, the study area offers several distinctive setting characteristics, including high scenic quality, a primitive backdrop, lower use levels, and

a relatively pristine environment, that may make it more appealing than other regional recreation areas.

4.2 Recreation Demand Analysis

Recreation demand is often defined as the approximate number of people who participate in a particular recreational endeavor. For purposes of recreation-related research, existing recreation use is often assumed to be the same as existing recreation demand, while future projected recreation use is often termed "recreation demand" (Haas et al. 2007). Existing recreation use and recreation demand are typically presented as estimates (e.g., 1,000 participants) and/or ranges (e.g., 25 to 30 percent) given the relative difficulty and subsequent lack of precision in developing highly accurate counts of people. This is not to say that recreation use and demand estimates are not reliable; rather, it can be misleading to present specific numeric values (e.g., 528 visitors, 983 boats, etc.) that may imply an unwarranted level of precision.

While the focus of this recreation demand analysis is on existing and projected future use levels in regard to specific activities, there are many other social attributes of a recreation experience that influence both existing recreation use and recreation demand (the combination of specific activities and social attributes are often referred to as "recreation opportunities"). These social attributes may include preferences for specific settings, individual skill levels, and anticipated benefits, among others. These types of social attributes that influence recreation use and demand are also presented in this section to the extent that existing information exists and was identified during the analysis.

Unmet recreation demand, while an important aspect of estimating future recreation use, is a much more difficult component to measure. Unmet demand is typically defined as the number of people who would in theory visit a specific recreation area, but do not. There are various reasons people do not visit recreation areas including lack of knowledge regarding the site/use area, displacement (i.e., people who previously visited an area but no longer do because of some undesirable condition), and disenfranchisement (i.e., people who do not feel welcome or comfortable visiting a recreation area), among others. To the extent possible, potential sources of unmet recreation demand are identified in this section; however, anticipating how unmet demand may affect future recreation use is difficult to quantify and is thus generally discussed in qualitative terms for purposes of this analysis.

4.2.1 Estimates of Current Use

This section provides estimates of existing recreation use in the study area and vicinity, as well as region.

4.2.1.1 Study Area Recreation Use Estimates

The Co-licensees have used visitor registration forms at Olney Pass (Figure 2-1) since at least 1988 to monitor and track the amount of recreational use occurring at the recreation sites at Spada Lake. More recently, the Co-licensees expanded the scope of the visitor registration forms through the RVS to monitor and track recreational use at other sites in

the study area, including the river access sites along the Sultan River. The RVS collected and summarized visitor use levels between August 2005 and July 2006 through the expanded use of visitor registration forms, as well as a questionnaire. Upon completion of the RVS data collection period, the Co-licensees continued the expanded use of visitor registration forms through early November 2007 (note: the visitor registration forms continue to be used at Olney Pass, but were removed from other sites in November 2007). The visitor use estimation methodology used in the RVS (including the visitor registration forms and visitor questionnaire) is described in the final RVS document (Co-licensees 2006b). This section uses the results of the RVS, as well as the additional visitor registration form collection period (through early November 2007) to estimate recreation use levels in the study area.

Figure 4-3 displays the estimated visitation for 1988 through 2007 at Spada Lake based upon completed visitor registration forms at Olney Pass. On average, over 4,850 people per year visited the Spada Lake recreation sites and vicinity (areas accessed via Olney Pass) from 1988 through 2006 (2007 was not included in the average; see figure note). In general, visitor use levels declined on an annual basis and dropped below 4,000 visitors from 1999 through 2003. Access to Spada Lake via Olney Pass was prohibited from September 2001 through May 2002 due to security concerns, which explain some, but not the entire decline in use. However, as shown in Figure 4-3, visitor use levels have recently rebounded (2004 through present).

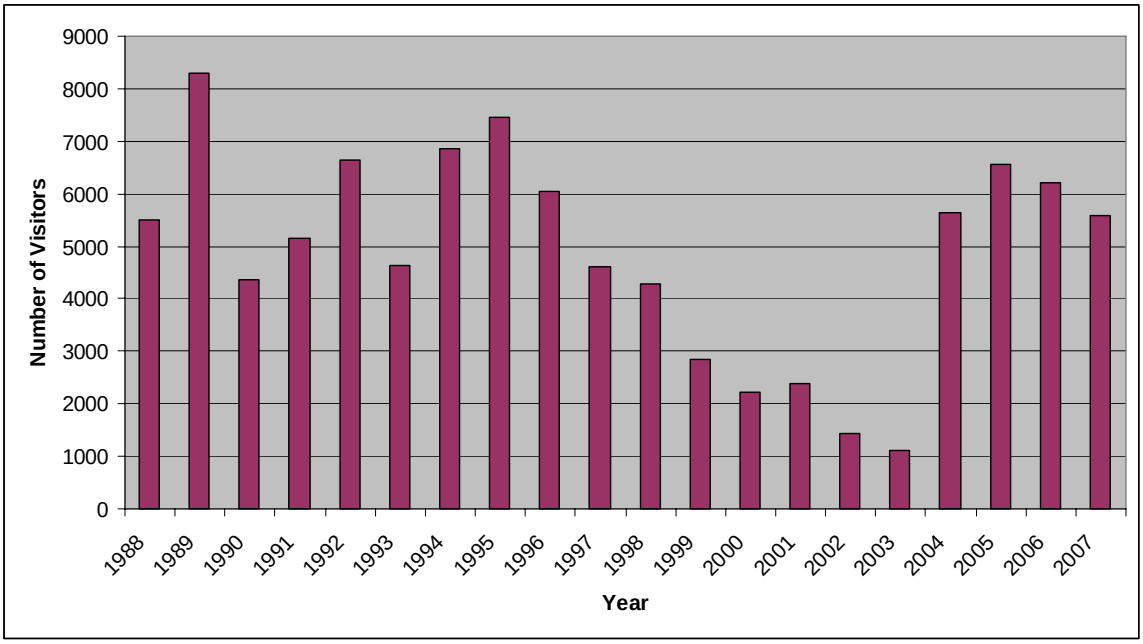

Figure 4-3. Annual Recreation Use Estimates at Spada Lake Recreation Sites and Vicinity (1988 – 2007).

Note: Annual use estimate for 2007 is incomplete (partial data for November and no data for December 2007 at time of assessment).

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

The Co-licensees filed the most recent FERC Licensed Hydropower Development Recreation Report (Form 80) in 2003. Form 80 is used to summarize recreation use estimates and developed site capacity at licensed hydroelectric projects every 6 years. Completed forms are filed with FERC and are used to help monitor recreation use. The most recent Form 80 for the Project provides another snapshot of recent recreational use in the Project area (note: Form 80 is specific to the Project area not the larger study area used for this analysis).

On the completed 2003 Form 80 (which reported recreation use for the 2002 calendar year), the Co-licensees estimated recreation use at the Project at 861 recreation days (RD), with a peak season weekend average of 42 RD (Co-licensees 2003). RD is FERC's preferred unit of recreation measurement. One RD is defined as each visit by a person to a recreation area for any length of time during a 24-hour period. As indicated by the Co-licensees on the completed Form 80, recreation use was likely lower in 2002 compared to a more typical year because of winter road failures along South Shore Road which delayed the opening date for developed recreation sites along the southern shoreline of Spada Lake. As noted previously, recreation use levels have recently (2004 through present) rebounded to higher levels.

In total, approximately 7,742 completed visitor registration forms were collected from August 2005 through July 2007 at visitor registration kiosks in the study area (Table 4-5). This period of time coincides with the RVS data collection period and the following year during which the Co-licensees continued to use visitor registration forms at multiple locations in the study area to help monitor use. This total includes 4,232 from the RVS data collection period (Year 1: August 2005 – July 2006) and 3,510 from the subsequent year (Year 2: August 2006 – July 2007). During both data collection years presented in Table 4-5 below, approximately 72 percent of the completed visitor registration forms were collected at the Spada Lake kiosks and about 28 percent were collected from the kiosks located at access sites along the Sultan River and Lost Lake.

Table 4-5. Collected Visitor Registration Forms in the Study Area (August 2006 – July 2007).

Location[1]	Year 1 (8/2005 – 7/2006)	Year 2 (8/2006 – 7/2007)
Spada Lake Kiosks	3,028	2,515
Sultan River/Lost Lake Kiosks	1,204	995
Total	4,232	3,510

[1] Visitor registration kiosk locations are described in the RVS.

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

Based on the completed visitor registration forms collected (Table 4-5), nearly 17,000 RD occurred in the study area over the two year data collection period (Table 4-6). During the first year of visitor registration form data collection, estimated use in the study area accounted for more than 9,200 RD. Estimated use levels dropped during the second year of data collection to about 7,740 RD (Table 4-6). On average (over the two year

data collection period), recreation use in the study area accounted for approximately 8,480 RDs.

Table 4-6. Estimated Recreation Days in the Study Area (August 2006 – July 2007).

Location	Year 1 (8/2005 – 7/2006)	Year 2 (8/2006 – 7/2007)
Spada Lake and Vicinity	6,965	5,843
Sultan River/Lost Lake and Vicinity	2,252	1,739
Total	9,217	7,742

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

As displayed in Table 4-6, use at Spada Lake and/or other sites in the study area accessed via Olney Pass accounts for approximately 75 percent of total study area use. The remaining 25 percent of use in the study area occurs at recreation sites and use areas along the Sultan River, Lost Lake, and the vicinity. While not listed in Table 4-6, approximately 16 percent of visitors to Spada Lake (or recreation sites/areas accessed via Spada Lake) and about 50 percent of visitors to the Sultan River/Lost Lake are repeat visitors based on license plate numbers provided on the visitor registration forms. Additionally and again based on license plate numbers, only about 1 percent of visitors to the study area visited both Spada Lake (and vicinity) and Sultan River/Lost Lake (and vicinity) recreation sites and use areas during the two year data collection period.

Monthly visitor use estimates for the RVS data collection period (Year 1: August 2005 – July 2006) and the following year (Year 2: August 2006 – July 2007) during which the Co-licensees continued to use visitor registration forms at multiple locations are presented in Figure 4-4 for the study area. Additionally, Figures 4-5 and 4-6 present monthly visitor use estimates for Spada Lake and Sultan River/Lost Lake respectively. Similar to other outdoor recreation areas in the region, use levels in the study area peak during the summer season (late May through early September) and drop during winter months (November through March). As shown in Figure 4-5, visitor use at Spada Lake and the vicinity (sites accessed via Olney Pass) follows this same general use pattern (low in winter, high in summer). This variability in monthly/seasonal use is due in part to recreation site closures during the off-season (late October through late April/early May) at Spada Lake and access limitations along South Shore Road during winter due to snow. While, use at recreation sites along the Sultan River and Lost Lake tends to be higher during the summer season, there is much less variability between seasons compared to Spada Lake (Figure 4-6). The more consistent monthly/seasonal use levels at Sultan River and Lost Lake recreation sites is likely due to a more local visitor population, a lack of seasonal recreation site closures, more convenient road access, less access time for area residents, lower elevation, and fewer road closures due to snow.

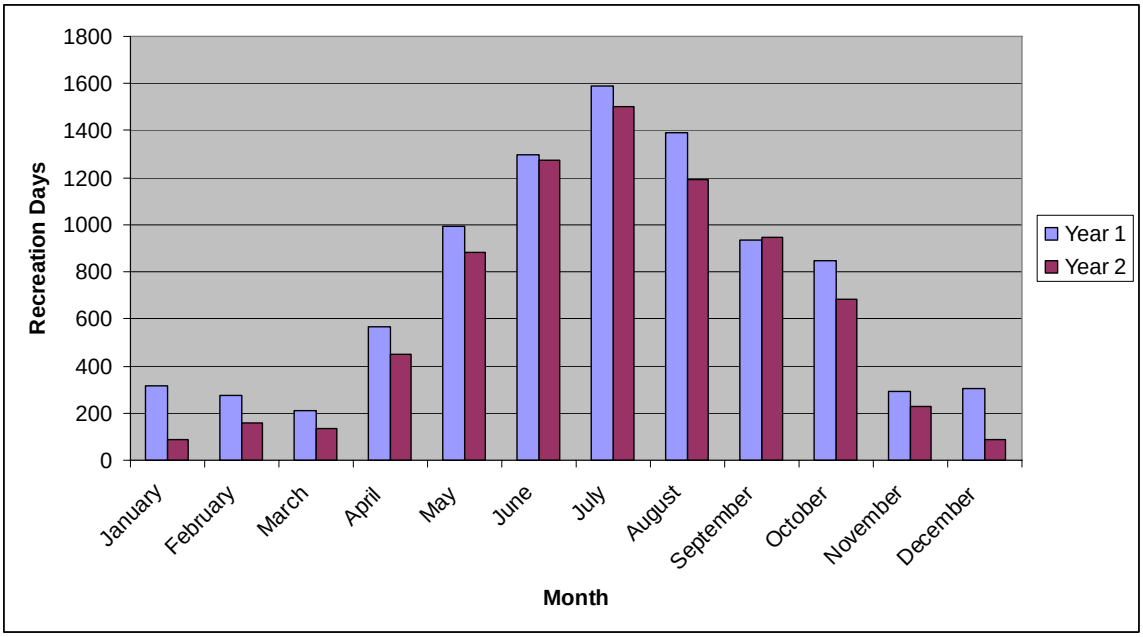

Figure 4-4. Monthly Recreation Use Estimates at Study Area Recreation Sites and Vicinity (August 2005 – July 2007).

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

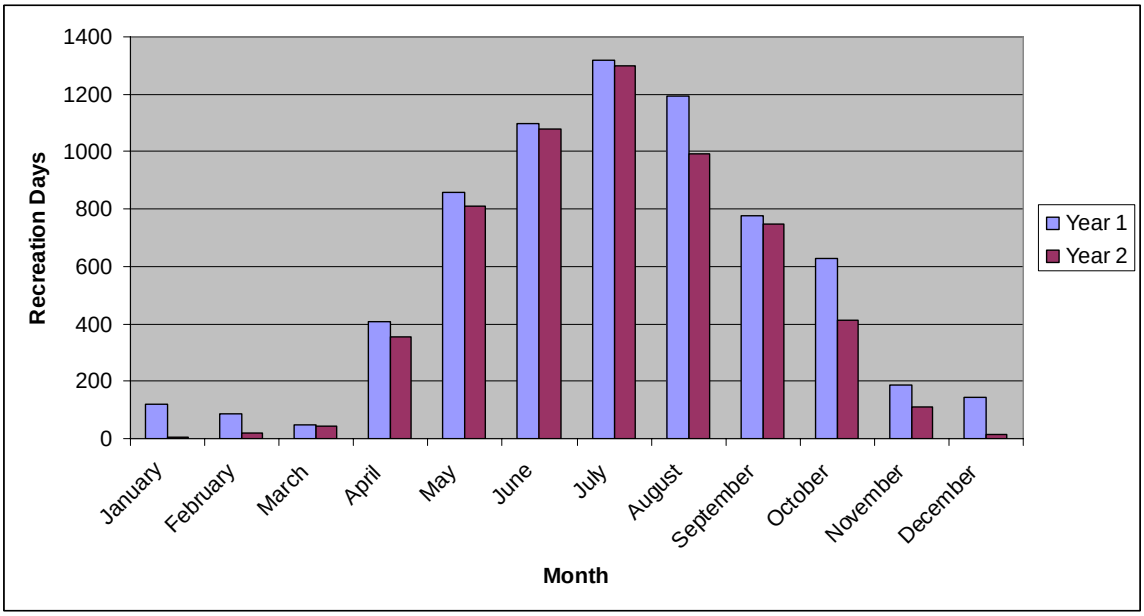

Figure 4-5. Monthly Recreation Use Estimates at Spada Lake Recreation Sites and Vicinity (August 2005 – July 2007).

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

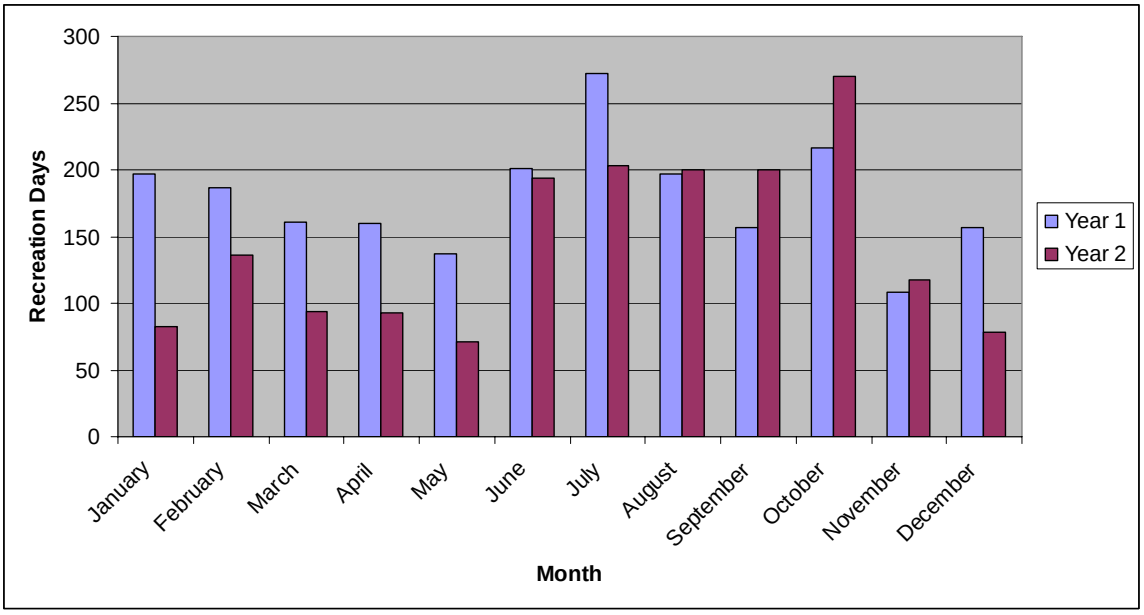

Figure 4-6. Monthly Recreation Use Estimates at Sultan River and Lost Lake Recreation Sites and Vicinity (August 2005 – July 2007).

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

Recreational use in the study area decreased by approximately 16 percent between the initial (Year 1) and subsequent year (Year 2) of visitor registration data collection (Table 4-6). Use levels were lower for every month except for one (September) of the second year of data collection compared to the first year for the study area (Figure 4-4). However, use levels were higher at Sultan River/Lost Lake recreation sites and uses areas during a four month period (August – November) during the second year of data collection (Figure 4-6). In general, this disparity in monthly use levels is more pronounced in the winter months (e.g., December – Year 1: 303 RD, Year 2: 90 RD; January – Year 1: 274, Year 2 – 89 RD), though use levels were also slightly lower during the summer of the second data collection year. There are many potential reasons for this decrease (including weather, economic conditions, changes in visitor preferences, etc.), but typically, recreation use is dynamic and fluctuates on an annual basis. Short-term (1-2 year) changes (increases or decreases) are anticipated; longer term (10-20 years) trends are generally a better indicator of both average, as well as potential future use levels. Potential future use levels in the study area are described in Section 4.2.2.

Figures 4-7 and 4-8 display recreation use levels for developed recreation sites (including the "Other" and "Sightseeing" response categories from the visitor registration forms) in the Spada Lake and Sultan River/Lost Lake areas respectively.

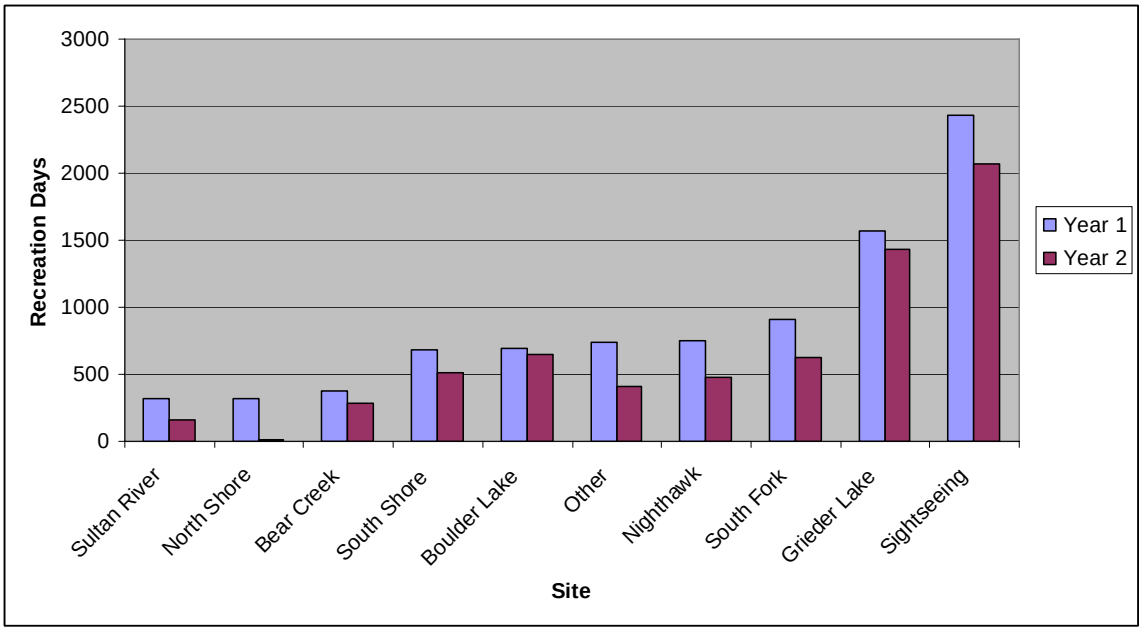

Figure 4-7. Recreation Use Estimates at Spada Lake Recreation Sites and Vicinity (August 2005 – July 2007).

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

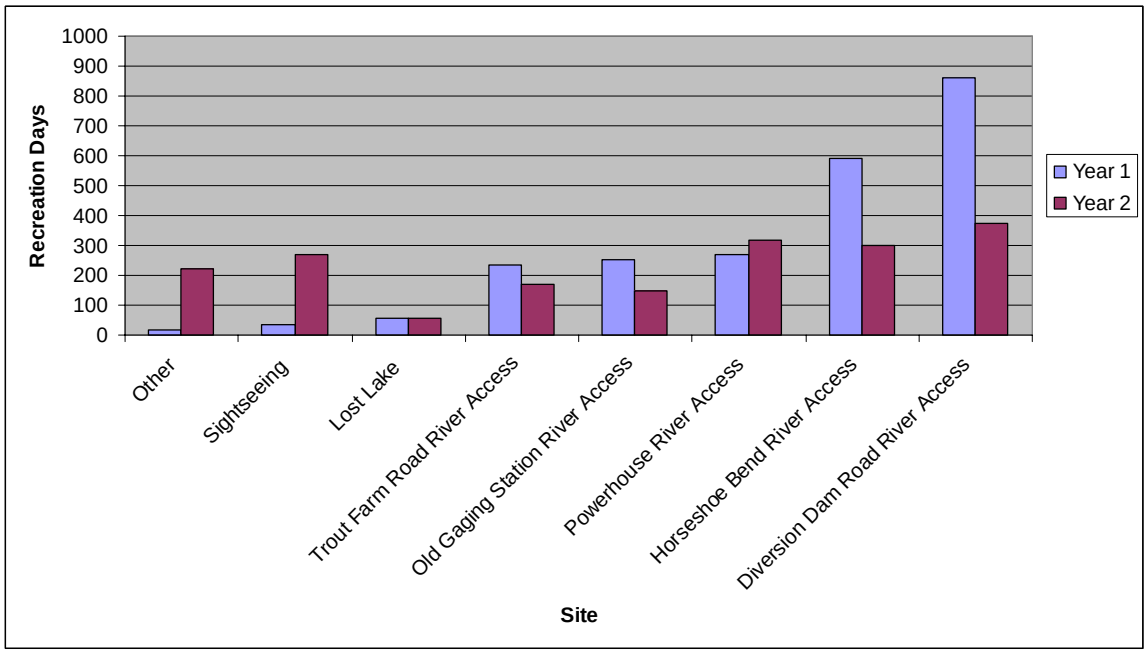

Figure 4-8. Recreation Use Estimates at Sultan River/Spada Lake Recreation Sites and Vicinity (August 2005 – July 2007).

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

As displayed in Figure 4-7, sightseeing was the most indicated response category on the visitor registration forms during both Years 1 and 2 for visitors to Spada Lake. These

visitors likely drive along South Shore Road and either stop at the developed recreation sites briefly or not at all. The Greider Lakes Trail/Trailhead accounted for the highest use estimates for a developed recreation site during both years of data collection. Use of this DNR-managed site was more than twice the estimated use of the South Shore recreation site (the Co-licensee managed site with the highest use estimates) during Year 2. Combined, the five Co-licensee managed recreation sites at Spada Lake only accounted for approximately 3,035 RD in Year 1 and 1,900 RD in Year 2. In comparison, the two DNR-managed trails/trailheads accounted for about 2,265 RD and 2,075 RD in Years 1 and 2 respectively. This indicates that the DNR-managed trails/trailheads likely attract a significant portion of visitors to the study area (about 26 percent in Year 1 and 31 percent in Year 2).

At developed recreation sites along the Sultan River, use tended to be more site-specific (as opposed to "sightseeing"), though both the "Other" and "Sightseeing" response categories experienced sizeable increases during Year 2 (Figure 4-8). During both Years 1 and 2, the Diversion Dam Road River Access accounted for the highest estimated levels of use among recreation sites along the Sultan River. Lost Lake had the lowest estimated use levels; however, public access to Lost Lake is hike-in only without designated trails (hiking distances can vary from less than 1.5 miles to up to 5 miles), which likely explains the low levels of use.

Figures 4-9 and 4-10 display recreation use levels for activities in the Spada Lake and Sultan River/Lost Lake areas, respectively. At Spada Lake, sightseeing and hiking accounted for the highest participation estimates, while fishing and hiking accounted for the highest participation estimates at Sultan River/Lost Lake. Interestingly, a considerable number of visitors to both Spada Lake (Figure 4-9) and Sultan River/Lost Lake (Figure 4-10) indicated "multiple" primary activities on the completed visitor registration forms. The high number of "multiple" activity visitors indicates the importance the study area plays in providing a range of recreation opportunities.

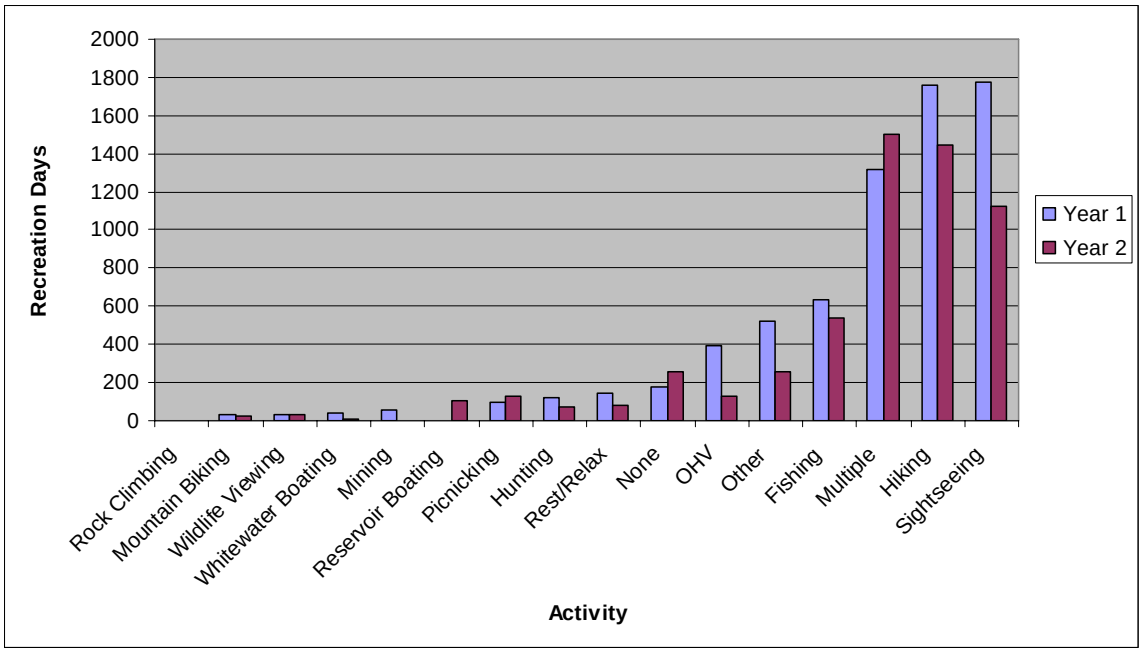

Figure 4-9. Recreation Use Estimates for Activities at Spada Lake and Vicinity (August 2005 – July 2007).

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

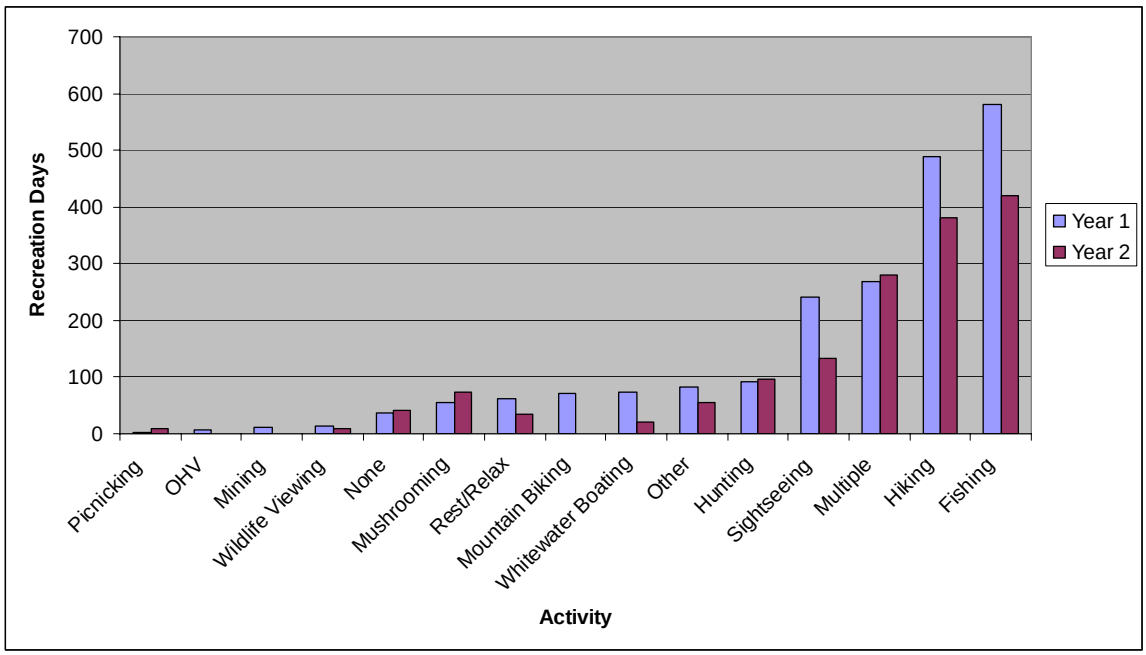

Figure 4-10. Recreation Use Estimates For Activities at Sultan River/Spada Lake and Vicinity (August 2005 – July 2007).

Source: RVS (Co-licensees 2006b) and data provided by Co-licensees.

4.2.1.2 Regional Recreation Use Estimates

The study area provides numerous outdoor recreation opportunities, particularly water-based activities (e.g., non-combustion engine motor boating, whitewater boating, etc.) and activities that are enhanced by the presence of water (e.g., picnicking, sightseeing, wildlife observation, resting and relaxing, etc.). While the Supply Analysis (Section 4.1) helped place the study area in its proper regional context in terms of other outdoor recreation opportunities in the region, this section describes regional, statewide, and national outdoor activity participation estimates that may potentially affect study area use levels. Regional outdoor recreation participation trends that may influence future study area use are discussed in Section 4.2.2.

4.2.1.2.1 National Estimates of Participation

Two recent reports provide national estimates of outdoor recreation participation in the U.S. These studies include: (1) Outdoor Recreation for 21st Century America (Cordell 2004), and (2) Active Outdoor Recreation Participation Study for 2005 (Outdoor Industry Foundation [OIF] 2006). Each of these reports provides participation estimates for the U.S., while the Cordell study also provides state-specific estimates. Both of these studies were conducted at the national level, while the participation estimates provided in Section 4.2.1.2.2. came from a study conducted at the state level.

Table 4-7 displays both Washington-specific and national participation estimates for activities that are prevalent in the study area and region, as presented in Outdoor Recreation for 21st Century America (Cordell 2004). Activity participation rates presented in this report are based on results from the 1999–2001 National Survey on Recreation and the Environment (NSRE), an ongoing USFS research effort that has been tracking outdoor activity participation in the U.S. since 1960.

Table 4-7. Recreation Activity Participation Estimates for the U.S. and Washington.

	Washington[1]		United States[1]	
Activity	Number	Percentage	Number	Percentage
Walking for Pleasure	4,968,744	84.3	233,580,182	83.0
Family Gathering	4,326,285	73.4	206,845,101	73.5
Viewing/Photographing Natural Scenery	4,137,673	70.2	169,697,409	60.3
Picnicking	3,778,132	64.1	153,374,939	54.5
Sightseeing	3,371,437	57.2	145,776,547	51.8
Driving for Pleasure	3,288,920	55.8	144,088,016	51.2
Fishing[2]	2,846,860	48.3	114,257,294	40.6
Day Hiking	2,770,237	47.0	93,713,495	33.3
Swimming	2,705,402	45.9	117,352,935	41.7
Visiting a Wilderness/	2,670,037	45.3	92,024,963	32.7

Table 4-7. Recreation Activity Participation Estimates for the U.S. and Washington.

	Washington[1]		United States[1]	
Activity	Number	Percentage	Number	Percentage
Primitive Area				
Developed Camping	2,416,590	41.0	74,295,383	26.4
Gathering Mushrooms, Berries	2,110,095	35.8	80,205,243	28.5
Motor Boating	1,732,872	29.4	68,666,945	24.4
Mountain Biking	1,662,142	28.2	60,224,288	21.4
Primitive Camping	1,579,624	26.8	45,027,505	16.0
Backpacking	1,302,601	22.1	30,112,144	10.7
Driving Off Road	1,261,342	21.4	49,248,834	17.5
Hunting[3]	1,208,295	20.5	50,655,943	18.0
Canoeing	554,047	9.4	27,297,925	9.7
Cross-country Skiing	406,694	6.9	10,694,032	3.8
Kayaking	300,600	5.1	9,849,767	3.5
Rock Climbing	206,294	3.5	12,101,142	4.3
Snowshoeing	111,988	1.9	5,065,594	1.8

[1] Participation estimates (number and percentage) are based on 2000 US Census data (Washington: 5,894,121; U.S.: 281,421,906).

[2] Fishing percent participation includes (sums) cold water fishing, warm water fishing, and anadromous fishing.

[3] Hunting percent participation includes (sums) big game, small game, and migratory bird hunting.

Source: Cordell 2004

As observed in Table 4-7, two of the most popular activities in Washington and the U.S. are walking for pleasure and family gatherings. Neither of these activities requires specialized facilities or equipment; both can be pursued in a variety of settings, but tend to occur primarily close to home. Therefore, both of these activities have high participation estimates. For nearly all of the other activities listed in Table 4-7, the Washington participation estimates (percentages) tend to be higher than the U.S. This is likely because most Western States, including Washington, tend to have a higher number of outdoor, nature-based protected areas available for recreation (e.g., parks, National Forests, state lands, etc.) compared to other regions of the U.S. (Cordell 2004).

Table 4-8 also displays national outdoor recreation participation estimates, as presented in Active Outdoor Recreation Participation Study for 2005 (OIF 2006). These estimates are provided separately from those above primarily because the activity categories are not always similar. Additionally, there are methodological differences between the two studies. The potential impact of these differences is not discussed here, however, it is important to acknowledge that the data was collected and analyzed differently and that these differences may influence the results. Nonetheless, reviewing two sets of national

participation estimates helps provide the proper context regarding activity participation levels (or ranges of participation) for popular study area and regional activities.

Table 4-8. Recreation Activity Participation Estimates for the U.S.

Activity	Percent Participation[1]
Bicycling	38.2
Fishing	34.5
Hiking	34.2
Camping	30.4
Mountain Biking	22.3
Motorized Off-Road Vehicle Use	18.9
Trail Running	18.0
Hunting	11.8
Canoeing	9.3
Bird Watching	7.0
Kayaking (non whitewater)	5.3
Rafting	4.7
Cross-country Skiing	4.5
Rock Climbing	4.1
Snowshoeing	2.4
Kayaking (whitewater)	1.0

[1] Percent of U.S. population participating in each activity.
Source: Outdoor Industry Foundation 2006.

In general, the Cordell study relied on a more extensive list of potential outdoor recreation activities, though the OIF study included some activities that were not included in the NSRE (e.g., bird watching, whitewater kayaking, trail running, etc.). Additionally, while there are some discrepancies between the participation estimates provided in Table 4-7 and 4-8 (e.g., hunting [6.2 percentage point difference], fishing [6.1 percentage point difference], and camping [4 percentage point difference]), many of them are similar (e.g., hiking, canoeing, and motorized off-road vehicle use). Ultimately, the two sources of national participation estimates are important indicators of the relative rank of popular outdoor recreation activities in the U.S. As previously indicated, Washington tends to have higher participation rates than the U.S.; however, the relative rank of activities appears to be similar to national estimates. Additional state-specific participation estimates are provided in Section 4.2.1.2.2.

4.2.1.2.2 Statewide Estimates of Participation

As with national activity participation estimates, recent sources of information exist for Washington-specific estimates. Two of these sources include: (1) OIF, and (2) RCO.

The OIF recently completed a research report entitled, "State-Level Economic Contributions of Active Outdoor Recreation" (OIF 2007). While the primary focus of this report was on the economic contributions of specific outdoor recreation activities, it also provided broad estimates of statewide use for the key activities involved in the assessment. These key activities, as well as the participation estimates for Washington are listed in Table 4-9.

Table 4-9. Participation Estimates for Select Activities in Washington.

Activity	Percent Participation[1]
Wildlife Viewing	39
Camping	36
Bicycling	32
Fishing	16
Paddling	12
Trail Activities	12
Hunting	4

[1] Percent of Washington population participating in each activity.

Source: Outdoor Industry Foundation 2007.

As displayed in Table 4-9, the number of activities investigated by OIF in Washington was very limited. As such, drawing specific conclusions from its data in isolation is difficult. Fortunately, in Washington, the RCO develops more extensive statewide participation estimates on a routine basis (typically every 5 years). Through the WA SCORP process, the RCO collects and analyzes data for outdoor recreation activities in the state. The most recent published SCORP document, titled An Assessment of Outdoor Recreation in Washington State, was completed in 2002. This document does not provide city, county, or region specific activity participation rates; however, it does provide statewide recreation participation estimates that are helpful for planning purposes (IAC 2002).

At the state level, approximately 53 percent of state residents participated in some form of outdoor recreation activity (IAC 2002). The Washington SCORP finds that the most popular activities for residents of Washington include walking/hiking, outdoor team and individual sports, nature-oriented activities, sightseeing, bicycle riding, picnicking, water-based activities, snow/ice activities, fishing, and camping. Table 4-10 displays the estimated number of participants for activities that are available in the study area, as detailed in An Assessment of Outdoor Recreation in Washington State (IAC 2002).

Table 4-10. Estimated Number of Participants in Select Outdoor Activities in Washington (2002).

Activity	Estimated Number of Statewide Participants[1]
Water-based Activities (Fresh Water)	
Fishing – Bank/Shore	264,000
Fishing – Boat	237,000
Swimming/Wading	196,000
Motor Boating	153,000
Muscle-powered Boating (canoe/kayak/rowboat)	57,000
Sail boating	9,000
Picnicking	
At undesignated sites	525,000
At designated picnic sites	460,000
At group facilities	157,000
Sightseeing	
Scenic areas	587,000
Cultural/historical	434,000
Nature Activities	
Observing/photographing nature	939,000
Visiting nature/interpretive centers	217,000
Hiking	
On mountain/forest trails	279,000
No established trails	90,000
On rural trails	74,000
Walking	
In a park/trail setting	449,000
With a pet (on leash) in a park/trail	322,000
Bicycling	
On mountain/forest trails	93,000
On rural trail systems	88,000
No established trails	32,000

[1] Estimated number of participants rounded to nearest 1,000.

Source: IAC 2002.

The RCO is in the process of developing an updated Washington SCORP and related documents that present results by various regions in the state (clustered counties), not just statewide results as in previous years. Preliminary data are presented in Table 4-11 for the North Cascades Region, as well as the State. The North Cascades Region includes

Snohomish, Skagit, Okanogan, Whatcom, and Chelan counties. Preliminary draft data are also provided in Table 4-11 for King County (a separate region), given the high number (32 percent) of visitors to the study area from King County. Note: direct comparisons with previous SCORP data is not possible at this time due to the preliminary nature of the 2007 data from RCO. However, the 2007 data are helpful in drawing conclusions that are more region-specific, compared to 2002 data.

Table 4-11. Preliminary Estimates of Participants in Recreation Activities in the North Cascades Region, King County, and in Washington (2007).[1]

	North Cascades Region		King County		State	
Activity	Number	Percent	Number	Percent	Number	Percent
Water-based Activities						
Swimming/Wading	267,990	24.4	427,465	23.8	1,215,962	19.3
Motor Boating	173,395	15.8	180,081	10.0	712,694	11.3
Muscle-powered Boating	84,539	7.7	140,841	7.9	441,482	7.0
Sail Boating	26,017	2.4	56,062	3.1	96,833	1.5
Whitewater Rafting	24,571	2.2	14,457	0.8	60,716	1.0
Fishing						
From a bank, dock, or jetty	94,206	8.6	102,333	5.7	539,100	8.6
From a private boat	113,333	10.3	84,341	4.7	464,401	7.4
Nature Activities						
Observing/photographing nature	331,294	30.1	623,525	34.8	1,979,455	31.5
Gathering or collecting in a natural setting	232,578	21.2	250,356	14.0	1,015,626	16.2
Picnicking	602,904	54.9	863,420	48.1	3,004,436	47.8
Sightseeing	460,453	41.9	864,177	48.2	2,677,410	42.6
Camping						
With a car	79,891	7.3	138,142	7.7	551,439	8.8
Backpacking at a primitive location	36,955	3.4	63,020	3.5	176,595	2.8
With a motor boat	7,016	0.6	30,698	1.7	104,440	1.7
With a canoe/kayak	4,787	0.4	44,093	2.5	89,016	1.4
Walking and Hiking						
Walking without a pet	576,742	52.5	1,129,310	63.0	3,484,390	55.4
Walking with a pet	411,322	37.4	655,314	36.5	2,331,044	37.1
Hiking	244,268	22.2	419,326	23.4	1,296,780	20.6
Climbing/Mountaineering	48,975	4.5	81,386	4.5	248,832	4.0
Bicycle Riding	340,745	31.0	680,511	37.9	2,045,794	32.5

Table 4-11. Preliminary Estimates of Participants in Recreation Activities in the North Cascades Region, King County, and in Washington (2007).[1]

Activity	North Cascades Region		King County		State	
	Number	Percent	Number	Percent	Number	Percent
Off-Road Vehicle Use						
4-Wheel Drive Vehicles	175,292	16.0	149,512	8.3	812,302	12.9
All-Terrain Vehicles	68,959	6.3	22,529	1.3	448,696	7.1
Motorcycles	78,131	7.1	33,379	1.9	343,869	5.5
Hunting						
Firearms	81,368	7.4	64,928	3.6	426,129	6.8
Archery	13,567	1.2	26,133	1.5	94,052	1.5
Snow/Ice-based Activities						
Skiing	52,867	4.8	112,506	6.3	293,120	4.7
Snowshoeing	2,320	0.2	54,196	3.0	81,873	1.3

[1] All data presented in Table 4-11 is preliminary and is subject to change based on further analysis by the RCO.

Source: RCO 2007 (unpublished preliminary data).

The activities with the highest study area estimated use (sightseeing and hiking) also tend to have moderate to high regional, state, and national participation levels. This may indicate that participation in these activities will continue to remain stable and/or increase in the near future in the study area. While fishing tends to have lower participation levels at the regional and state level (Table 4-11), it does have relatively high existing participation estimates in the study area (Figures 4-10 and 4-11). The potential effect of changes in recreation activity participation, as well as other factors on study area visitor use levels is explored in Section 4.2.2.

4.2.2 Estimates of Recreation Demand (Future Use)

This section discusses estimates of future recreation demand, as they relate to recreational use of the study area. These estimates were developed under the assumption that existing recreational management strategies in the study area will continue in the future. It is acknowledged that changes to recreation management strategies may change in the future and that these changes may in turn affect recreation use levels; however, potential changes in management strategies are not addressed here, but will likely be investigated during development of potential recreation-related PM&E measures. For purposes of this analysis, the new FERC license term is assumed to be between 30 and 50 years, beginning in 2011. Additionally, as indicated previously, the terms "recreation demand" and "future use" are used interchangeably throughout this section.

Two of the primary factors that influence future recreation use are population/ demographic changes and activity participation changes. These factors are described in Section 4.2.2.1. However, there are many other, more qualitative factors that also affect

recreation forecasts. These more qualitative factors include new recreation activities, changing management priorities, weather, emerging technologies and recreation equipment, national security, changes in visitors' preferences for recreation opportunities (settings, activities, etc.), the national economy, and societal characteristics that influence recreation participation (e.g., amount of free time, disposable income, etc.), among others. Understanding how and when these types of factors will potentially influence outdoor activity participation is difficult to quantify. Thus, while study area-specific demand is quantified in this section, these demand projections should not be interpreted as absolute.

4.2.2.1 Regional Background

For analysis of study area-specific recreation demand, it is important to first understand anticipated population and demographic changes, as well as regional recreation participation trends. Population and demographics tend to be one of the major determinants of recreation participation trends (Cordell 2004; Kakoyannis and Stankey 2002). One of the interesting population trends that has been noted recently is the migration of people to traditionally rural areas because of the presence of environmental amenities, such as federal/state land ownership, numerous recreation opportunities, and few extractive industries, among others. In terms of recreation participation trends, in general, as a population increases so too does the number of people participating in outdoor recreation activities. Both population and demographics, as well as regional participation trends are discussed in more detail in this section.

4.2.2.1.1 Population Projections and Demographics

For Washington, the state population is expected to continue to increase in the near term (next 5-years), particularly due to immigration from other states (especially California and Oregon). The Office of Financial Management (OFM) estimates that the 2007 state population is approximately 6,488,000 (OFM 2007a). By 2030 (the final year of OFM population forecasts), the state population is anticipated to grow to approximately 8,637,637, an increase of approximately 33 percent (OFM 2006). Population increases are expected not only in existing major population centers (e.g., along the I-5 corridor and other major highways), but also in communities that have traditionally been categorized as rural and on the periphery of major population centers, including the study area and vicinity.

In addition to statewide population growth, both Snohomish and King counties are also anticipated to experience increases in their populations in the future. Anticipated population changes in these two counties are included here because these counties account for nearly all user origins in the study area (Co-licensees 2006b). Table 4-12 displays OFM population forecasts for both Snohomish and King counties through 2025 (OFM only provides county forecasts through 2025). As with the state, the population of both counties is expected to increase by 2025. This increase will range between approximately 31 to 75 percent in Snohomish County, and between 9 to 33 percent in King County. However, the absolute increase in population (i.e., actual number of new

residents) would be similar for both counties (189,701 to 456,879 for Snohomish County and 157,625 to 581,334 for King County).

Table 4-12. OFM Population Forecasts for Snohomish and Kings Counties (2000 – 2007).

	Population Estimate			
		2025[2]		
County	2000[1]	Low	Intermediate	High
Snohomish	606,024	795,725	929,314	1,062,903
King	1,737,034	1,894,659	2,092,390	2,318,368

[1] 2000 Washington population estimates based on 2000 US Census.

[2] OFM provides Low, Intermediate, and High population forecasts through 2025 for planning purposes. The range in population forecasts is based on economic and other assumptions.

Source: OFM 2002.

Based on past population data (1960 – 2007) and as noted by OFM, population growth in Washington is significantly correlated to statewide economic conditions and growth (OFM 2007b). Generally speaking, when the state economy outperforms the national and/or regional economy, the state population has a tendency to increase (almost exclusively via immigration); when the state economy is on par or underperforms the national and/or regional economy, the state population tends to plateau or even decrease. Natural population change (births and deaths) has been relatively constant since the late 1970s/early 1980s and varies only slightly in response to changing economic conditions.

As a population ages, participation in recreational activities, especially high-intensity activities (e.g., waterskiing), tends to decrease. In fact, recent research indicates that activity participation drops significantly as a population ages (OIF 2006). For example, in the U.S., nearly 80 percent of 6 to 12 year olds participate in at least one outdoor recreation activity, while less than 35 percent of adults over age 65 participate in at least one outdoor activity. However, it has been noted that the population of 70 to 90 year olds tends to be healthier and more mobile than in the past, thus prolonging their participation in certain recreational activities (Wood et al. 1990). Thus, while participation may drop rapidly for some activities as a population ages, other activities will likely increase or at a minimum remain constant, especially as more focus is placed on healthy, active living.

Significant differences also exist in activity participation among racial and ethnic groups. In Washington, while non-Hispanic Whites will continue to make up the majority of the population, Hispanics and Non-Hispanic Asians/Pacific Islanders are expected to see significant increases in their populations by 2025 (US Census Bureau 1996). In general and compared to Non-Hispanic Whites, minority groups tend to use developed, urban recreation facilities that are in proximity to their homes, visit sites in larger groups, participate in more sport-type activities, stay longer at recreation sites and facilities (day use only), and participate in land-based more than water-based activities (Manning 1999). While it is not completely understood how racial/ethnic shifts in population will impact

recreation participation, it can be expected that the recreation needs and preferences of the population may change over time.

While anticipated study area use is not entirely correlated to population increases in the region, population will nonetheless influence future use. As the populations of both Snohomish and King counties increase, there is the potential that more people will seek outdoor recreation opportunities, including those available in the study area. Additionally, as residential-based development continues to expand between I-5 and the Cascades, such as in the Monroe and Sultan areas, the number of people living in proximity to the study area will likely increase. As a result, there is the possibility that use levels could increase in the study area because people tend to select recreation sites and use areas in proximity to their primary residence (at least for more routine recreation excursions).

4.2.2.1.2 National, Statewide, and Regional Estimates of Future Recreation Use

Estimating future recreation participation is not an exact science, but can provide useful insight into probable trends that may affect not only activities and participation levels, but also the need for land and facilities to support these activities. Several resources are available that attempt to estimate future recreation participation at the regional and national levels.

Estimates of Future Participation in Outdoor Recreation in Washington State, a SCORP document, provides estimates of future participation rates for popular outdoor recreation activities in the state. These activities include some that are known to occur in the study area and region (IAC 2003). Ten- and 20-year estimates (based on 1999-2000 SCORP data), as a percent change in the number of people participating in each activity, are provided in Table 4-13 for select activities, as presented in the RCO estimate. In general, future participation rates in most outdoor recreation activities are anticipated to increase; however, both fishing and hunting, activities occurring in the Project vicinity, are expected to decline over the next 20 years. The RCO has not yet developed potential outdoor recreation participation trends based on the new 2007 SCORP data.

Table 4-13. Anticipated Changes in Outdoor Recreation Activity Participation in Washington.

Activity	Estimate 10-Year Change (%)	Estimated 20-Year Change (%)
Walking	+23	+34
Hiking	+10	+20
Nature activities	+23	+37
Sightseeing	+10	+20
Bicycle riding	+19	+29
Picnicking	+20	+31
Motor boating	+10	No estimate

Table 4-13. Anticipated Changes in Outdoor Recreation Activity Participation in Washington.

Activity	Estimate 10-Year Change (%)	Estimated 20-Year Change (%)
Non-pool swimming	+19	+29
Canoeing/kayaking	+21	+30
Fishing	-5	-10
Camping	+10	+20
Hunting	-15	-21

Source: IAC 2003

A previous NSRE-based report entitled Outdoor Recreation in American Life provides a comprehensive analysis of future trends in outdoor recreation participation for the U.S., as well as for specific regions (Cordell et al. 1999). Washington is considered to be within the Pacific Region for purposes of the Cordell and others assessment. Other states included in the Pacific Region are California, Oregon, Alaska, and Hawaii.

Using statistical models, projected changes in demographics (including age, race and ethnicity, gender, income, education, and previous experience) were used to assess likely future trends of various outdoor recreation activities through 2050. Table 4-14 provides a summary of participation projections for popular activities in the study area and region through 2050 by decade.

Table 4-14. Recreation Activity Participation Projections Through 2050.[1]

Activity	1995	Percent Change (%)					
		2000	2010	2020	2030	2040	2050
Walking	21.10	8	23	34	49	62	73
Family gatherings	19.30	7	20	30	42	54	65
Sightseeing	18.50	9	26	42	58	74	87
Non-consumptive wildlife activities	16.70	8	23	37	52	65	77
Picnicking	15.80	7	20	31	44	54	63
Hiking	10.90	8	23	34	53	69	85
Non-pool swimming	11.60	6	19	29	43	57	72
Fishing	7.50	5	12	20	23	30	38
Biking	9.80	6	19	29	41	53	65
Developed camping	8.80	6	19	32	45	59	73
Motor boating	6.30	7	22	32	52	69	88
Primitive camping	5.60	5	13	23	27	35	44
Off-road driving	4.70	4	10	20	20	26	33
Backpacking	3.80	5	12	23	24	34	46
Rock climbing	1.70	3	6	16	12	21	34

Table 4-14. Recreation Activity Participation Projections Through 2050.[1]

Activity	1995	Percent Change (%)					
		2000	2010	2020	2030	2040	2050
Hunting	1.70	-6	-15	-21	-27	-33	-46
Canoeing	1.20	6	21	30	51	69	89
Cross-country skiing	1.10	6	23	33	57	74	90
Rafting/floating	1.10	4	10	19	24	36	52

[1] Projections are for the Pacific Region, which includes Washington.

[2] 1995 baseline totals for numbers of participants in millions.

[3] Projections are provided in 10-year increments from 2000–2050. The percent change provided by decade is based on 1995 baseline data.

Source: Cordell et al. 1999

These activity participation projections indicate that participation in most outdoor activities is expected to increase by 2050 and beyond. Some activities will experience modest growth (e.g., primitive camping, off-road driving, rock climbing, backpacking), while others will experience more robust growth (e.g., cross-country skiing, motor boating, canoeing, sightseeing, hiking). Only hunting is expected to decrease in terms of the number of participants in the Pacific Region. The factors that will likely contribute to this decrease in hunting include an expected increase in minority populations (hunting participants are currently disproportionately white compared to other demographic groups), as well as an increase in population density (hunting participants tends to live in rural and semi-rural areas).

Given both the state and regional outdoor activity participation estimates provided in Tables 4-13 and 4-14, as well as the population and demographic changes described in Section 4.2.2.1.1, it can be anticipated that demand for outdoor recreation activities will also likely increase in the study area and region.

4.2.2.2 Study Area Estimates of Future Use

Projecting recreation use is an important step in helping to determine future recreation needs in the study area, including potential infrastructure and programs. Future recreation use is influenced by many of the same factors as current use, including the availability of recreation sites and use areas (supply), location and attractiveness of facilities, demographics, economic conditions, and weather conditions, among others. However, future use is also influenced by variables for which very little or no hard data exist. As discussed previously, these variables include new recreation activities, emerging technologies and recreation equipment, changes in visitors' preferences for recreation opportunities (settings, activities, etc.), and societal characteristics that influence recreation participation (e.g., amount of free time, disposable income, etc.), among others. As a result, most recreation forecasting efforts involve a combination of quantitative and qualitative approaches.

For purposes of this assessment and based on the regional background provided in Section 4.2.2.1, three potential future participation scenarios were developed for the study area and its developed recreation sites. These scenarios include high, moderate, and low projections based on anticipated regional population and recreation participation changes. These scenarios include:

- High – recreation use in the study area would be anticipated to grow at approximately 1.5 percent per year through the anticipated term of the new FERC license (30-50 years). This scenario acknowledges the future population growth that is anticipated in Snohomish and King counties (Table 4-12), expected high demand for some activities that are available in the study area (e.g., walking, hiking, nature/non-consumptive wildlife activities, sightseeing, etc.), and other qualitative factors;

- Moderate – under this scenario, annual recreation use in the study area would grow at a more modest 1.0 percent per year through the anticipated term of the new FERC license. This scenario acknowledges OFM's moderate population increases for Snohomish and King counties (Table 4-12), expected demand for some study area activities (e.g., picnicking, biking, etc.), and other qualitative factors; and

- Low – recreational use of the study area would be expected to increase by only 0.5 percent per year through the term of the new FERC license under this scenario. This scenario acknowledges OFM's low population projections for Snohomish and King counties (Table 4-12), expected lower demand for some study area activities (e.g., fishing, hunting, rock climbing, off-road vehicle use, etc.).

Under each scenario, the anticipated annual growth rates were applied to an existing study area use estimate to develop demand projections through 2061 in RD by decade. These projections are unconstrained, straight-line projections. Thus, the estimated RD under each scenario assume that study area conditions remain constant throughout the anticipated term of the new FERC license. These unconstrained estimates reflect a range of potential outcomes, but should not be construed to be precise forecasts of future use. Instead, they should be used in conjunction with other recreation-related relicensing information to help anticipate future recreation needs in the study area (Section 4.4). Continued recreation monitoring can then be used periodically throughout the term of the new FERC license to re-evaluate these projections and potentially revise identified future needs (as captured in a future RRMP).

Figure 4-11 displays projected recreation use levels in the study area through the potential term of the new FERC license. Recreation use in the study area is projected to range from approximately 11,000 RD (low scenario) to about 18,800 RD (high scenario) by 2061. This represents an increase of about 30 to 123 percent over existing use levels. If future use levels were evenly distributed across a calendar year on a per day basis (as opposed to higher in the summer and on weekends/holidays and lower in the winter),

these increases would translate to approximately 30 RD (low scenario) to 51 RD (high scenario) per day in the study area (existing use levels are about 23 RD per day).

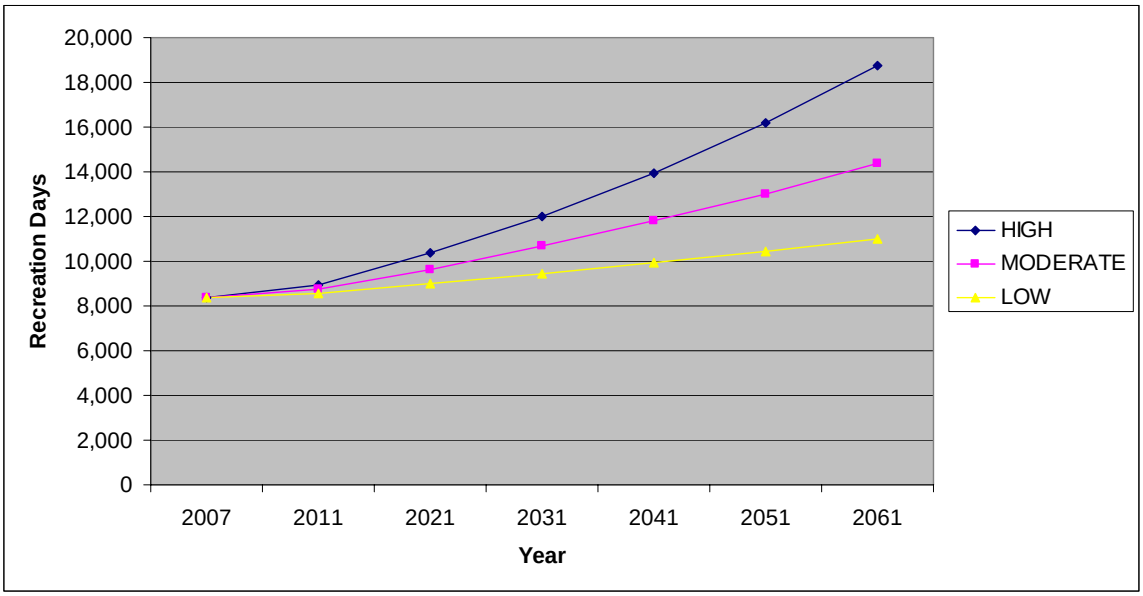

Figure 4-11. Projected Recreation Use in the Study Area (2007 – 2061).

Note: Year 1 and Year 2 visitor registration form data was averaged to develop the 2007 use estimate.

Table 4-15 provides demand projections for Spada Lake (and vicinity) and Sultan River/Lost Lake (and vicinity) by decade.

Table 4-15. Spada Lake and Sultan River/Lost Lost Demand Projections (2007 – 2061).

Area/Scenario	2007[1]	Projected Demand (RD)					
		2011	2021	2031	2041	2051	2061
Spada Lake and Vicinity							
High	6,404	6,797	7,888	9,155	10,624	12,330	14,309
Moderate	6,404	6,664	7,361	8,131	8,982	9,922	10,960
Low	6,404	6,533	6,867	7,218	7,587	7,976	8,383
Sultan River/Lost Lake and Vicinity							
High	1,996	2,118	2,458	2,853	3,311	3,842	4,459
Moderate	1,996	2,077	2,294	2,534	2,800	3,092	3,416
Low	1,996	2,036	2,140	2,250	2,365	2,486	2,613

[1] 2007 use estimate based on average of Year 1 and Year 2 visitor registration form data (Section 4.2.1.1).

Tables 4-16 and 4-17 provide projected demand for developed recreation sites at Spada Lake and Sultan River/Lost Lake, respectively. These site-specific projections are based on existing site use, as indicated by visitors on completed visitor registration forms

(Section 4.2.1.1). For capacity purposes (Section 4.3), only developed recreation sites are included in these tables.

Table 4-16. Spada Lake and Vicinity Developed Recreation Site Projected Use Estimates (2007 – 2061).

Site/Scenario	2007[1]	Projected Demand (RD)					
		2011	2021	2031	2041	2051	2061
North Shore							
High	161	171	198	230	267	310	359
Moderate	161	168	185	204	226	249	276
Low	161	164	173	181	191	201	211
Sultan River							
High	235	250	290	336	390	453	526
Moderate	235	245	270	298	330	364	402
Low	235	240	252	265	278	293	308
South Fork							
High	769	816	947	1,099	1,276	1,480	1,718
Moderate	769	800	884	976	1,079	1,191	1,316
Low	769	784	825	867	911	958	1,007
South Shore							
High	591	628	728	845	981	1,138	1,321
Moderate	591	615	679	750	829	916	1,011
Low	591	603	634	666	700	736	774
Nighthawk							
High	651	756	877	1,018	1,182	1,371	651
Moderate	639	706	780	861	951	1,051	639
Low	626	658	692	727	765	804	626
Bear Creek							
High	331	352	408	474	550	638	740
Moderate	331	344	380	420	464	513	566
Low	331	338	355	373	392	412	433
Greider Lakes Trail/Trailhead (DNR)							
High	1,498	1,590	1,846	2,142	2,486	2,885	3,348
Moderate	1,498	1,559	1,722	1,902	2,101	2,321	2,564
Low	1,498	1,528	1,606	1,688	1,775	1,866	1,961
Boulder Lake Trail/Trailhead (DNR)							
High	672	713	827	960	1,114	1,293	1,501
Moderate	672	699	772	853	943	1,041	1,150

Table 4-16. Spada Lake and Vicinity Developed Recreation Site Projected Use Estimates (2007 – 2061).

		Projected Demand (RD)					
Site/Scenario	2007[1]	2011	2021	2031	2041	2051	2061
Low	672	686	721	757	796	837	880

[1] 2007 use estimate based on average of Year 1 and Year 2 visitor registration form data (Section 4.2.1.1).

Table 4-17. Sultan River/Lost Lake and Vicinity Developed Recreation Site Projected Use Estimates (2007 – 2061).

		Projected Demand (RD)					
Site/Scenario	2007[1]	2011	2021	2031	2041	2051	2061
Lost Lake							
High	56	59	69	80	92	107	124
Moderate	56	58	64	71	79	87	96
Low	56	57	60	63	66	70	73
Diversion Dam Road River Access							
High	618	656	761	883	1,025	1,189	1,380
Moderate	618	643	710	785	867	957	1,058
Low	618	630	663	697	732	770	809
Old Gaging Station Road River Access							
High	200	212	246	286	332	385	447
Moderate	200	208	230	254	281	310	342
Low	200	204	214	225	237	249	262
Powerhouse River Access							
High	293	311	361	419	486	564	655
Moderate	293	305	337	372	411	454	501
Low	293	299	314	330	347	365	384
Horseshoe Bend/116th River Access							
High	445	472	548	636	738	857	995
Moderate	445	463	512	565	624	689	762
Low	445	454	477	502	527	554	583
Trout Farm Road River Access							
High	203	216	251	291	337	392	454
Moderate	203	211	233	258	285	315	347
Low	203	207	218	229	241	253	266

[1] 2007 use estimate based on average of Year 1 and Year 2 visitor registration form data (Section 4.2.1.1).

If, as predicted, the number of study area RD increase over time, increased pressure may be placed on existing study area recreation sites and use areas. New recreation

opportunities (e.g., sites, facilities, etc.), changes in the existing configuration of recreation sites and public access (e.g., hike/bike instead of vehicle access, road closures, etc.) and/or changes in management strategies (e.g., visitor regulations) may then be needed to accommodate this increased use. Potential future recreation needs (both opportunities and management strategies) based on projected use (as well as other recreation-related relicensing study results) are explored in Section 4.4.

4.3 Recreation Capacity Analysis

A recreation capacity analysis is often applied as either an inventory/research tool (to define capacity based on existing conditions and constraints and potential future use), and/or as a monitoring/management tool (to identify indicators [key issues] and standards of quality and experience to help manage use within established capacity parameters). In this component of the Recreation Needs Analysis, the purpose is as an inventory/research tool that investigates existing and potential future capacity of District-managed recreation resources in the Project area. This analysis relied on common capacity standards; specific indicators and standards of capacity (used for monitoring/management) were not fully developed for this analysis (and are generally beyond the scope of this relicensing study).

The primary purpose of this component of the study is to investigate the existing and potential future capacity of recreation resources in the Project area (this study component primary addresses the Project area, not the study area, as the District's management responsibilities and authority are limited to Project-related recreation sites and use areas on District and/or City-owned lands). Recreation carrying capacity has been defined in a number of ways. A useful definition is "the level of use beyond which impacts exceed standards" (Shelby and Heberlein 1986). At reservoir recreation areas, particularly near urban areas, there are often limits defining how much recreation use existing facilities and use areas can appropriately accommodate. At some point, recreation demand cannot be met without negatively affecting sensitive resources in the area and/or the recreation experience that people expect when they come to the Project area. The goal for decision-makers is to manage recreation use levels and impacts so that they do not exceed overall capacity standards set for the Project area.

The concept and practical application of establishing recreation capacity is a work in progress and continues to be researched extensively (Haas 2001). Recreation capacity frameworks have been researched and applied in a variety of settings and several are commonly used as recreation research and management tools, though none are universally accepted. These frameworks include the *Recreation Opportunity Spectrum* (Clark and Stankey 1979), *Limits of Acceptable Change* (Stankey et al. 1985), *Visitor Impact Management* (Graefe et al. 1990), and *Visitor Experience and Resource Protection* (NPS 1997), among others. This is not intended to create reader doubt regarding the results of this assessment; rather it is meant to highlight that this analysis is based on the best available practices and draws on the commonly-used qualitative and quantitative approaches that are common to each of these frameworks.

As stated previously, recreation capacity at outdoor recreation sites and use areas is generally associated with determining the level of use a given site or area can accommodate and then comparing the use level to established standards. However, recreation capacity is a complex issue and often requires more than an estimate of how many people can use a given site at any time. Capacity is also dependent on the type and severity of ecological impacts, available space or facilities for recreation, and the social perceptions of visitors to the site, among other variables.

To account for the complexity of capacity at recreation sites, three types of capacity were investigated at each District-managed recreation site and use area, as well as the Project area (capacity at non-District-managed recreation sites and use areas was generally not investigated as part of this analysis, except as noted otherwise in the results): biophysical/ ecological, social, and management. Capacity was only investigated at District-managed recreation sites and the Project area primarily because the District's management responsibilities and authority are limited to Project-related recreation sites and use areas on District and/or City-owned lands (within the existing FERC Project boundary).

A capacity parameter (expressed in qualitative terms including "below," "approaching," "at," or "exceeding" capacity) was estimated for each capacity type based on existing qualitative and quantitative information, as well as professional experience and judgment. Exploring different levels of capacity is important in determining where capacity concerns may exist and where management priorities and monitoring programs should be directed in the future. An overall estimate of capacity was then determined based on a cumulative review of the parameters for each type of capacity. Additionally, for each District-managed recreation site, as well as the Project area, one or more of the capacity types was identified as a potential limiting factor to recreation use.

For purposes of this analysis, a capacity type was considered to be a potential limiting factor if at least one of the following criteria were met:

- Existing or anticipated future recreation use levels adversely impact another resource area (e.g., wildlife, vegetation, soils, etc.);
- Existing or anticipated future recreation use levels result in significantly decreased satisfaction with the recreation experience;
- Existing or anticipated future recreation use levels exceed the District's ability to appropriately manage use; and/or
- A current or anticipated future management condition or action limits existing or potential future recreation use.

Trade-offs are an inherent component of recreation capacity; that is, determining the appropriate balance between recreation use and resource preservation is at the core of understanding recreation capacity (Manning 2007). The appropriate level of capacity is setting-specific (it is unique to each recreation area) and dependent on overall environmental protection and social objectives, as well as the management actions used

to achieve these objectives. While the focus of this analysis was on estimated levels of biological/ecological, social, and management capacity, ultimately, appropriate standards should be considered to establish and manage for the appropriate level of trade-offs between these capacity types.

Unlike the Supply and Demand components of the Recreation Needs Analysis, the results of this analysis are focused primarily on District-managed recreation sites and use areas within the Project area, as opposed to the larger study area. As noted previously, this is due to the fact that the District's management responsibilities and authority are limited to Project-related recreation sites and use areas on District and/or City-owned lands.

4.3.1 Overall Project Area Recreation Capacity

Overall, recreation use in the Project area is currently estimated to be below capacity. In part, this is due to the relatively low level of use that recreation sites and use areas currently receive, particularly given the Project area's proximity to major population centers. This is not to imply that low levels of use are unacceptable; rather, that recreation sites and use areas can likely accommodate higher levels of use without negatively impacting biophysical/ecological, social, or management variables that influence the recreation experience in the Project area.

All three capacity types (biophysical/ecological, social, and management) are considered below capacity and are not anticipated to be significant concerns (e.g., at or exceeding capacity) in the future, assuming use variables remain constant. As previously explained in Section 4.2, accurately predicting future recreation use is not an exact science. While current information seems to indicate that future recreation use will not likely result in capacity-related impacts, periodic monitoring will likely be needed throughout the anticipated term of the new license to monitor change over time and to account for unforeseen events and actions that may alter future recreation use.

While existing recreation use levels are estimated to be below capacity for all three capacity types, two of these types - biophysical/ecological and management capacity - are considered potential limiting factors. These two capacity types are not considered limiting factors due to observed recreation use impacts on these resources. Water quality protection measures (biophysical/ecological capacity) and associated recreation use regulations and restrictions (management capacity) do limit current and potential future recreation use in the Project area, particularly around Spada Lake. Again, this is not to imply that use regulations/restrictions, as well as lower use levels are unacceptable and should be changed (there are multiple factors that influence recreation use levels in the Project area); rather it is an acknowledgement of the outcome that these actions have on recreation use levels in the Project area. Additionally, while these capacity types are considered limiting factors to existing and potential future recreation use, RVS results indicate that most current visitors are not impacted by either biophysical/ecological or management capacity-related measures.

4.3.1.1 Biophysical/Ecological Capacity

In general, recreational use of District-managed recreation sites and use areas does not appear to have widespread impact on the ecological integrity of the Project area (or the larger study area). Most use at District-managed recreation sites and use areas occurs at developed recreation sites or along roads that are designed to limit typical biophysical impacts (e.g., soil compaction, vegetation damage, accumulated litter, etc.). Very little dispersed recreation use occurs in the Project area and no significant ecological impacts from dispersed uses were identified (Section 4.1). Additionally, preliminary results from terrestrial resource-related relicensing studies have not found any significant impacts from recreation use on these resources (e.g., wildlife, wetlands, fish, etc.). Given these observations, overall biophysical/ecological capacity is considered to be below capacity in the Project area.

While below capacity, ecological capacity is considered a limiting factor given water quality concerns and associated recreation use restrictions at Spada Lake (Section 2.2). In general, water quality-related regulations currently in place seek to balance water quality protection (Spada Lake provides approximately 80 percent of Snohomish County's water supply) with public recreation use opportunities (Directive 73, provided in Appendix B, describes the recreation-related water quality protection measures in place at Spada Lake). Project operations and management have been designed to accommodate and prioritize water quality concerns.

Spada Lake is a non-contact reservoir, meaning that activities requiring bodily contact (swimming, wading, etc.) with the water are restricted. Furthermore, internal combustion engines are also prohibited on Spada Lake by District and City directives and policy regulations (Appendix B). These water quality restrictions are considered a biophysical/ ecological limitation in regards to existing and anticipated future recreation use levels and are further discussed in Section 4.3.1.3. This is not meant to imply that water quality protections are inappropriate (as a limiting factor on recreation); rather these restrictions likely result in lower use levels and represent a limiting factor to current and future recreation use.

Unlike Spada Lake, recreational use on the Sultan River below Culmback Dam is not limited to non-contact uses only (note: there are recreational use restrictions and prohibitions on City-managed lands along the Sultan River – see Appendix B); thus, ecological capacity is not considered a limiting factor along the river. Given the lower level of development at the river access sites and Lost Lake (lightly developed sites and dispersed use areas tend to be more susceptible to recreation-related impacts [Hammitt and Cole 1998]), the potential for recreation-related impacts to biophysical/ecological resources is likely higher along the Sultan River and Lost Lake than at Spada Lake. The potential exists for biophysical/ecological capacity to be a limiting factor in the future along the river and at Lost Lake.

4.3.1.2 Social Capacity

Visitor satisfaction with a recreation experience has often been used as a measure of social capacity. Visitor satisfaction is complex and likely dependent on multiple factors,

including setting, activity, and social characteristics and preferences, among others (Manning 1999). Given this complexity, visitor satisfaction is typically used as one of multiple social capacity indicators.

In the Project area, most visitors (87 percent – combined satisfied and very satisfied response categories) were satisfied with their recreational experience during the RVS (Co-licensees 2006b). Only approximately 8 percent of visitors reported being dissatisfied (1 percent) or very dissatisfied (7 percent). These results likely indicate that social capacity is not a concern. Additionally, the RVS also investigated several other variables or indicators of social capacity (perceived crowding, displacement, social preferences, and visitor conflict) that support this premise (pertinent results for each of these variables/indicators are provided in this section). Considering the full suite of social variables/indicators in aggregate, social capacity is likely below capacity and is not a limiting factor for District-managed recreation sites and use areas.

4.3.1.2.1 Perceived Crowding

On a 9-point crowding scale (from 1 = "not at all crowded" to 9 = "extremely crowded"), visitors to District-managed recreation sites and use areas indicated an average crowding score of 2.4 during the RVS (Co-licensees 2006b). A 2.4 score generally corresponds to a qualitative indicator of just below "slightly crowded" on the commonly used 9-point crowding scale. About 63 percent of visitors provided a crowding score of 2 or below, while only about 5 percent of visitors felt "moderately crowded" or "extremely crowded." These scores indicate that crowding is not a major concern. The lack of concern over crowding may be related to current use levels, which are considered low (Section 4.2), and/or may be indicative of the crowding norms held by the current visitor population in the Project area (e.g., Project area visitors may be more tolerant of crowding).

There is a very weak relationship between perceived crowding and overall satisfaction with a recreation experience (Manning 1999); high crowding scores do not necessarily mean visitors are dissatisfied with their recreation experience. Additionally, crowding judgments tend to vary by activity and setting (Desor 1972, Cohen et al. 1975). Crowding is thus one of several social variables that should be considered in aggregate when assessing overall satisfaction with a recreation experience and also social capacity.

4.3.1.2.2 Crowding Preferences and Enjoyment

During the RVS, approximately 42 percent of visitors indicated that the number of people present at District-managed recreation sites and use areas does not affect their overall experience (Table 4-17)(Co-licensees 2006b). A slightly higher percentage of visitors indicated that the number of people "detracts" (combined "detracts a lot" and "detracts a little" response categories) from their experience compared to "adds" to their experience (combined "adds a lot" and "adds a little" response categories). This indicates that while some visitors have a slight preference for less crowding and others a slight preference for more crowding, a plurality of visitors to District-managed recreation sites and use areas do not care about the number of people present. As observed previously, this preference may be related to current use levels and/or visitor norms/preferences.

Table 4-17. Visitor Preferences for Crowding.

Response Category	Percent of Visitors
Adds a lot to experience	18
Adds a little to experience	7
Doesn't affect experience	42
Detracts a little from experience	26
Detracts a lot from experience	7

Source: Co-licensees 2006b

4.3.1.2.3 Visitor Displacement

Most current visitors to District-managed recreation sites and use areas do not change their visitation patterns (temporal and/or spatial) to avoid crowding. During the RVS, about 78 percent of visitors reported no change in their personal visitation habits to avoid crowding (Co-licensees 2006b). Of those visitors who did change their visitation patterns, the most frequently reported coping mechanisms to avoid crowding included the following (number in parentheses indicates percent of visitors):

- Seek out quiet places in the area to avoid other crowded locations (12 percent);
- Visit the area on weekdays instead of weekends (12 percent);
- Come earlier or later in the day to avoid crowding (8 percent);
- Visit the area earlier or later in the year (8 percent);
- Avoid holidays (7 percent);
- Go to other places in the region when this area is too crowded (5 percent);
- Use another day use site when my first choice location is full (4 percent); and
- Use undeveloped areas when my first choice location is full (2 percent).

As with visitor crowding scores and crowding preferences, visitor displacement related to crowding does not appear to be a significant concern. While some visitors do change their visitation patterns, most continue to visit District-managed recreation sites and use areas (only about 5 percent go to other regional recreation areas to avoid crowding). This likely indicates that visitors to these sites, especially those who may have changed their visitation patterns, have a preference for the unique setting and/or opportunities available in the Project area.

4.3.1.2.4 Visitor Conflict

Most visitors (77 percent) did not report experiencing conflict with other visitors during their recreational trips to the Project area (Co-licensees 2006b). Of those visitors who did report conflict (about 23 percent), the most frequently reported problems included hearing shooting nearby, observing trash/litter, observing OHV/motorcycle-use or impacts, hearing loud music, encountering too many gates, and observing loose dogs. The District has acknowledged that shooting, loose dogs, and OHV/motorcycle-use are concerns and have instituted measures to limit these uses (e.g., shooting is only legal

during designated hunting seasons, dogs must be leashed, and OHV/motorcycle-use is only allowed on designated roads). While some visitor conflict has been identified at District managed recreation sites and use areas, there do not appear to be widespread visitor conflict issues or concerns.

Shooting guns (the sights and sounds) was a primary concern among some visitors during the RVS; however, the fall hunting season was in progress during the initial months of the RVS and many of the shooting comments were received during this time. Shooting (i.e., discharge of a firearm) is only legal on District-managed lands for hunting purposes during WDFW-designated hunting seasons. Additionally, illegal shooting along Sultan Basin Road (owned and managed by Snohomish County), which provides access to Olney Pass, is an acknowledged problem, but outside the management scope of the District.

4.3.1.3 Management Capacity

Based on a review of several management-related capacity variables (those aspects of the recreation experience that the management entity has direct control over), management capacity is likely below capacity. Management capacity is considered a limiting factor for District-managed recreation sites and use areas because of specific use regulations and restrictions. Pertinent management-related capacity variables for this analysis included recreation development and recreation and public use regulations and enforcement. Each of these variables is discussed in greater detailed in this section.

4.3.1.3.1 Recreation Development

The District is responsible both for the current level of recreation development (e.g., number of sites, facilities, amenities, etc.) and the potential future construction of new developed recreation sites and facilities with a Project nexus. Facility capacity (the level of current development and the amount of use that level may support) and spatial capacity (the ability of the Project area to accommodate new and/or expanded recreation sites and use areas), the primary elements of recreation development capacity for purposes of this analysis, are both considered below capacity.

Facility Capacity

Facility capacity is typically determined by comparing an element of existing use (e.g., vehicle observations) with the maximum use a specific facility type (e.g., parking spaces) can accommodate. For purposes of this analysis, the number of available parking spaces at District-managed recreation sites and observed vehicles-at-one-time (VAOT) at these sites were used to estimate existing facility capacity. Parking space utilization tends to be a good indicator of facility capacity at destination recreation sites and use areas (i.e., sites and use areas that visitor drive to).

As displayed in Table 4-18, a maximum of about 202 vehicles could park at District-managed recreation sites at-one-time (Section 4.1). During the RVS data collection period, a combined maximum of 30 VAOT were observed by Watershed Patrol staff (note, VAOT were only used for calibration purposes and were not reported in the RVS)(Co-licensees 2006b). This use level corresponds to a maximum parking utilization

rate of approximately 15 percent (site-specific facility capacity estimates are discussed in Section 4.3.2). This parking-based facility capacity estimate for District-managed recreation sites and use areas does not include use that occurs along Project area roads. While this type of use is acknowledged, especially along Lake Chaplain Road, it is estimated to be low and not a concern for overall capacity.

Table 4-18. Estimate of Parking-based Facility Capacity.

Recreation Site/Area	Parking Spaces[1]	Maximum Observed VAOT[2]	Percent Utilization
Spada Lake			
North Shore[3]	28	0	0%
South Fork	26	4	15%
South Shore	32	2	6%
Nighthawk	42	5	12%
Bear Creek	10	3	30%
Sultan River/Lost Lake			
Lost Lake	8	2	25%
Diversion Dam Road River Access	10	4	40%
Horseshoe Bend River Access	8	4	50%
Old Gaging Station Road River Access	10	2	20%
Powerhouse River Access	20	3	15%
Trout Farm Road	8	1	13%
TOTAL (District-managed recreation sites and use areas)	202	30	15%

[1] For Spada Lake recreation sites, this column indicates the number of designated parking spaces. For Sultan River/Lost Lake sites, this column indicates the estimated number of parking spaces (spaces are not designated at these sites).

[2] Maximum VAOT based on Watershed Patrol staff observations completed during the RVS data collection period.

[3] There is no public vehicular access to North Shore.

Source: Co-licensees 2006b.

In addition to parking capacity, estimated recreation use is another indicator of facility capacity. As displayed in Table 4-19, a maximum of 404 people-at-one-time (PAOT) could visit District-managed recreation sites and use areas (based on parking capacity and average group size). On average, recreation use at District-managed recreation sites and use areas accounted for about 21 RDs per day (assumes use is evenly distributed throughout the open season). This corresponds to an approximate 5 percent capacity utilization estimate (Table 4-19). During July, the peak use month in the Project area (as well as the larger study area), recreation use at District-managed recreation sites and use areas accounted for an average of approximately 52 RDs per day (assumes use is evenly distributed throughout the month). During this peak use month, capacity utilization is

only estimated to be approximately 13 percent (similar to the maximum parking-based capacity utilization estimate).

Table 4-19. Estimate of Visitor-based Facility Capacity.

Recreation Site/Area	Maximum PAOT[1]	Annual RD[2]	Average RD/Day[3]	Percent
Spada Lake				
North Shore	56	316	2	3%
South Fork	52	910	5	9%
South Shore	64	677	3	5%
Nighthawk	84	754	4	4%
Bear Creek	20	380	2	10%
Sultan River/Lost Lake				
Lost Lake	16	56	<1	<1%
Diversion Dam Road River Access	20	863	2	12%
Horseshoe Bend River Access	16	592	2	10%
Old Gaging Station Road River Access	20	253	1	3%
Powerhouse River Access	40	269	1	2%
Trout Farm Road	16	236	1	4%
TOTAL (District-managed recreation sites and use areas)	404	5,306	21	5%

[1] Maximum PAOT was calculated based on the number of parking spaces (as listed in Table 4-18) and the average group size (2), as reported on completed visitor registration forms (Co-licensees 2006b).

[2] Annual RD estimate is for Year 1 data collection period (Section 4.2).

[3] Average RDs per day assumes annual RDs are evenly distributed throughout the open season (about April 15 through October 31 for sites at Spada Lake and year-round for sites at Sultan River/Lost Lake). In actuality, use is not evenly distributed and likely peaks during weekends and summer months.

[4] Percent compares average RDs per day with maximum PAOT. Note: this percentage assumes daily RDs occur at the same time.

Source: Co-licensees 2006b.

Adequately designed recreation sites are generally capable of operating at or near 100 percent facility capacity. In theory, facility capacity will always be a limiting factor to recreation use, assuming recreation use levels reach and then consistently exceed 100 percent and the site cannot be expanded (spatial capacity). Given the utilization estimates for both parking (maximum of 15 percent) and RD (average of 5 percent and maximum of 13 percent), current use of District-managed recreation sites and use areas is below facility capacity and future use levels are not expected to reach 100 percent capacity during the anticipated term of the new FERC license (Section 4.2). Based on these facility capacity estimates, facility capacity is not considered a limiting factor. While not

discussed in this section, the capacity utilization of the two DNR-managed trailheads and trails is described in Section 4.3.2.

Spatial Capacity

Based on a review of the locations and extents of current recreation sites and use areas, as well as field conditions, there are multiple areas within the Project area (as well as the larger study area) that could likely accommodate new and/or expanded District-managed developed recreation sites and use areas. As previously indicated regarding facility capacity and given existing use levels and anticipated future use (Section 4.2), new and/or expanded recreation sites are currently not needed, and it is likely they will not be needed during the term of the new license. Although, new recreation development may be identified during relicensing (Section 4.4), it will be based on other indicators (not current or anticipated future recreation use levels). Additionally, if and/or when recreation development is needed, a detailed suitability analysis would be anticipated to locate specific areas that are suitable for recreation development in the Project or study area.

4.3.1.3.2 Regulations, Enforcement, and other Management Directives

Currently, there are multiple District recreation regulations and restrictions in place in the Project area, though most are specific to the Spada Lake area (Appendix B). These regulations and restrictions are in place to not only provide for safe and appropriate recreation opportunities, but also to protect water quality. Use regulations and restrictions at Spada Lake include non-contact activities only, no combustion engine watercraft, and no camping, among others. Lake Chaplain is the only area in the Project area (as well as the study area) where recreation use and public access is specifically prohibited to safeguard water quality. The City's Watershed Patrol staff helps monitor recreational use and enforces regulations and restrictions at the Project.

Acknowledging that there are recreation and public use regulations and restrictions in place in the Project area does not mean that they are unacceptable or inappropriate in terms of recreation opportunities. Rules, regulations and restrictions are typical recreation management tools and visitors tend to be supportive of these tools if the underlying reason for them is clear, justified and adequately communicated (Frost and McCool 1988). It is important to consider the impacts of these measures, especially use restrictions, on overall recreation use levels in the Project area. While results from the RVS indicate that current visitors to the Project area are generally content with the level of on-the-ground management (including regulations, restrictions and enforcement) in the study area (Co-licensees 2006b), the RVS did not attempt to quantify lost recreation use due to management actions (e.g., those visitors who would visit the Project area, but do not because of use restrictions). There are many reasons visitors choose a particular destination for recreation and use restrictions are likely one factor that influences this decision. Use restrictions that are currently in place potentially influence and/or limit recreation use levels in the Project area, particularly around Spada Lake.

The presence of uniformed management staff (e.g., law enforcement) is an effective tool in managing visitor use, especially in limiting ecological impacts at recreation areas

(Swearingen and Johnson 1995). In general, visitors (participating in appropriate activities) tend to react positively in the presence of uniformed law enforcement staff, provided the visitors understand that they are needed to help disseminate information, provide for visitor safety, and protect sensitive resources (Manning 2007). At the Project, the City's Watershed Patrol helps enforce applicable recreation- and public use-related rules, regulations, and restrictions. While the RVS did not investigate visitor reactions to the presence of the City's Watershed Patrol, it is likely that their presence is not perceived negatively, at least not by those visitors engaged in appropriate activities for the Project. The relative lack of identified ecological and social impacts at District-managed recreation sites and use areas is likely in part due to the efficacy of the Watershed Patrol.

Other management directives, including access restrictions and potential future site configuration changes, are discussed in Section 4.3.2.

4.3.2 Site-Specific Recreation Capacity Estimates

Site-specific recreation capacity estimates are described in this section for Spada Lake and Sultan River/Lost Lake. For each area (Spada Lake and Sultan River/Lost Lake), a capacity overview is provided for all sites, followed by site-specific capacity observations, where needed. Also, unless noted otherwise, the capacity-related results presented in Section 4.3.1 apply to the specific recreation sites for each area. Table 4-20 provides a summary of recreation capacity at the District-managed recreation sites in the Project area.

Table 4-20. Overview of Capacity at District-Managed Recreations Sites in the Project Area.

Recreation Site/Area	Current Limiting Factor(s)	Current Capacity Parameter	Potential Future Limiting Factor(s)	Anticipated Future Capacity Parameter
Spada Lake				
North Shore	Ecological Management	Below	Ecological Management	Below
South Fork	Ecological	Below	Ecological Management	Below
South Shore	Ecological	Below	Ecological Management	Below
Nighthawk	Ecological	Below	Ecological Management	Below
Bear Creek	Ecological	Below	Ecological Management	Below
Sultan River/Lost Lake				
Lost Lake	Ecological Management	Below	Ecological Social Management	Below
Diversion Dam Road River	Management	Below	Ecological	Below

Table 4-20. Overview of Capacity at District-Managed Recreations Sites in the Project Area.

Recreation Site/Area	Current Limiting Factor(s)	Current Capacity Parameter	Potential Future Limiting Factor(s)	Anticipated Future Capacity Parameter
Access			Social Management	
Horseshoe Bend River Access	Management	Below	Ecological Social Management	Below
Old Gaging Station Road River Access	Management	Below	Ecological Social Management	Below
Powerhouse River Access	Management	Below	Ecological Social Management	Below
Trout Farm Road	Management	Approaching	Ecological Social Management	Below/Approaching

4.3.2.1 Spada Lake Recreation Sites and Use Areas

Recreation use at North Shore, South Fork, South Shore, Nighthawk, and Bear Creek recreation sites is estimated to be below capacity. No ecological, social, or management concerns have been identified, although both ecological capacity and management capacity are likely limiting factors to both existing and future recreation use levels. As noted previously, recreation use at Spada Lake has not resulted in widespread ecological impacts; however, water quality based activity restrictions (e.g., no camping, non-contact reservoir activities only, etc.) likely limit the amount of recreation use at Spada Lake. Based on these restrictions, both ecological capacity and management capacity are considered limiting factors to recreation use at all of the developed recreation sites at Spada Lake.

Site-specific capacity observations include the following:

- There are no capacity-related concerns at the South Fork, South Shore, Nighthawk, and Bear Creek recreation sites. Future use at these sites will likely be impacted by planned DNR road closures, as described below.

- At the North Shore recreation site, recreation use levels are limited by access restrictions. Previously, visitors could access North Shore by vehicle by crossing Culmback Dam or by using DNR's Pilchuck Mainline Road (P-5000 Road) (Figure 4-1). All public access across Culmback Dam was terminated in late 2001 because of increased security measures at the dam implemented by the District (note: similar closures were enacted by licensees across the U.S.). In June 2006, FERC issued an order that authorized continued public access restrictions

across Culmback Dam. Additionally, DNR prohibited vehicle access (primarily OHV-use) along the Pilchuck Mainline Road in approximately November 2005. These two management actions (closure of Culmback Dam to all public access and prohibition of motorized access on the Pilchuck Mainline Road) have cut off all vehicular access to the North Shore recreation site. The only way visitors can currently access the site is by foot or bike along the DNR's Pilchuck Mainline Road. These two management actions, only one of which the District enacted, limit recreation use levels at the North Shore recreation site.

- DNR plans to abandon the South Shore Road in phases during the next 10 years and may convert the road into a non-motorized trail or develop a new trail south of the existing road, among other options (Section 4.4). Closure of the South Shore Road and the potential development of a new trail to the Greider Lakes and Boulder Lake trails from an expanded trailhead facility at Olney Pass would transform the current day-hike experience at the DNR trails into a longer weekend/week experience. This potential closure of South Shore Road would likely have a significant impact on current recreation use and capacity at Spada Lake, especially for those activities with a Project nexus.

In the short term (by 2011 at the earliest), DNR anticipates closing South Shore Road between the South Fork Recreation Site and the Greider Lakes Trailhead (Section 4.4). Recreational use at South Fork, as the only remaining developed recreation site with vehicular access along South Shore Road, would be expected to increase considerably at the time of the closure. This initial road abandonment would also prohibit much of the boating use on Spada Lake, as vehicular access to the two developed boat launches (at South Shore and Nighthawk recreation sites) would no longer be allowed. This would result in a reduction in flat-water boating opportunities (e.g., boat ramp lanes, trailer parking spaces, etc.) that are currently available at Spada Lake.

In the longer-term (likely by 2015), DNR plans to completely abandon the South Shore Road beyond Olney Pass. This action would displace all current recreational use at the four District-developed recreation sites along South Shore Road, as well as all activities that occur along the road itself. DNR is considering converting all or a portion of the South Shore Road to a non-motorized trail. Not all recreational opportunities would be lost via the abandonment of this road, but those allowable recreation opportunities would be restricted (hiking access only where trails enter the NRCA) because DNR plans to include the trail in is NRCA lands adjacent to District lands around Spada Lake.

Currently, both of DNR's Greider Lake and Boulder Lake trails receive relatively high levels of use compared to the District sites. In fact, use observations from the RVS data collection period indicate that during peak use times, the parking area at the Boulder Lake Trailhead was used at approximately 60 percent of capacity, while use of the Greider Lakes Trailhead parking area was in excess of capacity (Co-licensees 2006b). It is not known what percentage of visitors at these trails camp at Greider or Boulder lakes; much of the current use is estimated to be from day hikers. Regional and national trends indicate that participation in day hiking is high and increasing, while participation in multi-day hiking trips is much lower (Cordell 2004). Correspondingly, use along the

potential new trail (from Olney Pass to the existing DNR trails) may be lower compared to existing use levels on the DNR trails.

In addition to site-specific capacity, it is also important to consider the recreational surface water capacity of Spada Lake. As previously noted, Spada Lake is a non-contact reservoir and watercraft with combustion engines are prohibited to protect water quality. These restrictions limit recreational use of the reservoir, especially for potential contact-related activities (e.g., swimming, wading, etc.) and motorized watercraft uses. Furthermore, the sport fishery at Spada Lake deteriorated throughout the 1980s and 1990s such that by 1995 fish harvest rates were almost zero (Co-licensees 2005). Coupled with the current low fish production potential of Spada Lake, the lack of a healthy sport fishery further limits recreational use of the reservoir.

Spada Lake has a surface area of approximately 1,870 acres at full pool (Co-licensees 2005). Based on boating capacity coefficients developed for the Water Recreation Opportunity Spectrum (WROS)(Haas et al. 2004), it is estimated that between 37 and 93 watercraft could be safely operated on Spada Lake at one time. This estimate is based on a setting classification of "rural developed," for which 20 acres/boat to 50 acres/boat is a reasonable range of appropriate boats-at-one-time (BAOT). During the RVS data collection period, the highest number of observed BAOT was five (Co-licensees 2006b). Additionally, during the second year of the expanded visitor registration form data collection process, boating on Spada Lake accounted for about 104 RD (Section 4.2). Given existing use levels, watercraft use on Spada Lake is below the estimated recreational surface area capacity of the reservoir.

The parking capacity at developed recreation sites is also related to recreation surface area capacity. In total, there are 22 vehicle-with-trailer parking spaces provided between the South Shore and Nighthawk recreation sites. Assuming all of these spaces were used by vehicles-with-boat-trailers (as opposed to OHV or other types of trailers), a maximum of 22 trailered-watercraft could use the reservoir for boating at one time. This estimate is below the range of acceptable BAOT at Spada Lake (37 – 93 BAOT), per WROS recommendations. Even if an additional 26 non-trailered-watercraft were launched from the car-top launch that is provided at the South Shore recreation site (assuming each of the parking spaces at this site corresponds to one non-trailered-watercraft), the potential BAOT on Spada Lake would still be within the upper range of acceptable watercraft. Given existing estimates of VAOT at each of the sites with boat launches (Table 4-18), parking capacity for vehicles with watercraft (either trailer or car-top) is below boat use capacity on Spada Lake and will not likely reach that capacity during the anticipated term of the new FERC license.

4.3.2.2 Sultan River/Lost Lake Recreation Sites and Use Areas

As with the recreation sites and use areas at Spada Lake, recreation use at the sites and use areas at Sultan River/Lost Lake are estimated to be below capacity, unless noted otherwise below. No widespread ecological, social, or management-related impacts have been identified, though future use may result in potential site-specific impacts, especially to ecological and/or social resources. Since most of the recreation sites at Sultan River/

Lost Lake are lightly developed, the potential for recreation and public use to result in ecological impacts is higher compared to more heavily developed sites that are hardened to help protect sensitive resources. Additionally, current visitors to the Sultan River/Lost Lake area may be accustomed to lower use levels and related levels of crowding and visitor conflict. A significant increase in recreational use in this area could disturb and/or displace current visitors. Both ecological and social capacity may be potential limiting factors to recreation use in the future. Currently, access restrictions/limitations are the primary limiting factors to recreation use levels at most of the sites and use areas at Sultan River/Lost Lake. Site-specific capacity observations include the following conclusions as noted below.

Other than those impacts and limitations already identified, there are no other capacity-related concerns at the Diversion Dam Road, Old Gaging Station Road, and Powerhouse river access sites. Recreational use of these sites is considered to be below capacity. Access, a component of management capacity, is considered a limiting factor. For recreation sites and use areas accessed via Lake Chaplain Road (Lost Lake, Diversion Dam Road River Access, Old Gaging Station Road River Access, and Powerhouse River Access), including dispersed activities along the road, access is the primary limit on both existing and future recreation use levels. Generally, Lake Chaplain Road is gated from 6 p.m. to 6 a.m. As noted elsewhere, access restrictions are not inappropriate or uncommon at recreation areas. A 6 p.m. closure limits recreation opportunities along Lake Chaplain Road, particularly during summer months when it stays light until later in the evening (9-10 p.m.), especially for those visitors seeking outdoor experiences after work. Management capacity is thus currently considered a limiting factor.

At Lost Lake, current recreation use levels are estimated to be below capacity. As with other recreation sites in the Sultan River/Lost Lake area, management capacity (as determined by the Co-licensees and the DNR in this area) is considered a limiting factor due to access restrictions (no vehicular access). Both ecological and social capacities also have the potential to become limiting factors in the future, especially given the primary purpose of these lands as wildlife habitat.

In general, dispersed and lightly developed recreation sites and use areas tend to be more susceptible to ecological impacts (given the lack of hardened facilities that concentrate and limit use-related impacts). Lost Lake is one of the least developed recreation use areas in the Project area. While use is currently low and is not anticipated to increase significantly during the term of the new FERC license, unanticipated increases in use could lead to potential ecological impacts, including vegetation damage, litter, soil compaction, and social trails, among others, given the lack of developed facilities at Lost Lake. This is especially pertinent given the wildlife habitat focus of Lost Lake.

An unexpected increase in use could also potentially impact the social component of the recreation experience available at Lost Lake. Current visitors to this site likely expect an experience with little to no crowding. An increase in use could subsequently result in a more crowded experience. Again, while use levels are not expected to increase significantly, nonetheless, the potential exists for recreation-related impacts to social capacity.

At the Horseshoe Bend River Access, no current capacity-related issues or concerns have been identified and as such, this site is considered to be below capacity. The Horseshoe Bend Placer Claim, which is located near the Horseshoe Bend River Access, is listed in the National Register of Historic Places and the Washington Historic Register. To date, no Project-related effects have been identified at this site; however, recreation use has been identified as one of several potential ground-disturbing activities that could adversely impact this historic site (Co-licensees 2005). Unmanaged recreational use in the area could ultimately result in a potential impact to the site (including ecological effects), which in turn could impact the District's ability to manage this area for its historic importance. The Diversion Dam is also eligible for the Historic Register and could likely face the same potential impacts as those identified at the Horseshoe Bend River Access.

Recreation and public use at Trout Farm Road River Access is considered to be approaching capacity. This is the only District-managed site that is not below capacity. Trout Farm Road River Access is estimated to be approaching capacity because of the types of use it receives, as opposed to the amount of use. This river access site receives some recreational use, though anecdotal evidence suggests that a portion of use at this site may not be recreation-related, including vandalism, trash dumping, and partying, among other activities. These other activities have resulted in ecological impacts (social trails, litter accumulation, soil compaction, etc.) and visitor conflict.

To limit potential ecologic and social impacts at the Trout Farm Road River Access, the District gates access to the site at Trout Farm Road when misuse of the site becomes a problem, to restrict vehicular access to the site (the Watershed Patrol does not typically monitor use at this site). This has limited some of the undesirable activities that have occurred at the site in the past. Motorized access is frequently limited to those members of the public that contact the District and make a request for the gate lock combination. Through this program the using public is able to enjoy the site while reducing undesirable behavior.

On-water capacity of the Sultan River was generally not investigated as a component of this analysis. Capacity-related observations regarding recreational uses of the Sultan River (e.g., whitewater boating, fishing, etc.) are discussed in Study 14 – Flow Recreation Study.

4.4 Recreation Needs Analysis

This section is divided into two sections: (1) non-motorized recreational trail location and development assessment, and (2) Project-related recreation needs. The first section describes the results of the non-motorized recreational trail location and development assessment, including potential trail-related needs and trail development opportunities. The second section describes Project-related recreation needs based on existing, as well as anticipated future conditions in the study area. Pertinent results and conclusions from the Flow-Recreation Study (RSP 14) have been reviewed and are integrated in this section, where appropriate.

Note: while the term Co-licensee has been used in previous sections of this study report, this section (and Section 5.0 which follows) refers instead to a single Licensee, the District. The term Licensee is more appropriate given the District's and City's intent to have the District be sole Licensee under the anticipated new FERC license, as well as the nature of this section (to identify needs under the new license).

4.4.1 Non-Motorized Recreational Trail Location and Development Assessment

A non-motorized (pedestrian and bicycle) recreational trail location and development assessment was completed as a component of the Recreation Needs Analysis. This assessment explored the potential for new trail opportunities in the study area. The Recreation Supply Analysis (Section 4.1) provides an inventory of existing trail opportunities in the study area and region.

4.4.1.1 Potential Non-Motorized Trail Opportunities

Potential non-motorized trails in the study area were explored using several sources of existing information (commonly referred to as a desktop analysis), as well as a trail-specific workshop that was conducted in September 2007 with interested stakeholders. Existing sources of information that were reviewed for trail-related opportunities included the following:

- GIS trail, land ownership, road, and access data layers;
- Regional trail opportunities (Section 4.1);
- Washington State Trails Plan (IAC 1991); and
- District, City and stakeholder input.

Trail information from these sources was mapped and is displayed on Figure 4-12. Constraints to trail development (e.g., landownership, topography, sensitive resources, costs, etc.) were not considered during this initial review of potential new trail opportunities. Based on the preliminary review of trail-related information, there are three primary types of opportunities for new trail development in the study area (as shown on Figure 4-12). These non-motorized trail development opportunities include:

1. *Road to Trail Conversions* – The potential use or conversion of existing study area roads to trails, specifically South Shore Road to connect the existing recreation sites (potentially including the DNR's trails)

2. *River Access Trails* – New and/or enhanced river access trails in the vicinity of Horseshoe Bend, China Camp, and Monroe Camp Road (pers. comm., J. Miller, Washington Prospectors Mining Association, August 9, 2007)

3. *Regional Trail Connections* – New regional trail connections, as identified in the 1991 Washington State Trails Plan (IAC 1991).

While potential regional trail connections are displayed on Figure 4-12, it is generally beyond the Licensee's responsibility to coordinate, develop, and/or manage and maintain

large regional trails. These types of trails generally do not have a Project nexus. Furthermore, the Licensee cannot commit other regional landowners or managers to new trail development and/or management. This is not to say that the Licensee does not support regional trail development, rather that they are not in a position to lead such efforts. In the future, the Licensee may consider partnering on opportunities for regional trail development provided these opportunities are within the Project boundary, have a Project nexus, and do not conflict with established water quality protection measures.

A trail-specific workshop was held in September 2007 to solicit stakeholder feedback on the preliminary trail opportunities (Figure 4-12) and to provide a forum for further input on potential new trail opportunities in the study area. A summary of the trails workshop is provided in Appendix E.

At the workshop, Stan Kurowski of DNR informed workshop participants of the DNR's current plans to create the new Morning Star NRCA and related abandonment South Shore Road. DNR's plans include:

- *The creation of the Morning Star NRCA* – the DNR has created the Morning Star NRCA by combining the three existing NRCAs in the study area and vicinity (Mount Pilchuck, Morning Star, and Greider Ridge). Along the southern shoreline, the new NRCA encompasses the portion of the South Shore Road corridor east of the South Fork Recreation Site. This portion of the road within the NRCA is subject to hiking only restrictions, per the DNR's NRCA policies.

- *Motorized uses are not permitted within NRCAs* – DNR does not need South Shore Road for NRCA management purposes. The portion of this road located within the NRCA would be converted to a trail and restricted to hiking use only, per DNR NRCA policies.

- *Abandonment of South Shore Road* – DNR's planned abandonment of South Shore Road would occur in three phases: 1) Boulder Lake Trailhead to Greider Lake Trailhead, 2) South Fork to Boulder Lake Trailhead, and 3) Olney Pass to South Fork. The first phase has already been completed, including the removal of the restroom at the Greider Lake Trailhead. The second phase is scheduled to occur no sooner than 2011 (to allow for the completion of the Project's relicensing process), while the third phase will be completed by 2015. DNR has stated that the road abandonment, at minimum, would include a road-to-trail conversion.

The abandonment of South Shore Road would prohibit motorized access to the existing Project recreation sites along the southern shoreline of Spada Lake, including DNR's two trails – Boulder Lakes and Greider Lake. In lieu of road access to their trails, DNR is considering road conversions to trails or a new backcountry trail to Greider Lake, among other options. However, none of these options would provide for continued vehicular access to the District's recreation sites at Spada Lake. The abandonment of South Shore Road and access considerations are explored in more detail in Sections 4.4.2 and 5.0.

Figure 4.12
Potential Trails in the Study Area and Vicinity

Henry M. Jackson Hydroelectric Project
FERC No. 2157

Legend

- Project Recreation & River Access Sites
- Mines
- Gates
- Potential Areas of River Access Trail Interest *
- RCO proposed trail corridors**

Road and Trail Use

- Abandoned Road
- Gated Forest Management Road
- Hike Only
- Street Legal

USFS Designated Roads and Trails

- USFS Delineated Trail
- Unimproved Road
- Light Duty Road
- Open Water
- Streams and Rivers

Land Ownership

- City of Everett
- DNR
- DNR-NRCA
- Easement
- US Forest Service
- Other
- Snohomish PUD

* As identified per Jim Miller, P.E., L.G., WPMA Geologist in an e-mail to colicenses dated 8/8/07.

** Based on data from the 1991 Interagency Committee for Outdoor Recreation plan: "Washington State Trails Plan: Policy and Action Document".

*** Road and Trail alignments based on USDA Forest Service GIS data.

Alignments are approximate.

0 1 2 Miles

EDAW | AECOM

Modified: July 2008

Back of Figure 4-12.

In addition to DNR's NRCA-related plans in the study area and vicinity, participants at the trails workshop provided other ideas for potential non-motorized trail opportunities in the study area. These opportunities included (in addition to those identified on Figure 4-1 and discussed above):

- *Access to Spada Lake Recreation Sites* – access to the existing Spada Lake recreation sites is important to continued public access and recreational use in the study area. Conversion of portions or all of South Shore Road to a trail would result in new types of recreation opportunities; however, if all motorized access is prohibited, then many opportunities, in particular boating-related activities, would be lost.

- *North/South Connectivity* – with the closure of Culmback Dam to public use, there is no longer a viable connection between recreation opportunities along the southern and northern shorelines of Spada Lake and the upper river corridor. There is a desire among stakeholders for some type of north/south trail connection, in particular to access the North Shore Recreation Site. This connection could potentially be located across the existing Culmback Dam road or within the Sultan River gorge, if a suitable location and trail crossing could be located.

- *Mountain Biking* – currently, there are very few mountain biking opportunities in the study area (mountain biking is allowed on study area roads, but not on the DNR trails). New mountain biking opportunities could enhance the types of recreation activities that are available in the study area. In addition to allowing mountain biking on any potential new trails, a loop trail around Spada Lake could provide an approximately 17-mile ride, if a suitable route could be located. Water quality concerns, extreme terrain, unstable slopes and numerous river crossings, and the NRCA designation (which would prohibit mountain biking) of DNR-managed lands surrounding District ownership in the Spada Lake Basin contribute to the lack of a suitable route.

- *Trails in the Sultan River Gorge* – currently, there are no officially-maintained public access trails into the Sultan River Gorge (the access trail off the FR 6122 provides undesignated access to a portion of the upper gorge). A new trail in the gorge would provide opportunities for study area visitors to experience not only the gorge, but also the old growth stands that are located along the river.

- *Enhanced River Access Sites* – while the current river access trails, including undesignated trails to Lost Lake, provide recreational opportunities, they could be enhanced. In particular, better signage is needed at several of the sites to help visitors reach the intended trail destination (the river, Lost Lake). It should be noted that the Lost Lake Tract was purchased as wildlife habitat, so enhancing or increasing recreational use may not be compatible.

4.4.1.2 Potential Non-Motorized Trail Needs and Actions

According to the results of the RVS, hiking is one of the most participated in activities in the study area (Co-licensees 2006b). Approximately 70 percent of study area visitors indicated that they participated in hiking (according to the visitor questionnaire). Hiking was also the second most indicated activity on the visitor registration forms (second to sightseeing at Spada Lake and fishing along the Sultan River/Lost Lake). Additionally, DNR's two study area trails (Boulder Lake and Greider Lakes trails) accounted for nearly a third of all recreational use in the study area. These factors, as well as input from stakeholders (Section 4.4.1.1) and regional demand estimates (Section 4.2) indicate that there is demand for enhanced trail opportunities in the study area.

While there are many non-motorized trail opportunities in the study area region, recreation opportunities in the study area could be enhanced with new trail development. This potential new development could help meet a portion of existing trail-related demand in the study area. Specific trail-related needs (to help meet demand) include:

- Pedestrian (e.g., walking, hiking, etc.) and mountain biking opportunities,
- Access (via trail connections) to existing recreation sites and use areas, and
- Interpretation and education (I&E) opportunities (e.g., signage, watchable wildlife, scenic viewpoints, etc.).

Considering the potential trail routes and corridors identified in Section 4.4.1.1., these needs could likely be met through new trail development in the study area. Potential trail development actions that could enhance trail opportunities in the study area and meet current trail-related needs include:

- *South Shore Road Trail Conversion Options* – To the extent feasible, create non-motorized connections between existing recreation sites along the southern shoreline of Spada Lake, including DNR's two existing trailheads/trails. Options for this type of trail development include adding designated trail elements (dedicated lanes or corridors) to the existing South Shore Road alignment, converting the existing road (South Shore Road) to a designated trail, and developing new trails away from the reservoir and existing road corridor. Trail connections would enable continued use of the recreation sites along the southern shoreline of Spada Lake if all or portions of South Shore Road were abandoned (as planned by DNR). Additionally, if the existing road alignment is used for potential trail development, it would limit any new recreation-related development impacts by concentrating use in an already disturbed area.

- *North/South Trail Access Options* – Create a north/south non-motorized trail connection over the Sultan River to provide continued access and use of the North Shore Recreation Site. Options for a north/south connection include the following:

    1. Constructing a new bridge below Culmback Dam across the river – this option would necessitate the development of a new trail on the northern

(to provide access to the North Shore Recreation Site) and southern banks of the Sultan River, assuming a suitable location for a bridge could be identified.

2. Allowing controlled access across the bridge at the Powerhouse that is currently closed to public use – this option would also necessitate the development of new trails along both the northern and southern banks of the Sultan River. Trail distance, land ownership, and other constraints may limit the identification of a viable trail route from this bridge to the North Shore Recreation Site.

3. Providing controlled access across Culmback Dam road – this option would provide the most direct route to the North Shore Recreation Site, but would require a revision to the District's current security measures at Culmback dam.

The first two options (new bridge and Powerhouse bridge) are both predicated on extensive new trail development to direct trail users to the North Shore Recreation Site. In addition to the difficultly in identifying potential tail routes especially along the northern bank of the Sultan River, this new trail development would need to be coordinated and supported by adjacent public (e.g., USFS, City, DNR, etc.) and private landowners to be considered feasible. The final north/south trail connection option would use the existing motorized road access across Culmback Dam (closed to public use since 2001), as well as the existing road system north of the dam to direct visitors to the North Shore Recreation Site. To be considered feasible, a system to allow controlled non-motorized access across Culmback Dam would need to be developed for the gates that currently limit public access at the dam. Controlled access could likely be achieved via several potential methods, such as a trail permit/registration system and temporal gate openings/closures (i.e., the gate would be opened/closed to public access per a predetermined schedule), among others. This option would also utilize the existing road network north of the dam to provide trail access to the North Shore Recreation Site, thereby minimizing the need for new trail development (and related resource and environmental impacts).

- *River Access Trail Options* – Add new river access trails to help facilitate river-based activities, including fishing, mining, and whitewater boating, and to provide new trail hiking opportunities. Specifically, the existing undesignated river access trail located about 1 mile downstream of Culmback Dam (and shown on Figure 4-1) could be improved to facilitate better access and to help protect ecological resources. Alternatively, a new trail could be developed either on USFS (the current undesignated trail is on USFS-managed lands) or Licensee lands below Culmback Dam. Whether a new trail is developed or the existing undesignated trail is maintained in its current status or improved, the level of trail development should be commensurate with the anticipated level of use the trail will receive (e.g., if the trail will only be used sparingly, then the trail should likely be lightly

developed; if on the other hand the trail will receive extensive use, a more developed trail may be more appropriate). Other river access trails may also be considered in specific areas (e.g., Monroe Camp Road, China Camp, etc.) that provide opportunities for visitors to experience distinct opportunities (e.g., scenic viewpoints, access into old growth stands along the river, etc.). However, improvements and/or enhancements to the existing river access sites and trails should likely be considered a higher priority than developing these new trails at this time.

- *River Access Options* – Improve the current river access sites by designating trails, providing signage, and hardening the trails. While the Licensee provides multiple opportunities for visitors in the study area to access the river, these opportunities are not well communicated to visitors who may be unfamiliar with these sites or the area. Designating the river access sites by adding them to study area recreation maps and adding appropriate signage would assist visitors in locating these opportunities. Currently, recreational use of the river access sites does not appear to result in widespread ecological impacts. If use levels increase in the future and ecological impacts are identified, the river access trails and sites could be hardened (through construction of a durable surface) to help concentrate use and minimize ecological impacts.

- *Trail Support Facility Options* – Reconfigure existing recreation use areas (e.g., gravel parking lots, recreation sites, etc.) to accommodate trail-related support facilities, such as trailheads, parking, signs, and restrooms. Adding trail-related support facilities to existing use areas would help limit potential development impacts (e.g., loss of habitat, natural areas) and helps to lower trail development costs.

- *I&E Options* – Enhance new trail development with I&E facilities, where appropriate. There are multiple opportunities in the study area, including along potential new trails, to provide I&E facilities that could enhance the visitor experience. Potential themes that could be interpreted along potential trails include hydroelectric power generation, drinking water source protection, natural resources, and cultural/historic resources, among others. Additionally, I&E-related facilities could also help educate visitors about current water quality-related use restrictions and appropriate recreational behaviors, among others.

These potential non-motorized trail needs and actions are assessed within the larger recreation needs framework described in Section 4.4.2. Additionally, potential trail alignments are also described in Section 5.0. Resource compatibility, trail route suitability, and cost estimates related to potential trail development will be further assessed during the PM&E measure development stage of the relicensing process.

4.4.2 Project-Related Recreation Needs

This section presents Project-related recreation needs. Section 5.0 presents three proposed action alternatives that address the provision of these needs in the study area.

4.4.2.1 Recreation Needs Analysis Study Components Summary

This section provides a summary overview of the salient factors and issues from the Recreation Supply, Demand, and Capacity analyses, as well as the Non-Motorized Trails Assessment. The results from these study components were considered in the identification of study area needs, which are described in Section 4.4.2.2.

Recreation Supply Analysis

- District Recreation Opportunities – The existing supply of District-managed developed recreation sites in the Project area (definitions of the Project boundary, Project, and study area are provided in Section 2.1) offer multiple recreation opportunities, including flat-water boating (on Spada Lake), fishing, picnicking, sightseeing, resting and relaxing, walking and hiking (within recreation sites and along Project roads), mountain biking (along Project roads), whitewater boating (on the Sultan River), and photography and wildlife observation, among others.

- Study Area Recreation Opportunities – In the larger study area, there are numerous other recreation opportunities on lands managed by DNR and USFS, including hiking, camping, hunting, and rock climbing, among others.

- Regional Recreation Opportunities – The areas in and around Snohomish and King counties (considered the Project region) are rich in recreation opportunities. Some of these opportunities are similar to those available in the study area, while others are different. Of particular importance to ongoing and future recreation management in the Project area, the region provides a diversity of recreation opportunities, some of which are available and appropriate in the Project area.

- Recreation Responsibilities – The District is one of many recreation providers in the region. As such, it is not the District's sole responsibility to provide all types of recreation opportunities. Instead, the Project area provides a range of appropriate recreation opportunities, given Project constraints (e.g., water quality protection, operations, etc.) and location.

- Study Area Use Factors – The study area's proximity to major population centers, as well as the beautiful/distinctive setting (mid-elevation forests surrounding the reservoir; a rustic forested river canyon) and low levels of use likely help attract visitors to the area. Conversely, water quality-related regulations and restrictions limit recreation use levels.

Recreation Demand Analysis

- Existing Study Area Use Estimates – Existing study area recreation use is estimated at approximately 8,500 recreation days per year (based on 2-year RVS-related data collection period). At Spada Lake, use tends to be highest during the summer months (June-August), while use tends to be more evenly distributed throughout the year along the Sultan River and at Lost Lake.

- Primary Activities in the Study Area – At Spada Lake (recreation sites accessed via Olney Pass, including DNR's two trails), sightseeing (average of 1,449 annual recreation days [RD] during 2-year RVS data collection period or approximately 22 percent of annual use at Spada Lake) and hiking (average of 1,603 annual RD during 2-year RVS data collection period or approximately 25 percent of annual use at Spada Lake) accounted for the highest participation estimates, while fishing (average of 500 annual RD during 2-year RVS data collection period or approximately 27 percent of annual use along the Sultan River) and hiking (average of 435 annual RD during 2-year RVS data collection period or approximately 24 percent of annual use along the Sultan River) accounted for the highest participation estimates at Sultan River and Lost Lake. Many visitors to both Spada Lake and Sultan River/Lost Lake indicated "multiple" primary activities on the completed visitor registration forms collected during the 2-year RVS-related data collection period. The high number of "multiple" activity visitors indicates the importance the study area plays in providing a range of recreation opportunities, not just one primary activity.

- Regional Estimates of Demand – National and state-level estimates of recreation demand indicate that participation in most outdoor activities is anticipated to increase over the term of the new FERC license (primarily as a result of expected population growth). Regional increases in outdoor activities will likely influence recreation use levels in the study area. At the state level, the RCO estimates that nature activities and linear activities (e.g., walking, hiking, bicycling, etc.) will both experience large increases in participation levels over the next 20 years (IAC 2003).

- Projected Future Recreation Use Levels in the Study Area – Future recreation use in the study area is projected to range (based on regional participation trends and anticipated population changes) from approximately 11,000 recreation days (low scenario) to about 18,800 recreation days (high scenario) by 2061 (the anticipated 50-year maximum term of the new FERC license). This represents an increase of about 30 to 123 percent over existing use levels.

- Potential Effects of Future Recreation Use Levels – Higher use levels in the future may result in increased pressure on existing study area recreation sites and use areas. New recreation opportunities (e.g., sites, facilities, etc.), changes in the existing configuration of recreation sites and public access (e.g., hike/bike instead of vehicle access, road closures, etc.) and/or changes in management strategies (e.g., visitor regulations) may then be needed to accommodate this increased use over time (see Capacity Analysis).

Recreation Capacity Analysis

- Current Project Area Capacity Estimate – In general, current recreation and public use levels throughout the Project area are considered below capacity (i.e., use levels do not create/result in unacceptable ecological/biophysical, social, and/or management impacts).

- Anticipated Future Capacity – Even with robust growth in recreation activity participation, use levels at existing developed recreation sites in the Project area are not anticipated to reach and/or exceed capacity in the future.

- Limiting Factors – While use levels are considered below capacity at this time (and will likely remain within acceptable levels during the anticipated license term), both ecological/biophysical and management capacity are considered recreation- and public use-related limiting factors. Ecological/biophysical and management capacity are considered limiting factors because of the District's water quality protection measures required by the City of Everett and Washington State Department of Health and associated recreation use regulations and restrictions. As noted in the Capacity Analysis, this is not to imply that use regulations and restrictions are unacceptable and should be modified (there are multiple factors that influence recreation use levels in the Project area); rather it is an acknowledgement of the outcome that these actions have on recreation use levels in the Project area.

Non-Motorized Trails Assessment

- Study Area Trails – Currently, there are no District-managed official, developed recreation trails in the study area, though informal trails generally provide river access at the Sultan River access sites. In the study area, DNR provides two non-motorized trails (Boulder Lake and Greider Lakes) and study area roads are also used as de-facto trails (motorized and non-motorized uses).

- Potential Trails – Several potential regional trails have previously been identified (e.g., IAC 1991 State Trails Plan), some of which pass near and/or through the study area (the District is not responsible for the development of regional trails outside the Project boundary). Other potential trails in the study area have also been identified by interested stakeholders. These stakeholder-identified trails tend to be focused on providing access to existing recreation opportunities, such as sites along the Sultan River.

- Trail Demand – While there are multiple trail opportunities in the Project region, demand for these types of opportunities appears to be growing (at both the state and national levels). As a result, the RCO has indicated that new trail development should be a priority in the state.

- DNR Study Area Plans – DNR recently created the Morning Star NRCA by combining the three existing NRCAs located to the north, east, and south of Spada Lake. DNR also plans to abandon the South Shore Road based on economics and their business practices. The abandonment will take place under the state's Forest Practice Act's Road Maintenance and Abandonment Plan process. DNR plans to develop new trails to access their existing Greider Lakes and Boulder Lake trails in the study area (trail and trailhead locations have not been determined to date). Mountain bikes would likely not be allowed on these new trails (DNR policy prohibits bikes in NRCAs unless an exception is granted).

While the designation of the Morning Star NRCA would increase the availability of trail opportunities in the study area, proposed abandonment by DNR of South Shore Road would result in hiking and/or biking access only to the District's existing developed recreation sites along the southern shoreline of Spada Lake.

- Pilchuck Mainline Road (DNR) – DNR currently allows non-motorized uses (hiking, biking, equestrian) by the general public on the Pilchuck Mainline (PK-ML) Road. No changes related to allowable uses and/or designation as an official trail are anticipated on this road. This is currently the only public access route to the North Shore Recreation Site north of Culmback Dam.

- USFS Study Area Plans – The USFS has a long-term strategy to "trade out" their lands in the Sultan River gorge. In the near-term, the USFS recognizes the importance of a lightly developed river access trail off of FR 6122, as well as the provision of continued reasonable access to mineral claims along the river (independent of the Project, the USFS has stated it would provide appropriate trail access on their lands along the Sultan River to mining and other recreation opportunities). Additionally, the USFS is interested in creating a north/south connection across the river (since public access is currently not allowed across Culmback Dam). The USFS plans to coordinate any planned access and trail improvements along the Sultan River with the District's relicensing efforts.

- Stakeholder Trail Input – There is a desire among stakeholders (who participated in the trails-related workshop) to maintain access routes to existing recreation opportunities in the study area, including the District's developed recreation sites along Spada Lake, the DNR's trails, the Static Point climbing area, and various locations along the Sultan River, among others. While vehicular access is still important, non-motorized trail access to some of these opportunities seems appropriate for most stakeholders.

- Potential New Study Area Trails – To help compensate for the potential loss of recreation opportunities at Spada Lake associated with the DNR's abandonment of South Shore Road, new trails are being considered during the anticipated license term. DNR has stated that, at minimum, they would likely convert the South Shore Road into a trail for access to their Boulder Lake and Greider Lakes recreation areas. Additional, potential new trails in the study area (i.e., the development of District-managed trails) could be sited and developed so as to provide continued water quality and other ecological protections, as well as continued Project security.

4.4.2.2 Project-Related Needs

This section synthesizes overall "big picture" needs for activities in the study area. Additionally, it proposes site-specific facility development, operations and maintenance (O&M), and programmatic needs for Project-related recreation use in the study area. Section 5.0 describes potential groups of actions that may help meet the needs identified in this section during the new license term.

4.4.2.2.1 Activity-Related Needs

Overall, there are many opportunities for visitors to the study area to participate in a range of appropriate outdoor activities given current and anticipated future water quality protection measures. Nonetheless, there are three primary activity-related needs in the study area that should be considered including:

- Maintain and/or enhance existing study area activities. These activities are appropriate considering current water quality protection measures in the study area and include:

    - Reservoir boating (non-combustion engine only)
    - Fishing (reservoir and river, boat and bank)
    - Sightseeing
    - Hunting
    - Picnicking
    - Wildlife viewing
    - Resting and relaxing
    - Mining/prospecting (river)

    All of these activities are day use only. Overnight use and activities are not allowed in the study area due to water quality protection measures. This is unlikely to change during the new license term as water quality protection will continue to be a priority. Sightseeing opportunities are of particular importance given the existing (one of the most participated in activities) and anticipated future use levels associated with this activity. Opportunities for enhanced reservoir fishing opportunities hinge on both adequate access to fishing opportunities, as well as a healthy sport fishery. Providing for the health of the fishery at Spada Lake is generally beyond the scope of this Recreation Needs Analysis, but is addressed in the fishery-related relicensing studies.

- Provide improved/enhanced opportunities for the following activities for which there is demand and a current deficiency in adequate experiences:

    - Walking/hiking
    - Mountain biking
    - Interpretation and education (I&E)
    - Whitewater boating (based on RSP 14 results)

    These activities are currently provided in the study area, but could be improved via new opportunities including new developed trails for pedestrian and mountain biking purposes, new signage and other media, and the periodic provision of whitewater boating flows and/or access below Culmback Dam (in Segments 2 and 3, as defined in RSP 14).

- Monitor recreation activities and participation levels periodically throughout the new license term (note: periodic monitoring, every 6 or 12 years to coincide with FERC's Licensed Hydropower Development Recreation Report [Form 80]

requirements, is a typical component of FERC recreation resource management plans). Recreation activities and participation levels change over time. Monitoring is necessary to help determine if new facilities and/or opportunities should be considered to help facilitate specific activities. For example, if picnicking increases significantly in the first 12 years of the new license, additional picnic tables and other related facilities may be needed to help accommodate this increased use. Additionally, recreation activities are constantly evolving and new activities and technologies are emerging over time. As such, monitoring will help determine if future activities (which may not occur in the study area now) are compatible with the study area's overall recreational management directives (e.g., water quality protection, use restrictions, sensitive resource protection, etc.).

In addition to these activity-specific needs, there is also a need to better define the niche the study area plays in the region in terms of outdoor activity opportunities. Defining a recreational niche is important to help potential visitors locate suitable areas for their outdoor recreational pursuits. The distinctive setting (alpine lake and river corridor) and relatively low use levels (considering the study area's location near the heavily populated I-5 corridor in western Washington) likely help define the recreation niche of the study area. This niche should help guide the Licensees' decision-making process regarding how specific activity opportunities are provided and managed in the study area.

4.4.2.2.2 Site-Specific Needs

Site-specific Project-related needs and potential actions were organized by facility development, O&M, and programmatic needs and are described below.

Facility Development Needs

In general and based on current research (e.g., Recreation Needs Analysis components, stakeholder input, etc.), new recreation facility development is not nor will it likely be a high priority need during the new license term given current and anticipated future use levels in the study area.

Spada Lake – If DNR's planned abandonment of South Shore Road proceeds, the District may consider expanding and/or developing new recreation sites on Spada Lake (the planned abandonment will not impact the Sultan River/Lost Lake access sites). Potential recreation facility expansion or development would likely be based on the District's and DNR's decisions regarding future management and segmentation of South Shore Road. Since the District is in the process of assessing potential management options related to the South Shore Road, recreation facility development needs would be dictated by implementation of one of the following road management options including:

- *Road Option 1* – The District assumes management responsibilities of South Shore Road and maintains the full length of the road to the eastern Bear Creek Recreation Site. Under this option, no new Project recreation development would be necessary, as the current supply of recreation sites and facilities appears to be sufficient to meet existing and future use levels. However, the existing supply of

recreation sites and use areas could be enhanced with the addition of trails for hiking and biking. New trail development could likely be accommodated by reconfiguring South Shore Road to safely provide for vehicular and pedestrian/bike use.

- *Road Option 2* – The District assumes management responsibilities for South Shore Road, but only maintains a portion of the existing road. Under this option, one or more of the existing recreation sites on Spada Lake would likely need to be improved and/or expanded to accommodate use from those sites that would no longer have vehicular access. Additionally, boat launch improvements may be necessary depending on which sites remain open to vehicular access. To enhance trail opportunities under this option, the portions of South Shore Road that are abandoned to vehicular use could actively be converted to trails linking the existing recreation sites, as well as the DNR's trails.

- *Road Option 3* – The District does not assume management responsibilities for South Shore Road. Under this assumption, there would no longer be vehicular access to the existing recreation sites along the southern shoreline of Spada Lake. While this would allow for the provision of trail opportunities (conversion of the existing road to a trail), it prohibits watercraft access to Spada Lake. To continue to provide this opportunity (reservoir boating), the District would need to develop a new recreation site that includes a developed boat launch capable of launching boats at lower pool levels. This site could potentially be located along the southwestern shoreline, pending suitability and engineering feasibility studies.

In addition to potential recreation site changes based on the status of the future South Shore Road, an additional recreation-related enhancement at Spada Lake would be the provision of restored access to the North Shore Recreation Site, which provides excellent views of Spada Lake and the surrounding mountains. Culmback Dam used to provide the primary access route to this recreation site, but has been closed to public access since 2001 due to FERC direction related to security directives. To facilitate visitor access to the North Shore Recreation Site, a controlled access system across Culmback Dam should be investigated. This controlled access system would be used to allow pedestrian and/or bike use only across the dam to the North Shore Recreation Site, providing not only a new trail-based opportunity, but also a continuation of use at this site. If an acceptable means of providing safe and secure public access across Culmback Dam to the North Shore Recreation Site is not feasible, this site should likely be formally closed and rehabilitated to discourage unauthorized use of the site.

Sultan River/Lost Lake – In general, the existing river and Lost Lake access sites are sufficient to meet existing and anticipated future needs. However, some trail/access enhancements may help limit potential sensitive resources (e.g., ecological, historic, cultural, etc.) and to better inform visitors. These enhancements could include the following:

- *River Access Trails* – Improve the existing undesignated river access trail (or develop a new trail based on land ownership, topographic, and other constraints)

off FR 6122 that is currently used for whitewater boating and mining-related access. This trail has several sections that are prone to ecological resource impacts (e.g., erosion, vegetation loss, etc.) if use levels were to increase as a result of potential future whitewater boating flows (see Flow Recreation Study RSP-14). However, trail development should be predicated by anticipated use levels associated with potential future flows (e.g., lower use levels may need less development, while higher use levels may need more development).

- *I&E Opportunities* – Provide new I&E opportunities such as signage, kiosks, brochures, and/or web-based information to help inform and educate visitors about sensitive natural resources, appropriate recreational behaviors, water quality protection, historic/cultural resources, and Project operations, among other potential topics.

- *Monitoring Program and Future Hardening (If Needed)* – Given that these access trails are currently undeveloped, they are generally more susceptible to potential recreation-related impacts compared to hardened trails. If, based on future monitoring, significant impacts to sensitive resources occur along these access trails, the District could consider designating and hardening the trails to limit further impacts.

Operations and Maintenance Needs

Currently, the District's recreation sites and use areas are generally well maintained. Changes to current O&M practices are generally not needed at this time and are not anticipated in the future except for the Trout Farm Road River Access Site. Under the new license, the District may continue to provide routine O&M at Project-related recreation sites.

In the past, the Trout Farm Road River Access Site experienced high levels of misuse, including vandalism, trash dumping, resource impacts, and other illicit activities. The District gated the site to help minimize these types of misuse (the public can still access the site by foot and can also ask the District to open the gate, and during periods of high use and low vandalism, the gate is left open). As an additional O&M practice, if a suitable partnership can be formed, the District may consider partnering with one or more local groups (e.g., the city of Sultan, American Whitewater, etc.) to help increase the management presence at this site. Recreation sites typically experience lower levels of misuse when the management presence is increased.

While changes to the current O&M practices and schedule are not anticipated, Project operations may be modified to enhance whitewater boating opportunities on the Sultan River below Culmback Dam. The results of the Flow Recreation Study (RSP 14) indicate that whitewater boating on the Sultan River could be enhanced if appropriate flows are provided. Key findings of the study include:

- In general, the District needs to release as little water as possible from the base of Culmback Dam because of various flow requirements and energy production

needs; water released at the Diversion Dam produces some generation while water released at Culmback Dam produces no energy.

- Whitewater recreation flow releases in summer may affect biophysical resources (which are being addressed by other relicensing studies). Issues focus on timing releases to minimize effects on the displacement and disruption of rearing and spawning fish (fall for salmon, spring for steelhead).

- Most Seattle area-based boaters are likely to support one-day releases (two days are not needed to attract them to the area).

- Boaters would prefer weekends over weekdays, and Saturdays over Sundays.

- Boaters probably do not need Culmback Dam releases longer than 3 to 4 hours.

The Flow Recreation Study does not provide definitive actions regarding potential whitewater releases (e.g., timing, volume, etc.) but identifies various options to be considered. Instead, potential whitewater boating flows will be assessed and proposed during the PM&E measure development process, as these flows need to be comprehensively assessed along with other recreation needs and resource areas.

It should be noted that the provision of potential whitewater boating releases could impact other typical recreational uses of the Sultan River, specifically fishing and recreational mining. Fishing on the Sultan River is primarily focused on steelhead, with the highest use probably occurring in Segment 3 (by wading anglers) and in Segment 5 (by boat-based anglers). In general, lower flows provide more fishable water, improved access to fishable water, and better aesthetics. Most anglers appear sensitive to flows, but only a few were "calibrated" to a gage; most wading anglers prefer "base flows" on Segment 2 (under 200 cubic feet per second [cfs]) and whitewater flows (over about 600 cfs) would substantially limit the amount of fishable water. Anglers suggest a wider fishable range exists on Segments 4 and 5, where more use is boat-based (and higher flows are typically present due to powerhouse outflows).

Recreational mining occurs in the Sultan River Basin in Segments 1, 2, and 3 from March through October (but it is most common in July and August). "Base flows" of about 20 cfs in Segments 1 and 2 and under 100 cfs in Segment 3 allow good access for dredges and wading miners, cover target sediments in the bottom of the channel, and are clear. Any substantial increase in flows (e.g., over 600 cfs for whitewater) would be "un-mineable."

Programmatic Needs

As with the Facility Development and O&M needs, there are no significant programmatic needs (i.e., there are no current gaps in the current programmatic efforts of the Licensee that limits or decreases the potential for recreation opportunities in the study area). However, there are several Project-related programmatic needs that could enhance recreation opportunities in the study area. These programmatic needs include:

- *Periodic Recreation Use Monitoring* – The District may continue to periodically monitor recreation use levels in the study area. Currently, visitors to Spada Lake are required to complete a visitor registration form at Olney Pass. This process, as well as an expanded visitor registration system (potentially similar to the one used during the RVS) could be used on a periodic basis to monitor recreation use levels. This enhanced visitor use monitoring system could be used every 12 years to coincide with two cycles of FERC's Licensed Hydropower Development Recreation Report (Form 80) filing requirements (recreation capacity assessment).

- *Periodic Recreation Impact Monitoring* – In addition to periodically monitoring visitor use levels, the District may also occasionally monitor potential recreation use-related impacts to sensitive resources. Recreation use in the study area has the potential to impact sensitive resources (e.g., ecological, cultural/historic, etc.), especially in areas with no developed recreation facilities (e.g., the Sultan River access sites, Lost Lake, etc.). To ensure that sensitive resources are protected throughout the new license term, the District may periodically (e.g., every 12 years) monitor for potential recreation-related impacts. This type of monitoring could be coordinated with other resource monitoring efforts.

- *Gates and Access Timeframes* – Potential ways to increase public access to recreation opportunities throughout the study area could be provided in the new license. During the RVS, as well as the development of the Recreation Needs Analysis, stakeholders voiced their occasional displeasure and frustrations with gated roads in the study area, especially on roads that are used to access the Sultan River for whitewater boating. During the relicensing process, the access policy at the 116th Street gate was changed which previously was closed at 3:00 p.m. on a daily basis. The 116th Street gate is now always open, but may be restricted depending on District and City operations and security needs. Access to river sites via Lake Chaplain Road (river right) is still normally provided on a daily basis, year-round between 6:00 a.m. and 6:00 p.m., but may also be restricted depending on District and City operations and security needs. The 6:00 p.m. closure of the gate on Lake Chaplain Road is especially problematic for recreation users during longer summer days when visitors may want to access the river after work. Access policies (specific to gate closures) should be reviewed, in consideration with safety, security, potential vandalism and Lake Chaplain watershed protection, to determine if expanded public access can be provided to some of the study area's recreation opportunities. During the review of potential enhanced access policies, emphasis may be placed on providing safe public access, as well as on providing for continued Project security and City of Everett water quality protection needs.

- *I&E Program* – As previously noted, I&E facilities (signage and kiosks) and programs (brochures and services) could be used to enhance recreation opportunities in the study area. In particular, I&E signs could be used at the Sultan River access sites and Lost Lake to help inform and educate visitors about natural resources, appropriate recreational behaviors, historic/cultural resources, and Project operations, among other potential topics. Additionally, potential

whitewater flows (natural and/or planned) could be communicated to the public via I&E-related media (e.g., signs, website, phone number, etc.).

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5.0 DISCUSSION AND CONCLUSIONS

As a final component of the Recreation Needs Analysis, a set of potential action alternatives were developed. The alternatives propose several ways that the recreation needs identified in Section 4.4 could potentially be provided for during the new license.

Table 5-1 displays potential recreation actions and three alternatives (A, B, and C) for potential implementation in the study area based on the Project-related needs that were identified in Section 4.4.2.2, as well as DNR's planned study area management changes. Potential actions under each alternative are categorized by type of need: (1) Facility Development, (2) Operations and Maintenance, and (3) Programmatic. Each type of need is also divided by geographic area (Spada Lake and Sultan River/Lost Lake). Figures 5-1, 5-2, and 5-3 depict potential facility development actions for each of the alternatives.

These potential recreation actions are based on the results of the Recreation Needs Analysis components (Supply, Demand, Capacity, and Trail Assessment), as well as stakeholder input received to date, and meet the Project nexus criteria described below. Additionally, some of the potential actions under the alternatives may also help meet regional recreation needs, as defined by other entities responsible for recreation management in the region, including NPS, RCO, DNR, USFS, WDFW, and Snohomish County.

To develop the preliminary recreation action alternatives, a set of criteria was established to help assess and prioritize the recreation needs in the study area. To be considered appropriate for the study area and specifically within the Project boundary, the potential need (as described in Section 4.4.2.2) must have a Project nexus; that is, there must be a connection between the Project (and/or Project operations) and recreation resources (either an effect on recreation resources or an effect from recreation on Project area resources). A need was considered to have a Project nexus if it met at least one of the following criteria:

- Action is needed to provide adequate public access to Project lands and water during the anticipated term of the new FERC license;
- Action is needed to address existing and/or future impacts of Project operations on recreation resources;
- Action is needed to address existing and/or future recreation-related impacts on other Project area resources;
- Action is compatible with other potential resource actions (e.g., terrestrial, fish, etc.) that may have a Project nexus (i.e., potential recreation needs are balanced and coordinated with other potential resource needs and stakeholder interests); or
- Action helps support water-based and/or water-enhanced recreation activities in the Project area.

Each of the three preliminary action alternatives are designed to help guide the District to meet current and expected future recreation needs in the study area, while maintaining the study area's distinctive characteristics (environmental, scenic, primitive, use levels, etc.). However, each alternative achieves this balance (between needs and maintaining important setting characteristics) differently. During PM&E development, the specific actions under each alternative will likely be re-organized to form a fourth alternative that balances operations, safety, security, water quality protection, recreation needs and cost, among others. In general, Alternative A assumes all existing District-managed recreation sites and opportunities are maintained throughout the new FERC license, while Alternatives B and C provide modified and/or new recreation opportunities. Water quality protection will continue to be a priority during the next license period under all three alternatives.

Two focus group workshops were held to review and comment on Alternatives A, B and C. The first focus group workshop was with agency and tribal representatives. Following this focus group workshop, modifications to the set of proposed actions were made. Next, a public focus group workshop was held to solicit comments from both the general public and from specific recreation user groups who were invited to attend. Recreation user group participants were invited from a list of key recreation user groups and organizations that use the study area now, or may potentially use it in the future. Meeting summaries from each of these meetings, as well as other comments that were received by participants are included in Appendix F.

None of the actions listed in Table 5-1 should be considered proposed PM&E measures yet. Instead, the preliminary actions listed in the table should be used to help guide the District's development of proposed recreation-related PM&E measures (all appropriate resource relicensing study results should be considered during the development of recreation-specific PM&E measures). Ultimately, recreation resource PM&E measures need to address the primary recreation needs that have been identified in this analysis, which include: 1) maintain and/or enhance quality recreation opportunities, 2) improve access options to recreation sites, use areas, and other opportunities, and 3) where appropriate, provide new trail development and opportunities. Meeting these priority needs during the new license term will help ensure the continued provision of safe public access and satisfying recreational experiences, while ensuring Project security and water quality protection.

Table 5-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Theme: Generally continue existing recreation management in the study area, with non-motorized trail enhancements.	*Theme: Enhance District-managed recreation opportunities to account for changes along South Shore Road (and potential loss of some District-managed sites) and increased land-based access along the Sultan River. The overall management goal is to provide opportunities that are compatible with water quality protection measures, the distinctive setting (environmental/ biophysical conditions), and the relatively uncrowded recreation experience.*	*Theme: Similar to Alternative B, but with different enhancement-related actions. The overall management goal is to provide opportunities that are compatible with water quality protection measures, the distinctive setting (environmental/ biophysical conditions), and the relatively uncrowded recreation experience.*
FACILITY DEVELOPMENT ACTIONS		
<u>Spada Lake</u>		
• No new recreation facility development. Retain existing recreation sites at Spada Lake including Olney Pass, North Shore, South Fork, South Shore, and Nighthawk. • Close Bear Creek Recreation Site to vehicular access (new trailhead development at Nighthawk). Develop non-motorized (no equestrian use) trail between Nighthawk and Bear Creek recreation sites. • Consider a controlled, non-motorized-	• Explore and implement a recreation site development option, based on South Shore Road management decision (assumes that at a minimum the District will maintain South Shore Road to at least the South Fork recreation site). Options include: <u>*Option 1:*</u> Formally close and rehabilitate District's developed recreation sites along South Shore Road (including South Shore, Nighthawk, and Bear Creek), except the South Fork recreation	• Formally close and rehabilitate the District's developed recreation sites along South Shore Road (including South Fork, South Shore, Nighthawk, and Bear Creek). Develop a potential recreation site along the southwestern shoreline of Spada Lake, pending the results of a site suitability and feasibility studies (environmental, economic, and engineering). The potential recreation site may provide a developed boat launch, picnic areas, parking, and other site features. The

Table 5-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
only crossing of Culmback Dam to provide access to the North Shore Recreation Site and the DNR's Pilchuck Mainline Road. Potential controlled pedestrian access across Culmback Dam is predicated on safe visitor access and dam security needs.	site. Enhance the existing South Fork Recreation Site by developing an improved boat ramp and increased parking to accommodate existing use levels from the District's existing South Shore Road recreation sites. *Option 2:* Formally close and rehabilitate Nighthawk and Bear Creek recreation sites. Retain South Fork and South Shore recreation sites. • Expand single vehicle parking at either Olney Pass, South Fork, or South Shore (depending on recreation site option above) to help accommodate additional DNR trail-related parking (assumes new DNR trailhead will be located at one of these sites; DNR would be responsible for the development of the trailhead and trail). • Formally close and rehabilitate the North Shore Recreation Site. • In the future and if feasible, potentially expand parking (both single vehicle and vehicle-with-	potential recreation site may also be designed so as to accommodate existing use levels at the District's current sites along South Shore Road. • Reconfigure and expand Olney Pass access site to accommodate additional parking related to new DNR trailhead at this site (assumes that new DNR trailhead would be located at an existing District-managed recreation sites and that DNR would be responsible for the development of the trailhead and trail). • In the future, consider developing a parking area (near existing gate on Culmback Dam Road or new the FR-6122 intersection) to allow for potential controlled pedestrian-only access across Culmback Dam to the North Shore Recreation Site (see Programmatic Needs). Provision of controlled pedestrian access would be dependent on a safe visitor experience and District security needs, among other considerations.

Table 5-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
	trailer) at District-managed recreation sites based on monitoring results (see Programmatic Needs).	
	Sultan River and Lost Lake	
• No new recreation facility development. Retain existing river access sites including Diversion Dam Road, Horseshoe Bend, Old Gaging Station Road, Powerhouse, and Trout Farm. Retain access opportunities at Lost Lake.	• Provide interpretive opportunities (natural resources, historic/cultural resources, Project operations, etc.) at the existing river access sites. • Enhance Trout Farm Road River Access (see Programmatic Needs). • In the future and based on periodic monitoring (see Programmatic Needs), formalize river access sites (designated parking and trails) to help protect sensitive natural and/or cultural resources. • In the future and based on periodic monitoring (see Programmatic Needs), designate and formalize appropriate access trails to Lost Lake to help protect sensitive resources (or consider other management actions related to use levels).	Same as Alternative B, plus: • Develop enhanced public access to the Sultan River below Culmback Dam at specific river access sites.

Table 5-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
OPERATIONS and MAINTENANCE (O&M) ACTIONS		
Spada Lake		
• Continue to provide periodic O&M at the District's developed recreation sites at Spada Lake. • Maintain South Shore Road from Olney Pass to Nighthawk (South Shore Road closed beyond Nighthawk per DNR's abandonment strategy).	• Continue to provide periodic O&M at the South Fork and South Shore recreation sites, depending on recreation site development option (see Facility Development Needs). • Maintain South Shore Road from Olney Pass to the South Fork or South Shore recreation sites, depending on recreation site development option (South Shore Road closed beyond South Fork or South Shore per DNR's abandonment strategy).	• Maintain South Shore Road from Olney Pass to potential recreation site, if this new site is accessed via South Shore Road (South Fork Road closed beyond new recreation site per DNR's abandonment strategy). • Provide periodic maintenance at potential recreation site, located at an appropriate area along southwestern shoreline of Spada Lake (if feasible). • Continue to provide periodic O&M at the North Shore Recreation Site.
Sultan River and Lost Lake		
• Continue to provide periodic O&M at the District's river access sites and Lost Lake.	Same as Alternative A, plus: • Provide increased O&M (site cleanup, official presence, etc.) partnering opportunities (e.g., with the City of Sultan, American Whitewater, etc.) at the Trout Farm River Access Site.	Same as Alternative B, plus: • Provide periodic whitewater boating flows, if determined to be feasible considering other resource needs during PM&E measure development. Whitewater boating flow details, including timing and volume of flows, will be developed (as a component of a potential PM&E measure) if recreational flows are determined

Table 5-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
		to be appropriate. Potential options for whitewater boating flows that may be considered during PM&E measure development include (among others): *Option 1:* Provide potential recreation flow releases in coordination with other resource needs (fish flows, flushing flows, maintenance, testing). *Option 2:* Provide potential recreation flow releases based on allocation of volume or costs. *Option 3:* Provide potential recreation flow releases per a multi-year trial and assessment period.

Table 5-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
PROGRAMMATIC ACTIONS		
Spada Lake		
• Continue to use visitor registration cards at Olney Pass to help monitor use levels. • Continue to monitor and inform visitors at the District's developed recreation sites at Spada Lake.	Same as Alternative A, plus: • Allow controlled (permitted) overnight parking at Olney Pass, South Fork, or South Shore recreation sites (depending on recreation development site option – see Facility Development Needs) to accommodate DNR trail users (depends on location of DNR trailhead, but assumes it will be one of these sites). • Provide new and enhanced I&E-related opportunities. • Periodically monitor recreation-related impacts (ecological/biophysical, social) at District-managed recreation sites at Spada Lake.	Same as Alternative A, plus: • Allow controlled overnight parking at Olney Pass to accommodate DNR trail users (assumes DNR trailhead will be at this site). • Assess options for providing controlled pedestrian-only access across Culmback Dam to the North Shore Recreation Site. • In the future and if controlled pedestrian access is allowed across Culmback Dam, consider allowing group day use opportunities (e.g., boy scouts, etc.), through a formalized reservation system, at the North Shore recreation site.
Sultan River and Lost Lake		
• Continue to monitor and inform visitors at river access sites.	Same as Alternative A, plus: • Periodically (minimum of every 6 years) monitor recreation-related impacts (ecological/biophysical, social) and use levels at river access sites and Lost Lake.	Same as Alternative B, plus: • Explore options for increased access (times during day when gates are open) to river access sites, especially along Lake Chaplain Road and Diversion Dam Road during planned

Table 5-1. Preliminary Recreation Actions and Alternatives.

ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
	• Provide new and enhanced I&E-related opportunities.	flows and/or boatable events (if deemed feasible during PM&E measure development). • Explore options for public access to the Sultan River at the Powerhouse from 116th Road Extended. • Explore options for improved communications regarding natural and/or planned flow events.

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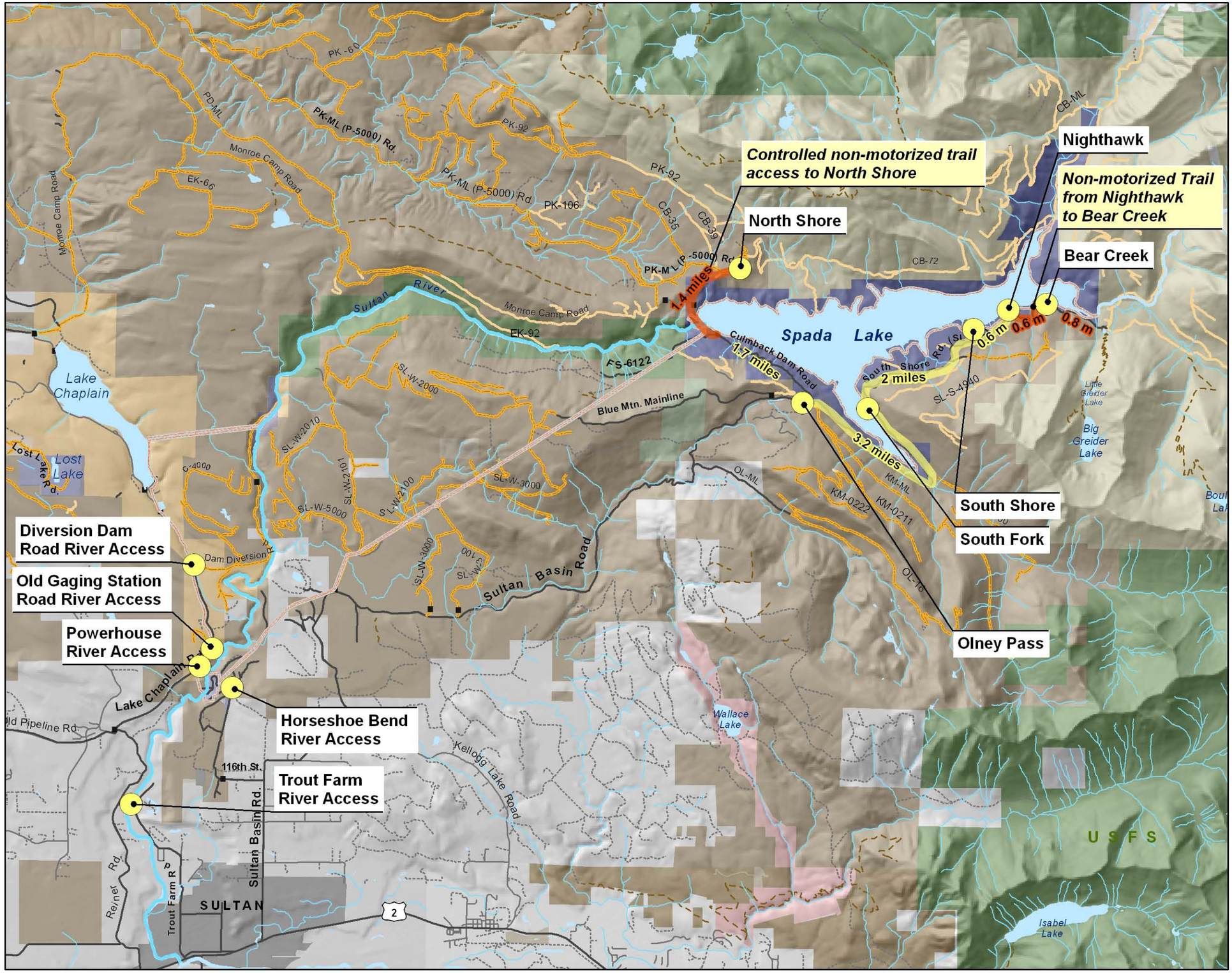

Figure 5-1
Alternative A
Preliminary Facility
Development Actions

Henry M. Jackson
Hydroelectric Project
FERC No. 2157

Legend

Recreation Site Development
- New
- Retain / Modify
- Close

Recreation Trail/Road Development
- New
- Retain / Maintain / Modify

Road Use
- Abandoned
- Gated Forest Management Road
- Street Legal
- Gates

USFS Designated Roads
- Unimproved Road
- Light Duty Road
- USFS Delineated Trail

- FERC Boundary
- Open Water
- Streams and Rivers

Land Ownership
- Snohomish PUD
- City of Everett
- US Forest Service
- DNR
- DNR-NRCA
- State Parks
- Other

0 1 2 Miles

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Modified: July 2008

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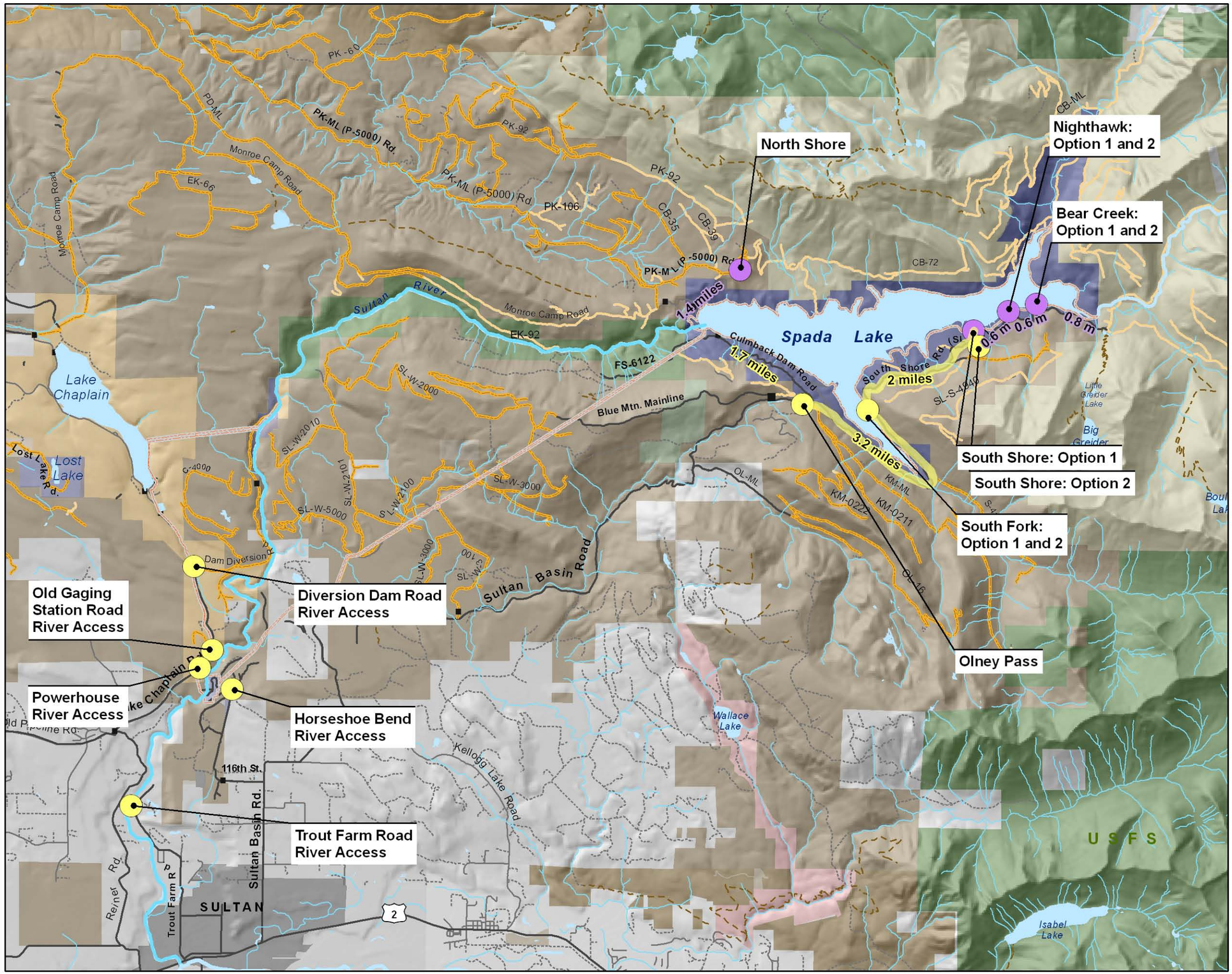

Figure 5-2
Alternative B
Preliminary Facility Development Actions

Henry M. Jackson Hydroelectric Project
FERC No. 2157

Legend

Recreation Site Development
- New
- Retain / Modify
- Close

Recreation Trail/Road Development
- New
- Retain / Maintain / Modify

Road Use
- Abandoned
- Gated Forest Management Road
- Street Legal
- Gates

USFS Designated Roads
- Unimproved Road
- Light Duty Road
- USFS Delineated Trail

- FERC Boundary
- Open Water
- Streams and Rivers

Land Ownership
- Snohomish PUD
- City of Everett
- US Forest Service
- DNR
- DNR-NRCA
- State Parks
- Other

0 1 2 Miles

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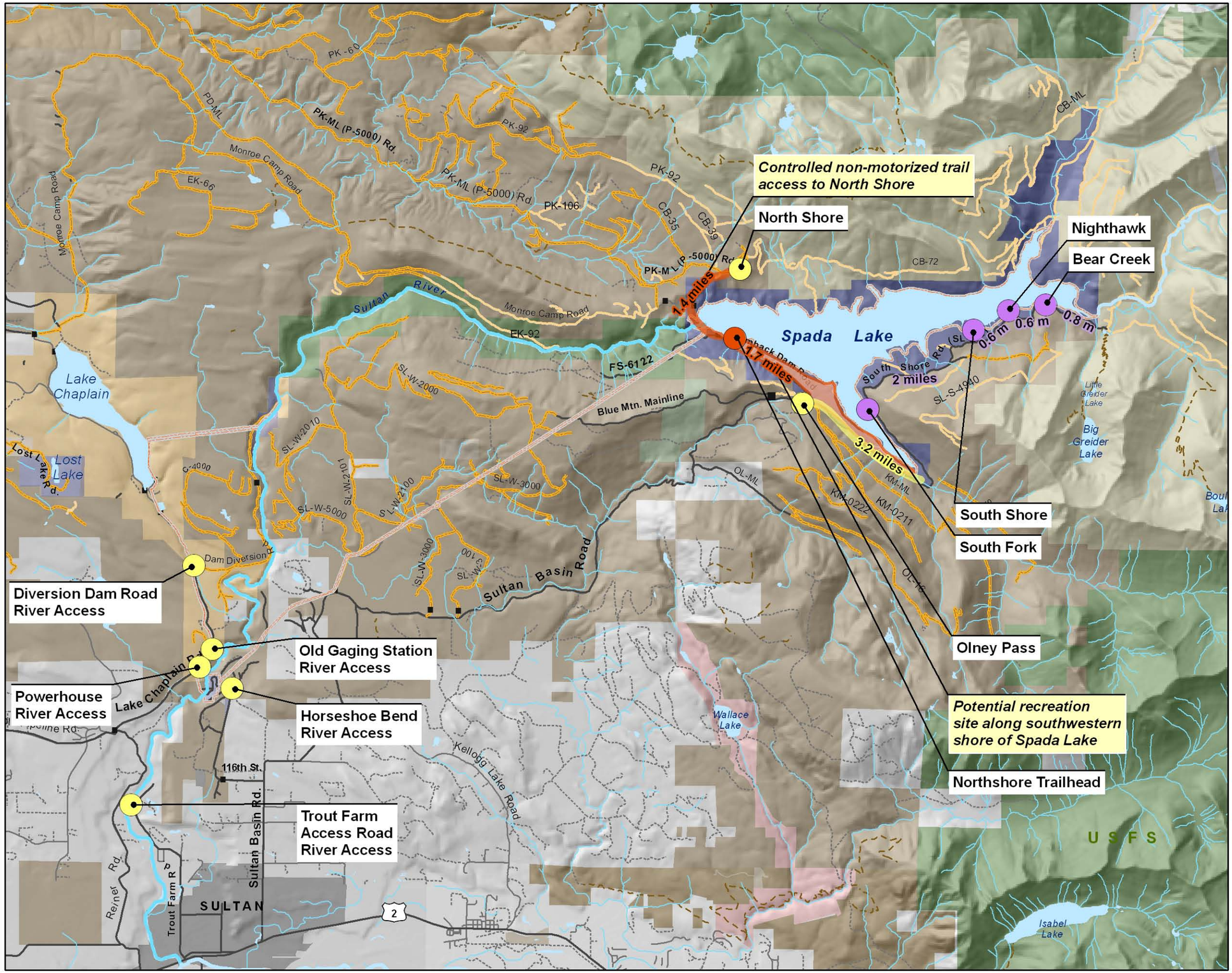

Figure 5-3
Alternative C
Preliminary Facility Development Actions
Henry M. Jackson Hydroelectric Project
FERC No. 2157

Legend

Recreation Site Development
- New
- Retain / Modify
- Close
- Potential Recreation Site Area

Recreation Trail/Road Development
- New
- Retain / Maintain / Modify

Road Use
- Abandoned
- Gated Forest Management Road
- Street Legal
- Gates

USFS Designated Roads
- Unimproved Road
- Light Duty Road
- USFS Delineated Trail

- FERC Boundary
- Open Water
- Streams and Rivers

Land Ownership
- Snohomish PUD
- City of Everett
- US Forest Service
- DNR
- DNR-NRCA
- State Parks
- Other

0 1 2 Miles

EDAW | AECOM

Modified: July 2008

Back of Figure 5-3.

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Appendix A

Stakeholder Comments and District Responses on Draft Recreation Needs Analysis Study Report

The Draft Recreation Needs Analysis was made available for stakeholder review when each of the individual study components (e.g., Supply, Demand, Capacity, etc.) was completed. This appendix contains stakeholder comments received during these review periods, as well as the District's responses to these comments. All stakeholder comments received during the final review period (of the entire study report, including the Needs Analysis and Discussion [Sections 4.4 and 5.0]) are also included in this appendix.

STAKEHOLDER COMMENT – SUPPLY ANALYSIS	LICENSEE RESPONSE
Jim Eychaner – Recreation Conservation Office – Email dated 12/6/2007	
Page 7-8. The list of goals attributed to my agency on pages 7 and 8 come from a study request we submitted to the utility. It was our attempt to blend IAC/RCO goals with City policy and goals and should be cited as such. The list should not be characterized as IAC/RCO goals "for all state hydroelectric projects." We do not have goals that cover <u>all</u> hydro projects statewide. Our SCORP language is clear: > IAC recommends that non-federal hydropower project operators enhance inventory with trails and paths for walking and bicycling, manage dispersed shoreline camping, improve access for on-water recreation, and improve opportunities for nonconsumptive interaction with nature including fish and wildlife. In instances where the license holder has provided recreation land or facilities to other agencies, IAC recommends that the license holder also provide maintenance and operation assistance. [*An Assessment of Outdoor Recreation in Washington State: A State Comprehensive Outdoor Recreation Planning (SCORP) Document 2002-2007*, page 62]	Comment noted.
Page 12-13. The recreation capacity discussion on pages 12-13 is well considered. I am relieved not to find a reference to the obsolete "supply minus demand equals need" formula. In this project, demand may be reasonably considered with capacity as described. I am looking forward to the completion of the first draft of that section (4.3) when it is done.	Comment noted.
Page 31, Section 4.1.3.2 The use of the word "Substitute" beginning on page 31 (Section 4.1.3.2) is puzzling and potentially misleading. It appears from the context that a	A "substitute" recreation site is a well established term in the recreation research and planning literature. Substitutability in regards to a recreation site generally means "the extent to which one recreation

STAKEHOLDER COMMENT – SUPPLY ANALYSIS	LICENSEE RESPONSE
better word may be alternates, options, or choices. "Substitute" implies that the utility intends to direct the recreational visitor elsewhere to substitute for sites/facilities the utility will not or cannot provide.	[site] might be a satisfactory substitute for another" (Manning 1999). The use of the term "substitute" recreation site in the draft Recreation Needs Analysis is not meant to imply that visitors would be directed elsewhere (to substitute sites). The term substitute recreation site has been better defined in Section 4.1 to help alleviate the confusion over the use of the term.
Table 4.3 Table 4.3 as essentially raw inventory is only marginally useful to depict recreation opportunity available in the area or region. For example, the table indicates one may "hike" at a number of sites that a reasonable person would consider "walking" destinations based on trail type, distance, and setting. One example is Rudolph Reese City Park. More seriously, the table does not present local conditions, availability (e.g., snow covered high country versus low elevation urban), or other characteristics that could help with a meaningful assessment of the choices available. It would be far more useful to compare the project setting with other settings within the travel distance established in Figure 4.2 - is the Jackson's setting unique, or are there other similar settings with similar opportunities?	As noted and acknowledged in Section 4.1.3.2, setting is one of the factors that may influence a visitor's decision to choose one recreation site over another. However, as also noted in Section 4.1.3.2, there are multiple factors that influence a visitor's decision-making process regarding where to recreate, not just setting. While the Project area's unique setting (rural, reservoir with mountains, remote river canyon) may be a factor that attracts some visitors to the area, it is not the only determinate. To use the RCO's example, during the RVS, approximately 16% of visitors to the Project area indicated that they also visited Rudolph Reese City Park. Furthermore, during the RVS about 20% of visitors indicated "opportunities for specific activities" as to why they preferred one recreation area over another. As evidenced by these two examples from the RVS, setting is not the only factor that influences Project area visitors' decisions on where to recreate.
Table 4.4 Similarly, Table 4.4 is misleading. A mere list of reaches creates the misleading impression that there is ample opportunity when in fact actual opportunity may be severely restricted by season, policy, physical access limitations, and other factors. Not all reaches are created equal. More analysis is needed to make this list useful as a true comparison.	A new column has been added to Table 4-4 indicating use/access considerations (season, physical, access, use restrictions, etc.).
Susan Roseborough – National Park Service – Email dated 12/26/2007	
Page 15 This is written as if the pieces have already occurred, I just wanted to clarify that this is because it is written like the needs analysis is complete and so far only the first section is done?	Correct, Section 3.0 is written as if the Recreation Needs Analysis has already been completed, even though the results (Section 4.0) are still being developed.

STAKEHOLDER COMMENT – SUPPLY ANALYSIS	LICENSEE RESPONSE
Page 15 Is the alternatives workshop still planned for April.	The recreation needs alternatives workshops are tentatively planned for April and May 2008.
Page 15 Please include a brief discussion on how the USFS trails analysis for river access will be incorporated as well as referencing how the WW study and alternatives for releases and access will be incorporated into the needs analysis.	The use of the trail assessment (including the USFS trail analysis) and the flow study (RSP 14) has been clarified in the methodology (Section 3.0).
Page 17- Section 4.1.1 The last statement states that no evidence of user-defined dispersed recreation was found in the FERC boundary. Does this include the Lost Lake area? Also, was user-defined dispersed recreation within the project vicinity investigated or will it be?	As noted in Section 4.1.1, dispersed use is known to occur on WHMP lands, including Lost Lake. The location of Lost Lake within WHMP lands has been clarified in the text. Dispersed recreation use was only investigated in the Project area and not on adjacent DNR or USFS lands.
Page 22, 4.1.1.1.3 Sultan River - Diversion Dam Road Access. Please describe the distances involved for walking access from the gate to the diversion dam.	The distance from the gate to the diversion dam has been added to Section 4.1.1.1.3.
Page 23 - Sultan River/gate opening. Does the gate opening vary by season? There is a need by boaters and possibly other recreation users to have the gate opened longer particularly in the spring/summer/early fall when the sunlight provides for evening recreational opportunities. A discussion/assessment of this should be included in the needs analysis (this may be planned to be included in a different section?)	The gate is open year-round between 6 a.m. and 6 p.m. This has been clarified in the text. Access needs (including gate policies) will be addressed in the recreation needs analysis (Section 4.4).
Page 24. 4.1.12 Static Point Climbing Area. Please include a description of the number of miles off the South Shore road as well as the hiking distance into this site. Also a description of the importance of this climbing area should be included somewhere in the needs analysis (see http://www.washingtonclimbers.org/Climbing/static.htm) as a reference.	The approximate distance from South Shore Road to Static Point has been added to Section 4.1.1.2. Note, the referenced website does not provide information regarding the importance of Static Peak as a climbing area.
Page 24, 4.1.1.3 - WSR. The Skykomish River is listed on the NatiowideRivers Inventory, a	The status of the Skykomish River has been clarified.

STAKEHOLDER COMMENT – SUPPLY ANALYSIS	LICENSEE RESPONSE
'register of river segments that potentially qualify as national wild, scenic or recreational river areas. The NRI qualifies as a comprehensive plan under 10(a)(2)(A) of the Federal Power Act (see http://www.nps.gov/ncrc/programs/rtca/nri/auth.html) However, it is not a federally designated river segment yet.	
Page 25, 4.1.21 Spada Lake Public Access. As discussed at the Interim Study meeting in October, alternatives regarding the South Shore road could include (1) decommissioning for vehicle access and converting to trail access only; (2) PUD paying for the road to be maintained until the last Spada lake access point; (3) PUD paying for the road to be maintained until the first Spada Lake access point. Because of this, we would like to see the current cost-share agreement including typical costs included in this description and a description of expected costs of the alternatives described in the alternative analysis.	The trails workshop that was held in October 2007 will be discussed in Section 4.4. The proposed alternatives presented in Section 4.4 will also discuss the various options for South Shore Road.
Page 26, 4.1.21 Spada Lake. Culmback Dam. Is vehicle access restricted but walk-in access allowed or is all access restricted? What is the walk-in distance to the north shore site?	There is no public access across Culmback Dam at this time.
Regional Supply Analysis. This provides a good overview of all available sites. Please also include a description of the special places and activities in the Sultan River/Spada lake (i.e W.W. boating on the Sultan is unique, hiking in the old growith forest on USFS lands; the Static Climbing area is also unique, there may be other activities/places that are unique or regionally significant to the area.)	Additional information regarding the unique recreation opportunities available in the Project area has been added to the Supply Analysis (Section 4.1).
Tom Davis – US Forest Service – Email dated 1/4/2008	
General While we understand the sequential nature of completing the study plan in steps, some comments on this supply analysis may not become apparent until the demand, capacity, and recreation needs sections are completed. Additional comments may be forthcoming as other sections are completed.	Comment noted.

STAKEHOLDER COMMENT – SUPPLY ANALYSIS	LICENSEE RESPONSE
Figure 2-1 Recreation Sites and Use Areas and Figure 4-1 Public Access Routes. It is difficult to discern the difference between the developed trails (for example, Boulder and Greider Lake) and the user defined trail to the Sultan Gorge off Forest Road 6122. We suggest showing one as dots so that it is easier to tell the difference between the two types of trails.	Figure 4-1 has been revised to better differentiate between developed and user-defined trails.
Section 4.1.1.2 Other Recreation Sites and Use Areas in the Study Vicnity. Page 24. In the last paragraph of this section please add a sentence after the next to last sentence: Whitewater boaters (primarily kayakers) also utilize this user defined trail to access a put in site on the Sultan River.	The use of this trail by whitewater boaters is acknowledged in the second paragraph of Section 4.1.1.2 ("The river may be accessed at approximately RM 14.3 via a user-defined trail off of Forest Road (FR) 6122…").
Section 4.1.1.3 Federally Designated Areas, Trail, and Wild and Scenic Rivers. Pages 24-25. No portions of the Skykomish River are federally designated as part of the Wild and Scenic River system. However, the North and South Forks of the Skykomish River upstream from their confluence near Index are recommended for designation as a Wild and Scenic River in the Mt. Baker-Snoqualmie NF Land and Resource Management Plan. The Skykomish River is a designated State Scenic River from the Sultan River upstream to the confluence of the North and South Fork Skykomish River and also includes portions of the Skykomish River system upstream from the confluence.	The status of the Skykomish River has been clarified.
Section 4.1.3.2 Potential Substitute Recreation Sites **Table 4-3 Potential Substitute Recreation Areas in the Project Region—Visitor Origin Seattle. Page 39.** Within the 50 mile radius from Seattle there are a wide range of recreation facilities not shown in the table, such as Olympic National Forest, Olympic National Park, and Mt. Rainier National Park. It makes sense to not include some of these, since to reach the Olympic Peninsula from Seattle requires a ferry ride or a circuitous drive around Puget Sound. Some folks from Seattle do travel to Mt. Rainier National Park and the Hwy. 410 Mather Memorial Parkway and Evans Creek ORV Area (FS lands) although for day users most users are probably from the	As noted in Section 4.1.3.2, the recreation sites and use areas listed in Table 4-3 is not meant to be exhaustive. The additional information regarding opportunities at the Mount-Baker Snoqualmie National Forest has been added to Table 4-3.

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Tacoma area. In addition, the National Forest is open to a range of recreational uses such as fishing and hunting in season. Swimming also occurs but is limited. So the line on Mt. Baker-Snoqualmie National Forest should also include: Whitewater Boating, Fishing, Swimming, Sightseeing, OHV use, and Hunting. The line on the activities in the Alpine Lakes Wilderness should also include: Fishing, Swimming, Camping, and Hunting.	
Section 4.1.3.2 Potential Substitute Recreation Sites **On the last paragraph in this section (page 42).** It should also be noted that many of the substitute recreation sites listed in the table are at or exceed capacity (for example Lake Serene Trail and Alpine Lakes Wilderness), and are not able to accommodate additional visitors without facility improvements. Since the Project Area is a lower elevation than most of the recreation sites on the Mt. Baker-Snoqualmie National Forest there is also a difference in which recreation sites are accessible or useable by season. Stream flows conducive to whitewater boating are also seasonal in nature.	Comment noted. The existing capacity of regional recreation sites and use areas was generally beyond the scope of the Recreation Supply Analysis. The seasonality of flows has been added to Table 4-4 to the extent that this information is available (this information has been added in a new column).
Patti Leppert – FERC – Email dated 1/11/2008	
Minor text edits.	No response necessary.
Tom O'Keefe – American Whitewater – Letter dated 1/28/2008	
page 8 typo on first bullet; should be "pedestrian and bicycle use"	This typo has been corrected.
page 12 In the discussion of biophysical/ecological capacity the statement is made that by design developed recreation sites typically have fewer ecological concerns. The clarification should be made that this assumes comparable use levels.	As noted in the text, developed sites concentrate use and provide hardened facilities, both of which limit potential biophysical/ ecological impacts resulting from recreation use (compared to dispersed use). Developed recreation sites are built and managed under the assumption that the environment would sustain unacceptable levels of impact from recreation without them. While use levels may influence the potential severity of biophysical/ecological impacts, the resiliency of the natural setting (i.e., environmental durability) tends to have a greater influence on the level of impact (Hammitt and Cole 1998); that is, some environments are better able to sustain dispersed

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	uses, while others are not.
page 17 The text notes use along the north shore of Spada Reservoir is "highly uncommon". Historically this was known as the Williamson Creek approach to Bald Mountain. The current edition of the Cascade Alpine Guide[1] notes that this approach is "no longer a practical access because of the road closure on the north side of Spada Reservoir." The guide notes that "one could kayak or canoe across the reservoir" to access this route. Deterioration of the road network and road closures have impacted access to Bald Mountain and this need should be considered in the context of a potential trail around the reservoir.	Note, the text states: "Dispersed recreation use along the shoreline of Spada Lake is highly uncommon…" This statement is not specific to the northern shoreline of Spada Lake. The potential for new trails along the northern shoreline will be addressed in the Trail Assessment (Section 4.4).
page 19 Given discussions regarding the future of South Shore Road and the potential conversion to trail it would be helpful to specify distance of reservoir access sites 2-5 along with the two DNR trailheads from Olney Pass.	Distance between the recreation sites and Olney Pass has been added to Section 4.1.1.1.
page 20 It would be helpful to footnote the entry for North Shore to clarify that although 28 parking spaces are available they are not accessible by vehicle. This is noted in the text but it would be helpful to clarify in this in the table.	This distinction has been made in the table.
page 21 The text notes that the DNR closed the Pilchuck Mainline but notes that the closure applies to "vehicular" access. It could be clarified to "motorized" access which is used to refer to this closure at other places in the document.	"Vehicular" access has been replaced by "motorized" access.
page 22 Please specify walk-in mileage for all sites. This distance is provided for some sites but not others. Specifically no walk-in mileage estimate is provided for sites along Diversion Dam Road. In contrast walk-in mileage is provided for Horseshoe Bend Access. For consistency and for the benefit of individuals who don't have first-hand knowledge of all the	Walk-in distances have been added.

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sites please provide this information for all sites.	
page 23 Access hours for Lake Chaplain Road are provided but not the 116th Street access. In the past this access has been closed at 3 pm. Please provide information on hours for this gate or if hours are variable please note that.	Currently and as noted in the text, the 116th Street access gate is always open, though may be closed at the Co-licensees discretion based on operations and security needs.
page 24 The text states that DNR-managed trails are "only open to use" during the summer season. Are these trails formally closed to all use outside the dates indicated or are they just inaccessible due to weather and trail conditions?	DNR trails are typically inaccessible due to weather and trail conditions (the open dates represent the typical period of time when the trails are accessible), as currently stated in the text: "…the trails are only open to use from approximately June 15 through October 15 because of snow at higher elevations."
page 24 In the discussion of Static Point it would be helpful to specify the distance from Olney Pass to the abandoned logging road and the distance along this road to the climbing area. This will provide the necessary information necessary for more informed discussions of potential closure or trail conversion of the South Shore Road.	The approximate distance from South Shore Road to Static Point has been added to Section 4.1.1.2.
page 24 The text notes that mining claims are "generally accessed" off of FR 6122. It is our understanding that the Monroe Camp Road is also used by miners.	The use of Monroe Camp Road for mining access has been explored and added to the text.
page 25 The Skykomish River, including the North and South Forks is not a federally designated Wild and Scenic River. The river, along with major tributaries is a designated State Scenic River.2 Of rivers in the Skykomish River watershed flowing through the Mount Baker National Forest the North Fork Skykomish, Troublesome Creek, South Fork Skykomish, Tye River, Miller River, West Fork Miller, East Fork Miller, Foss River, East Fork Foss River, West Fork Foss River, and Deception Creek have been recommended by the Forest Service for Wild and Scenic designation.	The status of the Skykomish River has been clarified.
page 25	Agency roles related to the management of Culmback Dam Road have

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In the discussion of the Culmback Dam Road reference to the management role of DNR and Colicensees is made but there is no discussion of the USFS management role. It is our understanding that USFS holds an easement for public access to USFS lands downstream of Culmback Dam. Management of the Culmback Dam Road is generally confusing to the public and stakeholders in this relicensing. It would be very helpful to spell out all agency roles in this section including any cost share agreements for both the Culmback Dam Road and South Shore Road.	been clarified in the text.
page 26 The discussion of the Pilchuck Mainline road notes that pedestrian and biking access provides the only access to the North Shore site. Mileage from the gate to the North Shore site should be provided to provide appropriate context for the distance to this site.	The approximate distance of the Pilchuck Mainline road has been added.
page 31 many of the sites listed provide alternatives to opportunities available at the project, the opportunities available at the project are sufficiently unique[4] that actual substitution is not typically possible. Alternatives are available and the lists reflect this, but without additional context on the setting the comparisons can be misleading. We believe the unique characteristics of project lands and waters should be described in additional detail.	As noted and acknowledged in Section 4.1.3.2, setting is one of the factors that may influence a visitor's decision to choose one recreation site over another. However, as also noted in Section 4.1.3.2, there are multiple factors that influence a visitor's decision-making process regarding where to recreate, not just setting. While the Project area's unique setting (rural, reservoir with mountains, remote river canyon) may be a factor that attracts some visitors to the area (and has been further described in the text), it is not the only determinate.
page 42 Qualifications on potential substitute sites are provided but changes to project management are not included. These might include changes to flow regime that provide opportunities for whitewater boating, changes to gate hours or access that increase or reduce access to sites, and changes to fishery management that increase opportunities for recreational fishing. There is thus a dynamic component to use of alternative sites that depends on management decisions that affect opportunities on sites impacted by project operations.	Comment noted. As identified previously, there are many factors that influence the substitutability of recreation opportunities, including management strategies and policies.
Maps The Blue Mountain Mainline has been gated but this is not indicated on	The Blue Mountain Mainline gate has been added to Figure 4-1.

STAKEHOLDER COMMENT – SUPPLY ANALYSIS	LICENSEE RESPONSE
the map.	

STAKEHOLDER COMMENT – DEMAND ANALYSIS	LICENSEE RESPONSE
Jim Eychaner – Recreation Conservation Office – Email dated 1/11/2008	
The "demand" text should discuss how study-area participation has been essentially pre-selected by a number of past management decisions. Examples include the utility's decision to limit many types of on-water uses on Spada; the utility's prohibition of camping; DNR's decision to eliminate road access on the north side of Spada; and Sultan River in-stream flow agreements with fish-managing agencies. These facts render the discussion of regional and statewide demand somewhat irrelevant and have the potential to create unrealistic expectations for "unrepresented" user groups.	It is common at outdoor recreation areas for the managing entity to limit the types of uses that are allowed in the area/site (e.g., no OHV-use, no camping, etc.). Limits on uses (activities) are a valid management technique to help limit potential resource impacts, increase visitor safety, lower potential visitor conflict, and help provide appropriate and ultimately satisfying opportunities, among others. The City's and the District's existing recreation-related rules and regulations are in place to help protect resources including the City's drinking water quality by ordinance. These types of rules and regulations and are common around the country. Most regional recreation providers (e.g., USFS, DNR, State Parks, etc.) also have rules that may limit the types of uses that are acceptable on their lands. The District's water quality protection measures and their impact on recreation are discussed in the Capacity Analysis Results (Section 4.3). Discussion of demand for a range of regional and statewide recreational activities places the Project in context and helps define its niche, albeit a more limited set of recreational activities.
I suggest that regional and statewide demand be revisited by narrowing the focus to activities that have the greatest potential to be consistent or compatible with actual land and water management.	The discussion of regional activity participation and demand has been re-evaluated and some activities have been removed (e.g., snowmobiling, RV camping).
Also, the demand analysis should consider how certain activities could be found to be compatible through appropriate facility management. For example, trail-accessed camp sites with appropriate waste management	The Needs Analysis (Section 4.4) will consider the results of the Supply, Demand, and Capacity sections to recommend potential needs in the Project area during the anticipated new FERC license

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could well prove to have less potential or actual impact to water quality than runoff from an obsolete forest road.	term. Potential management actions, including facility development, will be considered and may create new opportunities in the Project area.
The data indicating the popularity of fishing and trail activities is unmistakable, as is the data pointing to under-utilized day use sites. The data would appear to agree with the recommendations found in our agency's most recent SCORP document.	Comment noted.
Patti Leppert – FERC – Email dated 1/16/2008	
Minor text edits.	Text edits have been accepted.
Tom O'Keefe – American Whitewater – Letter dated 1/28/2008	
page 2 The comment above applies to the discussion of unmet recreation demand and reasons people do not visit a recreation area. Changes in project operations or management can have either a positive or negative impact on future recreation use. While future recreation use is difficult to measure, ultimately a FERC-licensed project needs to have a comprehensive plan for the protection, mitigation, and enhancement of beneficial public uses including recreation.	Comment noted. An updated Recreation Resource Management Plan will be developed for the Project in the future.
page 22 We assume the estimates of future use are based on an assumption of ongoing project operations and management. The report is generally vague on this point and additional discussion should be provided. For example if the South Shore Road is decommissioned this would have an impact on future use of sites accessed from that road. Similarly, changes in project operations that affect flow would be expected to affect Sultan River recreation sites.	The Demand Analysis results assume that current Project area conditions remain static. There are a number of factors that could potentially change conditions in the Project area that in turn would affect recreation. These other factors will be addressed in the Needs Analysis results (Section 4.4). The anticipated new FERC license will also address comprehensive resource needs in the Project area.
Susan Roseborough – National Park Service – Email dated 01/29/2008	
The demand analysis does a great job of describing and projecting existing recreation use that is occurring today. The document also acknowledges that both current management restrictions including protection of water quality and the river flow regime direct what use is	Comment noted. The results of the trail assessment (including the fall workshop) will be described in Section 4.4 (Needs Analysis Results). Additionally, unmet demand and potentially needs will also be

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occurring. In addition the potential future closure of all or a portion of the South Shore Road will also have great impacts to the current recreation. We recommend that the unmet demand section be expanded to include information from the trail workshop as well as information from stakeholders and user groups that will be captured in the upcoming Spring workshop as well as other studies (i.e. whitewater study). There is potential for other activities to become more prominent in the area - including mountain biking, whitewater boating, hiking camping, and climbing. A discussion of the needs, opportunities, and potential impacts should be included in the needs analysis.	described in Section 4.4.

STAKEHOLDER COMMENT – CAPACITY ANALYSIS	LICENSEE RESPONSE
Susan Rosebrough – National Park Service – Email dated 3/28/2008	
This report just describes PUD sites & DNR sites. It briefly goes into the DNR road closure and impacts to capacity on sites when this happens. We recommend that the needs analysis also include an assessment of other recreation impacts due to the road closure. The alternatives should include an at least one alternative where the PUD maintains the road to the first lake access point. A cost/benefit analysis should include: (1) costs for the PUD to maintain the road up until the first access site; (2) reduced costs for any site closures due to limited vehicle access; (3) impacts to recreation users - including water users, trail users, climbers, etc.).	The potential impacts of closing all or a portion of South Shore Road will be described in the Recreation Needs Analysis (Section 4.4). Additionally, the preliminary recreation needs-related actions and alternatives will likely include several recreation site development and access options based on the closure of all or a portion of South Shore Road.
We also recommend a description of how access limitations regarding the inclusion of gates and the hours the gates are left open be included in the alternatives and discussion of current limits.	As with the closure of South Shore Road, the Recreation Needs Analysis, as well as the preliminary recreation needs-related actions and alternatives will discuss access issues and potential enhancements along the Sultan River.
Rich Johnson – WA Department of Fish and Wildlife – Email dated 4/10/2008	
The Recreation Capacity Analysis for RSP 13 appears to have applied established methodology for the capacity analysis. However, the Washington Department of Fish and Wildlife is concerned that the	Comments noted. RSP 16 and the bio-energetics work being conducted by the

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recreational opportunities for fishing and hunting associated with the project have actually decreased and are underutilized due to diminished populations of desired fishes in the river and reservoir and due to the road closures and increased security measures that have reduced access. There is also a lack of information about how to access the project areas for recreational use, and this combined with the numerous restrictions placed on usage, is likely to discourage usage. The potential for these recreational opportunities is greater than is reflected by projecting present usage into the future. Use of the project area for recreation in the future is important. A goal for the future should be to make access and enjoyment of this area a priority instead settling for the existing diminished usage. The needs analysis should focus on future opportunities and increasing recreational usage.	University of Washington will help define factors limiting the productivity of the trout populations in Spada Lake. This information will be used in future discussions regarding the management of the Spada Lake fishery. Additionally, access and enhanced recreation opportunities will be discussed in the Recreation Needs Analysis (Section 4.4) component of the RSP 13 study report.
The low productivity of the lake fishery at this time should not be the basis for calculating future demand. There may only be 2,000 angler trips per year at present, but actual usage of the reservoir by anglers in 1985 is estimated to have been 12, 994 trips (Pfeifer 1999). The angling effort in the 1985 is a reasonable reflection of what future demand could be. This demonstrates that there exists a demand far greater than is being provided for today. It should be a priority to increase angling opportunity to satisfy this demand. The population of fishes desired by anglers is depressed, but efforts should be made in the future to increase fish populations. The existing restrictions on motorized watercraft needs a critical reexamination. Four-cycle outboard engines have little risk to water quality, and could greatly expand the ability of anglers to use the lake. The management of reservoir levels also needs a critical review to assure it is not adversely affecting access, esthetics, and fish populations. These efforts could result in a considerable increase in usage. Given the population growth of Snohomish County since 1985, the future demand is likely to be even greater. The need for boat launch facilities and parking facilities is likely to increase substantially.	Comment noted. Recreation use levels tend to be influenced by a number of factors (e.g., weather, facilities, resource conditions, leisure time, the economy, etc.). Additionally, recreation demand can be manipulated in a number of ways. At this time and over the anticipated term of the new FERC license, the number of fishing-related facilities is commensurate with the level of fishing use at Spada Lake. Just providing new/enhanced fishing-related facilities would likely have little to no influence on fishing use levels at Spada Lake (the "if you build it, they will come" model does not always work in recreation settings). Instead, if the goal is to increase demand (i.e., future use levels) at Spada Lake, improvements to the resource (fish species, quantity of fish, etc) and/or an aggressive information/awareness campaign (to attract new anglers to Spada Lake for fishing) may be needed. The protection of water quality is of the utmost importance to the City and PUD, as well as the residents of the Project region. Any relaxation of water quality restrictions for the purpose of increasing recreational opportunities may ultimately degrade this exceptional drinking water source. As such, water quality will continue to be a

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	priority during the new license term. There is no doubt that under normal operation, four-cycle marine engines are cleaner than carbureted two-cycle engines in terms of exhaust. However, accidents do happen and, regardless of the exhaust quality, fuel spills represent an enormous risk to water quality. Contamination from fuel spills is not treatable by the City of Everett's current filtration system. These contaminants would pass through the filtration system and into the County's primary municipal drinking water supply (Spada Lake is the sole source of drinking water for the majority of Snohomish County). The capital improvements to provide the level of treatment required to remove these organics (fuel) would be extremely costly for the City. Management of reservoir levels is an ongoing aspect of the project operation. Several factors, including flood control, play into reservoir management. The influence of current management on the Spada Lake fishery is being investigated under RSP 16 and the bio-energetics work being conducted by the University of Washington. In most years, access to reservoir during the fishing season is not constrained by reservoir levels. Recreation Site 2 provides the best access over the broad range of reservoir elevations.
Access to the river both for bank and boat angling is very limited. Improved access both in the form of parking and trails for bank anglers and parking with boating access facilities are needed to allow the potential usage to be realized.	For fishing purposes, the Sultan River is boatable only in the lower 2.7 miles. The District maintains a launching facility with parking at the Trout Farm Road River Access Site at RM 2.7. A large take-out facility with parking for 50 vehicles exists at RM 0.0 at the confluence with the Skykomish River. For bank anglers, access to the lower river is available at RM 0.0 at the aforementioned take out facility, at Rudolph Reese Park at RM 0.6, at Osprey Park at RM 1.1 to RM 1.6, and at Trout Farm Road Access at RM 2.7. Near the Powerhouse, access downstream is available along a trail that originates at the USGS Gaging Station and access upstream is available along a trail at the bridge. These routes, when combined,

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	allow easy access (with some wading) to roughly one mile of river between RM 4.1 and 5.1. Access upstream is more limited do to terrain but does not appear to discourage anglers. Many of these access points along the road to the Diversion Dam can be accessed using mountain bikes. Improved and/or enhanced access opportunities will be discussed in the Recreation Needs Analysis (Section 4.4) component of the RSP 13 study report.

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Stan Kurowski – WA Department of Natural Resources – Letter dated 10/8/2008 (attached to email received 10/13/2008)	
Thank you for giving the Washington State Department of Natural Resources (WDNR) the opportunity to comment on the Recreation Needs Analysis Revised Study Plan 13 (RSP 13). This project may affect WDNR managed lands. The comments that follow address specific points for information within RSP 13.	Comment noted.
Page iv, paragraph2: The combination of three existing NRCAs into the Morning Star NRCA has been accomplished. The statement, "Creation of the Morning Star NRCA would result in complete abandonment of the South Shore Road beyond Olney Pass" is inaccurate and should be deleted. The creation of the NRCA has no bearing on the decision to abandon the South Shore Road. A more accurate statement would be, "The decision to abandon the South Shore Road was based on economics and prudent business practices. The abandonment will take place under the state's Forest Practice Act's Road Maintenance and Abandonment Plan (RMAP) process." The other information contained in the paragraph is essentially correct.	Paragraph has been revised to read: "DNR Study Area Plans – DNR recently created the Morning Star NRCA by combining the three existing NRCAs located to the north, east, and south of Spada Lake. DNR also plans to abandon the South Shore Road based on economics and their business practices. The abandonment will take place under the state's Forest Practice Act's Road Maintenance and Abandonment Plan process. DNR plans to develop new trails to access their existing Greider Lakes and Boulder Lake trails in the study area (trail and trailhead locations have not been determined to date). Mountain bikes would likely not be allowed on these new trails (DNR policy prohibits bikes in NRCAs unless an exception is granted). While the designation of the Morning Star NRCA increases the availability of trail opportunities in the study area, abandonment by the DNR of the South Shore Road would result in hiking and/or biking access only to the District's existing developed recreation sites

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	along the southern shoreline of Spada Lake."
Page 11, paragraph beginning with "DNR plans to combine…": The merger has been accomplished and the Morning Star NRCA is official. The second sentence in this paragraph is incorrect and should be deleted. A more accurate statement would be, "The DNR has proposed to convert portions of the abandoned South Shore Road located in the Morning Star NRCA to a hiking trail, as NRCA policy prohibits other trail uses."	This paragraph has been revised to read: "DNR has combined the three existing NRCAs (Greider Ridge, Mt. Pilchuck, and Morning Star) in the vicinity of the Project into one new consolidated Morning Star NRCA (pers. comm., S. Kurkowski 2007). As a component of this consolidation, the DNR has proposed converting portions of the South Shore Road within the Morning Star NRCA to a hiking trail (independent of the NRCA consolidation, the DNR also plans to abandon the South Shore Road), as NRCA policy prohibits other trail uses. The DNR's planned combination of these three NRCAs and anticipated management-related changes are discussed in more detail in Section 4.4."
Page 28, paragraph 3: The statement in the second sentence, "(likely as a component of a proposed transfer of lands from state trust lands to NRCA management)" is incorrect and should be deleted. No substitution is needed; the rest of the paragraph is essentially correct.	This statement has been deleted.
Page 87, paragraph beginning with "In the longer term…": A more accurate last sentence would be created by replacing "(mountain bikes)" with "(hiking access only where trails enter the NRCA)".	This statement has been revised per the DNR's suggestion.
Page 92, first bullet: The merger of 3 NRCA has been completed to form the Morning Star NRCA. Only the portion of the South Shore Road east of the South Fork of the Sultan River would be in the NRCA and subject to hiking only restrictions.	This bullet has been revised to read: "The creation of the Morning Star NRCA – the DNR has created the Morning Star NRCA by combining the three existing NRCAs in the study area and vicinity (Mount Pilchuck, Morning Star, and Greider Ridge). Along the southern shoreline, the new NRCA encompasses the portion of the South Shore Road corridor east of the South Fork of the Sultan River. This portion of the road within the NRCA is subject to hiking only restrictions, per the DNR's NRCA policies."
Page 92, second bullet: A more accurate statement for this paragraph would be "The South Shore Road is not needed for management purposes of DNR resource and NRCA management. The portion of the road located within the NRCA would be converted to a trail and restricted to hiking use only."	This bullet has been revised to read: "Motorized uses are not permitted within NRCAs – DNR does not need South Shore Road for NRCA management purposes. The portion of this road located within the NRCA would be converted to a trail and restricted to hiking use only, per DNR NRCA policies."

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Page 93, third bullet: Delete the sentence "These dates are subject to change and will be further detailed in a future DNR planning process for the new NRCA." This sentence is inaccurate; the road will be abandoned and converted prior to transfer into NRCA management.	This sentence has been deleted from the bullet.
Page 101, sixth bullet: The merger has been completed. Delete the sentence, "Creation of the Morning Star NRCA would result in the partial or complete abandonment of South Shore Road beyond Olney Pass." The sentence could be replaced with, "DNR plans to abandon the South Shore Road beyond Olney Pass."	This paragraph has been revised per the comments above (specifically those identified on Page iv, paragraph 2). The same paragraph appears in both sections (Executive Summary and Section 4.4.2) – both instances have been made consistent with the DNR's comments.
The Department appreciates the opportunity to comment on the Recreation Needs Analysis Revised Study Plan 13 (RSP 13) for the Henry M. Jackson Hydroelectric Project (FERC No. 2157). If you have any question concerning the issues and comments in this letter, please feel free to give me a call at (360) 856-3500.	Comment noted.
Rich Johnson – WA Department of Fish and Wildlife – Email dated 10/13/2008	
WDFW does not agree with the assessment of recreational demand for this area. The review of users that was conducted misses a critical group: those people that are not satisfied with the recreational opportunities now being provided. The recreational opportunities are severely restricted. There are no trails around the lake. No wading, no swimming, and no landing of boats on the shore. Fishing gear is restricted, and no outboard motors except electric are allowed. No camping is allowed. And there is no crossing of the dam. The trout fishing is poor for multiple reasons.	The RVS (the source for much of the information contained in the Demand Analysis) did capture those visitors who are not currently satisfied with recreation opportunities in the Project area; however, only about 8 percent of visitors are currently dissatisfied (see Section 4.3.1.2 and the RVS). Additionally, the RSP 13 study report also acknowledges that water quality restrictions are a warranted constraint on the types of activities that are appropriate in the Project area. In particular, contact activities with the reservoir surface (swimming, wading, etc.), as well as combustion engine use potentially pose significant threats to water quality at Spada Lake and are thus prohibited. The City (with support from the Department of Health) does not plan to change their water quality protection measures during the anticipated new license term. As such, contact activities, combustion engines, and any other activities that may threaten the water supply will continue to be

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	prohibited. In regard to trails around the lake, this is not a District-only decision. The DNR is the primary land management agency around Spada Lake and has stated multiple times that it is not their intent to create a trail around Spada Lake. The District does support some new trail development during the new license term, as described in their preliminary protection, mitigation, and enhancement (PM&E) proposal for recreation. The District's fishery-related relicensing studies discuss the current status of the sport fishery at the Project. If the sport fishery improves during the new license term, angling participation levels may increase. However, as noted previously, water quality protection measures will continue to limit how visitors fish at the Project (e.g., no combustion engine watercraft, no wading, etc.).
To provide a better experience and to appeal to a much wider cross-section of people, the use of outboard motors on boats should be allowed, trails should be constructed, wading, swimming and over-night camping should be allowed, and better information should be provided on how to access and use the area. In 1985 Spada Lake was used by almost 13,000 angler-days, far more than the few hundred last year. A real effort needs to be made make this area more user-friendly and to adapt it to the real recreational desires of people who like to recreate along the lakes and streams in the Cascade foothills.	See previous comment. Additionally, note that the Project is not the only supplier of recreation opportunities and experiences in the region. The Project region is rich in quality recreation opportunities and experiences that in general do not have the types of water quality protection measures found at Spada Lake. The Project offers opportunities and experiences that are appropriate for a FERC licensed hydroelectric project (i.e., that have a Project nexus) and that are also compatible with the City's drinking water protection measures. Regarding fishing-related use estimates, the District's visitor registration-based estimates began in 1988. All recreational use (not just fishing) at Spada Lake accounted for approximately 5,500 recreation days in 1988 (see Figure 4-3). It is possible that fishing use levels were higher in 1985 due to the newly expanded nutrient rich reservoir (which was filled the previous year – 1984); however, a decrease from 13,000 angler-days in 1985 (as indicated by DFW) to

STAKEHOLDER COMMENT – RECREATION NEEDS ANALYSIS (Full Document)	LICENSEE RESPONSE
	5,550 recreation days (all types of activities) in 1988 seems unlikely (some of this difference could potentially be attributed to counting methodologies – that is, how DFW estimates angler-days versus how the District estimates recreation days). The District's visitor registration-based data does not support this type of dramatic reduction in use (which has actually remained relatively constant the past 20 years). Such a dramatic drop in use is typically only associated with significant events that impact recreation use. There is no indication that there was a significant event between 1985 and 1988 that would have resulted in such a large change in fishing-related use at Spada Lake. Currently, average fishing use at Spada Lake accounts for about 585 recreation days per year. Again, if the sport fishery improves during the new license term, angling participation levels may increase; however, it is unlikely that use would approach DFW's estimate of 13,000 angler-days (fishing levels at Spada Lake would need to increase more than 22 times current levels to reach DFW's estimate) without a large-scale effort to manipulate demand for fishing opportunities at Spada Lake. Furthermore, regional and national data trends point to steady or in some cases decreasing fishing participation levels (reducing the potential for significant increases in fishing participation at the Project) and water quality protection measures will continue to limit how visitors fish at the Project (e.g., no combustion engine watercraft, no wading, etc.).
Tulalip Tribes – Letter dated October 20, 2008	
General The protection of water quality as a precedent to all preliminary recreation actions and alternatives described in the Draft RSP 13 report is strongly supported by the Tribe.	Comment noted.
Section 2.0 Section 2.2, paragraph 1, 4th sentence: To the end of the sentence please	Water quality protection measures at Spada Lake are in place specifically to guard against potential threats to the City's municipal drinking water supply. Other beneficial consequences (e.g., fisheries,

STAKEHOLDER COMMENT – RECREATION NEEDS ANALYSIS (Full Document)	LICENSEE RESPONSE
add, "and other beneficial uses."	resource conditions, etc.) of these water quality protection measures are incidental and not the primary aim of the measures. No change to the text.
Section 3.0 Section 3.4, first bullet top of page 15: In the first sentence, prior to the word "wetlands" add the words "water quality…" Adding this reflects on the important consideration of potential effects of recreational activities on water quality in the project area.	This statement has been revised per the Tribes' suggestion.
Section 4.0 Section 4.2.2.2., page 72, Table 4-15: Title should read… "Sultan River/Lost Lake Demand Projections…"	This table title has been revised per the Tribes' suggestion.
Section 4.3.1.1, page 78, 4th paragraph, last sentence: The Tribe concurs there is concern that recreational activities or facilities along the Sultan River, if expanded or if demand increases in the future, could limit the biophysical/ecological capacity of the river, especially as related to water quality and anadromous fish habitat.	Comment noted.
Section 4.4.2.2.2, page 106, 1st bullet: The Tribe supports use of interpretive and educational opportunities to promote an understanding of resource protection and historic/cultural resources particularly along existing or future access trails of the Sultan River.	Comment noted.
Section 4.4.2.2.2, page 106, 2nd paragraph under Operations and Maintenance: Monitoring of recreation facilities should be conducted to ensure improved access along the Sultan River does not create a magnet for the type of problems experienced at the Trout Farm Road River Access Site.	Comment noted. Appropriate recreation-related monitoring will likely be a component of on-going recreation management during the anticipated new license. However, is should be noted that the issues experienced at Trout Farm Road River Access are less likely to occur at the other river access sites (even if these sites are formalized or enhanced at some point in the future) due primarily to vehicular access and proximity to Sultan. The other river access sites are generally hike-/walk-in only and are farther away from Sultan (and other population centers). This does not mean these other access sites could not experience visitor-related issues/impacts, rather that access and distance from Sultan (and other population centers) makes them less prone to illicit uses.

STAKEHOLDER COMMENT – RECREATION NEEDS ANALYSIS (Full Document)	LICENSEE RESPONSE
Section 4.4.2.2.2, page 107, 1st bullet: While comments related to the Flow Recreation Study (RSP 14) will address this issue in more detail, the Tribe has concern that flow alternations designed to benefit whitewater recreationists should not adversely affect anadromous fish and their habitat. Access points must be regularly monitored with corrective measures implemented where and when needed and the risk of enforcement actions made clearly known.	Comment noted.
Section 5.0 Table 5-1, page 115, Sultan River and Lost Lake, Alternative C: The Tribe has concern that enhanced access to the Sultan River Canyon below Culmback Dam could result in problems similar to those experienced at the Trout Farm Road with a consequent adverse effect on water quality and fish habitat. Monitoring or patrolling of any such improved public access areas in this remote area should be conducted at an appropriate frequency as part of the operations and maintenance commitments.	See previous response regarding the river access sites. Additionally, the RSP 13 Study Report did not indicate that visitor-related issues at the Trout Farm Road River Access Site resulted in adverse effects on water quality and/or anadromous fish (the identified impacts tended to be land-based).
Table 5-1, page 118, Programmatic Actions, Sultan River and Lost Lake, Alternative B: See comments above associated with Section 4.4.2.2.2, page 107, 1st bullet.	Comment noted.
Table 5-1, page 118, Programmatic Actions, Sultan River and Lost Lake, Alternative B: Monitoring of recreation-related impacts a "minimum of every 6 years" will not effectively regulate potential risks to the ecological/biophysical environment along the river. While it may be appropriate to undertake a more comprehensive level of monitoring at this frequency, there is a need to conduct more frequent patrolling of river access sites to ensure resource damage does not occur or, if it does, it is rectified in a timely manner.	Comment noted. The frequency of recreation-related monitoring will be address in potential future Recreation Resource Management Plan that may be developed to help guide recreation management during the new license term.

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Appendix B

Project Public Use Regulations and Restrictions

This appendix contains:

- *Snohomish County Codes 12.08.030, 12.28.020, and 8.47*
- *Directive 73*
- *FERC License Article 44*

Snohomish County Codes

Pertinent Snohomish County Codes that apply to public use and recreation in the study area are provided below. These codes are available on-line at URL: http://www1.co.snohomish.wa.us/County_Services/county_code.htm.

12.08.030 (prohibition of watercraft with internal combustion motors on Spada Lake)

"Due to the inadequate flow or other factors where pollution from motor discharge is aggravated by internal combustion motor discharge, or the pristine character of upland lakes over 1,500 feet in elevation in danger of being seriously damaged, or the small size (under 45 acres), or shallow depth, or a configuration rendering the use of internal combustion motor-powered watercraft hazardous, the propulsion of a motorboat in whole or in part by an internal combustion motor is unlawful upon the following lakes:

Name	***Acreage***	***Location***
Spada Lake	*1527.0*	*29 29 09*
Lake Chaplain	*443.7*	*06 28 08"*

Note: the list of lakes provided in Snohomish County Code 12.08.030 includes about 65 lakes/water bodies. Only the study area reservoirs are provided here.

12.28.020 (no swimming in Spada Lake)

"No person may swim or float in a swimming-restricted area unless accompanied by a vessel that remains within 20 feet of the person at all times; PROVIDED, HOWEVER, That this prohibition shall not apply to any water skier who falls or otherwise ceases to be towed if a vessel travels to within 20 feet of the water skier as soon as is reasonably possible after the fall or cessation of towing.

In lakes where water-skiing and/or boating in race-type boats is permitted, the swimming-restricted area is any area more than 100 feet out into the lake from any and all shorelines during the hours water-skiing or boating in race-type boats is permitted.

No person may swim or float in an area expressly prohibited to swimming."

Chapter 8.47
CHAPLAIN TRACT PUBLIC ACCESS

Sections:

8.47.010 Short title.

This chapter shall be known and may be cited as the “Chaplain Tract Public Access” ordinance. (Ord. 2020-94 § 3, 1994)

8.47.020 Purpose.

The purpose of this chapter is to provide a safe and environmentally sound public access program for the areas of the Chaplain Tract on which it is allowed. Specifically, this chapter seeks to accomplish this goal by regulating public use of these lands. (Ord. 2020-94 § 1, 1994)

8.47.030 Regulations

The portions of the incorporated Chaplain Tract on which public use is allowed shall be subject to the following regulations:

A. Incorporated, city-owned property located south of the city water filtration plant and outside the Chaplain Reservoir watershed (as defined in the attached map; see also the Chaplain Reservoir Water Protection Ordinance [No. 2019-94]) is open to the public for limited recreational uses including hunting and fishing as licensed by the State Department of Fish and Wildlife.

B. Users seeking access to the Sultan River are advised to proceed with caution. Potentially hazardous natural conditions occur throughout the property, particularly in the vicinity of the Sultan River. Therefore, users proceed at their own risk. Also, river users are

advised that the Sultan River may experience sudden increases in flow velocity and depth without warning due to operation of the Jackson Hydroelectric Power Project. For information about Project operating schedules that could affect river flows, contact Snohomish County PUD #1 (powerhouse telephone # (206) 347-5549).

C. No unauthorized person shall enter or remain on city-owned property outside the Chaplain Reservoir watershed (see attached map) between 6:00 p m. and 6:00 a.m. seven days a week. The gate located at the south end of Chaplain Reservoir Road (approximately four miles south of the city filtration plant) will be locked between the hours of 6:00 p.m. and 6:00 a.m. Unauthorized vehicles may be towed and impounded at owner's expense.

D. Public access areas may be closed at any time for construction, maintenance, or other operational necessities.

E. Parked vehicles shall not restrict access on roads or to gates. Vehicles restricting access may be impounded and towed at the owners' expense.

F. Motor vehicle access to and use of closed city-owned roads and rights-of-way is limited to authorized vehicles on official business only.

G. Motorized vehicle usage is restricted to developed roads. Off road vehicle (ORV) activity is prohibited.

H. Overnight camping is prohibited.

I. All fires other than city-approved management activities are prohibited.

J. Littering is prohibited.

K. Discharge of firearms is prohibited except when lawfully hunting. Discharge of firearms within one-half mile of the city of Everett Water Filtration Plant or from, across, or along the maintained portion of city-owned roads and rights-of-way is prohibited.

L. Hunters shall not leave animal carcasses or putrescible material (viscera & skins) on the property.

M. No person shall enter or remain on city-owned property within four hundred feet of the city of Everett Diversion Dam in the Sultan River at river mile 9.5.

N. The public is prohibited from marking new trails, hanging new ribbon, or removing existing ribbon.

O. The public is prohibited from damaging, destroying, or removing natural or cultural resources from city-owned property.

P. Horseback riding is prohibited except in limited areas along the Chaplain Road and pipeline right-of-way.

Q. All mineral prospecting is prohibited on or from city of Everett property. Possession of prospecting equipment on city-owned land is prohibited.

R. Visiting and use privileges may be rescinded for cause or violation of these regulations. (Ord. 2020-94 § 2, 1994)

8.47.040 Definitions.

The following words and terms when used in this chapter shall mean as follows, unless a different meaning clearly appears from the context:

A. "Authorized" means any permitted activity as defined in this chapter.

B. "Off road vehicles (ORVs)" means any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other natural terrain. The term excludes any military, fire, emergency, or law enforcement vehicle when used for emergency purposes.

C. "Right-of-way" means the actual property which is publicly dedicated or reserved for road access and for other public purposes such as public utilities.

D. "Watershed" means that area of land that collects and discharges runoff into a specific body of water (used synonymously with "drainage basin" or "catchment"). In this case, the Chaplain Reservoir watershed is a smaller component of the larger Sultan River

watershed.

E. “Watershed patrol” means any person designated by the public works director to enforce rules and regulations within city-owned Chaplain property land. Such persons shall bear identification reflecting the authority under which they act, which identification shall be shown to any person requesting the same. (Ord. 2020-94 § 4, 1994)

8.47.050 Enforcement.

A. It shall be the responsibility of the public works director to enforce all provisions of this chapter (as amended).

B. The director and his/her designees shall be empowered to exercise the authority of peace officers on city-owned property within the corporate boundaries of the city to the extent necessary to enforce this chapter, which power shall include issuance of citations.

C. Persons designated by the director to enforce the chapter shall bear identification reflecting the authority under which they act, which identification shall be shown to any person requesting the same. Persons designated to enforce this chapter shall be known as “watershed patrol”. (Ord. 2020-94 § 5, 1994)

8.47.060 Obstructing watershed patrol prohibited.

A person commits the offense of obstructing the watershed patrol if:

A. He/she intentionally uses or threatens to use force to obstruct a person he/she knows or should reasonably know is a watershed patrol person and while such watershed patrol person is performing his/her official duties on city property, within the corporate boundary of the city.

B. He/she intentionally does any act that he/she knows or should reasonably know will interfere with or obstruct a person known to be or who should reasonably be known to be a watershed patrol person and while such watershed patrol person is performing his/her official duties within the corporate boundary of the city. (Ord. 2020-94 § 6, 1994)

8.47.070 Refusal to give information to watershed patrol.

Any person requested to identify himself/herself to a watershed patrol person pursuant to an investigation of a potential or actual violation of this chapter has a duty to identify himself/herself and give his/her current address. (Ord. 2020-94 § 7, 1994)

8.47.080 Violations.

Any person violating any provision of this chapter or failing to comply with its mandatory requirements shall, upon conviction of such violation, be punished by a fine of not more than five thousand dollars plus court costs. Each violation shall be treated as a separation violation. (Ord. 2020-94 § 8, 1994)

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SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

DIRECTIVE

Number 73

SUBJECT: PUBLIC USE OF JACKSON HYDROELECTRIC PROJECT RECREATION AND MITIGATION LANDS

Date
8/28/2007

POLICY

Public use and enjoyment of lands and waters associated with the Jackson Hydroelectric Project, which are owned by the District or administered by the District for Project purposes through a lease or permit shall be subject to the regulations set forth in this Section. Public access to such lands, including the Trout Farm Road Site, boat launches and Spada Lake shall be authorized during daylight hours only, and shall be without charge. Spada Lake access is authorized from opening until closing of state authorized freshwater sport fishing seasons (approximately April 15 through October 31) each year. The Spada Lake recreation sites are open during the freshwater sport fishing season. The Olney Pass recreation site shall be open year-round. The Trout Farm Road Recreation Site shall be open for fishing access when fishing is authorized under applicable state regulations in the Sultan River.

The General Manager or the Manager's designee may determine at any time that circumstances require temporary closure of access roads and recreation sites due to poor road conditions, operational necessity, or for public safety or security.

DESCRIPTIONS OF PROPERTY SUBJECT TO POLICY

Lands and waters subject to this Section shall include:

1. "Spada Lake / Williamson Creek Property," containing approximately 4,200 acres, located in TWP 29 N, Range 9 East W.M., and TWP 28 N, Range 9 EWM, acquired by patent from the United States, as recorded in Snohomish County Auditor's File No. 9102280510, and by exchange with the State of Washington, as recorded in Snohomish County Auditor's File Nos. 9106280580 and 9106280581, including Spada Lake and all surrounding lands owned by the District;
2. District-developed recreation sites associated with the Jackson Hydroelectric Project, including the Olney Pass Recreation Site (at the entrance to the Sultan Basin), District-owned lands for wildlife habitat management on the Lost Lake Tract, the Trout Farm Road Recreation Site

(near Sultan), and Sultan River access sites located on lands owned by or administered by the District.

AUTHORIZED ACTIVITIES

Authorized activities include:

1. Hiking and cross-country skiing (year-round);
2. Picnicking, in designated areas (when sites are open);
3. Hunting, during state-authorized hunting seasons or as provided by applicable federal laws or treaties, and in compliance with all applicable firearm safety and other laws and regulations; however, all kills must be packed out intact;
4. Fishing, including shore fishing along the south shore of Spada Lake, from the North Fork of the Sultan River west to the section line between Sections 28 and 29, during authorized fishing seasons, subject to all applicable laws and regulations;
5. Non-motorized or electric-powered boating from designated launch areas; and
6. Fires in designated fire-pits, except when otherwise posted.

PROHIBITED ACTIVITIES

Except with the express, prior written authorization of the District, the following are PROHIBITED:

1. Over-night camping;
2. Spada Lake and tributaries only: a) swimming of humans or domestic animals; b) wading, except in rubber boots or as reasonably incidental to launching or landing an authorized boat in approved areas; c) use of inflatable boats and floating devices (except life preservers in approved boats); and d) water skiing or sail-boarding;
3. Littering;
4. Pets, except on leashes; PROVIDED, that at Spada Lake/Williamson Creek Property only, hunting dogs may be used off-leash while owner is actively hunting and

PROHIBITED ACTIVITIES, Continued

must remain under owner's control at all times; dogs must not enter waters and all waste must be retrieved and properly deposited in sanitary facility;

5. Vandalism or defacement of any vehicle, road, facility, vegetation or other property;
6. Depositing human or domestic animal waste on the ground or in the waters;
7. Use of motorized vehicles, except on improved roads;
8. Use of combustion-powered boats, except that the District and its authorized agents and contractors shall be authorized to utilize combustion-powered work boats from time to time for enforcement purposes, or as otherwise determined by the District to be necessary for proper administration and maintenance of Spada Lake shorelines, facilities and tributaries;
9. Fires, except in designated fire pits;
10. Discharge of firearms, except as may be reasonably necessary and incidental to lawful hunting and shooting of game animals; PROVIDED, that discharge of firearms across, from, or into the waters of Spada Lake or within 200 feet of any Project structures or recreation sites shall be prohibited at all times;
11. Use of lands, waters or facilities for any purpose other than an authorized purpose, or at any time between dusk and dawn;
12. Landing aircraft on Spada Lake;
13. Consumption of intoxicants;
14. Fireworks;
15. Loud or disorderly conduct which disturbs others' peaceful use of the lands and waters;
16. Wood cutting or collection of any Christmas trees, native ornamental trees, or shrubs, or cutting or picking of evergreen foliage, wooden products or salvage of bark;
17. Removal of firewood provided by the District for recreation sites; and
18. Landing of boats on the east shore of Spada Lake from the North Fork of the Sultan River north to Williamson Creek, the north shore of Spada Lake, Culmback Dam,

and the west shore of Spada Lake from Culmback Dam southeast to the section line between Sections 28 and 29;

19. Introduction of any non-native, invasive plant species or noxious weed, such as, but not limited to, Eurasian Water Milfoil.

PROHIBITED AREAS

Prohibited public access areas:

1. Culmback Dam and all appurtenant facilities;
2. Spada Lake and adjacent lands west of the log boom;
3. North Bank stabilization area (north and west of dam).

ADDITIONAL REGULATIONS

Each recreation site may be posted with such additional public access and use regulations as may be determined necessary by the General Manager or designee for proper administration of the lands and waters subject to this regulation.

WARNING AND DISCLAIMER

Public Utility District No. 1 of Snohomish County shall not be liable for any injury, loss or damage to any person or the property of any person who is using Jackson Hydroelectric Project lands and waters. Entry upon Jackson Hydroelectric Project lands, waters and roads shall be solely at the user's own risk. Such lands are in a mountainous environment, remote and rugged, and either left in their natural state or developed for project operations and limited recreation activities; such lands and waters may contain hazards consistent with these conditions that are not readily obvious to recreation users. Access roads are narrow and primitive, with steep drop-offs and narrow shoulders. The waters of Spada Lake are cold and deep, with steep drop-offs in some areas, and they contain submerged stumps and trees which may not be readily visible from the surface. Use of all due care is advised, and posted speed limits and warnings shall be observed by recreation users at all times.

SNOHOMISH COUNTY PUD
PUBLIC UTILITY DISTRICT NO. 1

DIRECTIVE

Number 73

SUBJECT: PUBLIC USE OF JACKSON HYDROELECTRIC PROJECT RECREATION AND MITIGATION LANDS

Date
8/28/2007

The General Manager or designee may restrict or suspend public access to District lands and roads temporarily at any time during periods of elevated, high or severe risk as designated by advisories issued by the Federal Homeland Security Administration, for public safety, or due to poor road conditions or operational necessity.

INQUIRIES

Direct inquiries about this Directive to Water Resources.

APPROVAL

Water Resources AGM

Office of the General Counsel

General Manager's Office

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FERC License Article 44 – Public Access

License Article 44

"The Licensees agree that the public may have access for purposes of hunting and fishing in all lands and waters within the project boundaries excepting those areas in the vicinity of Lake Chaplain and the existing diversion dams which are presently closed to public access by the City of Everett for protection of public health.

To protect the public health the licensees may close specific area within the project boundaries to public access, and impose regulations controlling conduct of persons on said property.

In addition, the licensees may reserve from public access such portions of the project waters and lands and project facilities as may be necessary for the protection of life and property.

If at anytime in the future the use of said areas by the public shall, in the opinion of the Department of Health of the State of Washington, or in the opinion of Snohomish County, City of Everett, Public Utility District No. 1 of Snohomish County, constitute a hazard to the public heath and safety, said areas may be closed to public access by the licensees. (06/16/61)

(A) Ordering Paragraph A of the Presiding Examiner's Initial Decision of December 31, 1969, is modified to read as follows:

A. The Agreement of March 24, 1969, between the Department of Game of the State of Washington, the Washington State Sportsmen's Council, and the City of Everett, which Joint Licensees urge be adopted, is accepted as a statement of the under taking by Joint Licensee, the City of Everett, and shall be deemed to be an exercise of authority set forth in Article 44 of the license. To the extent that licensees consider other arrangements for public access, they shall advise the Commission within 30 days of completing such further arrangements.

(04/30/1970 - See Appendix A for text of Agreement dated 3/24/69)"

Appendix A

"Appendix A Agreement between the City of Everett, Washington State Department of Game and Washington State Sportsman's Council

IT IS AGREED between the undersigned that Article 44 of the license on Federal Power Commission Project No. 2157 should be amended to read as follows:

1) That the public will have access to the lands and waters of the project area for the purpose of outdoor recreation, including fishing and hunting.

2) That recreational facilities will be developed within project boundaries in areas designated in the Letter of Agreement between the licensees and USDA Forest Service dated March 18, 1965, (such areas are generally referred to as the Morning Glory Spillway area and the boat launch area), which is hereby incorporated by reference, and adequate sanitary facilities will be provided in

designated recreational areas which facilities will include water-tight, vault-type toilets that will be pumped at least once a month through the months of April to November, or more often should the need arise. There shall be established an alternate boat launching site on the South shore of Spada Lake, preferably East of the South Fork of the Sultan River, for use solely when the present boat launching site is not usable by reason of reservoir draw-down. The exact location thereof shall be determined by subsequent mutual agreement of the parties, and, such agreement not being arrived at within one (1) year of date hereof, either party may petition the FPC for its determination of the location and nature of such alternate site upon presentation of evidence thereon. It is recognized by the parties that such alternate site may be rendered unusable at times by reason of reservoir draw-down and its location and nature shall not require absolute access of boats to water at all stages of water level but shall be so located and constituted as to provide the most reasonable access under existing circumstances.

3) That in the interest of health, sanitation and public safety, the following rules and regulations are hereby adopted regarding the recreational use of Spada Lake and lands within the project area adjacent thereto as now or hereafter impounded by Culmback Dam or any additions thereto:

a) That no fishing or boating shall be allowed on the waters of Spada Lake west of the north-south section line between Sections 29 and 28, Township 29 North, Range 9 E.W.M., Snohomish County, Washington.

b) That such line shall be marked by the City of Everett on the north and south shores of the lake by appropriate range markers clearly visible from the surface of the lake.

c) That the City of Everett shall maintain at all times a log boom to the west of the aforesaid line across the surface of Spada Lake from north to south.

d) That no fishing or boating shall be allowed on the waters of Spada Lake between the first Tuesday in September and the first day of April.

e) That no fishing will be allowed from the shore of Spada Lake as the same rises and falls except along the South shore of Spada Lake from the mouth of the North Fork of the Sultan River to the fishing boundary described in Clause 3(a) above; provided nothing in this section shall be construed to prohibit fishing on the Sultan River or its forks above their entry into the fluctuating waters of Spada Lake.

f) That no person shall land from a boat upon the shores of Spada Lake except within the area in which shore fishing is allowed by section "e" above and approved boat launching sites.

g) That no boat shall be launched on the water of Spada Lake except through and from the boat launching and access facility constructed by the United States Forest Service in the Northeast quarter of the Northeast quarter of

Section 27, Township 29 North, Range 9 E.W.M. and such alternate site as shall be located in accordance with Clause 2 hereof.

h) That no person shall clean fish in Spada Lake; nor deposit garbage or any other material in its waters; nor propel a boat with a motor; nor use a rubber or inflatable device as a boat; nor be afloat in a boat without wearing a life preserver of a type approved by the United States Coast Guard; nor fish with any bait or device other than an artificial lure; nor have more than one (1) person in any boat under 8 feet long, or more than two (2) persons, if under sixteen feet long.

i) That no person shall camp within the project area and no person shall picnic within the project area except at such locations as are provided by the United States Forest Service or the Department of Natural Resources, as provided in Clause 2 hereof, and pursuant to Regulation R (FPC Regulation 4.41).

j) That no person shall enter the project area by road over Olney Pass unless such one shall first register his name, address, and purpose of his visit; provided, that a registration facility to be provided by the City of Everett is open and in use at the time of entry.

k) That no person shall bathe, swim or wade in the waters of Spada Lake or engage in any water contact activity except when launching and landing boats or in fishing therefrom.

l) That all human excreta, either solid or liquid, rubbish and wastes must be disposed of into containers or sanitary facilities to be provided by the licensees or other agencies which develop recreational sites within the project area.

4) That the foregoing rules and regulations will be enforced by the respective Federal and State agencies having jurisdiction over the lands and waters of the project area and each party hereto agrees to cooperate with the other in such enforcement and to report to the appropriate agency any violations of the foregoing rules and regulations as well as to cause signs to be posted at mutually agreeable places advising the public of the regulations and to do any and all other reasonable and mutually agreeable acts to publicize and inform of said rules and regulations and the enforcement thereof.

5) That nothing herein contained shall be construed to limit, supersede or pre-empt the jurisdiction and power as now or hereafter conferred upon any party hereto by law, and any of the parties may with notice to the others apply to the Federal Power Commission to reopen the license and present evidence to the Commission supporting change, amendment, modification or enlargement of these regulations and public outdoor recreational activities.

DATED this 24th day of March, 1969.

APPROVED:

/s/ John Biggs
Department of Game

/s/ Lewis A. Bree
Washington State Sportsman's Council

/s/ Robert C. Anderson
City of Everett"

Appendix C

City of Everett Water Quality Protection Background Documents

This appendix includes:

- *The City of Everett's Spada Lake Recreation position paper (including appendix)*
- *Letter of support from the Washington Department of Health regarding the City's water quality protection measures*

City of Everett Spada Lake Recreation Position Paper
April 2005 (updated June 2008)

Introduction

The City of Everett supplies drinking water to more than 500,000 people in Snohomish County. The City of Everett's source of drinking water is the Sultan River, located approximately 25 miles east of Everett.

Spada Reservoir was created by construction of Culmback Dam which is located at river mile 15.9 of the Sultan River. The Jackson Project supplies source water from Spada Reservoir to the City of Everett's water system. The Snohomish County PUD and the City of Everett are currently co-licensees of the Jackson Project. The Jackson Project generates power for Snohomish County PUD and supplies drinking water to the City of Everett at Lake Chaplain (figure 1).

The Jackson Project operates under the authority of a license originally issued in 1961 to the Snohomish County PUD and the City of Everett by the Federal Power Commission, now the Federal Energy Regulatory Commission (FERC). The original FERC license authorized stage 1 construction and operation of Culmback Dam for water supply only. The FERC license was amended in the early 1980s to authorize raising Culmback Dam for power generation (stage 2).

The FERC license for the Jackson Project expires in 2011. In accordance with FERC's Integrated Licensing Process (ILP), relicensing of the Jackson Project formally began on December 1, 2005. The Snohomish County PUD will be the sole licensee in the new license. Recreation within Jackson Project limits, and in particular around Spada Reservoir, is anticipated to be a key issue during relicensing. The intent of this paper is to update and document the City of Everett's position regarding recreation within the Spada Reservoir watershed.

History of Recreation within Spada Reservoir Watershed

The vast majority of land within the Spada Lake watershed is owned by federal, state or local government (figure 2). Approximately 2,340 acres of land along the shoreline of Spada Reservoir is owned by the Snohomish County PUD. Washington State Department of Natural Resources (DNR) is the largest landowner with 27,500 acres. The United States Forest Service (USFS) owns approximately 10,900 acres, primarily in the highest elevations of the watershed and the river gorge below Culmback Dam. There are only 1,165 acres of privately owned land, with most of this adjacent to Williamson Creek.

Recreation on Snohomish County PUD land is regulated primarily by articles 44 and 52 of the FERC license. Article 44 requires the co-licensees to allow public access for

purposes of hunting and fishing within the Jackson Project boundary. However, article 44 also allowed the co-licensees to close areas within Jackson Project boundary if necessary to protect public health or safety. During stage 1, Jackson Project recreational facilities included two boat launches on Spada Reservoir, fishing along the south shore of Spada Reservoir, picnicking and overlook sites.

Article 52 of the amended FERC license required the co-licensees to revise the recreational plan for stage 2 development of the Jackson Project. After consultation with federal and state agencies, the final revised recreation plan was approved by FERC in December 1994. The revised recreation plan called for the development of eight recreation sites within Jackson Project boundaries (figure 3). These recreation facilities, which were completed in 1991, are described below:

Site 1: This day-use site acts as the gateway to the Spada Reservoir recreation sites for those entering the area on the Sultan Basin Road. Parking is provided as well as a vault toilet building, a short trail, and trash receptacles. Registration is required at this site prior to entering the watershed.

South Fork (Site 2): Approximately 3.1 miles from Olney Pass and located on the southern shore of Spada Lake, this day-use site includes picnic sites, covered shelters, signage, vault toilet building, trash receptacles, parking, and a car-top boat launch.

South Shore (Site 3): Approximately 5.0 miles from Olney Pass and 1.9 miles past the South Fork site, this day-use site provides a vault toilet building, parking, gravel boat launch, signage, and trash receptacles.

Nighthawk (Site 4): Approximately 5.5 miles from Olney Pass, this day-use site includes covered picnic shelters, signage, vault toilet building, parking, boat launch, and trash receptacles.

Bear Creek Viewpoint (Site 5): Approximately 6.0 miles from Olney Pass, this viewpoint offers two scenic overlooks, vault toilet building, signage, and parking. The DNR's Boulder Lake Trailhead and Grieder Lake Trailhead are located a mile past this site.

Culmback Dam Viewpoint (Site 6): This day-use viewpoint at the dam previously offered a scenic overlook, vault toilet building, signage, and trash receptacles; however, general public access has been restricted due to post-9/11 security concerns, as approved by FERC.

Pilchuck Entry (Site 7): Originally provided only several directional signs for those entering the basin from DNR's Pilchuck Mainline Road. The site has since been abandoned due to heavy vandalism.

North Shore (Site 8): Located north of the dam, this day-use site includes two scenic overlooks; covered picnic shelters vault toilet building, parking, and signage. Access to this site has been restricted because of the post-9/11 road closure to Culmback Dam and road closures by the DNR. In 2005, DNR closed the SL-P-5000 road to all motorized

vehicles. Site 8 remains accessible only to hikers, mountain bikers, and illegal off-road vehicle (ORV) users via the gated DNR maintenance road SL-P-5000.

Historical recreational uses on DNR land include fishing, hunting, hiking, camping, mining and sightseeing. Recreational uses on DNR land are regulated by numerous state laws, rules and regulations including RCW 79.10.120, WAC 332-52 and RCW 79.71. RCW 79.10.120 allows recreational uses provided those uses are compatible with DNR's financial obligations of trust management.

WAC 332-52 encourages public use of all roads and trails under DNR's jurisdiction provided the use is consistent with DNR's trust responsibilities, conservation of soil and water, and timber management. However, public use of DNR land is subject to compliance with many restrictions including sanitation, noise restriction, safe vehicle operation, discharge of firearms, camping and vandalism. DNR revisions to WAC 332-52 are in process.

Over half of DNR land in the watershed has been designated Natural Resource Conservation Areas (NRCAs). As stated in RCW 79.71, one of the objectives of NRCA designations is to conserve areas for their outstanding scenic and ecological values and provide opportunities for low-impact public use. However, RCW 79.71 requires the adoption of management plans to specify what types of management activities and public uses will be permitted in each NRCA; such uses must be consistent with the conservation purposes RCW 79.71. No management plans have been adopted to date for the three NRCAs in the watershed. Current recreational uses on DNR land consist primarily of camping at Greider and Boulder Lakes, hiking to Greider and Boulder Lake, hiking on other designated trails and hunting. Since closure of the North Shore Road in the 1990s, recreational use occurs primarily on DNR land south of Spada Reservoir.

Recreational use of land currently owned by USFS has been very limited. There are no designated campgrounds, trails or picnic areas on USFS land. Timber harvesting has not occurred on any USFS land for more than 20 years.

A wilderness designation (the Wild Sky Wilderness Area) that would include most of the USFS land in the watershed was considered by Congress in 2004. This designation would further limit recreational opportunities on USFS land. Although the 2004 proposed wilderness designation was voted down by Congress, new legislation for the Wild Sky Wilderness Area was introduced, passed and signed in 2008.

There are eleven mines on USFS land. However, none of these mines are active.

Mining has historically been the primary recreational use on private land in the watershed. However, none of these private mines are active.

Over the last twenty years, the number of people registered at Olney Pass has averaged 4,850 people per year. During this time period, compliance with the requirements to register at Olney Pass is estimated by the watershed patrolman to be about 50%. Therefore, annual visitation to PUD and DNR land is estimated at 9,700 averaged over the last twenty years.

Potential Water Quality Impacts of Recreation

Many of the recreational activities that occur within the Jackson Project boundary and adjacent lands, if unregulated, have the potential to adversely affect the quality of the City of Everett's water supply. These activities include boating on Spada Reservoir, fishing from the shore of Spada Reservoir, hiking, overnight camping and off road vehicle use. The potential water quality impacts of these recreational activities are largely due to: 1) human/pet waste, 2) fuel spills and 3) soil erosion.

Human and pet waste includes many contaminants that can adversely affect drinking water quality. Pathogens from waste, if ingested, can cause illness in humans including giardiasis, cryptosporidiosis, cholera, typhoid fever and hepatitis A (American Water Works Association 1999). Nitrogen and phosphorus in waste (Hole and Heizer 1973) can cause increased algal growth in surface waters such as Spada Reservoir (Cooke et al. 1993). Increased algal growth can cause taste and odor problems in drinking water supplies and increase the production of disinfection by-products, which are regulated contaminants (Lee and Jones 1991).

Disinfection by-products such as trihalomethanes form when organic matter, including algae, is chlorinated at water treatment facilities to kill bacteria and other pathogens. These disinfection by-products can be mutagenic and carcinogenic (Martin 1993). The City of Everett chlorinates its water supply at the Lake Chaplain Water Treatment Plant. Therefore, if wastes of recreational users in the watershed were not disposed of properly, there would be an increased human health risk and increased potential for taste and odor problems and disinfection by-products in the City of Everett's water supply.

Two components of fuel, benzene and ethylbenzene, are carcinogenic. The maximum contaminant level (MCL) for these two organic chemicals are .005 and 0.7 parts per million (ppm), respectively (Wash. St. Dept. of Health 2004). According to the material safety data sheet produced by Chevron Oil Company, one gallon of unleaded fuel would contaminate 5,000,000 gallons of water to the MCL for benzene. Controlling the use of internal combustion engines on Spada Reservoir, therefore, is critical to protecting the quality of Everett's water supply.

Vehicle travel off road or off trail is prohibited on DNR land by WAC 332-52 unless designated by DNR. DNR has not designated off –road vehicles (ORVs) in the watershed. Therefore, ORV use is prohibited in the watershed. Despite this prohibition ORV use does occur in the watershed. Therefore, the effects of ORV use on soil erosion are addressed in this policy.

ORVs can cause significant soil erosion when traveling across roadless terrain, in some cases more than three times the natural rate of soil erosion (Webb et al.1978; Kay 1981). Eroded soil that is delivered to surface waters in the watershed during stormwater runoff events could increase the turbidity of Everett's water supply, particularly if the soil eroded is fine-grained material.

Turbidity is a measurement of solids and organic matter in water that scatter light. Turbidity is caused by both suspended organic and inorganic matter (APHA 1989). Turbidity must be minimized to optimize disinfection of drinking water (AWWA 1999). Potable water systems in Washington State are required to achieve an 80% reduction in source water turbidity (Wash, St Dept of Health 2004).

The majority of the soil units (by surface area) in the Spada Reservoir watershed has a high erosion potential, are fine-grained and/or are naturally unstable (Wash St. DNR undated). Therefore, eroded soil caused by ORV use in the watershed that is delivered to surface waters can increase turbidity and, potentially, adversely affect the quality of Everett's water supply.

Existing Water Quality Regulations

The quality of the City of Everett's water supply has historically been excellent, particularly since the completion of the Lake Chaplain Water Filtration Plant in 1983. The City of Everett's water supply meets or exceeds all federal and state drinking water regulations. This high quality water supply is not simply a result of effective pollutant removal that occurs at the Lake Chaplain Water Filtration Plant. Controlling potential sources of water pollution within the Spada Reservoir watershed is also a very important factor in protecting the high quality of the water supply.

Controlling potential sources of pollution is a practice that is both recommended and required by water supply organizations and regulatory authorities. The American Water Works Association (AWWA), an organization representing thousands of public water supplies across the country, recently adopted a revised policy regarding recreational use of domestic water supply reservoirs. This policy states, in part, that body contact recreation and internal combustion engines on boats should be discouraged. AWWA's policy on source water protection also stresses the importance of controlling and minimizing sources of pollution to domestic water supplies. Source water protection is considered the most important element of a multi-barrier approach to protecting, improving and enhancing safe drinking water. Both of these AWWA policies are included in the appendix.

The Washington State Dept of Health, the state agency that regulates public water systems, requires all water purveyors to develop a watershed control program for their source of supply (WAC 246-290-135). The watershed control program must include an assessment of all potential sources of pollution and measures to control these potential sources. These control measures include landowner agreements, inspection, surveillance and monitoring (Wash. St. Dept. of Health 1997). WAC 246-290-135 is included in the appendix. The City recommends that future licenses include restrictions on activities that have the potential to harm water quality.

To control potential sources of pollution in the watershed, and as authorized by the FERC license, the co-licensees have adopted regulations to control public use of Jackson Project recreational facilities and other PUD-owned facilities. The current regulations are:

1. Visitors must register before entering the watershed.
2. The following activities are prohibited:
    a) Depositing human waste, animal waste or litter in the watershed.
    b) Overnight camping except at designated DNR sites.
    c) Swimming, wading or other water contact activity.
3. Picnicking is allowed only at designated areas.
4. Shore fishing is allowed only on the south shore of Spada Reservoir.
5. Boats shall be launched only at designated launch areas and may land only on the south shore of Spada Reservoir.
6. Internal combustion engines are prohibited on Spada Reservoir.
7. No inflatable devices (including rafts and float tubes) are allowed on Spada Reservoir.
8. Pets must remain in vehicles or on a leash at all times.
9. Livestock is prohibited in the watershed.
10. No target shooting.
11. No consumption of alcohol or drugs.

City's Position on Recreation in Spada Watershed

Given that the City of Everett currently maintains a very high quality water supply, the City of Everett will support recreational uses in the watershed that are no more intensive than the current recreational uses in the watershed. However, the compatibility between the existing recreational uses in the watershed and a high quality water supply is possible, in part, because of the co-licensees' active role in enforcing water quality regulations and monitoring land uses in the watershed. Therefore, the City of Everett will continue to enforce the existing water quality regulations described above. In addition, the City of Everett will:

- Advocate for low intensity recreation in the watershed, such as presently exists, that is consistent with protection of the quality of Everett's water supply.
- Discourage any expansion of overnight camping in the watershed.
- Work with DNR to eliminate the use of ORVs in the watershed.
- Continue daily watershed patrols.
- Review and comment on any proposed land use changes that could intensify recreational activity in the watershed and/or impact water quality.
- Work with property owners in the watershed to minimize recreational activities with the potential to impact the quality of Everett's water supply.
- Work with Snohomish County to adopt an ordinance that restricts public use of land in the watershed to those uses compatible with protection of public health and safety and provides watershed patrolmen the police powers to enforce those restrictions on all state and PUD land in the watershed.

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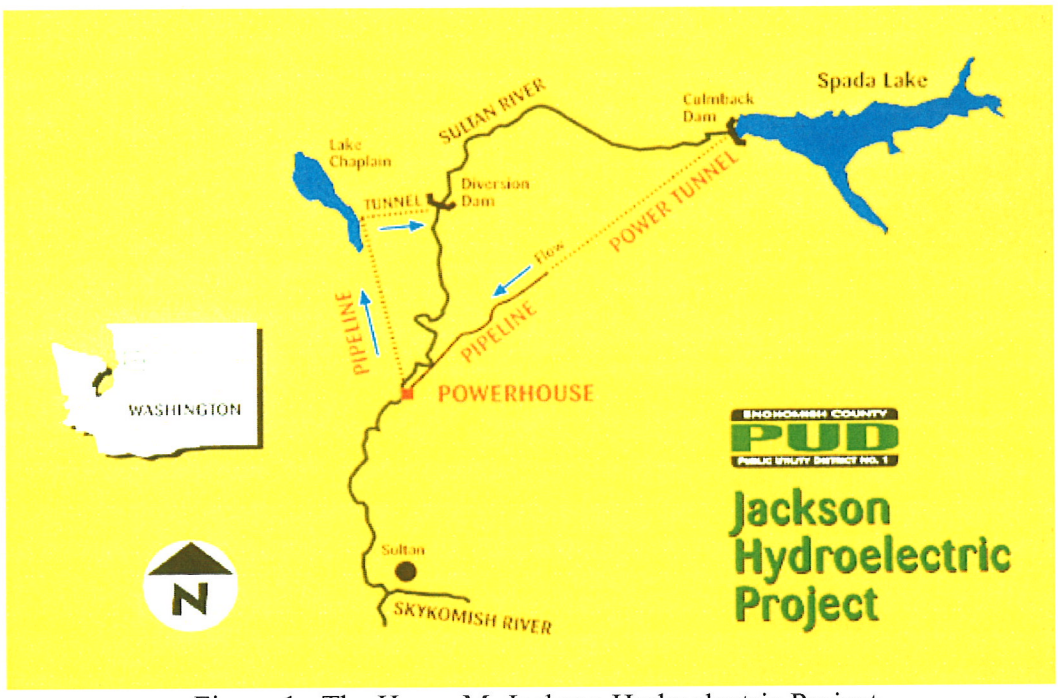
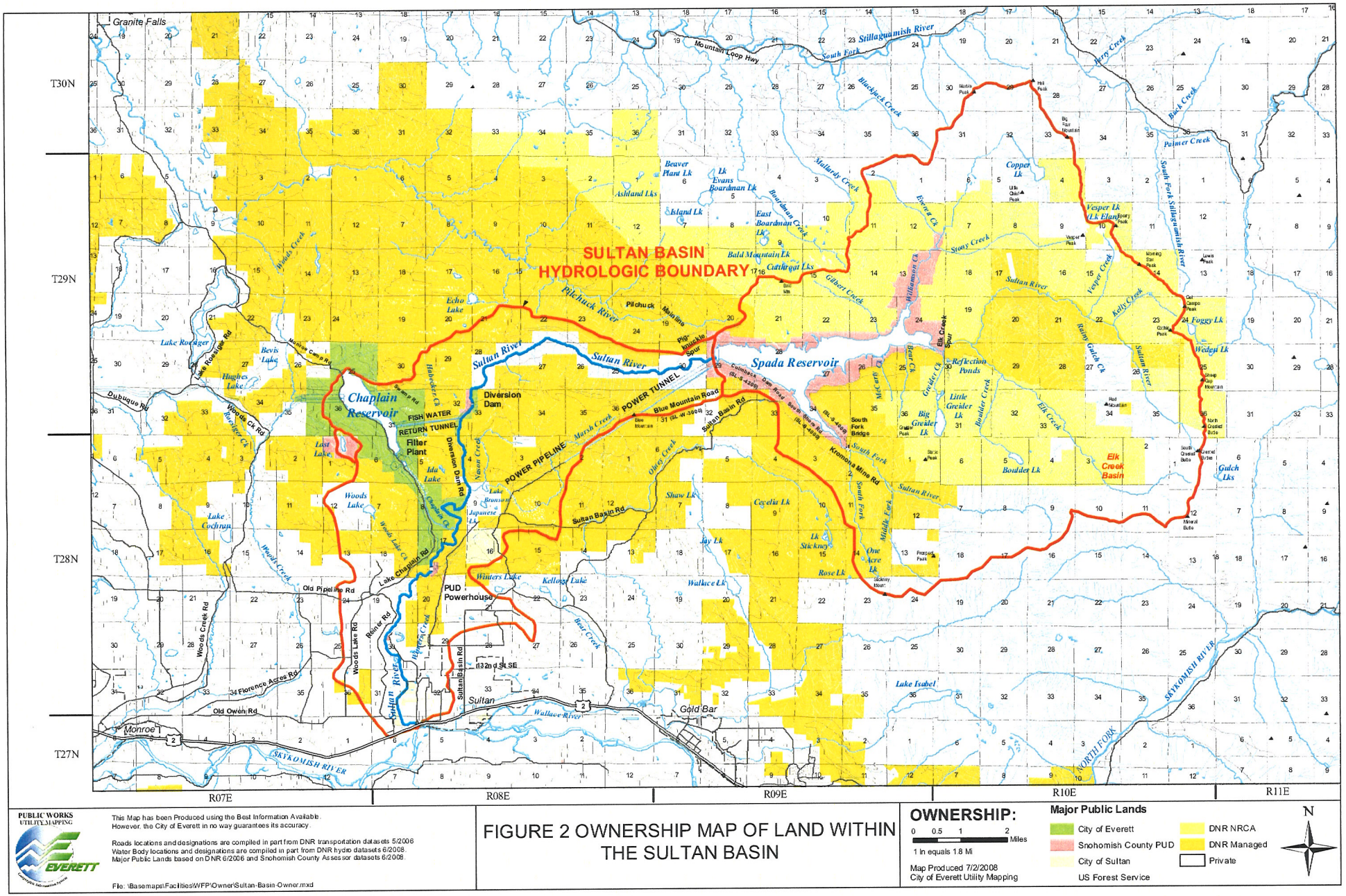


Figure 1. The Henry M. Jackson Hydroelectric Project.



PUBLIC WORKS UTILITY MAPPING

EVERETT

This Map has been Produced using the Best Information Available. However, the City of Everett in no way guarantees its accuracy.

Roads locations and designations are compiled in part from DNR transportation datasets 5/2006
Water Body locations and designations are compiled in part from DNR hydro datasets 6/2008.
Major Public Lands based on DNR 6/2006 and Snohomish County Assessor datasets 6/2008.

File: \Basemaps\Facilities\WFP\Owner\Sultan-Basin-Owner.mxd

FIGURE 2 OWNERSHIP MAP OF LAND WITHIN THE SULTAN BASIN

OWNERSHIP:

0 0.5 1 2 Miles

1 In equals 1.8 Mi

Map Produced 7/2/2008
City of Everett Utility Mapping

Major Public Lands

- City of Everett
- Snohomish County PUD
- City of Sultan
- US Forest Service
- DNR NRCA
- DNR Managed
- Private

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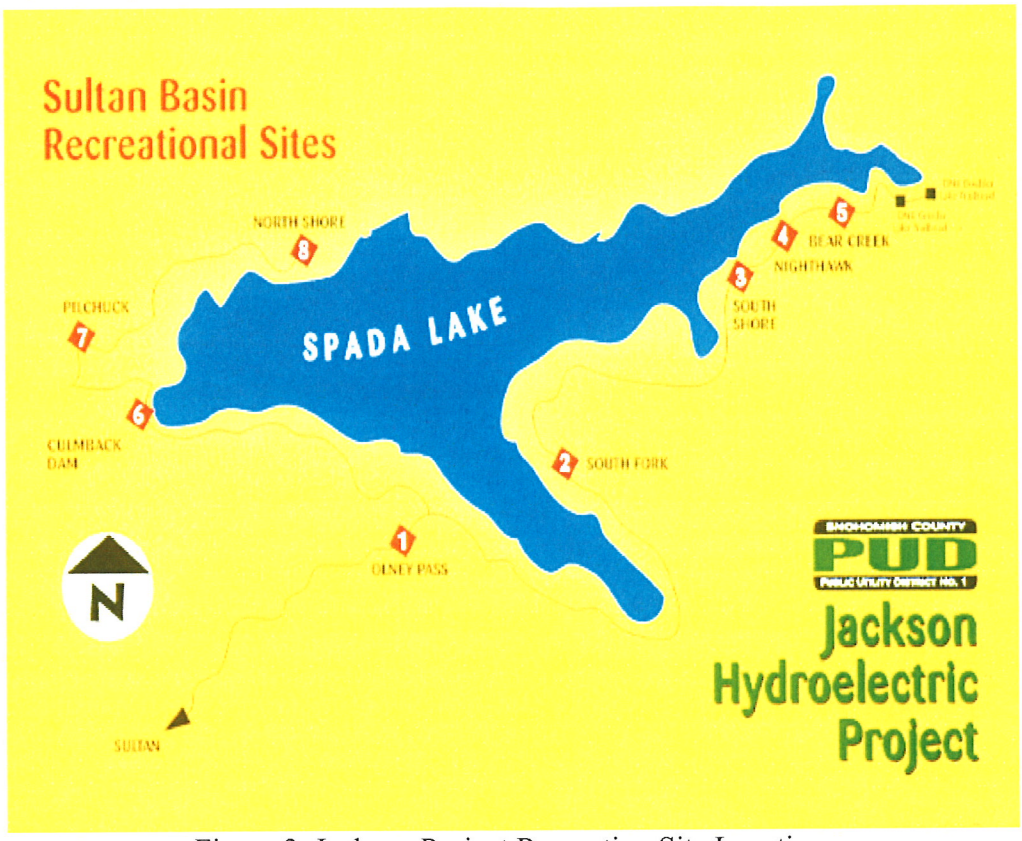

Figure 3. Jackson Project Recreation Site Locations

APPENDIX

Recreational Use of Domestic Water Supply Reservoirs

Adopted by the Board of Directors June 13, 1971, reaffirmed Jan. 28, 1979, and Jan. 25, 1987, revised June 23, 1996 and June 13, 2004

Because the American Water Works Association (AWWA) supports the principle that water of highest quality should be used as the source of supply for public water systems, the risks and potential mitigation requirements of any recreational activity on water supply reservoirs should be identified and publicly evaluated. In the evaluation, utility- and customer-determined acceptable levels of risk should be given the highest consideration.

Recreational use of source waters and the supporting land-based infrastructure necessary to support recreational activities increase the potential for microbial, physical, and chemical contaminants in the drinking water produced from these source waters. When making decisions regarding recreational uses of water supply reservoirs, utilities should give strong consideration to the potential for water quality degradation, the level of increased risk and customer acceptance of that risk, the current level of treatment, and additional treatment requirements, uncertainties, and costs that may be incurred.

To address potential recreation impacts, utilities and other responsible parties should monitor water quality. This information should be used to assess the appropriate level of recreational use of water resources and other monitoring required to evaluate the long-term effects of such recreation. The costs for such monitoring, evaluations, and mitigation should be borne by those proposing or benefiting from the recreational activity, not by the utility or its customers.

If recreation already exists on a reservoir, the water utility should work with other stakeholders to develop an integrated reservoir management plan to evaluate and, if necessary, mitigate water quality impacts and minimize increased risks. Body-contact recreation (swimming, water skiing, wind surfing) and use of polluting two-cycle gasoline engines on boats should be discouraged.

Protection of public health and drinking water quality should be the highest priority in operational decisions for reservoirs used jointly for water supply and recreation.

Finished water reservoirs should not be used for any form of recreation under any circumstances.

AWWA Policy on Recreation in Water Supply Reservoirs

AWWA Government Affairs
Source Water Protection

(Approved April 11, 1997)
To Be Published in *AWWA MainStream*

Statement of Principles

The American Water Works Association is dedicated to providing the public with an adequate supply of clean, safe drinking water. AWWA is committed to assuring that water resources are managed in a manner consistent with the protection and enhancement of source waters for current and future supplies of drinking water. Source water protection (SWP) is a program of actions, policies, and practices to be undertaken by water suppliers, government agencies, institutions, or individuals to advance these goals.

AWWA promotes a multiple-barrier approach to providing safe drinking water that includes SWP, treatment as appropriate, distribution system maintenance, and monitoring. SWP may reduce health risks and treatment costs and improve finished water quality. SWP programs may also provide ancillary benefits of enhancing water quality for other users and improving the natural and aesthetic environments of communities. Accordingly, SWP should be pursued diligently for every water supply source.

SWP programs must be implemented in a context of supporting and competing public needs. They also must be flexible enough to address threats to source water quality and opportunities for improvement that vary from site to site and evolve over time. Regulatory programs and subsidies at all levels of government that are related to water resource protection should focus on existing or potential sources of drinking water. In these programs, SWP goals should be added or elevated in importance.

Water suppliers, regulators, and local landowners and municipalities share responsibility for accomplishing source water protection. Property owners must bear responsibility for preventing and abating pollution emanating from their holdings. AWWA supports the interests of water suppliers and of consumers whose health and welfare could be affected by unrestricted exercise of property rights upstream. However, AWWA recognizes the need to be sensitive to property rights and to avoid imposing undue burdens on parties who may be affected by source water protection measures.

The Road to a Source Water Protection Program

A basic premise for the implementation of source water protection programs is the multiple-barrier approach to protecting water supplies and public health. Through the establishment of multiple barriers that include source water protection, treatment as appropriate, distribution system maintenance, and monitoring, water suppliers are able to assure the quality and safety of drinking water for their consumers. Source water protection represents a first and most important step in safeguarding public water supplies.

There are some common elements for successful source water protection programs: they account for local conditions, incorporate diverse interests, require commitment to the SWP process by all involved parties, and are sustainable over the long term. Source water protection requires a sustained commitment of policy, as well as financial and technical resources over a time span of decades, not just years. Some important water quality benefits of source water protection may not be measurable in the short run. In addition, a long-term commitment is necessary to assure the protection of high-quality water sources so that they remain available for future generations.

One of the most difficult issues in an SWP plan is the establishment of equity in sharing the responsibility and expense of these programs. Source water protection efforts often are hampered by issues of who benefits and who pays. The following guidelines have been used to resolve these issues:

- Sources of pollution bear the responsibility for remediation; in other words, the polluter pays.
- Open and active communication, flexibility, and participation in the SWP process by involved parties can overcome actual and perceived imbalances of equity.
- Federal, state, and local resources can be applied to help address the equity issue.
- Consideration should be given to the value that source water protection programs can provide to a community through environmental benefits -- such as wildlife habitat and open space -- as well as improved quality and quantity of available resources.
- Appropriate compensation for lost or diminished use of property because of source water protection restrictions may be considered in some cases.

These guidelines can help balance the rights of property owners and others affected by source water protection measures with the rights of consumers whose health and welfare depend on the quality of source waters that could be degraded by the exercise of unrestricted property rights.

Developing Resources for Source Water Protection

A challenge incumbent upon successful, sustainable SWP programs is developing adequate structural and financial resources to support them. Some specific options include the following:

- State and federal governments tailoring legislative and regulatory agendas, resources, and programs to support source water protection.
- State governments refocusing and allocating a portion of resources and funding to source water protection. The states should secure adequate legislative and regulatory authority, e.g., planning and regulatory enforcement, for source water protection programs. This could also include levies on polluters or pollutants (pesticides, herbicides, fertilizers, etc.), with the proceeds supporting cleanup efforts.
- Local governments supporting source water protection with appropriate land use management and regulatory enforcement and by encouraging support from local grassroots efforts, environmental groups, and community groups.

- Water suppliers taking an active role in protecting their source waters by providing organizational, technical, monitoring, and financial resources and by harnessing resources available from federal, state, and local programs and institutions and from volunteers.

- Private organizations initiating source water protection programs and participating in cost-sharing arrangements.

Recommendations:

1. Water suppliers, regulators, and local landowners and municipalities share responsibility for accomplishing source water protection. Existing federal and state programs need to be tailored to support a local and regional approach to the development and implementation of source water protection programs and activities.

2. Recognizing that significant pollution of drinking water sources is occurring now, various federal and state legislative and regulatory programs should be directed to stress the protection of water resources for existing or potential drinking water supplies on a priority basis. Source water protection goals should be included in programs and, where already included, elevated in importance.

   Where necessary and appropriate, new or expanded regulatory programs for source water protection should be implemented for specific river basins, watersheds, or aquifers via state or regional initiatives. This implies an integrated look at all the activities within an aquifer or watershed to assess priorities and place priority on certain pollution-protection programs that offer the best net economic and environmental benefit.

3. Water suppliers should develop written source water management plans to prevent or reverse water quality degradation. The SWP plans should delineate and characterize specific source water areas (watershed, wellhead, or recharge areas), should identify threats to water quality, and should provide a strategy for ongoing management of conditions and activities within these areas that may affect source water quality. The plans should also specify resource requirements for communications, implementation, and program assessment.

WAC 246-290-135 Part (4) Watershed Control Program

(4) Watershed control program.

(a) Purveyors of water systems using surface water or GWI sources shall develop and implement a watershed control program in accordance with Part 6 of chapter 246-290 WAC as applicable.

(b) The watershed control program shall be part of the water system plan required in WAC 246-290-100 or the small water system management program required in WAC 246-290-105.

(c) The purveyor's watershed control program shall contain, at a minimum, the following elements:

(i) Watershed description and inventory, including location, hydrology, land ownership and activities that may adversely affect source water quality;

(ii) An inventory of all potential surface water contamination sources and activities, including identification of site locations and owner/operators, located within the watershed and having the significant potential to contaminate the source water quality;

(iii) Watershed control measures, including documentation of ownership and relevant written agreements, and monitoring of activities and water quality;

(iv) System operation, including emergency provisions; and

(v) Documentation of water quality trends.

(d) The purveyor shall submit the watershed control program to the department for approval. Following departmental approval, the purveyor shall implement the watershed control program as approved.

(e) Purveyors of systems using unfiltered surface or GWI sources and meeting the criteria to remain unfiltered as specified in WAC 246-290-690 shall submit an annual report to the department that summarizes the effectiveness of the watershed control program. Refer to WAC 246-290-690 for further information about this report.

(f) The purveyor shall update the watershed control program at least every six years, or more frequently if required by the department.

[Statutory Authority: RCW 43.02.050 [43.20.050]. 99-07-021, § 246-290-135, filed 3/9/99, effective 4/9/99. Statutory Authority: RCW 43.20.050. 94-14-001, § 246-290-135, filed 6/22/94, effective 7/23/94; 93-08-011 (Order 352B), § 246-290-135, filed 3/25/93, effective 4/25/93.]

STATE OF WASHINGTON
DEPARTMENT OF HEALTH
20435 72nd Ave. S. , Suite 200, K17-12• Kent, Washington 98032 -2358

June 5, 2008

JULIE SKLARE
CITY OF EVERETT
3200 CEDAR STREET
EVERETT WA 98201

Subject: Everett Utilities (ID #24050)
Snohomish County
City of Everett Watershed Control

Dear Ms Sklare:

This letter is written in response to our recent conversations about watershed control and recreational activities within the watershed for the City of Everett municipal water supply.

As you know, watershed control and a watershed control program are both required under WAC 246-290-668 and WAC 246-290-135. We approved the City of Everett's water system plan on January 8, 2008; this approved plan contains the city's watershed control program as one of the required elements.

According to WAC 246-290-130(1), "Every purveyor shall obtain drinking water from the highest quality source feasible." Water systems must also use a multiple-barrier approach to protect public health – watershed control is the first barrier to preventing public health problems. Any activity in a watershed increases the risk to public health and should be limited to the greatest extent possible.

If you have any questions or concerns, please give me a call at (253) 395-6762.

Sincerely,

Jolyn Leslie, PE
Regional Engineer
N.W. Drinking Water Operations

cc: Snohomish Health District
Tom Thetford – Everett Public Works

Appendix D

FERC Order Modifying and Amending Recreation Plan

UNITED STATES OF AMERICA 115 FERC ¶ 62, 321
FEDERAL ENERGY REGULATORY COMMISSION

Public Utility District No. 1 of Snohomish County and the City of Everett — Project No. 2157-166

ORDER MODIFYING AND AMENDING RECREATION PLAN

(Issued June 28, 2006)

On December 15, 2005 and as supplemented on February 24, 2006, Public Utility District No. 1 of Snohomish County and the City of Everett (co-licensees) filed an application to amend the approved recreation plan for the Henry M. Jackson Project, FERC No. 2157. The co-licensees have implemented security measures to protect project hydroelectric facilities, including gate closures across Culmback Dam Road, the road that crosses over the project dam. These closures eliminate or restrict public access to three project recreation areas. The co-licensees' application reflects this change in public access to the project. The project is located on Sultan River in Snohomish County, Washington.

BACKGROUND

The project dam and reservoir (Spada Lake) are located in a remote, forested area about 37 miles from the City of Everett and about 17 miles from the City of Sultan and serves as the water supply for the City of Everett. Except for the licensee-owned lands around the reservoir, the project is surrounded by Washington State Department of Natural Resources' (WDNR) trust lands and natural resource conservation areas and the U.S. Forest Service's (FS) Mt. Baker-Snoqualmie National Forest. The current project license expires on May 31, 2011.[1]

On December 5, 1994, the Commission approved a recreation plan for the project. The plan identifies eight project recreation sites around Spada Lake including, but not limited to : (1) recreation area no. 6 (Culmback Dam Viewpoint) - a scenic overlook adjacent to the south end of the dam consisting of a small parking area, viewing benches, interpretive signage, a vault toilet, and trash containers; (2) recreation area no. 7 (Pilchuck Entry) – a directional signage area on the north side of reservoir; and (3) recreation area no. 8 (North Shore) – an area on the north side of the reservoir consisting of two scenic overlooks, parking for about 23 vehicles, trails, two vault toilets, and a picnic area. Recreation areas nos.1 through 5 are located along the south side of the reservoir. Historically, access to recreation

[1] The co-licensees initiated the relicensing process for the project on December 1, 2005, and are required to file their final relicense application with the Commission by May 31, 2009.

area no. 6 was from the south via Culmback Dam Road, while access to recreation areas nos. 7 and 8 was from the northwest via Washington State's Pilchuck Mainline Road (PK-ML, formerly SL-P-5000) or across Culmback dam via Culmback Dam Road. In November 2005, the WDNR closed the PK-ML road to motorized vehicles, allowing only bicycles, pedestrians, and equestrians to use the road to access recreation areas nos. 7 and 8.

As required by the Commission's Office of Energy Projects' Hydro Security Program, the co-licensees hired a consultant to conduct a vulnerability assessment (VA) to analyze the project's vulnerability to a security threat and make recommendations for improving security. Based on the VA's findings and recommendations, the co-licensees implemented various security measures at the project, including the installation of several gates. These include gates along Culmback Dam Road on the north and south sides of the dam and at recreation areas nos. 1, 2, 3, 4 and 8. Recreation area no. 1 (Olney Pass) is located at the intersection of Sultan Basin Road, the primary access road to the project, and the SL-ML Road (aka Culmback Dam Road northward towards the dam and South Shore Road toward the southern shore of the reservoir). One of two gates at recreation area no. 1 controls access to South Shore Road which leads to recreation areas nos. 2 through 5. The second gate controls access to Culmback Dam Road.

In addition, about 1,000 feet south of the dam on Culmback Dam Road there is an access road (6122 Road) that leads to the Sultan River below the dam. Historically, this road has been used by whitewater boaters and miners to access the river. The present gates do not restrict or prevent access to or use of this existing access road, except during the high alert and emergency conditions noted below.

Currently, the security gates installed on the immediate north and south sides of the dam prohibit all public access across the dam at all times, including access to recreation area no. 6, as well as access from the south to recreation areas nos. 7 and 8. The gates at recreation area no. 1 are normally open year round, while the gates at recreation areas nos. 2, 3, 4, and 8 are normally open only during the spring/summer fishing season (mid April through October). During times when U.S. Department of Homeland Security (DHS) threat levels are orange or red, or during public safety emergencies or hazardous road conditions, all gates are closed and public access is prohibited.

In accordance with the provisions of the Hydro Security Program, the licensee filed the subject amendment application to reflect the how implementation of the above-security measures have affected the project's approved recreation plan.

PROPOSED ACTION

In its application, the licensee requests that the plan be amended to eliminate all public access across the dam and to recreation area no. 6, including access across the dam to recreation areas nos. 7 and 8. Further, the licensee identifies a proposed change in its current

gate closure practices to enhance public access to recreation areas nos. 2 through 5. Specifically, the licensee proposes to eliminate its current practice of closing the gates at recreation areas nos. 1(the gate across South Shore road only), 2, 3, and 4 during DHS orange or red threat levels. These gates and recreation areas 2, 3, and 4 are located on the south shore of the reservoir away from the dam and associated project works. The proposed change would allow the public to access these specific recreation areas as currently permitted under the project's recreation plan, even during times of DHS orange or red threat levels. However, the licensee reserves its rights under license article 44 to closes these gates if it receives reasonably credible information regarding specific security threats to hydropower facilities or water supply reservoirs and facilities in the area.[2] The above security measures do not adversely affect other aspects of the project's recreation plan.

In addition, in its application, the co-licensees describe how vandalism of certain project works and recreation areas nos. 6, 7, and 8 has been a persistent management problem in the past and how implementation of the gates and other security measures has dramatically reduced this problem. Further, the co-licensee's filing includes responses to specific American Whitewater Affiliation (AWA) and FS comments on the proposed amendment application. In its responses to the comments, the co-licensees have proposed the following measures to minimize impacts on recreationists due to the proposed changes to the project's recreation plan: (1) relocate the interpretive signage that exists at recreation area no. 6 to another site along the south shore of the reservoir; (2) when DHS threat levels necessitate the gate closures, notify recreationists of gate closures by posting notices at recreation area no. 1 and at the bottom of Sultan Basin Road, just off State Highway 2 and by placing a notice on the Public Utility District No. 1 of Snohomish County's website.

PUBLIC NOTICE AND CONSULTATION

In preparing its application, the co-licensees consulted with the FS, the Washington Departments of Health, Natural Resources, and Wildlife, and the Washington Parks and Recreation Commission. By letter dated December 2, 2005, the FS provided comments on the proposal. No other comments were received.

On January 26, 2006, the Commission issued a public notice for the amendment application. On February 10 and 14, 2006, respectively, the U.S. Department of the Interior (DOI) filed a motion to intervene and comments on the application. On February 14, 2006, the AWA filed a motion to intervene and comments on the application. By letter dated April 11, 2006, AWA provided additional comments on the proposal. No other submittals or

[2] In general, article 44 provides for public access and use of most project lands and waters for recreational purposes. However, the article also reserves the co-licensees the right to close portions of project lands and waters to public access, as necessary for the protection of life and property and when such access may constitute a hazard to public safety or health.

comments were filed in response to the notice. Except as discussed below, we find that the co-licensees filings adequately address these comments.

DISCUSSION

Relicensing Proceeding

The AWA and DOI recommend the Commission defer action on the amendment request to the current relicensing proceeding, noting that the relicensing process is the best forum for discussing the comprehensive recreational access needs of the project in a collaborative manner.

In general, it is the Commission's practice not to consider an application to amend a project's recreation plan when the project is in a relicensing proceeding, in order to avoid any decision on the plan that may prejudge the Commission's action on the relicensing proceeding or circumvent the comprehensive review of the project's recreation needs and resources. However, as noted above, the co-licensees implemented several security gates at the project in accordance with the Commission's Hydro Security Program. These gates have been determined to be necessary to protect project works and users of the project against a security threat. Given that the existing security gates are needed at this time and that they have a direct, but limited affect on the project's recreation plan, it is appropriate for the plan to be revised accordingly. Further, we find that Commission's action on the amendment request would not preclude a comprehensive review of the project's recreation needs and resources during the relicensing process. For these reasons, it is appropriate for the Commission to act on the amendment application at this time.

Mitigation for the Loss of Public Access

The AWA recommends that if the Commission acts on the amendment request at this time, the loss of access to the recreation sites would be mitigated by the development of a recreation site along the 6122 Road. The co-licensees indicate that they do not support the AWA's recommended mitigation. The co-licensees note that access and use of the 6122 Road is not materially changed by the proposed amendment and that the affected recreation areas have no bearing on the use of the 6122 Road for river access. Further, the co-licensees disagree with the AWA's assertion that recreation area no. 6 is very useful to boaters to view flow conditions below the dam and that the loss of recreation area no. 6 has eliminated the only suitable parking area along this portion of Culmback Dam Road. The co-licensees note that ample parking is available along the 6122 Road.

We find that public access to the Sultan River below the dam from the 6122 Road is not significantly affected by the co-licensees' amendment request. Under the proposal, public access to the 6122 Road, including parking along the road, would not be restricted, except during DHS orange or red threat levels or other emergencies. We anticipate that such gate

closures would occur infrequently and that public access to the 6122 Road would be available the vast majority of the time. As such, we do not believe that the AWA's recommended recreation area is appropriate mitigation for the loss of recreation area no. 6 and public access across the dam.

In addition, the co-licensees propose to relocate the interpretive signage at recreation area no. 6 to another site along the south shore of the reservoir and to modify its current gate closure practices to allow greater public access to the recreation areas along the south shore of the reservoir. We believe these measures are adequate at this time. However, during the relicensing process a comprehensive review of the project's recreational needs and resources would be conducted, including a review of any lost recreational opportunities associated with the security measures. At such time, additional recreational measures or enhancements may be required.

Relocation of Interpretive Signage

In its application, the co-licensees propose to relocate the existing interpretive signage at recreation no. 6 to another site along the south shore of the reservoir. The co-licensees have not identified when and where the facilities would be relocated. In order to ensure that the facilities are relocated in a timely manner and to a location along the south shore of the reservoir that would provide the greatest public benefit, the co-licensees should consult with the AWA, the FS, the DOI, the WDNR, and the National Park Service on the relocation of the interpretive signage and complete this relocation within six months from the date of this order. Upon completion of the relocation, the co-licensees should file documentation identifying the new location for the interpretive signage and its consultation with the above entities on the relocation.

Gate Closure Practice at Olney Pass

The AWA recommends the co-licensee eliminate closure of the gate for Culmback Dam Road at recreation area no. 1 (Olney Pass) to provide year-around vehicle access to the 6122 Road. As noted above, the 6122 Road is located just south of the dam and is accessed via Culmback Dam Road after passing through a gate at recreation area no.1. This gate would be open year-round, except during emergencies or DHS orange and red threat levels. We expect that such emergencies would be infrequent and the associated gate closure limited. As such, recreationists would be able to access the Sultan River below the dam via the 6122 road the vast majority of the time. Given the relatively close proximity of the 6122 road to the dam and other project works, fully eliminating closure of the gate at recreation area no. 1 would make the dam and project works more vulnerable to a security threat. For these reasons, we find that the proposed limited closure of the gate at recreation area no. 1 (gate at Culmback Dam road) appropriate.

CONCLUSION

The security gates are a necessary part of the co-licensees' hydro security program and need to be maintained to reduce the vulnerability of the dam and project works to a possible security threat. The gates have a direct impact on project recreation area nos. 6, 7, and 8, and it is necessary to amend the project's recreation plan accordingly. In its amendment application, the co-licensees have proposed measures to reduce the impact of the gates on recreation opportunities at the project. We find the co-licensees' amendment request reasonable and we approve the proposed revisions to the project recreation plan, with the above modifications.[3]

The Director orders:

(A) The application to amend the Henry M. Jackson project's approved recreation plan filed on December 15, 2005, and supplemented on February 24, 2006, with regard to the recreation facilities affected by the implementation of security gates at the project, as modified by paragraph (B), is approved.

(B) Within six months from the date of issuance of this order, the co-licensees shall relocate the existing interpretive signage at recreation no. 6 to a site along the south shore of Spada Lake, in consultation with the American Whitewater Affiliation, the U.S. Forest Service, the U.S. Department of the Interior, the National Park Service, and the Washington Department of Natural Resources. Within 30 days after completion of the relocation, the co-licensees shall file with the Commission documentation identifying the new location for the interpretive signage and its consultation with the above entities on the relocation.

(C) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days from the date of issuance of this order, pursuant to 18 CFR § 385.713.

John E. Estep
Chief, Land Resources Branch
Division of Hydropower
Administration and Compliance

[3] The co-licensees' filing includes drawings showing the proposed changes to the project recreation plan. While we are approving the proposed revisions to the plan, we are not requiring additional drawings to be filed at this time, given the ongoing relicensing proceeding.

Appendix E

Study Area Trail Workshop Summary Notes

Jackson Project Relicensing
SP13: Recreation Needs Analysis
Trails Focus Group Workshop

Wednesday, September 19, 2007

Meeting Summary

Start Time: 9:00 a.m.	**End Time:** 4:00 p.m.
Subject: SP13: Recreation Needs Analysis - Trails Focus Group Workshop	

Attendees:

- American Whitewater – Thomas O'Keefe
- Backcountry Bicycle Trails Club – Justin Vander Pol
- Boeing Recreation Groups – Mike Dunican
- Cascade Land Conservancy – Joe Sambataro
- City of Everett – Joe Dreimiller, Julie Sklare
- EDAW – Sarah Daniels, Chuck Everett
- PUD - Karen Bedrossian, Bruce Meaker, Kim Moore, Dawn Presler
- WA Recreation and Conservation Office – Jim Eychaner
- WA Climbers Coalition – Mark Hanna, Matt Perkins
- WA Dept of Fish and Wildlife – Rich Johnson
- WA Dept of Natural Resources – Stan Kurowski, Peter Hurd
- US Forest Service – Tom Davis, Eric Ozog

DISCUSSION ITEMS

Introductions – Chuck Everett
All meeting participants introduced themselves and said which organization(s) they were representing in the meeting. Meeting participants received a copy of the agenda, a schedule of relicensing events and a summary of the Recreation Needs Analysis Overview. Everett walked meeting participants through the agenda.

Relicensing Process Update – Karen Bedrossian
Bedrossian gave a brief overview of the relicensing process and schedule of upcoming relicensing events. She discussed how this workshop fit into the relicensing process and explained the list of deadlines that the PUD must meet for relicensing. Bedrossian welcomed the workshop participants to visit the PUD's web-site, or contact them for more information.

DNR's Plans for the Sultan Basin – Stan Kurowski
Natural Resource Conservation Areas
Kurowski presented information on DNR's plans for the Upper Sultan Basin NRCA. Currently, there are three separate NRCAs (Natural Resource Conservation Areas); DNR's plan is to combine them into one larger NRCA called "Morning Star NRCA." This will form one large

NRCA on the north, east and south side of Spada Lake on DNR-managed lands, making it the largest NRCA in the state at 30,000 acres. (The state has approximately 100,000 acres of NRCA.) The intent of NRCAs is to conserve and protect lands that do not meet the strict requirements of natural area preserves. Once Trust Lands move out of having timber or other financial value (benefiting and funding schools systems), lands are transferred from the Trust to be managed as an NRCA. Priorities for protection for NRCAs, listed in order of importance, are:

1) environment preservation
2) low impact recreation (will be sacrificed if it negatively impacts the environment)
3) environmental education

South Shore Road

DNR does not need the South Shore Road to manage the planned NRCA; they can manage the area via trails and backcountry crews. Motorized uses are not permitted within an NRCA. Therefore, DNR plans to abandon the road in phases:

- Greider Lake Trailhead to Boulder Lake Trailhead – to be abandoned within the next two years. Boulder Lake Trailhead will be moved to the current Greider Lake Trailhead. The permanent toilet has already been removed from the Greider Lake trailhead.
- South Fork to Greider Lake Trailhead– expected to be abandoned no sooner than 2011, based on agreement with the PUD, due to ongoing relicensing studies and consultation.
- South Fork to Olney Pass – expected to be abandoned no later than 2015 based on Forest Plan requirements. The master trailhead would be expected to be located at the existing Olney Pass site and will transform the current day-hike experience from Olney Pass to Greider Lakes and Boulder Lake into a longer weekend/week experience. Day hikes are available on the north side of Spada Lake to Cutthroat Lake, across Bald Mountain, and to Ashland and Beaver lakes.

With the closure of the South Shore Road, options that DNR is considering include:

1) convert the old road into a trail, and/or
2) convert trails off old logging roads on the south side of Spada Lake, and/or
3) connect Boulder Lake to Greider Lake via a trail, and/or
4) create a back-country trail to Greider Lakes.

Mountain biking is not normally considered a compatible use within an NRCA. However, Kurowski was intrigued by the concept of biking to a trailhead location, and then hiking into the NRCA.

Pilchuck Mainline "PK-ML" (Road on north side of Sultan River and northwest side of Spada Lake)

Previously, the PK-ML road was open to vehicles and all recreation types. Due to public abuse issues, such as vandalism, thefts, death, etc., the road was closed to automobiles; however, OHV use was still permitted. Public abuse still occurred over time, so the road was then closed to all motorized vehicles. Non-motorized uses, such as horseback riding, mountain biking, and hiking are allowed on the road today. There are no trails accessed from the road. Road use as a trail on DNR-managed Trust land is managed by the multiple-use act and by allowance of the Trust as long as users obey the rules. Kurowski does not see much changing related to allowable uses on this road. He noted that the road is technically not designated as a mountain bike trail.

Abandonment Costs for South Shore Road
DNR reported estimated costs for the South Shore Road options as follows:

- $45,000 to abandon the road from Boulder to Greider trailhead
- $35,000 to abandon the road from Olney Pass to South Fork
- $250,000 to bring the road up to WA Forest Practice Standards (replace culverts, etc.)
- $35,000/annually to maintain South Shore Road

Abandonment would be "simple" abandonment – pull culverts, water bars, side casts, block off to vehicles, etc. One can lessen the slope where very steep to accommodate hiking. Overall, it is less expensive for DNR to abandon the road than to bring it up to WA Forest Practice standards and to continue to maintain this road.

US Forest Service's Plan for Sultan Basin – Eric Ozog
Ozog discussed the 1991 USFS land exchange, where the USFS traded out of land around Spada Lake, but retained ownership of the land downstream of Culmback Dam in the Sultan River gorge. USFS owns lands southeast of the DNR parcels on Spada Lake, and these lands may become part of the planned Wild Sky Wilderness area in the future. USFS still has many road easements accessing these lands which should be terminated over time because there is no need for these roads to access USFS-managed lands. Ozog suggests that some of these easements might be converted to trail use easements.

In the Sultan Gorge area, watershed and water quality are overall priorities. The USFS Forest Plan does allow for dispersed use; there is known whitewater and mining interest (17 claims and 4 operators) along the Sultan River gorge. USFS would like to see legal access to connect north and south (possibly via a bridge across the gorge) since Culmback Dam is not currently accessible to the public for crossings. FR 6122 is the main access for boaters and miners to the gorge area. USFS's overall long-term objective is to trade out of the gorge area; although, the existing placer claims and old growth forest areas may make it hard to do so. USFS is looking to the relicensing process to help determine recreation needs in the basin and the future of FR 6122. The USFS is putting planned improvements on hold at this time, such as slide repair, until the relicensing process provides a clear direction.

Recreation Needs Analysis – Chuck Everett
Everett walked the meeting participants through the recreation needs analysis process and tasks and discussed how the needs analysis, supply analysis and demand will be analyzed. Results of SP14: Flow Recreation Study will also be coordinated with this study to give a comprehensive overview of recreation resource needs in the Project area. The trails analysis is a component of the Recreation Needs Analysis. Further trail field analysis will likely be conducted based on the outcome of this meeting. Everett reminded the participants that this workshop is meant to focus on trails in the Project area. He mentioned the following:

Constraints to trails analysis

1) Directive 73 discusses the restrictions to protect water quality.
2) Must have a project nexus.

3) Cannot commit other land owners to trails on their lands, should focus on the current project boundary.

Future Input Opportunities

1) ISR meeting – October 29
2) Needs Analysis Workshop – April/May 2008
3) Technical Report review – June 2008
4) USR meeting – October 2008
5) Will send individual report components for stakeholder review as they become available.

Desktop Analysis of Trails - Maps – Sarah Daniels

Daniels explained three maps for consideration when in discussion groups. These maps included: Existing Road Use and Trails in the Project Area; Land Ownership in the Project Area and Vicinity; and Potential Trails in the Project Area. She noted that workshop participants should note the road use categories when considering trail opportunities, as well as consider land ownership boundaries. Eychaner noted that the 1991 WA State Trails Plan trail alignments depicted on the "Potential Trails in the Project Area" map were created based on city, county, state and USFS plans at the time; however, times and management priorities have changed and the alignments may be outdated for current practicality. These trail alignments have not been updated and there are no plans to do so. Kurowski noted that NRCAs barely existed in 1991 and we need to be careful of old alignments over DNR-managed lands.

Eychaner and O'Keefe noted that FERC can change the current project boundary to accommodate Project-related recreation needs and facilities mitigated outside of the project boundary, as it has done on other projects. Bedrossian noted that FERC first looks at the current project boundary and also at off-license agreements. Responsibility is not necessarily on licensees to fund recreation on other landowner properties.

Concern was expressed if South Shore Road closes it would eliminate boat access to Spada Lake.

Group Discussions

Meeting participants broke into four discussion groups. A brief summary of these discussions include:

Group 1

- Goals for recreation in the Project area included:
    - Boat launching access to Spada Lake (continued ability to get a non-motorized boat on the lake, even if the South Shore Road is converted to a trail)
    - Vehicular access
        - Safety (multiple access points)
        - Sultan River access
        - Hunting access
        - Fishing access
        - Trailhead access
- North/South public trail access connectivity

    - Across the gorge
    - Across the river
    - Mountain bike access to at least Static Point
- Keep South Shore road open to PUD recreation Site 2
- Maintain fishing access to Spada Lake
    - Vehicular access (multiple access points)
    - Boat ramp use depends on the pool level of Spada Lake
    - Boat types on Spada Lake: review limitations on boat type and possible use of newer technologies for petroleum-powered boats that might allow other boat power types to access the lake (City of Everett to consider a change)
- Site 8 on the north side of the lake is very nice
    - Is there anyway to possibly gain access across Culmback Dam in the future?
    - Consider a bridge by the powerhouse?

Group 2

- Greider Lakes and Boulder Lake trails are popular
    - Is there a way to keep the South Shore Road open? At least for mountain bikes?
        - PUD owns 30 feet below the centerline of the road now
        - DNR mentioned that the PUD and USFS have easements on South Shore Road. These organizations can be responsible for the road (but they will have to bring the road to WA Forest Practice Standards.) Because this is a pre-existing easement, it may influence what uses the NRCA allows.
        - Abandonment of the South Shore road may impact PUD policy
- Sultan Gorge
    - FR 6122—Provide a trail off of this route?
    - Better routes to the gorge may be available?
    - Bridge site?
- Log-Stringer Bridge
    - Access to north side roads
    - Some potential trail crossing opportunities at this site
    - North/South connectivity—could trail foot traffic be allowed across the dam?
- Horseshoe Bend/Powerhouse and Diversion Dam
    - River walk in this area, loop trail opportunities
    - Interpretation of cultural/historic/mine interests in the area
- Lost Lake
    - Provide trail directional signage so visitors do not get lost

Group 3

- Static Point
    - Maintain the access
    - Krimona Mine climb (consider maintaining mountain bike access)
- Mountain bike access along the South Shore Road
- Mining claim owner access to the Sultan Gorge

Group 4

- Overall there is a lack of mountain biking trails in the region

  - Mountain bikers really want single-track, narrow trails, not old roadbeds to use
  - Users likely originate from the Everett area and along Highway 2
  - Desire is for 10-20 miles of mountain biking trail opportunity with out-back segments and loops
  - Consider the South Shore Road as a mountain bike trail also
  - Bikers are responsible trail users, and providing for this use may displace current unauthorized uses
  - DNR mentioned that recreation use in an NRCA is secondary to environmental protections. Day-use trails and wilderness are allowed.
- South Shore Road is a multiple use route for mountain biking, hiking, and climbing, but Greider and Boulder lake trails are hike only
- A loop around Spada Lake for mountain biking would be 17 miles long if built

Determine Field Locations

Potential Sites to Visit

- Shoreline access from Olney Pass (abandoned road)
- FR 6122 trail access below Culmback Dam
- Horseshoe Bend/Powerhouse
- Lost Lake
- South Shore Road and Site 2

FIELD VISITS

Stop 1: Shoreline access from Olney Pass (abandoned road)

This abandoned road section was a mine-to-market road (called OR 17) near Olney Pass. It is a steep section of roadbed of about 1 mile of switchbacks leading from South Shore Road near Olney Pass to the shoreline of Spada Lake. The land (forested) through which the old roadbed passes is in the Wildlife Management Area and there are possible wetlands around the lake shore area, some old growth forest in the area and marbled murrelet species restrictions apply to the area.

Stop 2: South Fork (Site 2)—picnic area and boat launch

This is currently a car-top boat launch here that can be accessed when water levels are lowest. In order to be used more extensively, though, the boat launch would need to be improved and expanded. In addition, formal trailer parking is needed. This boat launch and day-use site could be used as the jumping-off point for many of the recreation sites in the project area and vicinity.

Stop 3: FR 6122 and landslide wash-out; Miner and kayaker access trail

There is a rough trail leading from the end of FR 6122 (where the landslide washed it out) down to the river. This trail accesses multiple mining claims in the gorge and kayakers use the trail to reach the river. Users have requested that the USFS cut downed logs and maintain the trail, but the USFS does not have funding and volunteer hours to complete this work. FR 6122 is classified as being "open to the public" though a landslide obscures the road. It has yet to be decided what use status this road should be maintained at. The USFS must maintain reasonable access to mine claims on USFS-managed property, but this access could be by quad. The USFS supports a trailhead (with parking, turn around area, and unloading area) on USFS-managed

land. An alternative to this current trailhead site may be possible on nearby PUD property; however, it may be too close to Culmback Dam.

END MEETING

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Appendix F

Recreation Needs Analysis Meetings – Summary Notes and Comments

This appendix includes:

- *Summary notes from the Agency/Tribe Recreation Needs Analysis meeting (4/29/08)*
- *Summary notes from the stakeholder Recreation Needs Analysis meeting (5/28/08)*
- *Comment letters received from stakeholders after the Recreation Needs Analysis meetings*

Jackson Project Relicensing
Agencies and Tribes
Study Plan 13: Recreation Needs

Tuesday, April 29, 2008

Meeting Summary

Start Time: 1:05 p.m. **End Time:** ~3:30 p.m.
Subject: Revised Study Plan 13: Recreation Needs
Attendees:

- **City of Everett –** Julie Sklare
- **District** – Karen Bedrossian, Keith Binkley, Bruce Meaker, Kim Moore, Dawn Presler
- **EDAW** – Chuck Everett, Sergio Capozzi
- **NPS** – Susan Rosebrough
- **RCO** – Jim Eychaner
- **Tulalip Tribes –** Daryl Williams
- **USFS** – Eric Ozog, Tom Davis
- **WDFW –** Rich Johnson
- **WDNR –** Stan Kurowski, Allison Hitchcock

DISCUSSION ITEMS

Introductions
Everyone stated their name and affiliation.

Relicensing Update
Karen Bedrossian (District) passed out an update on the current status of relicensing. The City of Everett will not be a co-licensee for the new license so is participating as a stakeholder in the process now.

Meeting Objective
Sergio Capozzi (EDAW) noted that the objective of today's meeting is to discuss the big picture recreation needs in the Project area and what should be the "niche" for recreation in the Project area. (SP14: Flow Recreation (whitewater boating) is not on the table for discussion during this meeting because the report has not been completed as of yet.)

Draft Report Sections
Sergio reviewed the highlights of the three report components that previously have been reviewed by the stakeholders.

Supply Analysis – describes the existing inventory and opportunities in the Project area and regional area. The Project area has distinct features and a lot of opportunities; however, the region as a whole is also rich in recreation opportunities.

Demand Analysis – describes the current use levels and potential future demand. Use has been fairly consistent over the term of the recreation plan (4000-8000 users/year). However, use levels at the Project are anticipated to increase as the overall regional population increases.

Capacity Analysis – describes the current capacity and future capacity levels. Use levels within the Project area are not projected to be at capacity in the future; however, ecological and management considerations must be considered to help protect water quality and other sensitive habitat.

A final draft of the report, including the trails component, information from the Flow Recreation Study, and recreation needs analysis, will be available for stakeholder review in late June 2008. Responses to comments received so far will be included in the report's appendix.

The SP14: Recreation Flow Study should be available for stakeholder review in mid-May.

Options

Sergio discussed the Preliminary Recreation Needs Alternatives (provided to meeting participants as a handout). Options A, B, and C are preliminary and a final option will probably be a re-combination of several actions from all three alternatives. Costs have not been evaluated at this point, nor have results from RSP 14.

Based on study results and stakeholder input, three major needs categories became evident:

1) maintain or enhance existing opportunities;
2) provide adequate access along the Sultan River (gate locations and timing); and
3) provide enhanced non-motorized trail access

A major driver for the potential recreation options is the planned South Shore Road abandonment by WA DNR. Another major driver is to continue to maintain high water quality as Spada Lake Reservoir supplies 80% of the drinking water to Snohomish County residents and businesses.

Controlled Access over Culmback Dam

The District's concern for security/safety at Project facilities remains; however, the District is willing to consider options for using the dam road for crossing to the north side of the reservoir. What controlled access means has not been fully defined; it could be a permitting system, self-register, timing of gate openings, key card check-out, or something else to be determined where the security monitoring functionality at the dam is not compromised. The District would need to look at all options and weigh the benefits to the public with the anticipated administrative burden, costs, benefits, etc. of each type of controlled access that might be considered.

Culmback Dam Road
Access to Culmback Dam Road would remain the same. Tom Davis (USFS) inquired about a possible trailhead in the FR 6122 area. Sergio stated that it is still a possibility and the RSP14 report should help inform if there is a need for such a parking area.

South Shore Road
Stan Kurowski (WDNR) stated that WDNR is not offering to upgrade or maintain the South Shore Road under any circumstances as motorized access will not be an option within the planned Morning Star NRCA. To bring the road up to Forest Practice (FP) standards would cost the WDNR an estimated $250K, with approximately $30K in annual maintenance (sometimes higher if a significant slide occurs). Per Kim Moore (District), the District's costs to bring the road up to FP standards would likely be 3 or 4 times that much. The planned process for the Morning Star NRCA designation will take approximately 1-2 years to finalize a management plan. WDNR management plans must conform with three major priorities (in order of importance): 1) environmental conservation, 2) low impact recreation, and 3) environmental education. Stan stated that a non-motorized trail conversion of the South Shore Road is acceptable. Mountain biking into the WDNR trailhead and then hiking to the Boulder/Greider Lakes area is an intriguing concept and might work. However, if the environment is likely to suffer, then mountain biking will probably not be allowed. Without the presence of the FERC/District, WDNR would have abandoned the South Shore Road to Olney Pass some time ago. Stan stated day use would be available towards the north side of Spada Lake along Mountain Loop Highway.

- *Restrooms*
  There was concern expressed about how far people would be willing to hike without facilities and how would restrooms be accessed for administration/cleaning. Stan stated motorized access for administration would be ok. Another option would be to remove the existing vault toilets and replace them with portables that can be serviced/removed by helicopter.
- *Boat Launches*
  Rich Johnson (WDFW) expressed concern about the number of boat launches available on the lake for safety reasons since only electric motors are allowed. Rich suggested that the boat launches should be closest to the most popular fishing areas, which are generally on the east side of the lake. Also, multiple boat launches should be available for safety reasons in case boaters cannot make it back to one boat launch. He also said that allowing combustion engines on Spada Lake would make it safer for boaters to travel to and from the South Fork boat launch site. Julie Sklare (City of Everett) expressed concern about maintaining the high water quality on the reservoir if the reservoir is opened up to camping and combustion-engine motors. Rich said he did not understand the level of vigilance to maintain water quality given the sophistication of the City's treatment facilities. Julie and Rich will discuss these topics off-line. The boat launch at the South Fork site is the deepest and therefore available for the longest time into the fall fishing season. The boat launches at the South Shore and Nighthawk sites become unusable at lower elevations (around elev. 1420 ft.) as the reservoir is drawn down. Information

regarding boat launch availability is posted to the web site so users can check before heading to the reservoir.

- *Overnight Camping*
  There were suggestions from RCO, WDFW and NPS to look into potential for overnight camping along the South Shore Road with the options that include closure of recreation sites, making the hike longer into Boulder/Greider. Camping at the Northshore Site was also discussed. Susan Rosebrough (NPS) suggested implementing a camping program on a trial basis with a monitoring component (like a three year plan) and then reassess the program to see if water quality is being affected.
- *Horses*
  Rich inquired if horses would be allowed on the trails because, trails would need to be built to different standards. RCO, WDNR, and the City opposed allowing horses because: 1) they can bring in weeds, 2) the trails for walking and non-motorized biking would not be suitable for horses which require a higher standard of construction, and 3) potential fecal coliform contamination affecting the water quality.
- *Bank Fishing*
  Bank fishing is allowed on the south shore but not on the north shore due to soil instability and erosion potential.
- *South Fork Site*
  Susan noted that keeping the area open to the South Fork site would allow for continued boating and climbing opportunities, and provide an enhanced hiking/trail experience.
- *Road Maintenance and Upgrade Costs*
  The District is planning on doing a cost assessment of upgrading and maintaining the South Shore Road and each segment of the South Shore Road in between the recreation sites. There are currently 7 feet of snow on the road, so the District has not been able to access the road to assess the costs of bringing each segment up to Forest Practice Standards.

North Shore Site

One option is to allow for group use only via controlled access across the dam. The method of access was a concern because families or large groups would probably not want to hike in with all of their picnicking supplies/coolers/etc for such a long distance (~2 miles with elevation gain). Someone suggested allowing vehicular access in a controlled way so groups could use the site more effectively. Organized groups (such as Boy/Girl Scouts, etc) may be interested in using the site for group use with hike-in access only. It was noted that no water service exists at this site.

Kim suggested that overnight camping might be considered since the site is remote and away from the reservoir (500 ft. in elevation and a half mile from the shoreline) and on WDNR-managed land (provided via lease to the District). Stan said the WDNR would not be opposed to that option and would look at the current lease. Julie indicated that the City would probably have concerns with potential water quality issues if camping were allowed in the basin, regardless of the site. The District and City agreed to meet to discuss these concerns.

Jim Eychaner (RCO) questioned whether any of the recreation sites received IAC grant funds, in which case there may be a bigger issue with abandoning the South Shore Road. The group was

not aware of any funding from outside sources to construct or maintain any of the Jackson Project Recreation sites. Jim will research this issue.

Lost Lake
Chuck asked if there were any comments regarding access to Lost Lake. No one had concerns or comments. Karen noted that the current users she has talked to prefer undesignated trails and feel strongly about its remoteness. No comments were received regarding changing use of this natural resource area.

Sultan River
No comments were received on the options for the river access sites. Further discussion will occur at the May 28 RSP 13 and 14 meetings.

Comments
Any additional comments, ideas or thoughts regarding the three options should be routed to Dawn Presler within the next two weeks (by May 16) so they can be considered and incorporated as needed into the alternatives before the next RRG meeting on May 28.

May 28 Meeting
The location of the next RRG meeting will likely be in Everett offices due to the limited space at the Monroe Office. Karen will confirm a location and update the RRG.

END MEETING

ACTION ITEMS

- All – send any further comments to Dawn Presler (DJPresler@snopud.com) by May 12.
- Jim – verify if IAC grants were issued for any of the Spada Lake recreation sites.
- Karen – update meeting location for May 28. (Post meeting note: meeting on 5/28 will be held in the Commission Room at the Electric Building in Everett)
- Rich/Julie – discuss water quality concerns regarding horses, motors.
- Kim/Karen/Julie – discuss water quality concerns regarding camping.
- Sergio/Chuck – update options before next RRG meeting.

NEXT MEETING

May 28 – SP14 in a.m.; SP13 in p.m. – Commission Room 2320 California Street, Everett.

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Jackson Project Relicensing
SP13: Recreation Needs Analysis Workshop
Wednesday, May 28, 2008

Workshop Summary

Start Time: 1:00 p.m. **End Time:** 3:45 p.m.
Subject: Discussion of desired future conditions and potential recreation alternatives for the Jackson Hydroelectric Project Area
Attendees:

- **American Whitewater** – Andy Bridge, Tom O'Keefe
- **Boeing Employees Everett Prospectors Association** – Mike Dunican
- **City of Everett:** Julie Sklare
- **Confluence Research and Consulting** – Bo Shelby, Doug Whittaker
- **Snohomish County PUD:** Karen Bedrossian, Keith Binkley, Barry Chrisman, Bruce Meaker, Kim Moore, and Dawn Presler
- **EDAW:** Sergio Capozzi and Chuck Everett
- **Hydro Reform Coalition** – Rich Bowers
- **NPS** – Susan Rosebrough
- **RCO** – Jim Eychaner
- **Snoqualmie Tribe** – Cindy Spiry, Diana Popic, Matt Baerwalde
- **Tulalip Tribes** – Mike Wert (AMEC)
- **USFS** – Eric Ozog, Tom Davis
- **WDFW –** Rich Johnson
- **WDNR –** Stan Kurowski

AGENDA ITEMS

Call to Order and Introductions

Relicensing Update

Recreation Needs Analysis Overview

Desired Future Conditions

Preliminary Recreation Needs Alternatives and Discussion

Wrap-up and Next Steps

DISCUSSION ITEMS

RELICENSING UPDATE

Karen Bedrossian summarized the relicensing work that has been accomplished to date. There are no revised study plans for recreation resources in 2008.

Karen indicated that the Updated Study Reports (USR) are to be completed in October 2008. The Preliminary Licensing Proposal (PLP) is due the end of December 2008.

The District needs to have the study results from various resource areas prior to beginning preliminary Protection, Mitigation and Enhancement (PME) discussions with stakeholders - likely in September 2008 for the Recreation Work Group. The attendees agreed that meeting in September would be OK for these PME discussions, or they did not object to a September timeframe.

Kim Moore will check with Patti Leppert (FERC) regarding her schedule in September to see if she may be able to attend.

RECREATION NEEDS ANALYSIS OVERVIEW

Sergio Capozzi indicated that the next draft installment of Study Plan 13 Recreation Needs Analysis will be in July 2008. This will be the complete draft report for stakeholder review and will include edits based on previous stakeholder comments to recreation supply, demand and capacity sections.

Sergio gave a presentation of existing information from SP 13. The Project receives approximately 4000-8000 visits/year. Use levels have tended to stay in this range for several years. Sergio indicated that he does not expect to see any major increases in use beyond typical slow growth in use based on overall population increase in the region. Recreation capacity should not be an issue throughout the next license period (30 to 50 years). However, the ongoing protection of the City of Everett water supply and need to provide for adequate Project security will continue to affect recreation use in the Project area.

Sergio indicated that there are three primary areas of need in the Project area:

1. Maintain or enhance existing recreational activities at Spada Lake (day use picnicking, non-motorized boating, fishing, hiking, etc.) and along the Sultan River (rec. mining, fishing, whitewater boating, etc.).
2. Provide additional non-motorized trail-related opportunities in the Project area (provide new hiking and/or enhance existing trails, and consider road to trail conversions).
3. Provide improved public access to the Project area by improving or enhancing access to existing recreation sites and access points along the Sultan River corridor.

Julie Sklare from the City of Everett discussed the City's ongoing requirements to protect the drinking water supply coming from Spada Lake and the Sultan River to the

Diversion Dam. This need will continue into the new license period. Spada is now the sole drinking water source for over 80% of Snohomish County. Water quality regulations are becoming stricter all the time with lower limits and new contaminants of concern.

Stan Kurowski from the WA Dept. of Natural Resources (DNR) summarized DNR's plans for closure of its South Shore Road and the creation of a new consolidated DNR Morningstar Natural Resource Conservation Area (NRCA) that will not allow current uses or activities. A new DNR planning process for this new NRCA may begin this year. Stan went over a standard list of NCRA requirements and the need for conversion to low impact activities only (hike-in).

Stan discussed DNR State Trust land requirements and the need to abandon roads wherever possible to help reduce maintenance costs, such as the South Shore Road that DNR does not need for timber harvesting any longer. The State Trust must generate revenue for public schools and other uses. There are new Forest Practice requirements that require forest land owners to meet certain road standards, such as new culverts and fish passage facilities. All DNR roads in the state have been inventoried and compiled with a set of road closures listed in their "RMAP" database. DNR actually has many more roads than Washington State DOT. Stan discussed DNR's plan for the South Shore Road beyond 2008 and the Olney Pass site that DNR says would be used as a trailhead for the DNR Boulder and Greider Lakes trails. The South Shore Road would be abandoned in place up to Olney Pass. Abandonment in DNR terms means removing culverts and adding water bars, but does not mean pulling out the road bed itself or decommissioning to USFS standards, for example. The intent is to convert the old road into a new non-motorized trail. Trail building is not subject to Forest Practice standards. The road will eventually disappear and forest vegetation will grow in back in. No trails are planned along the north shore of Spada Lake.

DNR has estimated the cost to abandon the South Shore Road to be approx. $30,000. The estimated cost to reconstruct the South Shore Road is approximately $250,000. In addition, the cost to annually maintain this road is approximately $35,000 on average. Some years it is a lot more, sometimes it is less. These maintenance costs don't pencil out for the State Trust, so closure is slated for this road.

In 2005, DNR became aware of relicensing the Project from the District. DNR has since offered to keep the South Shore Road open to vehicular traffic until 2011 when resolution of the road should be known. DNR plans call for all RMAP road closure work to be completed by 2016.

DESIRED FUTURE CONDITIONS

Sergio Capozzi then asked participants to think about what their desired future condition was for the Project area through the term of the new FERC license (30-50 years). The group then went around the room and discussed their thoughts. These responses are summarized below:

Snohomish County PUD (Licensee):

- Rustic experience, similar to now, with activities compatible with sensitive resources in the area
- Northshore Recreation Site at Spada Lake is enhanced and used
- Greater cooperation with organized user groups to partner and help maintain facilities and trails; identify organized user groups for specific tasks and areas
- Reduce vandalism through partnering
- Enhanced opportunities for young families
- Enhanced opportunities at the Trout Farm Road Recreation Site such as trail loops and picnicking
- Provide picnic facility at the Old Gaging Station Road River Access

USFS:

- Public access should be improved
- Rustic opportunities for hiking, mountain biking, and wildlife viewing
- Non-motorized day use opportunities
- More opportunities for children and families
- River access would be improved
- Partnerships with others and more volunteerism
- Nature trails

NPS:

- Improved public access at the Project
- Hiking and mountain biking trails are enhanced
- Water trail opportunities are considered
- Consider a non-motorized trail around all or part of Spada Lake

Tulalip Tribe:

- Boat launches are well maintained
- Enhanced public education and interpretation; possible interpretation center
- Take advantage of great views
- Enhanced access and non-motorized trails

Snoqualmie Tribe:

- Improved non-motorized access in the river gorge including hiking and mountain biking
- Increased management presence to reduce vandalism
- Invasive species are controlled
- Sensitive habitat and traditional cultural uses are protected
- Interpretation and education signage is added
- Wildlife and habitat values are balanced with recreation
- Climate change is considered (note: the Jackson Project is generally not considered renewable energy)
- Reservoir levels and flow releases in the river can accommodate both recreational uses and the life cycle of fish

Washington RCO:

- Increased non-motorized trail opportunities and boating, etc.
- Well built and maintained facilities using accepted standards
- Increased management presence
- Recreational growth may not necessarily be tied to population, it could be tied to non-motorized recreation activity demand
- Good stewardship

WDFW:

- Better and user-friendly access (parking, trails, gates, river access, signs)
- Better boat fishing opportunities on Spada Lake and catch rates
- Improved wildlife viewing opportunities
- Defined Spada Lake level management

Washington DNR:

- District would take over the South Shore Road; if not, consider off-site mitigation
- Move the trailhead to Olney Pass for the Boulder and Greider Lakes Trails
- Existing recreation sites need a real focus and has few opportunities; could be interpretation and education opportunities, wildlife observation, or others

City of Everett:

- Maintenance of the current level of recreational activity
- Protect the drinking water quality supplied to 80% of Snohomish County
- Reduced vandalism to facilities

Hydro Reform Coalition:

- Access issues at the Project are addressed
- Non-motorized recreation opportunities are enhanced

Boeing Recreation Miners:

- Enhanced day use opportunities for an aging population
- A more welcoming experience, less focus on “keep out” signage
- More hiking and mountain biking trails
- Enhanced access in/out of the river canyon

American Whitewater:

- Spada Lake has a lot of public recreation restrictions due to the City of Everett’s drinking water quality protection needs; visitation will continue to remain low in the next license term as a result of these restrictions (no swimming, no camping, no power boats, and no beer).
- DNR trails in the area are great but they could do more
- A new trail(s) in the Sultan River gorge would be great due to the unique low elevation Old Growth vegetation near the population centers
- More hiking trails such as the William’s Creek area

- A new trail from Spada Lake into the new Wild Sky Wilderness Area
- Whitewater boating opportunities and access are enhanced in the Sultan River gorge (Segments 2 and 3) due to it's proximity to urban populations and unique wilderness experience.
- Protect the primitive experience in the river gorge; late successional and old growth forest

Confluence Research and Consulting:

- Consider conditions if future conditions surrounding the Project change: What if the town of Sultan becomes a destination and grows substantially? What if the road network to Spada Lake and the Project is enhanced and improved? Would use levels then change?
- Consider conditions if recreation activities change drastically?

PRELIMINARY RECREATION NEEDS ALTERNATIVES and DISCUSSION

Sergio Capozzi presented a set of three preliminary recreation resource alternatives (A, B and C) for the Project area that would help meet anticipated needs over the term of the new license. These alternatives are "high level" and pre-date the Recreation Needs Analysis due out in July. A table with the alternatives was distributed to participants. A fourth alternative (D) was included in the table but left blank for participants to fill in if desired. It is anticipated that selected components from the three alternatives (A, B and C) would be compiled into a fourth composite alternative. Participants were asked to comment on these three alternatives and to compose a fourth preferred alternative if desired.

Sergio first presented the whitewater boating concepts included in Alternative C since CRC representatives were leaving early. No ideas or comments were received from participants. Sergio then presented all of the components of Alternatives A, B & C.

Sergio discussed non-motorized access across Culmback Dam. The District has determined that controlled access across the dam could likely be considered. Various methods of controlled access would be considered. These methods could include online dam crossing permits, specific crossing times that are posted, and others. Andy Bridges (AW) said that he doesn't think anyone would want to day hike on a road.

Susan Rosebrough (NPS) discussed the potential for camping at the Northshore Recreation Site (site 8) accessed by crossing the dam. Sergio discussed potential uses at this site including hike-in group reservation day use and general hike-in day use picnicking and sightseeing. Sergio discussed the need to use existing recreation sites that are already disturbed and are already linked by roads. Jim (RCO) discussed turning roads into trails and a California technical report on this process.

Stan (DNR) discussed the Morningstar NRCA planning process and how the DNR will be looking at options for the South Shore Road. The DNR will be considering an overland trail with abandonment of the road. The DNR will be balancing the costs of

road maintenance (a Trust concern) with public access and consistency with NRCA requirements.

Andy (AW) questioned the rationale for 2 boat ramps at Spada Lake. Sergio explained that the Nighthawk Recreation Site is the closest site to launch a boat to access the Williamson Creek fishing area (good fishing area). Another boat ramp is the South Fork Recreation Site that has the best launch for lower pool elevations. It takes longer to access fishing sites due to the use of small electric motors on boats. Rich supports only 1 boat ramp.

Feedback on the three alternates (A, B and C) was requested by Sergio by June 13th. All participants indicated that they could be able to do this review. The District will send the workshop summary minutes and the alternatives table to all attendees in a few days.

Tom O'Keefe (AW) asked about any concerns on USFS-managed lands. One of the recreation issues is the 6122 trail to the river. Andy Bridge indicated a trail across the river near the stringer bridge would go to nowhere and would not be used.

END MEETING

RECAP ACTION ITEMS

1. Kim Moore to check with Patti Leppert (FERC) regarding attendance at a September 2008 Recreation Work Group Meeting.
2. Karen Bedrossian to set up a Study Plan 13/14 meeting in September 2008 to discuss preliminary PMEs.
3. All to provide comments on the 3 preliminary recreation alternatives by June 13. Send comments to Dawn Presler at the District.

NEXT MEETING

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Comments Letters

Comment Letter 1: National Park Service – Susan Rosebrough (email received 5/30/08)

Hi Dawn,

Thanks for the meetings yesterday, they were both helpful and it is nice to see some of the study results coming in. I just had a couple of comments to share on the alternatives:

1. River Access & Whitewater boating. All of the river access/boating pieces are lumped together in one option. While, I understand that these options can be put into future alternatives. I think it would be nice to see a range of options for river access. (i.e. one option might have X days of boating release at the dam, another might have a scenario based on water year and use; another might focus on releases at the diversion dam; for river access - one alternative might use existing trails while other alternatives might create several new trails; another option might take away all the gates while another alternative might extend the hours). These options could be spread across the alternatives giving an array of options. With river access, other uses including hiking, biking, family picnicking, mining could be incorporated to. The options for releases might need to wait to be developed until the fishery studies come in.

2. Hiking/Biking Trails & Access. At the visioning exercise Sergio led, there was a lot of interest in hiking and biking trails and access to the area. The old growth forest was mentioned as a unique feature. I'm not sure what the trail study looked at, but it would be nice to see more trail options in the range of alternatives. If other trail routes were looked at, but unfeasible this would be good to explain too.

3. South Shore Road and Access to Spada Lake. NPS currently supports terminating the road at the first lake access road - south shore. This provides vehicle access to the lake and limits impacts to other traditional uses of the lake and surrounding area.

4. Lake Use. We would like to see some options developed for lake uses they are not currently available - primarily swimming and camping, perhaps on a trial basis to ensure water quality standards are met. Nonmotorized Water Trails are on the rise and I wonder if this area could be promoted for this use, given the in-place restrictions on motorized use.

Process. At the meeting, it was suggested that the alternative matrix get sent out electronically. I think this is important as some of the user groups did not attend the meeting, and they earlier they provide input the better and this will allow that opportunity. This would also allow people at the meeting to forward it to any groups they think might provide feedback.

I may have some more comments later.

Thanks!
Susan

Susan Rosebrough
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Rivers, Trails and Conservation Assistance/Hydropower
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www.nps.gov/pwr/rtca

Comment Letter 2: American Whitewater/Resident of Sultan – Andy Bridge (email received 6/13/08)

Dawn,
Here are my comments on SP13 Rec Needs Alternatives as requested by Sergio.

Facility Development Needs
I would like to see the South Shore Road maintained as a minimum to the South Fork and preferably to the South Shore existing sites. If this is not done then hikers that will be accessing the DNR trails to Greider and Boulder Lake will most likely be making a multi day trip and they will end up camping along Spada Lake enroute. The City will be challenged to control this use. Some hikers may do this anyways due to the increased distance and this issue will be exacerbated if the South Shore Road is closed at Olney Pass. I realize that there is an ongoing expense to maintain this road and would hope that the district, city of Everett, and the DNR can come to a workable cost sharing agreement that makes sense. Overnight parking should be allowed because certain users will want to access more remote areas for a multi day backcountry experience.

One boat ramp should be sufficient given the level of historical use. I understand that due to small electrical motors that this may mean longer travel time to certain fishing areas but the usage level does not warrant maintaining more then one ramp. These motors will improve with technology.

Alternative routes for new trails that would start at the terminus of the South Shore Road wherever that may be should be explored. One option would be to steer hikers up to the Kromona mine from Olney Pass. This is a potential dayhike route that users of the Greider and Boulder Lake trails may find appealing. A possible hiking trail up the South Fork is another option.

The Trout Farm river access should be improved and enhanced to provide more parking and picnicking opportunities. This site is underutilized. I believe that between the angler groups and kayakers that we can arrange some type of stewardship program for this area.

Build a new access trail to the Sultan River from USFS 6122 located as per the USFS's recommendations. This trail can provide river access for kayakers as well as relatively easy access to some old growth forest for hikers.
As part of this trail infrastructure improve on the existing parking area on 6122 as a formal trail head. American Whitewater would supply volunteers to the USFS for trail building work days.

Thanks for the opportunity to comment.
Andy Bridge
American Whitewater and Sultan resident

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Comment Letter 3: WDFW – Rich Johnson (email received 6/17/08)

SUBJECT: SP 13 Comments on Recreational Needs Alternatives Table 1 May 28, 2008

These comments are provided in relation to the May 28, 2008 meeting, and may be modified as more information is provided and additional field reviews are conducted. WDFW has previously commented on the inadequacy of the study plan 13 draft needs analysis section in that current conditions are not inviting to recreational use. WDFW may expand upon those themes as study plan 13 becomes more developed.

WDFW generally prefers road abandonment, and habitat for fish and for wildlife would benefit from abandonment of the road east of Olney Pass. However, almost all of the recreational facilities, such as trails, boat launches, and picnic sites, are east of Olney Pass. Since our preliminary review of options for new sites that could compensate for the closure of the South Shore Road was negative, it appears that the road needs to be kept open to at least some of the existing sites.

Angling effort is generally concentrated at the eastern end of the lake. The existing restriction of not allowing gasoline powered engines on watercraft limits the safe distance watercraft can travel. Hiking trails also begin at the eastern end of the lake. Since a road closure will increase both boating and hiking distances, time, and effort, it appears that maintaining and upgrading the South Fork, South Side, and Nighthawk recreation sites is the best recreation option. Enhancements should include improved boat launches and parking, educational signs, and short trails accessed from each site to improve the destination experience.

Management of the reservoir pool level to provide a stable, full pool during the height of the user season, mid-May to mid-September, would also enhance use and enjoyment of the lake. This would also benefit fish life and waterfowl.

Access to the river should be improved. Parking and a trail are needed to access the reach just downstream of Culmback Dam, and a safe kayak launching area is needed here. A safe kayak launch / take-out is also needed at the diversion dam. Access should be allowed to the diversion dam during planned boating flow releases. Parking and turn around areas should be provided to improve access to the sections of river behind locked gates. Where safe and appropriate, trail access to the river should be provided. The river access and parking at the powerhouse should be maintained and improved for both foot and boat usage. The Trout Farm Road boat launch should be modified and enhanced to allow safe boat launching and parking for vehicles with trailers, without providing access for unintended uses.

Controlled high flow release appears to be a reasonable way to allow some boating use of the river that has otherwise been lost due to the project. The ability to transport a couple hundred boats and boaters to the put-in and takeout sites during planned flow releases needs to be provided in some manner that allows for the efficient enjoyment of the river during those brief periods when kayaking flows are available. Providing adequate parking and river access would be one method, and coordinating some type of shuttle service would be another.

Improved parking / pull-off areas for access to Lost Lake and other undeveloped reaches of the river and project, coupled with better information on how to access and use these areas, would increase recreational opportunities.

Rich Johnson / Habitat Biologist
Washington Department of Fish and Wildlife