

Revised

**Recreation Resources 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. 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.

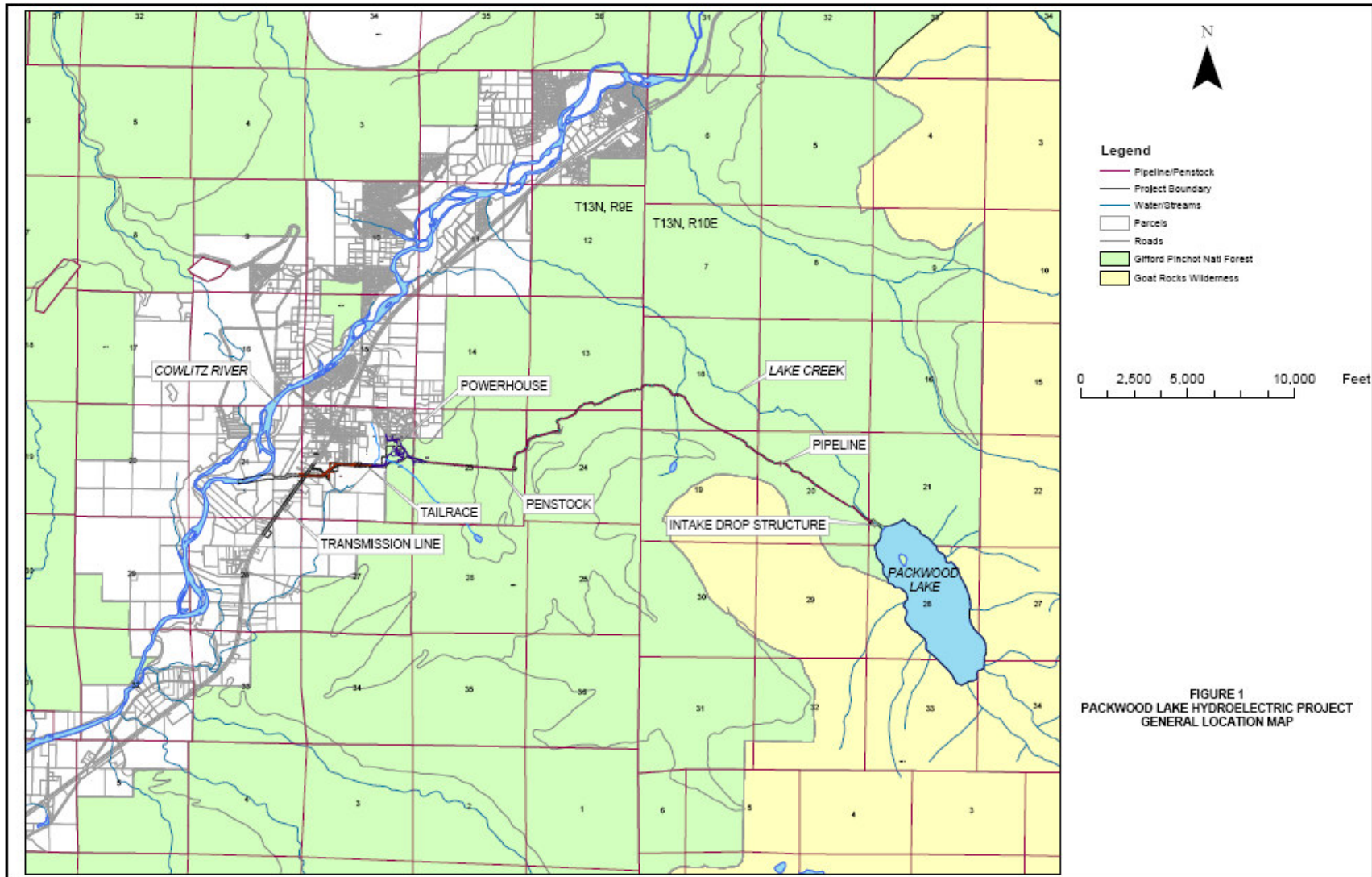
The source of water for the Project, Packwood Lake, is a natural lake situated at an elevation of approximately 2,857 feet above mean sea level (MSL), about 1,800 feet above the powerhouse. Water discharged from the Project is released to the Cowlitz River via a tailrace channel. Power from the Project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

Packwood Lake is maintained at its approximate natural 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 and 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.

Over three quarters of Packwood Lake shoreline is within the Goat Rocks Wilderness boundary, while the lake itself is outside of this designated wilderness boundary. There are approximately 20 documented campsites along the non-wilderness portion of Packwood Lake and 23 campsites monitored by the Forest Service within wilderness along the shoreline (USDA Forest Service, 2005). A map showing these sites will be developed as part of the Recreation Resources Study.

Energy Northwest fisheries/aquatic consultants, who have been conducting studies on Lake Creek, indicated that recreational use of Lake Creek is very minimal due to the creek's location within a steep canyon and limited access (Blum, 2005). According to Washington Department of Fish and Wildlife regulations, Lake Creek is open for game fish from June 1 to October 31 (WDFW, 2004). The Creek is closed to salmon fishing.



1.1 Goals and Objectives

The goals of the Recreation Resources Study are to obtain additional information regarding recreational facilities, utilization, including activity types and location around Packwood Lake, as well as utilization of the parking lot that services both trails #74 and #78, and vehicle utilization on Trail #74. Information will also be obtained to determine recreational use (i.e. fishing) at Lake Creek.

Information gathered will be used to estimate average weekday, weekend day and holiday recreational use along the shoreline of Packwood Lake during the off-seasons (late April/May fishing and September/November hunting and fishing seasons) and during the peak-season (Memorial Day Weekend to Labor Day). Information will also be obtained to learn more about visitor's attitudes and desires around Packwood Lake. Observations made at Lake Creek will be used to estimate average weekday, weekend day and holiday recreational use (i.e. fishing on Lake Creek) during the fishing season (June 1 through October 31).

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).

Under the UH classification, the resource management goal 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).

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 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).

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

Existing information regarding recreation use in the Project area has been collected by the Forest Service and Energy Northwest and is summarized below.

- 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 the period 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).
- 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. Wilderness permits indicate that an average of 900 people enter the Wilderness at this location each year (Bedell, 2004).
- Currently, the Forest Service documents general information and observations around Packwood Lake as a result of site visits for various management purposes. It is estimated that approximately two-thirds of the non-wilderness use at Packwood Lake is day use (Bedell, 2004).
- 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. The Forest Service commonly

had wilderness rangers and recreation staff persons stationed part-time at the lake during this period. Estimates of use prior to 1992 indicated an average of about 60 people per day during the summer months with up to 300 people per day on weekends (Bedell, 2004).

3.2 Need for Additional Information

The Forest Service's Existing Information Analysis for the Packwood Lake Project (USDA Forest Service, 2005) indicates a need for additional information regarding current recreation use patterns and user attitudes in the Project area. The Forest Service Wilderness permit system provides good information within the wilderness area, but does not provide information regarding non-wilderness area use and does not provide information regarding user desires and needs within the Project area.

The Forest Service has requested a study to obtain information on usage of Trails #74 and #78, access methods, numbers and destinations of visitors, length of visit, activities, as well as visitor concerns and desires. The Forest Service has requested this study to provide current information to determine protections, mitigation and/or enhancement needs.

The Federal Energy Regulatory Commission (FERC) requested additional information regarding maintenance, inspection and management practices; potential adverse impacts associated with existing recreation uses; recreational use in the bypassed reach (Lake Creek); and overnight camping (FERC, 2005).

The data collection, recreation inventory, survey/observation efforts, and traffic monitoring outlined in this proposed study plan will attempt to address these additional information requests.

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. The Project has improved access to Packwood Lake.

In the 1960's 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 minimum 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) provides 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 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. The Forest Service is considering curtailing recreational ATV use on the Pipeline Road/trail because such use creates conflicts with management objective of the area.

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 landslide clean-up, as needed. 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. The Forest Service is considering decommissioning this road.

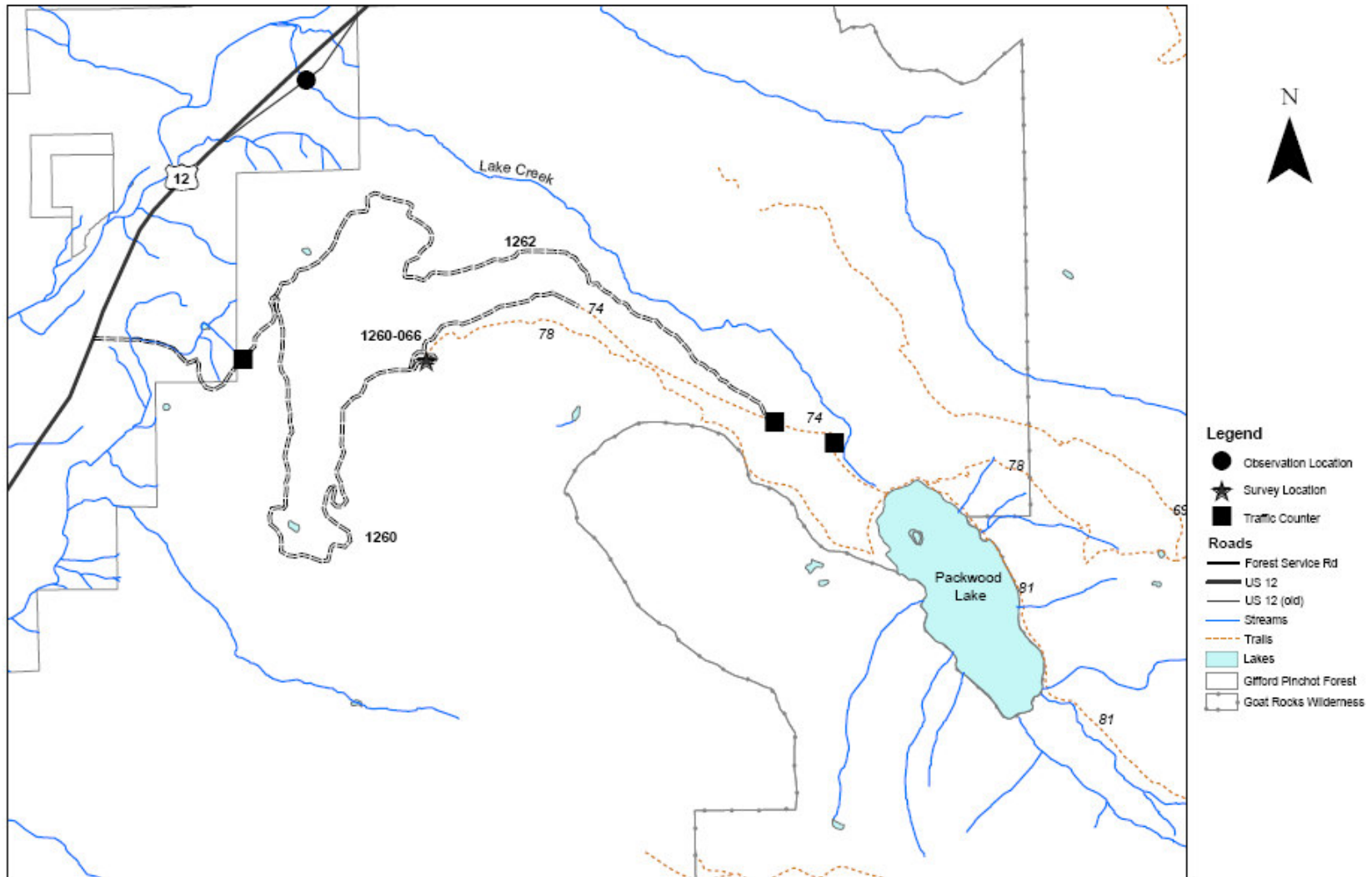
This proposed Recreation Resources Study will provide additional information regarding current recreational use patterns and user attitudes in the Packwood Lake Project area.

5.0 STUDY AREA AND METHODS

The following outlines the study area and methodology proposed to conduct the Recreation Resources Study.

5.1 Study Area

The proposed study area is the Packwood Lake area, including 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 study will include recreational resources within this area.



Source: USDA Forest Service, Gifford Pinchot National Forest 2004

1:50,000

0 2,650 5,300 10,600 Feet

Figure 2
Packwood Lake Hydroelectric Project
Recreation Study Area

5.2 Methodology

Energy Northwest's proposed Recreation Resources Study will include an inventory of recreational resources in the study area, data collection, on-site surveys and observations to determine recreational use patterns, and user attitudes in the Packwood Lake area and Lake Creek. Energy Northwest trip records on Pipeline Rd/Trail #74 will be obtained and traffic counters will be installed on Trail #74 to learn use patterns by Energy Northwest and the public. A traffic counter is also proposed on FS Rd 1260 to obtain information on the total use of FS Rd 1260.

5.2.1 Recreation Inventory

Dispersed day-use and overnight camping areas around Packwood Lake will be identified and mapped. Other recreational use facilities including toilet and water facilities, interpretive displays and wilderness stations in the Project area will be identified. The status of recreational use facilities around Packwood Lake will be described, and maintenance, inspection, or management practices will be identified.

5.2.2 Data Collection

Information will be obtained from the Forest Service, Energy Northwest and any other identified entities who may have recreational use information available to supplement on-site field surveys, observations, and traffic counter data. Energy Northwest personnel currently document their visits to Packwood Lake to check and maintain facilities. These records will be obtained to summarize use patterns by Energy Northwest on the Pipeline Road and Trail #74. Other entities consulted would include the National Park Service, Washington State Parks and Recreation, Interagency Committee for Outdoor Recreation, Trout Unlimited, Friends of the Cowlitz, CPR Fish, Washington Department of Fish and Wildlife, Washington Trails Association, Mountaineers, Backcountry Horsemen of Washington, and the Washington State ATV Association.

Information sought will include detailed data from the Forest Service's Wilderness Permit System that may include use information around Packwood Lake. Other observational data will be sought from Forest Service, Energy Northwest personnel, local sporting goods outfitters and other entities, if applicable.

5.2.3 On-Site Surveys and Observations

On-site surveys and observations will be conducted to obtain information regarding average off-season and peak-season weekday, weekend and holiday recreation use in the Packwood Lake area and at Lake Creek. Surveys will also provide information regarding attitudes of Packwood Lake area visitors. Surveys and observations are proposed during the off-seasons (spring fishing and fall hunting seasons) and during the peak-season (Memorial Day Weekend to Labor Day).

On-Site Surveys at FS Rd 1260 Parking Lot

On-site surveys will be conducted between 8:00 am and 3:00 pm at the Packwood Lake trailhead parking lot on pre-selected off-seasons and peak-season weekdays, weekends, and holidays. A calendar showing survey days is provided in Attachment 1 to this study plan. Survey days will consist of:

Spring Fishing Season (April 29 – May 26):

April: One weekend day

May: Two weekdays
One weekend day

Peak-Season (May 27 – September 4):

May: One weekend day
One holiday (Memorial Day)

June: Two weekdays
Two weekend days

July: Two weekdays
Three weekend days
One holiday (July 4)

August: Two weekdays
Three weekend days

September: One weekend day
One holiday (Labor Day)

Fall Hunting and Fishing Season (September 5 – November 30):

September: One weekday
Two weekend days

October: Two weekdays
Two weekend days

November: Two weekdays
Three weekend days

Current Washington Department of Fish and Game regulations show game fishing on Packwood Lake starting the last Saturday in April and ending October 31.

Elk hunting season is from September 8 to 21 for archery and from November 5 to 13 for modern firearms. There does not appear to be a season for Muzzleloader hunting in the Packwood Lake Game Management Unit area. Black tail deer season occurs between September 1 to 30 for early archery, October 15 to 31 for modern firearms, and November 23 to

December 15 for late archery. A late buck season for modern firearms occurs between November 17 and 20. Black bear hunting season is from August 1 to November 15 and mountain goat hunting season is from September 15 to October 31. These schedules are based on 2005 regulations and may change once 2006 regulations are available.

The surveyor will count all visitors arriving at the parking lot and will ask visitors to respond to the questionnaire upon arrival. One representative from each party will be surveyed. Visitors leaving the area will be surveyed if they visited Packwood Lake and were not surveyed on arrival. The surveyor will either interview the visitors or will hand out the survey forms for visitors to fill out and give back to the surveyor.

The number of vehicles and number of vehicle axles will be counted at the parking lot at noon during survey days and the weather will be documented.

Information on the survey will attempt to identify the following, without being unduly long and time consuming:

- Number of visitors and size of group
- Length of stay
- Return visitors
- Access route (Trail #74 or #78)
- Access method (hike, ATV, bicycle, motorcycle, horse, etc.)
- Destination (Lake, Wilderness)
- Activities participating in
- Concerns and desires for improvements

A pre-test of the survey will be conducted in the field prior to full implementation of the survey. If problems with the clarity of this survey are encountered, the survey form will be modified.

Attachment 2 includes survey forms for entering and exiting visitors, and a form that will be used for the noon vehicle counts.

Observations at Packwood Lake

Energy Northwest personnel visit the Packwood Lake intake weekly for inspection and maintenance. In addition, several contractors will be visiting the Lake to conduct field work. Energy Northwest and the contractors will document on standard forms (included in Attachment 2) the time and date, weather, their method of access, the number of ATV, motorcycles, bicycles, and horses observed, and the number of people observed on the trails and at Packwood Lake. This will provide information regarding Energy Northwest and contractor use of the trails and additional information regarding recreation use by access method to supplement the on-site surveys and traffic counter data.

Observations at Lake Creek

During fishing season at Lake Creek (June 1 to October 31) observations will be conducted in the early am (around 7:30 am) and late afternoon (around 3:30 pm) at Lake Creek from the Old Highway 12 Bridge. This location was selected because it is the only readily accessible location

where the public can access Lake Creek. The remainder of the Creek is confined within a steep canyon making access very difficult. During observation days, where on-site surveys are also scheduled, field workers will conduct observations prior to heading up to the on-site survey parking lot and in the late afternoon, following the on-site surveys.

Field workers will document on standard forms (included in Attachment 2) the date, time of day, number of cars parked along the old highway bridge and road, and number of people observed on Lake Creek and types of activity they are engaged in.

5.2.4 Traffic Counters

Two pressure sensitive counters will be placed on Trail #74 below the diversion structure. The counters will be placed approximately 200 feet apart in the area between the trail coming off the end of Latch Road (FS Road #1262) and below the concrete sidewalk near the foot of the Packwood Lake diversion. This will provide information regarding use on Trail #74. The traffic counter data, along with other information obtained by other methods (user surveys, observations and Energy Northwest personnel Trail #74 use information), will be used to estimate ATV use of Trail #74.

Another pressure sensitive counter will be placed on FS Rd 1260 to document total vehicle use on this road. This data will supplement information obtained during on-site surveys. Vehicle counts and average number of vehicle axles documented during on-sites surveys will be used to estimate vehicle use of FS Rd 1260 based on counter data.

Counters will be installed at the beginning of the field survey period (end of April, 2006) and will be removed at the end of the survey period (end of November, 2006). Counters will be checked for working order and data will be collected from the counters weekly during Energy Northwest personnel visits to the Packwood Lake intake. Standard forms (included in Attachment 2) will be utilized to document counter status and data collected.

5.3 Products

5.3.1 Recreation Resources Study

The products of the Recreation Resources Study will be draft and final reports discussing the results of the recreation inventory, data collection, on-site surveying, observations, and traffic counter data. 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 for their files.

5.3.2 Recreation Needs Analysis

A Recreation Needs Analysis is proposed following completion of the Recreation Resources Study report. The goal of the Recreation Needs Analysis would be to identify recreation needs in the project study area that recreation resource managers should strive to address over the term of the new license. The analysis would not assign specific responsibility for implementing

potential actions, nor would it propose that Energy Northwest fund all needs identified in the analysis. The intent of the needs analysis would be to provide information that can be used by recreation managers to assist in making decisions regarding the management and planning of recreation resources in the project area.

A detailed Recreation Needs Analysis Study Plan would be developed for agency review following completion of the Recreation Resources Study. In general, the Recreation Needs Analysis would involve several steps, including an evaluation of the existing recreation supply and use in the study area and recreation demand. Recreation supply and use would be based on information obtained in the Recreation Resource Study, including the inventory of existing recreation facilities, current visitor utilization and activity participation, physical and social capacity and management prescriptions, visitor survey responses, signs of overuse, and visitor perceptions. Additional information, including population and demographic data and trends, growth projections, and local and regional demand information obtained from existing studies and planning documents would be used in the analysis. Tasks expected for the needs analysis include:

- Collect Existing Information (including local, state and federal planning documents, programs, management prescriptions/design standards, surveys, population projections and demographic information, etc.).
- Review Inventory of Recreation Facilities (from Recreation Resources Study).
- Review Existing Project Area Visitor Use (from Recreation Resources Report).
- Develop Recreation Growth Projections.
- Determine Activity Trends/Demands (based on growth projections, existing plans, survey data, and demographic trends).
- Analyze Current Facility Capacity (based on review of parking spaces, camping sites, length of trails, Forest Service management prescriptions and capacity standards, and vehicle/trailer parking space guidelines).
- Determine Recreation Needs for Facilities (based on facility/activity categories).
- Analyze Facility Needs (based on comparison of public demand and Forest Service management prescriptions/design standards).
- Determine Ability of Existing Public Facilities in Study Area to Accommodate Needs (summarizes results of demands, needs, and potential analyses).
- Prepare First Draft Report. Present data by monitoring season (Spring, Peak, and Fall).
- Prepare Draft Report for Distribution and Stakeholder Review.
- Prepare Final Report.

5.4 Consistency with Generally Accepted Scientific Practice

The recreation study methods proposed for the Packwood Lake relicensing are similar to recreation studies conducted for other hydroelectric relicensing efforts in Washington State, including the Box Canyon Hydroelectric Project, Lake Chelan Hydroelectric Project and Rocky Reach Hydroelectric Project. The sampling intensity and duration proposed in this study plan are similar to the stakeholder approved recreation use studies conducted for the Box Canyon Hydroelectric Project, Lake Chelan Hydroelectric Project and Rocky Reach Hydroelectric Project. These recreation use studies were found to provide adequate data regarding off-season

and peak-season average weekday, weekend and holiday recreation use at dispersed as well as highly developed recreation areas. The recreation use data for these studies was also sufficient and useful in developing demand and needs analyses and recreation management plans for these areas. The studies are consistent with methodologies outlined in *Research Methods in Physical Activity* (Thomas, 1996) and *Visitation Estimation and Reporting Systems (VERS) Workshop* (US Army Corps, 1996).

The on-site survey and traffic counter methods proposed by Energy Northwest are essentially the same as outlined in the Forest Services study requests. However, Energy Northwest proposes additional tasks, including a recreation inventory, data collection, observations, and an additional traffic counter. Energy Northwest proposes to collect data and perform the recreation inventory in late 2005 and 2006, and conduct the on-site surveys, observations and traffic monitoring in the spring, peak, and fall seasons of 2006. This data will be used to prepare a Recreation Resources Study Report. Data presented in the Recreation Resources Study Report will be used to conduct a Recreation Needs Analysis in 2007.

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. Stakeholder representatives will be invited to provide information for the study and technical reviews of the draft Recreation Resources Study Report and the Recreation Needs Analysis Study Plan and Report.

7.0 PROGRESS REPORTS, INFORMATION SHARING, AND TECHNICAL REVIEW

Technical reports, including the draft and final Recreational Resources Report and Needs Analysis Report will be shared with stakeholders and will discuss the progress of the studies. Energy Northwest and its consultant will also report on the methods, progress, and results of the Recreation Resources Study and Needs Analysis at stakeholder meetings.

Energy Northwest will provide copies of the draft Recreation Resources Study and Recreation Needs Analysis reports 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 final reports.

8.0 SCHEDULE

Data collection efforts will be initiated in late 2005 and on-site inventory and field surveys/observations/traffic counter recordings will begin in the Spring of 2006 and continue through the Fall of 2006.

The draft Recreation Resources Report will be completed in mid-January 2007 and distributed to the Forest Service and other interested stakeholders for review and comment. A final Recreation Resources Report will be completed following receipt of comments.

Following completion of the Final Recreation Resources Report, a detailed Recreation Needs Analysis Study Plan would be prepared for stakeholder review and comment. The Recreation Needs Analysis would be initiated following stakeholder agreement on the study plan. It is anticipated the Recreation Needs Analysis would be completed in 2007.

9.0 LEVEL OF EFFORT

Study efforts outlined above for the Recreation Resources Study are intended to provide relevant information regarding recreational use in the Project area. Efforts will include data collection, on-site inventory and mapping of formal and informal recreation facilities, database development and on-site surveying, observations and traffic data collection. Several person-days of time will be required for data collection and for the on-site inventory and mapping efforts. Development of the database for the study will also require several person-days of time. It is expected that one person can effectively conduct the on-site surveys and observations. On-site surveys and observations will require approximately 35 person-days of time. Additional time will be required for hiring and training the surveyor and on-site pre-testing of the survey. Costs will also include three pressure sensitive automatic counters and approximately 18 person days to install and monitor the counters and collect data weekly. Following completion of data collection and on-site monitoring efforts, several weeks of work will be required for data input and analysis, and preparation of draft and final reports. The estimated cost for completing the study is \$65,537.

The level of effort for the Recreation Needs Analysis would be determined following completion of the Recreation Resources Study and development of a detailed study plan for the Recreation Needs Analysis. However, it is anticipated 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 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 \$22,200.

10.0 LITERATURE CITED

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ATTACHMENT 1 SURVEY/OBSERVATION CALENDAR

PACKWOOD LAKE RECREATION RESOURCES STUDY 2006 SPRING, PEAK and FALL SEASONS FIELD WORK

Packwood Lake (PWL) Surveys:

Spring – 4
Peak Season – 19
Fall – 12

Involves on-site surveys at FS Rd 1260 Parking Lot from 8 am to 3 pm. Count of vehicles and documentation of number of axles at noon.

Lake Creek (LC) Observations:

Spring – 0
Peak Season – 17
Fall – 7

Involves documentation of number of people and type of activity at approx. 7:30 am and 3:30 pm.

APRIL 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29 PWL Survey
30						

MAY 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6 PWL Surveys
7	8	9	10	11	12	13
14	15	16	17	18 PWL Survey	19	20
21	22	23	24	25	26 PWL Survey	27 PWL Survey
28	29 <i>Memorial Day</i> PWL Surveys	30	31			

JUNE 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10 PWL Surveys LC Observations
11	12	13 PWL Surveys LC Observations	14	15	16	17
18	19	20	21 PWL Surveys LC Observations	22	23	24
25 PWL Surveys LC Observations	26	27	28	29	30	

JULY 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 PWL Surveys LC Observations
2	3	4 PWL Surveys LC Observations	5	6	7	8
9	10	11	12 PWL Surveys LC Observations	13	14	15
16 PWL Surveys LC Observations	17	18	19	20	21	22
23	24	25	26	27 PWL Surveys LC Observations	28	29
30 PWL Surveys LC Observations	31					

AUGUST 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5 PWL Surveys LC Observations
6	7	8	9	10 PWL Surveys LC Observations	11	12
13 PWL Surveys LC Observations	14	15	16	17	18	19
20	21	22 PWL Surveys LC Observations	23	24	25	26 PWL Surveys LC Observations
27	28	29	30	31		

SEPTEMBER 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2 PWL Surveys LC Observation
3	4 <i>Labor Day</i> PWL Surveys LC Observations	5	6	7	8	9 PWL Surveys LC Observations
10	11	12	13	14	15	16
17	18	19 PWL Surveys LC Observations		21	22	23
24 PWL Surveys LC Observations	25	26	27	28	29	30

OCTOBER 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7 PWL Surveys LC Observations
8	9	10	11 PWL Surveys LC Observations	12	13	14
15 PWL Surveys LC Observations	16	17	18	19	20	21
22	23	24	25	26 PWL Surveys LC Observations	27	28
29	30	31				

NOVEMBER 2006						
Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6 PWL Surveys	7	8	9	10	11 PWL Surveys
12	13	14	15	16	17	18
19 PWL Surveys	20	21	22	23	24	25 PWL Surveys
26	27	28	29	30 PWL Surveys		

ATTACHMENT 2 FIELD FORMS

Packwood Lake Recreation Survey (Entering)
Packwood Lake Recreation Survey (Exiting)
Packwood Lake Noon Vehicle Counts
Packwood Lake Observations (Energy Northwest)
Packwood Lake Observations (Contractors)
Lake Creek Observations
Packwood Lake Traffic Counter Records

Not Surveyed
(Fill in Question #1)

PACKWOOD LAKE RECREATION SURVEY (Entering)

Date: _____ Time: _____ am/pm

Hi my name is _____. I am conducting a survey for Energy Northwest to learn more about the recreation use at Packwood Lake. I have a few questions about your visit here.

1. How many people are in your group? _____
2. How many vehicles does your group have in this parking lot? _____
3. Where are you from (*for multiple locations show number of people*)?
Zip Code: _____ #: _____
Zip Code: _____ #: _____
Zip Code: _____ #: _____
4. Are you staying overnight? *If yes,*
 - a. How many nights are you staying (*# of nights*)? _____
 - b. Where will you camp? Along Packwood Lake (non-Wilderness)
 Along Packwood Lake (Wilderness)
 Other
5. *If not staying overnight,*
 - a. How long do you plan to visit (*# hours*)? _____
 - b. Where will you visit? Along Packwood Lake (non-Wilderness)
 Along Packwood Lake (Wilderness)
 Other
6. How will you access your destination? Trail #78 (*trailhead at parking lot*)
 Trail #74 (*around gated road*)
7. What is your method of access?
 Hike Bicycle
 Horse Motorcycle
 Horse/Pack Stock ATV Other: _____

If not visiting Packwood Lake (Questions 4b and 5b) stop here. If visiting Packwood Lake continue.

8. What activities will you participate in at Packwood Lake during your visit?
 Camping Visiting beach Other: _____
 Picnicking Wading/Swimming
 Boat fishing Hiking
 Shore fishing Hunting
 Other boating
9. Is this your first visit to Packwood Lake? Yes (*Stop here*) No (*Continue with Question 10*)
10. How many years have you been coming to Packwood Lake? _____
11. About how many times a year do you visit Packwood Lake? _____
12. What seasons of the year do you visit Packwood Lake? Summer Winter
 Fall Spring
13. What are your opinions regarding?
 - a. Moving camping areas away from Packwood Lake shoreline.
 Good idea Bad idea No opinion
 - b. Eliminating ATV/Motorized vehicles at Packwood Lake.
 Good idea Bad idea No opinion
14. On a scale from 1 to 5 (5 is best), how would you rate the Packwood Lake area (*compared to other areas you visit*)? _____
15. On a scale from 1 to 5 (1 is not crowded and 5 is overcrowded), how would you rate crowding at Packwood Lake? _____
16. On a scale from 1 to 5 (5 is best), how would you rate your recreation experience at Packwood Lake? _____
17. Do you have any comments regarding improvements or amenities at Packwood Lake?

PACKWOOD LAKE RECREATION SURVEY (Entering)

Thank you very much for participating in this survey. Enjoy the rest of your visit.

AFTER EACH SURVEY, RECORD THE FOLLOWING:

Gender of person surveyed: Male
 Female

Estimated age group: 16 YEARS or under
 17 – 29
 30 – 39
 40 – 49
 50 – 59
 60 – 69
 70 – YEARS or over

Not Surveyed
(Fill in Question #1)

PACKWOOD LAKE RECREATION SURVEY (Exiting)

Date: _____ Time: _____ am/pm

Hi my name is _____. I am conducting a survey for Energy Northwest to learn more about the recreation use at Packwood Lake. I have a few questions about your visit here. (Stop if they were interviewed when entering)

1. How many people are in your group? _____
2. How many vehicles does your group have in this parking lot? _____
3. Where are you from (for multiple locations show number of people):
Zip Code: _____ #: _____
Zip Code: _____ #: _____
Zip Code: _____ #: _____
4. Did you stay overnight? If yes, a. How many nights did you stay (# of nights)? _____
b. Where did you camp? Along Packwood Lake (non-Wilderness)
 Along Packwood Lake (Wilderness)
 Other
5. If no overnight stay, a. How long was your visit (# hours)? _____
b. Where did you visit? Along Packwood Lake (non-Wilderness)
 Along Packwood Lake (Wilderness)
 Other
6. How did you access your destination? Trail #78 (trailhead at parking lot)
 Trail #74 (around gated road)
7. What was your method of access? Hike Bicycle
 Horse Motorcycle
 Horse/Pack Stock ATV Other: _____

If not visiting Packwood Lake (Questions 4b and 5b) stop here. If visiting Packwood Lake continue.

8. What activities did you participate in at Packwood Lake during your visit?
 Camping Visiting beach Other: _____
 Picnicking Wading/Swimming
 Boat fishing Hiking
 Shore fishing Hunting
 Other boating
9. Was this your first visit to Packwood Lake? Yes (skip to Question 13) No (Continue with Question 10)
10. How many years have you been coming to Packwood Lake? _____
11. About how many times a year do you visit Packwood Lake? _____
12. What seasons of the year do you visit Packwood Lake? Summer Winter
 Fall Spring
13. What are your opinions regarding?
 - a. Moving camping areas away from Packwood Lake shoreline.
 Good idea Bad idea No opinion
 - b. Eliminating ATV/Motorized vehicles at Packwood Lake.
 Good idea Bad idea No opinion
14. On a scale from 1 to 5 (5 is best), how would you rate the Packwood Lake area (compared to other areas you visit)? _____
15. On a scale from 1 to 5 (1 is not crowded and 5 is overcrowded), how would you rate crowding at Packwood Lake? _____
16. On a scale from 1 to 5 (5 is best), how would you rate your recreation experience at Packwood Lake? _____
17. Do you have any comments regarding improvements or amenities at Packwood Lake?

PACKWOOD LAKE RECREATION SURVEY (Exiting)

Thank you very much for participating in this survey. I hope you enjoyed your visit.

AFTER EACH SURVEY, RECORD THE FOLLOWING:

Gender of person surveyed: Male
 Female

Estimated age group: 16 YEARS or under
 17 – 29
 30 – 39
 40 – 49
 50 – 59
 60 – 69
 70 – YEARS or over

PACKWOOD LAKE TRAFFIC COUNTER RECORDS

Date	Time	Location *	Count
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	
		FS Rd. 1260	
		Trail #74 (West)	
		Trail #74 (East)	

* Trail #74 (East) is traffic counter located closest to the Intake