

Final
**Recreation Needs Analysis
Study Plan
for
Energy Northwest's
Packwood Lake Hydroelectric Project
FERC No. 2244
Lewis County, Washington**

Submitted to



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1.0 INTRODUCTION

Energy Northwest's Packwood Lake Hydroelectric Project, FERC No. 2244, received its initial license in 1960. The majority of the Project is located in the Gifford Pinchot National Forest, and the lands surrounding Packwood Lake are primarily located in the Goat Rocks Wilderness Area. The Project consists of an intake canal, a concrete drop structure (dam) and intake building on Lake Creek located about 424 feet downstream from the outlet of Packwood Lake, a 21,691-foot system of concrete pipe and tunnels, a 5,621-foot penstock, a surge tank, and powerhouse with a 26,125 KW turbine generator. The Project location is shown on Figure 1.

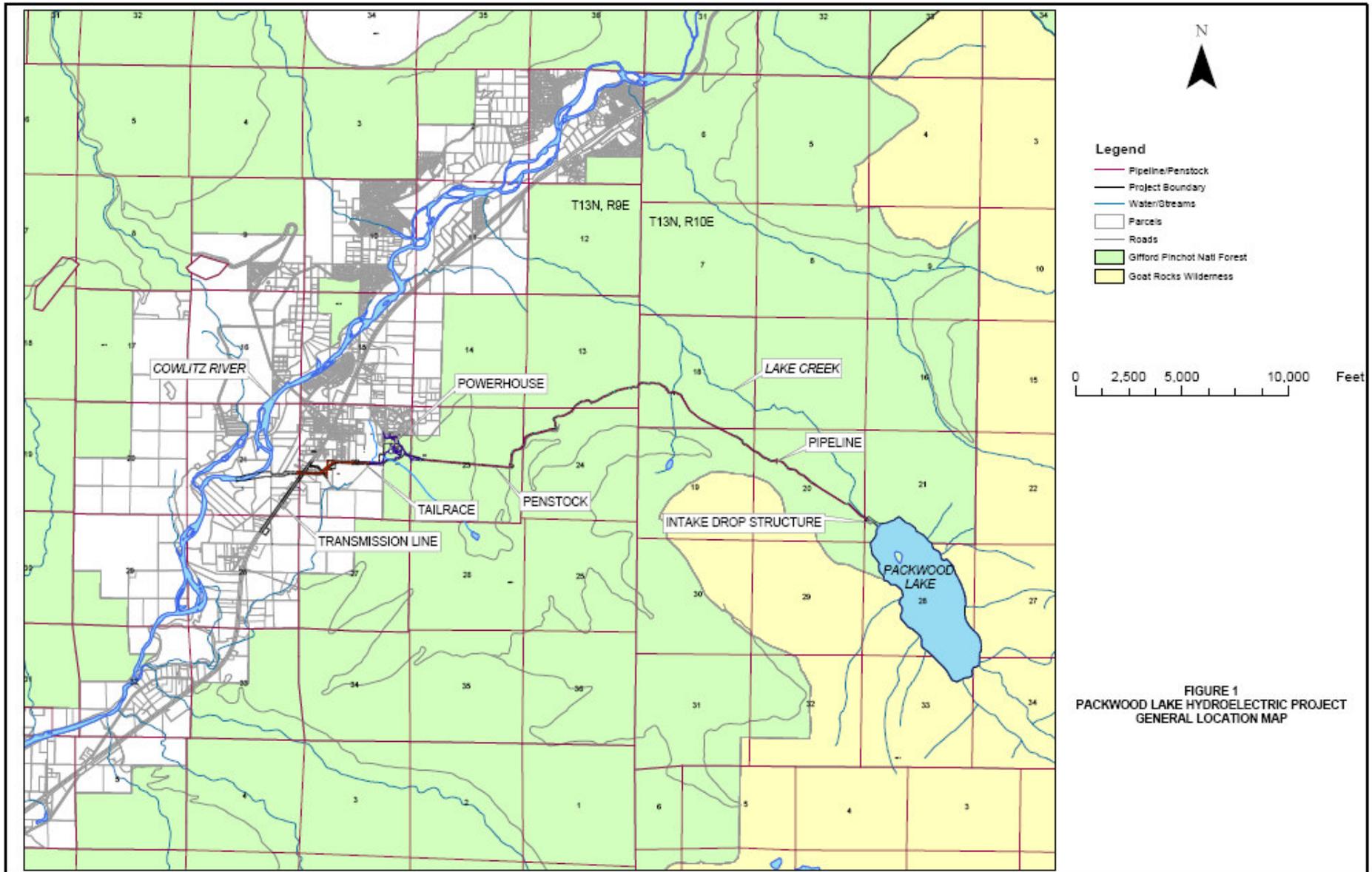
The source of water for the Project, Packwood Lake, is a lake situated at an elevation of approximately 2,857 feet above mean sea level (MSL), about 1,800 feet above the powerhouse. Water discharged from the Project is released to the Cowlitz River via a tailrace channel. Power from the Project is delivered over an 8,009-foot 69 KV transmission line to the Packwood substation.

Packwood Lake is maintained at approximate elevation 2,857 feet MSL from May 1 through September 15. During the remainder of the year, the existing FERC license allows lowering the lake level not more than eight feet below the summer lake level down to an elevation of 2,849 feet MSL.

Access to Packwood Lake is available via a motorized trail maintained by Energy Northwest (Pipeline Road/Trail #74) and a non-motorized trail maintained by the Cowlitz Valley Ranger District (Packwood Lake Trail #78). The trailhead for both trails is located at the end of FS Road 1260. Pipeline Trail #74 ends at the lakeshore. Trail #78 goes to the lakeshore then continues across a bridge at the lake outlet and heads up to Mosquito Lake and Lost Lake. Trail #81 veers off of Trail #78 and continues along the lakeshore, and along Upper Lake Creek.

1.1 Goals and Objectives

The goals of the recreation needs analysis are to evaluate recreation use and demands and identify recreation needs in the Project area that recreation resource managers should strive to address. The needs analysis does not assign specific responsibility for implementing potential actions. The intent of the needs analysis is to provide information for Energy Northwest, as well as other recreation resource managers and providers, to use in making decisions regarding the management planning, design and construction of recreation resources in the Project area.



2.0 AGENCY AND TRIBE RESOURCE MANAGEMENT GOALS AND OBJECTIVES

2.1 USDA Forest Service Resource Management Goals and Objectives

Recreation at, and around, Packwood Lake is managed and controlled by the USDA Forest Service. Management classifications around Packwood Lake include Unroaded Recreation Without Timber Harvest (UH) and Wilderness (WW).

Packwood Lake and lands on the north end of the Lake are within the UH classification. The resource management goal for this area is to provide high quality dispersed recreation in a predominately natural setting. The Recreation Opportunity Spectrum (ROS) management prescription for this area is for no more that 15 encounters between groups of visitors per day with groups no larger than 25 persons (encounter no more than 400 individuals each day), and no more than three other campsites visible from a given site. Campsites should be located away from lakeshores, streamsides, and trails (USDA Forest Service, 1995).

While the Lake itself is outside of Goat Rocks Wilderness boundary, over three quarters of Packwood Lake's shoreline is within the designated Wilderness boundary (see Figure 1). The goal of the Wilderness designation is to preserve the wilderness character, allowing for natural processes and providing opportunities for solitude, challenge and inspiration. Within this intent, primitive or unconfined type of recreational, scenic, scientific, educational and historical uses are allowed. The ROS management prescription for this area directs that the average number of people encountered each day should be 24 or less and that no more than two campsites should be visible from a given site. All campsites should be located at least 100 feet from the shoreline (USDA Forest Service, 1998).

Goals and objectives of the Forest Service and their implications related to exiting and future recreation facilities/activities will be reviewed, as part of this needs analysis.

2.2 Other Resource Management Goals

In its licensing decisions, FERC considers a hydroelectric project's consistency with relevant comprehensive plans for developing or conserving waterways, which includes the Interagency Committee for Outdoor Recreation's (IAC) Statewide Comprehensive Outdoor Recreation Plan (SCORP) (IAC, 2002 and 2003), as amended. The IAC SCORP encourages hydropower project operators to review recreation enhancement opportunities at projects. Recommendations and goals outlined in the SCORP will be reviewed, as part of this needs analysis.

Recreation policies and goals outlined in the Lewis County Comprehensive Plan (Lewis County, 2002) encourage opportunities for recreational and tourist activities that are well managed with respect to the overall preservation of natural resources. The County encourages the multiple use of forest land, which acknowledges the primary use and provides for other compatible uses. These uses may include air and water quality, fauna, flora and their habitats, viewsheds,

watersheds and dispersed recreation. Policies and goals outlined in the Lewis County Comprehensive Plan will be reviewed as part of this needs analysis.

3.0 EXISTING INFORMATION AND NEED FOR ADDITIONAL INFORMATION

The following sections describe previous recreational resources information in the Project area, followed by the need for additional information.

3.1 Existing Information

The US Forest Service and Energy Northwest have collected information over the years. The following generally summarizes the information collected.

- A study of the Gifford Pinchot National Forest (GPNF) was conducted in 2000-2001 as part of the US Forest Service National Visitor Use Monitoring (NVUM) initiative (Graefe, et al., 2002). The purpose of the study was to determine recreation use patterns, satisfaction levels, economic expenditures, and experiences currently occurring in the GPNF. On-site interviews were conducted during October 1, 2000 through September 30, 2001. One of the sampling sites was at the Trail #78 parking lot, where interviews were conducted two or three times during the sampling period. The results indicated that visitors to the GPNF are generally quite satisfied with their visits and would like to see management continue in the directions that are currently being pursued. Most visitors surveyed were not staying overnight in the GPNF.
- The 2002 FERC Form 80 Recreation Report (Energy Northwest, 2003) was completed based on general observations in the Packwood Lake area by Energy Northwest. Based on Energy Northwest general observations, the annual total at Packwood Lake for 2002 was estimated as 1,200 recreation days for daytime use and 450 recreation days for nighttime use. The daytime average peak use weekend (July 4th weekend and other holiday weekends) in 2002 was estimated as 40 recreation days for daytime use and 24 recreation days for nighttime use (Coleman, 2003).
- Energy Northwest and its contractors recently collected detailed information regarding recreation facilities and visitor use around Packwood Lake, and at the parking lot that services both trails #74 and #78. Vehicle utilization of Trail #74 was also reviewed, as well as recreation use of Lake Creek (Howe, 2007). Overall, the 2006 surveys indicated that visitors were very satisfied with their recreation experience at Packwood Lake. Based on the recreation resources study conducted in 2006, the majority of annual visits to Packwood Lake occur in the peak-season (Memorial Day weekend to Labor Day) and nearly four times more people visit Packwood Lake during weekends than during weekdays. Based on the 2006 survey data, the annual total at Packwood Lake is estimated as 1,694 recreation days for day use and 4,543 recreation days for overnight use. The daytime average peak use weekend (July 4th weekend and other holiday weekends) based on 2006 data showed an estimated average of 35 recreation days for day use and 40 recreation days for overnight use.

- The current Forest Service mandatory, self-issuing wilderness permit system provides information on wilderness use, particularly number of users, destinations, origins, and activities. Two Wilderness Permit Stations are located near the Wilderness boundary; one on Trail #78 and the other on Upper Lake Creek Trail #81. This is the third most popular entry point into the Goat Rocks Wilderness on the Cowlitz Valley Ranger District (Bedell, 2004). Wilderness permits in 2005 and 2006 indicated that an average of 522 people enter the Wilderness at this location each year (Howe, 2007). The Forest Service estimates that 80 percent of visitors complete permits at Wilderness Stations (Bedell, 2006). Based on this estimate, it can be assumed that more than 650 visitors likely enter the Wilderness near Packwood Lake annually.
- Historically Packwood Lake has been extremely popular for fishing, boating and camping. Recreation use at Packwood Lake was greatest prior to 1992. A public campground at Packwood Lake was first established by the Forest Service around 1917, and in 1921 a tent camp resort was developed near the lake outlet. From 1921 to 1991, the Forest Service oversaw a permitted resort at Packwood Lake. In 1936, a two-story cedar lodge complete with store, kitchen, and dining area was constructed; followed by a floating dock. Eleven small wood cabins were built and rented to overnight guests. In 1972, the main lodge, utility room, and the boiler building were damaged by fire. Most of the cabins were removed in 1974. The boat concession, with boathouse and dock, continued until 1991. The remaining structures were removed by the Forest Service in the 1990s (Bedell, 2004).
- After the Forest Service permitted resort and facilities were removed, visitor use decreased significantly. Prior to closing down the Forest Service permitted resort in 1992, visitors use at Packwood Lake was estimated to be an average of about 60 people per day during the summer months with up to 300 people per day on weekends (Bedell, 2004). Based on the average number of visitors per day, prior to 1992, it is estimated that 6060 people visited Packwood Lake during the summer months.
- Current visitor use at Packwood Lake, based on surveys conducted in 2006, estimated an average of less than 30 people per day during the peak-season, with an estimated 50 people per day on weekends (Howe, 2007). Based on the 2006 surveys, an estimated 2,535 people visit Packwood Lake during the summer months (peak-season).

3.2 Need for Additional Information

FERC guidelines identify the requirement to evaluate existing and potential future recreation needs (FERC, 2004). Existing and future recreation needs within and adjacent to the Project boundary are currently undefined. This needs analysis, proposed in the revised study plan (Howe, 2005), will satisfy the FERC requirements.

4.0 NEXUS BETWEEN PROJECT OPERATIONS AND EFFECTS ON RESOURCES

Packwood Lake existed before development of hydroelectric facilities; the Project did not create the lake or the recreational opportunities within the National Forest and wilderness lands. In order to improve access to Packwood Lake, in the 1960s Energy Northwest constructed

approximately 3.5 miles of permanent road (Forest Service Road 1260) to Forest Service standards and constructed a new parking lot located at the end of the access road to accommodate a maximum of 50 cars and five trailers. Energy Northwest also reconstructed a hiking trail (part of Packwood Lake Trail #78) to Forest Service standards for public recreation access from the parking lot to the Lake and Wilderness areas beyond.

The Project access road (Pipeline Road, FS Rd 1260-066) and connecting trail (Trail #74) provide motorized access to Packwood Lake. The Pipeline Road and trail is maintained by Energy Northwest and is Energy Northwest's primary access for operation and maintenance of the hydroelectric diversion dam at the lake's outlet. The Pipeline Road/Trail #74 is located approximately 100 yards from the parking lot, down Forest Service Road 1260. Energy Northwest use of the Pipeline Road and connecting trail is generally once per week, to check on intake facilities and perform needed maintenance. Public access on foot, horseback, or by all terrain vehicles is provided around Energy Northwest's locked vehicle gate on the Pipeline Road. The Pipeline Road is 1.3 miles in length, with the gate near the junction of Snyder Road (MP 0.03). Trail #74 continues from the end of the Pipeline Road another 3.2 miles in length.

Energy Northwest uses Latch Road (Forest Service Road 1262) and the one-mile trail leading to the intake structure for access in winter months, when snow makes access difficult on the Pipeline Road. In these instances, Energy Northwest will drive FS Rd 1262 to the snowline, and then snowmobile to the intake structure. Forest Service trail crews use this road for working on trails in the Packwood Lake area. The Forest Service maintains this road, although Energy Northwest has performed minor maintenance, as needed (refer to the Engineering Needs for Access Routes Study Draft Report (Watershed Geodynamics 2007). A locked gate is located on FS Rd 1262, approximately 2.4 miles from the junction of Snyder Road. There is no public vehicular traffic behind the gate, although a few hunters may use the road up to the gate in the fall. From this gate, it is another 2.2 miles to where the road ends and the one-mile trail begins.

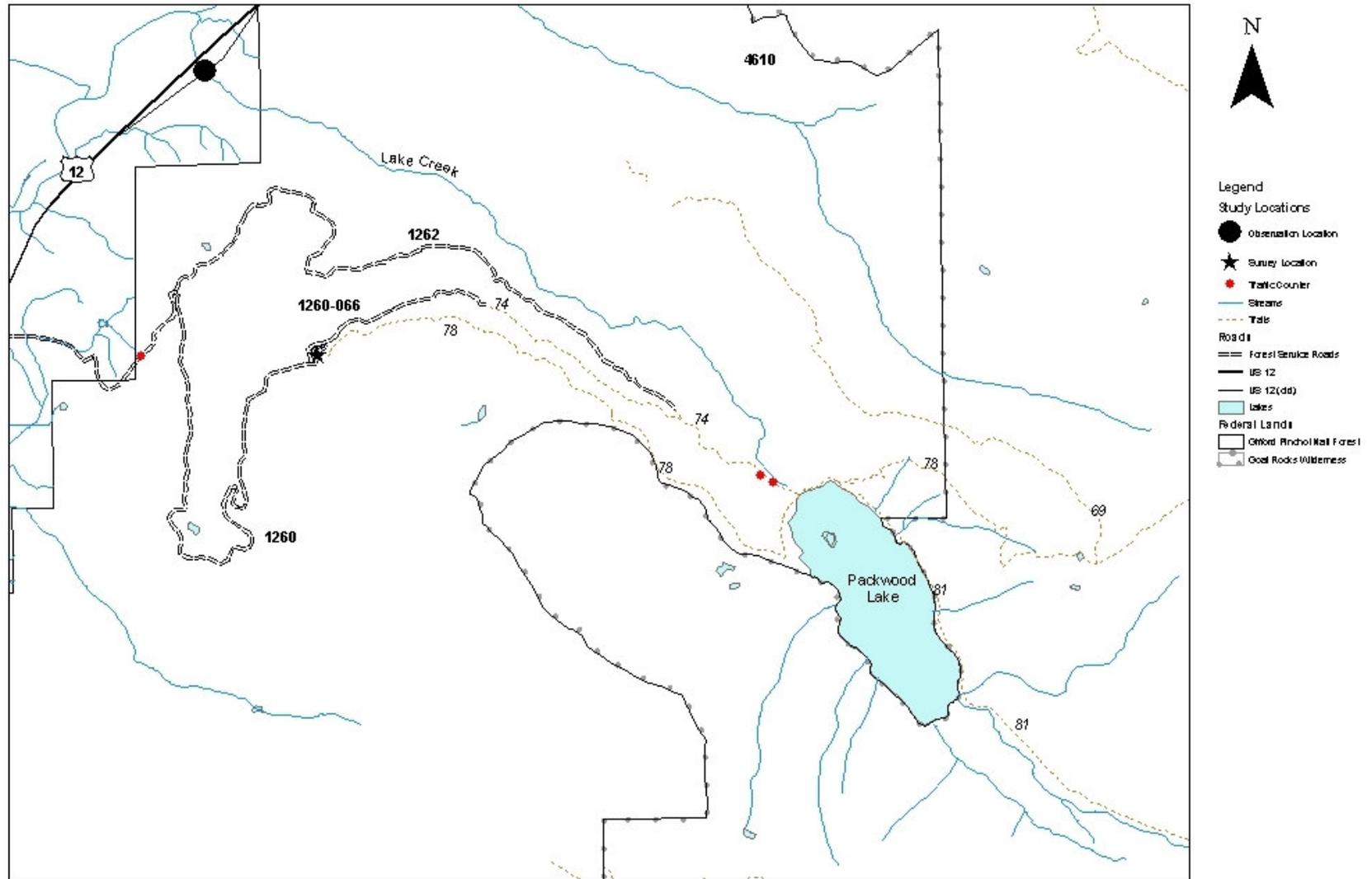
This proposed Recreation Needs Analysis will provide additional information regarding current and future recreation demands and needs in the Packwood Lake Project area.

5.0 STUDY AREA AND METHODS

The following outlines the study area and methodology proposed to conduct the Recreation Needs Analysis.

5.1 Study Area

The proposed study area, or Project area, in this analysis will include lands and waters within and adjacent to the Project boundary. More specifically the study area consists of Packwood Lake and adjacent shoreline; the parking lot at the end of Forest Service Road 1260 and Trails #74, #78 and #81 where they provide access to Packwood Lake; and Lake Creek near Old Highway 12 (Figure 2). The needs analysis will evaluate existing and potential recreation activities and resources within this area.



Source: USDA Forest Service, Gifford Pinchot National Forest 2004

1:50,000

0 2,500 5,000 10,000 Feet

Figure 2
Packwood Lake Hydroelectric Project
Recreation Study Area

5.2 Methodology

The Recreation Needs Analysis will involve a number of interrelated factors, including an evaluation of the existing recreation supply and use in the Project area, and recreation demand and needs. Recreation supply, use, demand and needs will be based on information obtained in the Recreation Resource Study (Howe 2007), including the inventory of existing recreation facilities and dispersed sites, current visitor utilization and activity participation, and visitor perceptions. Additional information including visitor use data, population and demographic data and trends, growth projections, local and regional demand information obtained from existing studies and planning documents, and land management prescriptions may be used in the analysis. Components expected for the needs analysis are described in more detail below.

5.2.1 Data Collection

Data to be collected that will be used in the analysis of current and future recreation supply, use, demand and needs includes local, state and federal planning documents that may provide information regarding recreation demand, trends, goals, and/or recreation management in the Project area, surveys, historical visitor use data, population projections and demographic information. This data will be used to assess recreation demands, future conditions and needs.

5.2.2 Recreation Supply

In this component, the recreation inventory information included in the Recreation Resources Study (Howe, 2007) will be reviewed. The inventory and condition status of existing recreation facilities will be described, including compliance with current and potential proposed Forest Service management regulations and policies.

5.2.3 Existing Recreation Use

Existing recreation use data from the Recreation Resources Study (Howe, 2007) will be used to analyze recreation use along Packwood Lake by activity type. For this task recreation use data from the 2006 Survey will be used. Although the study report presents numerous other types of data, including US Forest Service Wilderness data and survey data collected by Forest Service workers in August/early September 2006; this other data will only be used for reference regarding the validity of the 2006 data. Statistical computation of the survey data, such as standard deviation, will be used to determine variability of visitor use (Thomas and Nelson, 1996).

5.2.4 Recreation Demand/Trends

Visitor demand for recreation activities that are pertinent to the Project area and how this demand will be anticipated to change in the future over the term of the new license will be evaluated using historical visitor use data, Project area growth projections and studies related to recreation demands and trends.

The estimated increase in demand for recreation activities in the Project area will be assessed by projecting recreation visitation based on past, existing and future conditions, growth rates, and trends, as described below:

- Past recreation trends at Packwood Lake will be analyzed, to help predict anticipated future growth rates.
- Current and potential future conditions and trends will be reviewed, based on existing and potential future management directives and review of other similar dispersed forest areas, to determine influences on future recreation use.
- Potential growth in recreation activities will be analyzed using weighted averages based on the location of visitors (based on 2006 surveys) and growth rates for these areas.
- Information obtained from various sources, such as SCORP, US Forest Service and County Plans, and the 2006 visitor surveys will be reviewed, as well as other economic/social data (i.e. affects of increases in gas prices), to help predict changes in anticipated demand for outdoor recreation activities associated with the Project area.

5.2.5 Recreation Capacity

The capacity of the Project area, with the current situation, will be evaluated based on a review of existing dispersed sites and parking spaces at the Packwood Lake trailhead parking lot, and visitor attitudes regarding crowding. This review will be based on information obtained from the Recreation Resources Study (i.e. inventory, Wilderness Monitoring Site Forms and recreation surveys) (Howe, 2007). Current and future capacity of the Project area will also be evaluated based on compliance with GPNF Land and Resource Management Plan (LRMP) and Wilderness Resource Protection Environmental Assessment and regulations. A review of LRMP standards and Wilderness regulations related to dispersed camp site suitability will be conducted.

5.2.6 Recreation Needs

This component will provide a synthesis and analysis of recreation needs by facility/activity categories in the Project area over the term of the new license. To assess the existing and future needs for recreation facilities/activities in the Project area, recreation supply and demand will be reviewed and compared with management standards/directions/goals. Recreation demand minus the existing recreation supply will be estimated to approximate recreation need. Visitor survey responses from the 2006 surveys will also supply further information regarding visitors' perceptions of recreation crowding and needs. Future needs will be estimated based on expected increase or decrease in supply and demand, based on potential growth, trends and resource management prescriptions. The suitability and need to provide barrier-free access will also be reviewed.

The ability of the Project area to accommodate recreation needs will be based on the opportunities and constraints of the resources in the Project area.

5.3 Products

The products of the Recreation Needs Analysis will be draft and final reports discussing the results of the analysis. Draft copies of the Recreation Resources Study report will be provided to the Forest Service and other stakeholders for review and comment. The final study report will be provided to the Forest Service and other stakeholders.

5.4 Consistency with Generally Accepted Scientific Practice

The planned study methods discussed above are consistent with the methods followed for other hydroelectric relicensing efforts in Washington State, such as the Box Canyon Hydroelectric Project, Lake Chelan Hydroelectric Project and Rocky Reach Hydroelectric Project. For these projects the Needs Analysis studies were accepted by participating stakeholders and FERC.

6.0 CONSULTATION WITH AGENCIES, TRIBES AND OTHER STAKEHOLDERS

Energy Northwest initiated agency consultation in December 2003. Meetings related to recreation resources were held in 2005 and 2006. Stakeholder representatives are invited to provide information for the study and technical reviews of the draft Recreation Needs Analysis Study Plan and Report.

7.0 PROGRESS REPORTS, INFORMATION SHARING, AND TECHNICAL REVIEW

Technical reports, including the draft and final Needs Analysis Report will be shared with stakeholders and will discuss the progress of the studies. Energy Northwest will provide copies of the draft Recreation Needs Analysis report to interested stakeholders for review. Review periods will be 30 days, after which Energy Northwest and its consultant will take review comments into consideration when making revisions and producing the final report. If requested, Energy Northwest and its consultant will meet with interested stakeholders to discuss results.

8.0 SCHEDULE

The Recreation Needs Analysis Study Plan will be finalized by the end of May 2007. Data collection efforts for the analysis will be initiated in late May and the analysis will be conducted in June 2007. A draft Recreation Needs Analysis Report will be completed by mid-July and distributed to the Forest Service and other interested stakeholders for review and comment. A final Recreation Needs Analysis Report will be completed following receipt of comments.

9.0 LEVEL OF EFFORT

Study efforts outlined above for the Packwood Lake Recreation Needs Analysis are intended to provide relevant information regarding recreational demands and needs in the Project area. It is expected that the Recreation Needs Analysis would involve several weeks of data collection efforts and approximately four weeks to analyze data and prepare a draft report. Additional

effort would be required for agency consultation, including distribution of the draft report for stakeholder review and comment, and for completion of a final report. The estimated cost for completing the analysis is \$33,200.

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