

## **Lewis River Hydroelectric Projects Relicensing**

Merwin Hydroelectric Project (FERC No. 935)  
Yale Hydroelectric Project (FERC No. 2071)  
Swift No. 1 Hydroelectric Project (FERC No. 2111)  
Swift No. 2 Hydroelectric Project (FERC No. 2213)

**USDA Forest Service  
Gifford Pinchot National Forest**

### **EXISTING INFORMATION ANALYSIS**

#### **9. Forest Road 90**

Prepared by: Robin DeJong<sup>1</sup>, Geotechnical Engineer  
Updated July 2002

##### **I. Existing Situation**

Forest Road 90 is a paved double lane road extending from SR 503B at the Skamania County line and continuing up the Lewis River Drainage. The road is the primary east/west route through the National Forest with average daily traffic above 600 vehicles per day and summer weekend daily averages of 2000 vehicles. The segment of concern begins at the Skamania County line and continues 15 miles to the Pine Creek Information Center. The road has served as a primary timber haul route from federal, state and private timberlands in the area. The road is important for public access to winter and summer recreation sites in the southern and eastern portions of the Mt. St. Helens National Volcanic Monument (Marble Mt. Snow Park, Ape Cave, Lava Canyon, Climbers Bivouac) as well recreation sites along Swift Reservoir (Swift Forest Camp, Northwoods Cabins, Eagle Cliff). This road is the primary access to Swift #1 and Swift #2 projects, is a primary evacuation route from the Mt. St. Helens area and is an important link to an anticipated future Forest Highway route following the Curly Creek and Wind River Highway segments.

The road segment along the reservoir traverses steep terrain with an alignment through deeply incised drainages. Three bridges cross major drainages and the power canal. The route is characterized by steep high road cuts and numerous sharp curves. See Figure 1.

---

<sup>1</sup> (360) 891-5162

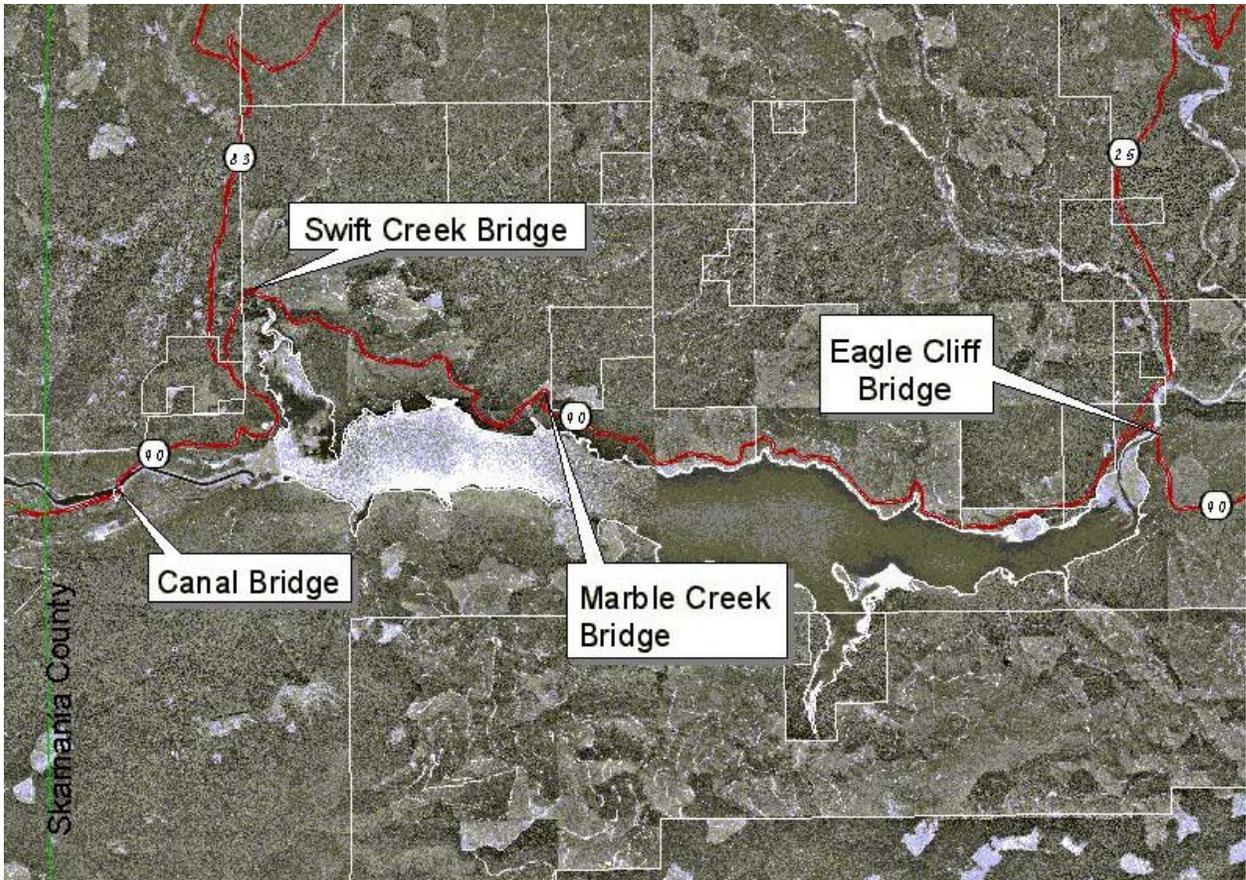


Figure 1. Road 90 around Swift Reservoir

## II. Management Direction

### Forest Service Manual Direction

7701 – Authority. Highway safety Act of 1966 (23 U.S.C. 402, Pub. L. 89-564). Directs states and participating Agencies to design, construct and maintain roads in accordance with safety standards: to apply sound traffic control principles and standards.

Federal Aid Highway Act of 1968 as amended (23 U.S.C. 109(a) and (h), 144,151, 351, 1nd319) (Pub. L. 90-424, and 97-134). Establishes the National Bridge Inspection Standard (Title 23, Code of Federal Regulations, Part 650 (23 CFR Part 650)) and the requirements that each state have a current inventory of bridges on all public roads, including those on the forest development roads open to public travel (FSM 1535.11).

Title 23, Code of Federal Regulations, sections 625.4(b) and 625.5(b), and Part 650, Subpart C (23 CFR 625.4(b), 23 CFR 650, Subpart C). These rules promulgated by Federal Highway Administration establish national bridge design specifications and guides, and bridge inspection standards, and are applicable to bridges on forest development roads as provided in FSM 7722 and FSM 7736 (FSM 1535.11).

Title 23, Code of Federal Regulations, Part 1230 (23 CFR Part 1230). These rules promulgated by the Federal Highway Administration establish standards for highway safety.

7702 – Objectives. To plan, develop, and operate a network of transportation system facilities and transportation modes that provide user safety, convenience, and efficiency of operations.

7703 – Policy. Plan, develop, operate, and maintain forest development transportation facilities as an integrated system considering other public and private transportation system facilities.

### **Forest Plan Direction**

For each existing or planned road, meet ACS objectives by ... *minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.*

*New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris.*

*Minimize sediment delivery to streams from roads. Route road drainage away from potentially unstable channels, fills and hill slopes.*

*Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams. (Forest Plan, p 2-23)*

*Aquatic Conservation Strategy Objective 2. Maintain and restore spatial and temporal connectivity within and between watersheds. Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to areas critical for fulfilling life history requirements of aquatic and riparian-dependent species (Forest Plan, p 2-2)*

### **18 CFR 2.7**

The [Federal Power] Commission expects the licensee to assume the following responsibilities... (e) to cooperate with local, State and Federal Government agencies in planning, providing, operating and maintaining facilities for recreational use of public lands administered by those agencies adjacent to the project area.

## **III. Information Analysis**

Prior to the construction of the Swift Creek Hydroelectric Project the Forest Service used a company owned road up the Lewis River valley to Swift Creek. The road was used primarily for timber haul but provided easy access to the Lewis River for fishing and recreation. The Forest Service was planning further extension of that road for timber haul and public access. Construction was not undertaken because of the power project. Under Article 35 of the License Agreement the Licensee was to provide that Licensee and Forest Service enter into an agreement as to provision for or cooperation in construction of a road connecting the existing forest highway below the project to the forest road at the upper end of the reservoir

near Pine Creek. A new road was constructed by Pacific Power and Light Company above the dam and reservoir. In 1960 this road was conveyed to the Forest Service.

Relocation of the road above the reservoir onto steeper terrain has resulted in increased difficulty and continuing expense in maintaining a safe and stable road facility. The relocated alignment limits recreation access to the Lewis River, which is now primarily Swift Reservoir along this segment.

Higher maintenance costs for this segment are associated with:

- Increased length compared to valley floor location.
- Increased signing because of the high number of curves and decreased sight distance.
- Increased maintenance of pavement and embankments in unstable areas.
- Increased maintenance of ditches because of erosion of steep high cut slopes.
- Guardrails, due to sharp curves and steep side slopes.
- Swift Creek Bridge
- Canal Bridge
- Winter snow removal because of higher elevation.
- Increased maintenance of under sized culverts.

The continuing expense of maintenance and periodic replacement of bridge facilities on Forest Road 90 is much higher than it would be if the road still followed the river plain. The 440 feet long Swift Creek Bridge is 252 feet above the average water level. The 311 feet long bridge over Marble Creek has a column that is over 110 feet long. Special inspections, involving the use of a “snooper truck”, climbing equipment and non-destructive testing equipment must be contracted out to periodically monitor these bridges to ensure the continued safety of vehicles and passengers. The Canal Bridge, having 11 piers submerged in swift water, requires periodic underwater inspections by professional divers. This bridge would not exist if the Power Canal had not been constructed. Inspections and repairs on all these bridges are dangerous and expensive, far more so than crossings on the original alignment would have been.

The increased public use of the road to visit recreation facilities in the national forest and along Swift Reservoir has also increased the Forest’s need to upgrade the facility to ensure public safety (signing, stripping, guard rails, etc.).

The 342 feet-long Eagle Cliff Bridge crosses the Lewis River just above Swift Reservoir, accessing national forest system lands and the community of Northwoods which has formed on the east end of the reservoir. This bridge has been a continual maintenance problem for the Forest, since the east embankment has been repeatedly eroded by stream movement, and the existence of the Northwoods community on the east edge of Swift Reservoir gives repairs very high priority, at the expense of other repairs needed on the Forest. Additional recreational traffic due to the reservoirs’ existence increases traffic-related maintenance needs on the bridges, and may even have required a higher standard of bridge design than would have been required for National Forest traffic alone.

The Forest Service has entered into cost share agreements with Plum Creek Timberlands and the Washington State Department of Natural resources for the maintenance of this road.

#### **IV. Preliminary Forest Service Objectives**

The Forest Service seeks an equitable maintenance agreement by which the licensee assumes maintenance and reconstruction costs related to the relocation of the Forest Road 90 around the reservoir (bridge and drainage structure reconstruction and maintenance) and assumes a share of reoccurring maintenance proportional to reservoir-induced use.

#### **V. Information Needs**

A significant percentage of traffic through this corridor is believed to be associated with recreation activities at Swift Reservoir. A traffic study would assist in determining the proportion of Road 90 use attributable to the project.