

Environmental Assessment: 1501 FLOOD REPAIR PROJECT

United States Department of Agriculture
United States Forest Service
Okanogan-Wenatchee National Forest

Naches Ranger District
May 2013

The 1501 Flood Repair Environmental Assessment (EA) is now available. The United States Forest Service, Okanogan-Wenatchee National Forest is proposing to address damage sustained from the May 2011 flood along Forest System Road 1501. This analysis is consistent with the National Environmental Policy Act of 1970 and other national and regional direction. The EA is also available online at: <http://www.fs.usda.gov/projects/okawen/landmanagement/projects> under the heading **Okanogan-Wenatchee National Forest Current and Recent Projects**. For more information or components of the project file, please contact Michelle King, 509-653-1420.

Official Comment and Appeal Period

As per 36 CFR 215 regulations, the official comment period for the EA begins the first day after publication of the legal notice in the Wenatchee World newspaper and ends 30 calendar days later. It is imperative to understand that in order to have eligibility to appeal the subsequent decision, one must provide the following information with the designated comment period: name and address, title of proposed action, specific substantive comments, signature or verification of identity, and evidence of timely submission. It is the responsibility of all individuals and organizations to ensure their comments are received in a timely manner. Please reference 36 CFR 215.6 for more information.

Written comments must be submitted to the Responsible Official:

Irene Davidson
District Ranger
Naches Ranger District
10237 U.S. Highway 12
Naches, WA 98937

Oral comments must be provided at the Responsible Officer's office during normal business hours (Monday-Friday 8am– 12:00pm, 12:30pm-4:30pm). Naches Ranger District phone (509) 653-1401, fax (509) 653-2638.

Electronic comments must be submitted in forms such as an email message, plain text, rich text, or word document to:

comments-pacificnorthwest-wenatchee-naches@fs.fed.us

An identifiable name or verification of identity is required on electronic messages.

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CHAPTER I

Proposed Action, Existing Condition, and Purpose and Need

Introduction

This Environmental Assessment (EA) in its entirety includes an outline of legislative requirements and relevant environmental documents. The completed environmental analysis finds its basis in the Wenatchee National Forest Land and Resource Management Plan (USDA Forest Service, 1990) as amended. The decisions to be made, based on the proposed action analysis and possible alternatives, are also reviewed. The EA will include a summary of scoping and public involvement for this project. It will describe anticipated effects associated with the proposed action. Chapter I within the Environmental Assessment describes the proposed action, the existing condition, and the purpose and need.

In June 2011, the Okanogan-Wenatchee National Forest was granted Federal Lands Highway funding. The Emergency Relief for Federally Owned Roads, known as ERFO, has made it possible for the Naches Ranger District to plan and implement multiple flood repair projects. The intent of the ERFO program is to pay the unusually heavy expenses in the repair and reconstruction of Federal roads as a result of damage sustained by a natural disaster over a wide area or by a catastrophic failure (Federal Highway Administration, 2013).

Proposed Action

The Naches District is proposing to address flood damage along Forest System Road (FSR) 1501. Forest System Road 1501, otherwise known as the Little Rattlesnake Road, sustained damage at mile post 0.5 and 2.0. The two alternatives proposed are:

- 1.) Decommissioning the first five miles of FSR 1501
- 2.) Repairing the road at both sites and.

The original scoping letter can be found in its entirety in Appendix A. These two alternatives are described in detail in Chapter II.

Background

The Little Rattlesnake Road sustained flood damage in spring 2009 and 2011. The May 2011 flood event resulted from approximately three to four inches of rainfall occurring within a 24 hour period. The peak stream flow was estimated to be greater than a 100 year return interval which is approximately 850 cubic feet per second (cfs) in the lower Little Rattlesnake Creek.

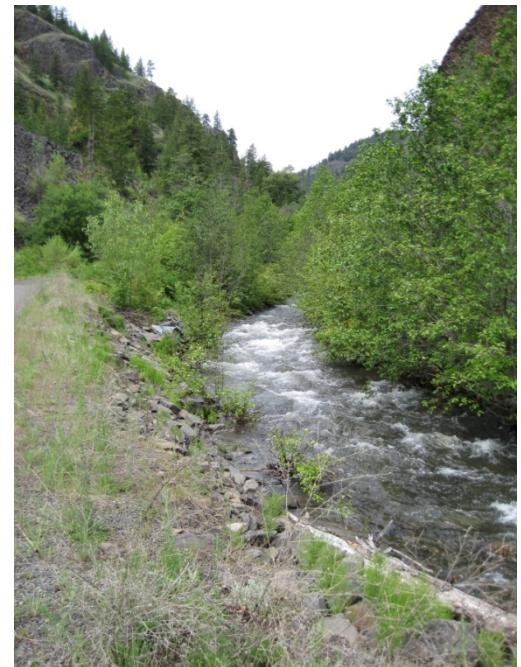


Figure I.1- Little Rattlesnake Creek

Project Area

The 1501 Flood Repair Project is located in Township 15 N, Range 15 E, Sections 9, 10, 16, 17, 19, and 20 W.M. within Yakima County, Washington. Forest System Road 1501 is located off of Bethel Ridge Road (FSR 1500) which connects to WA State Highway 410 (Figure I.2).



Figure I.2: 1501 Flood Repair Project Vicinity

This project is unique as it is within Washington State Department of Natural Resources (DNR) land but FSR 1501 is managed by the Naches Ranger District. Descriptions of the specific damage sites are included within this chapter, but the total project area includes the first 5 miles of road, including the road prism, road shoulder, and road embankments.

Forest System Road 1501 is adjacent to Little Rattlesnake Creek which is nested in the Rattlesnake Creek-Naches River hydrologic unit code (HUC) 10 watershed. Rattlesnake Creek is a tributary to the Naches River. This Forest System Road is maintained as a Maintenance Level IV road (USDA 2005).

Mile post 0.5

Damage at mile post 0.5 occurred in 2009 and 2011 during spring flooding. The stream began flowing into the roadway ditch and then across the road. From mile post 0.5 for 350ft, the stream is now running across and onto the road, eroding some of the asphalt pavement surfaces as well as the aggregate road base. See Figures I.3 and I.4.



Figure I.3: Mile post 0.5 in 2011, looking west.



Figure I.4: Mile post 0.5 in 2012, looking east

From 350ft to 800ft, the stream is occupying and eroding the roadside ditch. It is continually eroding the road prism pavement and road fill along the shoulder. See Figures I.5 and I.6. The analysis area also includes the area 10ft west of the roadway (opposite of creek side) for the entire 800 ft of the damaged area where the road is proposed to be shifted in Alternative B.



Figure I.5: Upper end of m.p. 0.5 in 2011.

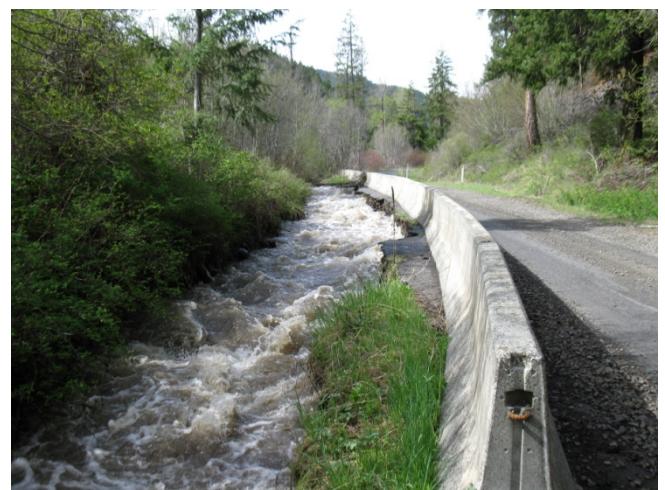


Figure I.6: Upper end of m.p. 0.5 in 2011

Mile post 2.0

At mile post 2.0 during a high water event, the Little Rattlesnake Creek activated a side channel next to the roadway that cut into the road prism eroding approximately three feet of road surface. The damage to the road surface extends approximately 30ft and the damage to the road embankment spans a total of 74ft. See Figures I.7 and I.8. The project site includes the area 20ft south of the roadway (opposite of creek side) for 200ft where the road would potentially be shifted.



Figure I.7: Mile post 2.0 in 2011



Figure I.8: Mile post 2.0 in 2012

Management Areas

It is necessary for the Forest Service to complete the National Environmental Policy Act (NEPA) process whenever the Forest Service is spending federal resources. Although land allocations from U.S. Forest Service (USFS) direction and guidance are not directly applicable on Washington DNR land, the Inter-disciplinary team (IDT) and District Ranger determined that the land management classification of Riparian Reserve is relevant for this project.

The *Wenatchee National Forest Land and Resource Management Plan* (USDA Forest Service, 1990) as amended by the *Northwest Forest Plan* (USDA Forest Service, 1994) describes Riparian Reserves as portions of the watershed where riparian-dependent resources receive primary emphasis and where special standards and guidelines apply. Projects within Riparian Reserves are consistent with Aquatic Conservation Strategy (ACS) standards and guidelines and contribute to maintaining or restoring watershed conditions over the long term, with only minor short term negative effects. For detailed project consistency with ACS objectives, see page III-18.

Figure I.9 (next page) shows the project site locations and relative distance to Forest Service Land and State Highway 410.

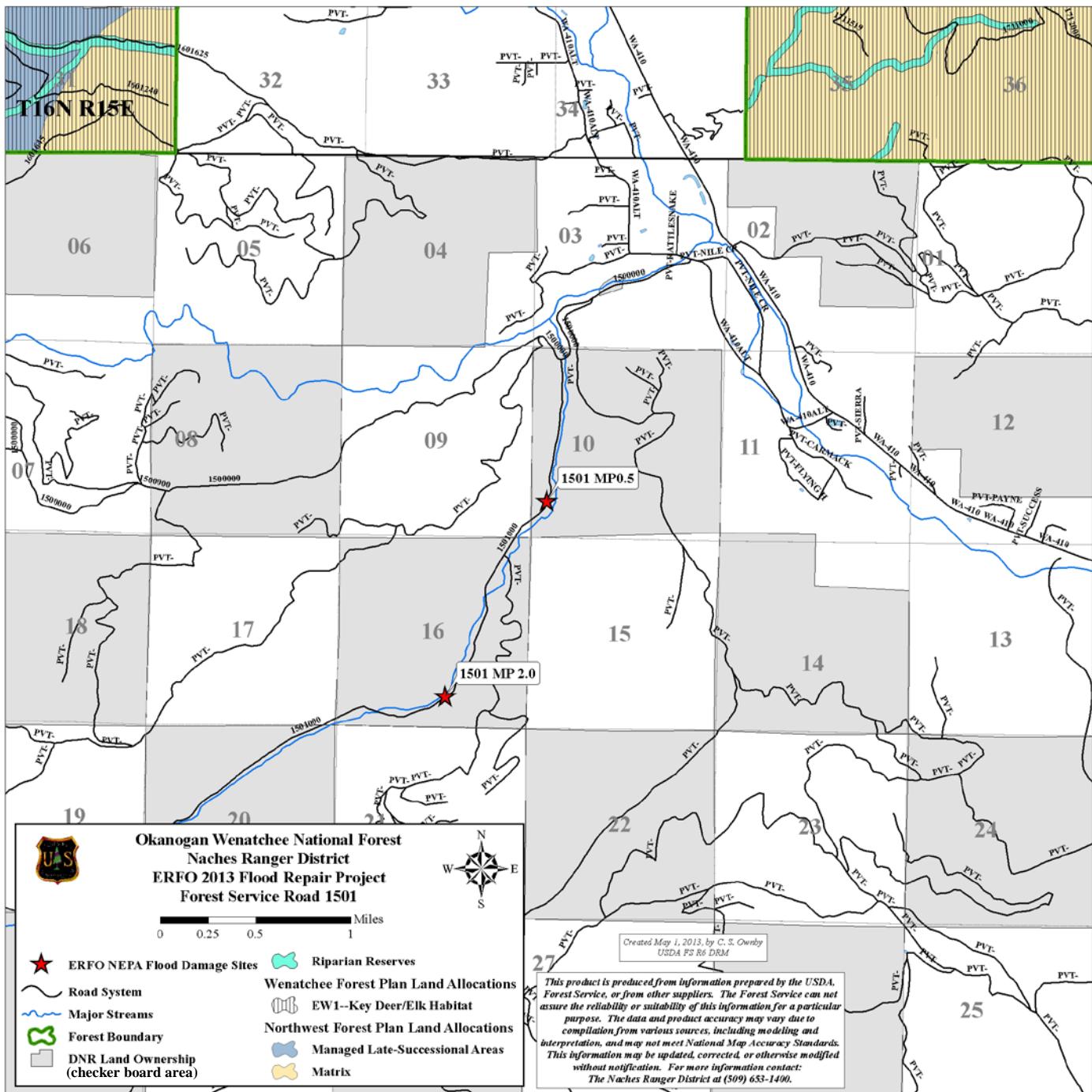


Figure I.9-Project Sites and Land Allocations

Additional Management Direction

The following acts, laws, and decisions are some of the important documents that provide the Naches Ranger District resource specialist with guidance and direction in addition to the standards and guidelines found in the Wenatchee Land and Resources Management Plan and the Northwest Forest Plan:

The National Environmental Policy Act of 1969 (NEPA) as amended establishes the basic process for conducting and documenting environmental analyses, including public participation. The Council on Environmental Quality (CEQ), 40 Code of Federal Regulation (CFR), Forest Service Handbook and Forest Service Manual are the implementing tools of NEPA that the Forest Service must follow. This Environmental Assessment meets the NEPA standards.

The Endangered Species Act (ESA) of 1973 as amended (16 USC 1531) requires a Biological Assessment (BA) for review of activities for possible effects on endangered, threatened, and proposed species. A formal consultation process will be completed to adhere to the Act.

The Magnuson-Stevens Fishery Conservation and Management Act of 1996 (MSA§303 (a)(7)) as amended directs that each Federal agency shall consult with the Secretary with respect to any action authorized, funded, or undertake, or proposed... that may adversely affect any essential fish habitat identified under this Act. Specifically the agencies must consult with National Marine Fisheries Service (NMFS).

The Clean Water Act, as amended (33 USC 1251) requires Federal agencies to comply with all substantive and procedural State water quality requirements.

Executive Order 12962, Recreational Fisheries (1995) states that federal agencies shall, to the extent permitted by law and where practicable, and in cooperation with States and Tribes, improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities.

Executive Order 11988, Floodplains requires government agencies to take actions that reduce the risk of loss due to floods, to minimize the impact of floods on human health and welfare, and to restore and preserve the natural and beneficial values served by floodplains.

Rattlesnake Creek Watershed Assessment (Naches Ranger District, 1997) provides guidance for meeting long-term ecosystem management objectives including the goal of the Aquatic Conservation Strategy to restore and maintain the ecological health and aquatic ecosystems within the watershed.

Okanogan and Wenatchee National Forest Roads Analysis: Naches Sub-Basin (Naches Ranger District, 2001) provides information to develop road systems that are safe and responsive to public needs and desires, are affordable, and efficiently managed, have minimal negative ecological effects on the land, and are in balance with available funding for needed management actions.

Existing Condition

The Existing Condition helps tell the story of the proposed action. The District compares the existing condition and the desired future condition to develop the purpose and need for the project.

The existing state of FSR1501 creates a concern relative to the aquatic habitat and the integrity of the road. The Little Rattlesnake Creek flows year-round in the ditch and on the road at mile post 0.5. The creek continues to erode the road fill material and increases the undercutting of the existing pavement during annual high flows at both damage sites. The continued erosion is further reducing the width of the travel-way. The exposed damaged areas are also more susceptible to sustain damage in future flood seasons. The increased introduction of fine grained sediment from road fill materials into the stream channel system can lead to detrimental effects to the aquatic habitat and water quality.

Although FSR 1501 has been closed since the damage at its junction with FSR 1500 to the Forest Service boundary (approximately 5 miles), motor vehicles have been able to travel around the barriers and illegally access the damaged and closed area.



Hydrology and Fisheries are the resources that are most affected by the existing condition of the FSR 1501 and are described here in more detail. For information on the current conditions of all of the resources, please see the project file.

Hydrology

The hydrology of the Little Rattlesnake Creek watershed is dominated by snow accumulation in winter, spring snowmelt with the rise in stream flow and late summer low flow periods. Peak streamflow from snowmelt normally occurs during late-April thru mid-June. Some floodwater is stored in the floodplains along the creeks and adjacent riparian areas as groundwater within the valley floor. This stored water is slowly released back to the stream and helps maintain flows later in the summer and fall as water level drops.

Streamflow drops rapidly in late-July or early August. Flow continues to slowly drop through September, as smaller tributaries and streams go dry. Maximum peak streamflows have resulted from rain-on-snow floods typically in the December to February period when warm winter-time storms with air temperatures over freezing promotes more rapid snowmelt along with the precipitation that immediately runs off. Summer convective storms may rarely occur in small localized areas and cause flooding or debris mobilization in more isolated areas.

Little Rattlesnake Creek is approximately 12 miles long and the drainage is approximately 16,125 acres in area. Elevation ranges from 2,110 feet at the mouth up to 6,280 feet at the headwaters near Cash Prairie. The average annual precipitation is 35 inches for the watershed.

Past storm events with flood levels on the order of 10 to 25 year return periods have typically resulted in minor road fill damage at various points along the 1501 Road. The previous major region-wide storm event during the winter of 1995-96 was recognized as a greater than 100 year return interval and resulted in road damage at both of the current sites plus several other locations that were not damaged during the most recent flood events.

Streamflows, measured in cubic feet per second (cfs), for bankfull discharge and 100 year peak flood levels are summarized in Table 1.1 below.

Table 1.1: Streamflow Summary

Location	Drainage Area (square miles)	Bankfull Flow (cfs)	100 Year Flood (cfs)
Little Rattlesnake Creek near mouth	25.2	204	851
Little Rattlesnake Creek near FS boundary	17.1	149	631

Water Quality

All waters on Okanogan-Wenatchee National Forest lands are classified by the Washington State Department of Ecology in WAC 173-201A-200 fresh water designated uses and criteria. The general classification of WAC 173-201A-200 classifies all surface waters on National Forest system lands according to aquatic life uses and Little Rattlesnake Creek within the project area is classified as core summer salmonid habitat. Water quality standards are listed in WAC 173-201A-200 (and summarized below in Table I.2). Water quality standards are established for temperature and turbidity along with a number of other constituents. Some of these standards allow increases over background levels. Water quality parameters (which have a Washington State Water quality criteria) most likely impacted by the proposed activities are stream temperature and turbidity (stream sedimentation).

All streams on National Forest lands have additional designated uses of: Core summer salmonid habitat and extraordinary primary contact recreation, unless otherwise designated in table 602, of WAC 173-201A (State of Washington, 2012).

Table I.2: Water Quality criteria for waters on National Forest and designated Char Spawning/Rearing

Category	Default Criteria for waters on National Forest	Criteria for waters designated as Char Spawning/Rearing
Temperature	16 C (60.8 F) (7-day average of maximum daily temperature)	12 C (53.6 F)
Dissolved oxygen (DO)	9.5 mg/L	Same
Turbidity	Turbidity shall not exceed: 5 NTU over background when the background is 50 NTU or less; or 10 percent increase in turbidity when the background turbidity is more than 50 NTU.	Same

Category	Default Criteria for waters on National Forest	Criteria for waters designated as Char Spawning/Rearing
Total Dissolved Gas	Total dissolved gas shall not exceed 110 percent of saturation at any point of sample collection.	Same
pH	pH shall be within the range of 6.5 to 8.5, with a human-caused variation within the above range of less than 0.2 units.	Same
Fecal Coliform Criteria are based on the Water Contact Recreation Criteria – which is “Extraordinary primary contact recreation” on National Forest Lands, and applicable for all waters in analysis area.		
Fecal Coliform	Fecal coliform organism levels must not exceed a geometric mean value of 50 colonies/100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 100 colonies/100 mL	

Turbidity is a measure of optical clarity of water, and is measured in Nephelometric Turbidity Units (NTUs). NTU readings increase as a function of particle size distribution and concentration, so sediment delivery to streams will increase NTU measures. State water quality criteria for waters on National Forest call for less than a 5 NTU increase (or 10% above background for streams greater than 50 NTU background). Generally, most streams in the area will have a lower than 50 NTU background.

303(d) Listings of Impaired Water Bodies

Water quality in Washington State is classified into five categories in order to comply with the Clean Water Act. Category 5 waters are considered “impaired”, and are placed on the state 303(d) list. Within the analysis area, Little Rattlesnake Creek is listed on the current (2012) 303(d) list as impaired for stream temperature. The segment which is listed is the lowest 1.5 miles above the confluence with Rattlesnake Creek. The water temperature impaired segments of Little Rattlesnake Creek is downstream of the MP 2.0 site and adjacent to the MP 0.5 project site. Water temperature is an important water quality parameter for this project. Water temperatures in the lower Little Rattlesnake Creek typically do not meet the state standard for several days in the mid-July to mid-August period.

Water temperature has been monitored at sites on Little Rattlesnake Creek during the summer period for over 10 years. The seven day average maximum daily temperature has averaged 59.6°F near the Forest boundary and 62.8°F at the 1500 Road crossing near the confluence with Rattlesnake Creek. More complete water temperature data is available in Hydrology report in the analysis file.

To meet the intent of the Clean Water Act, activities planned in tributaries and mainstem of the Naches Basin cannot further impair the water temperature in the river, and should help restore water quality in the river where possible. Activities in the Riparian Reserves and headlands should leave the structural shade that maintains the water temperature at current levels intact and improve vegetation and habitat features that will reduce stream temperatures in the long term.

Soils

Soils within the planning area are primarily valley bottom alluvium and are mapped as the Logy silt loam soil series. This is a very coarse textured soil with rapid infiltration and permeability.

Fisheries

These two damage sites are adjacent to Middle-Columbia River (MCR) steelhead occupied and designated Critical Habitat (CH). The site at mp 0.5 is adjacent to designated CH for Bull trout while the mp 2.0 site is one mile above Bull trout designated CH. All of the project area is occupied by resident fishes which include resident rainbow trout, cutthroat trout, juvenile Chinook (from the mouth to the 1501 crossing), sculpin, Brook trout, and Bull trout (very limited). Rattlesnake Creek and Little Rattlesnake Creek provide important habitat for resident and anadromous fishes including Endangered Species Act (ESA) protected species.

The Naches River is the main tributary of the Yakima River entering just north of the city of Yakima. It begins approximately 45 miles upstream at the confluence of the Bumping and Little Naches Rivers. Major tributaries of the Naches River include the Tieton River and Rattlesnake Creek. With the exception of storage dams, which block upstream migration on the Bumping and Tieton Rivers, fish are able to migrate freely within the system. Below these dams there are 16.5 miles of habitat available to fish on the Bumping River and 21 miles on the Tieton River. Numerous smaller tributary streams also flow into the Naches River.

Habitat

Habitat components of the Little Rattlesnake that will be discussed as part of the existing condition include woody debris, pools and riffles, and the general stream channel condition.

Woody Debris

Stream surveys were conducted by the Forest Service in 2002 from approximately river mile (rm) 5 upstream to approximately rm 10.75. The data from that survey shows adequate wood loading levels in those upper reaches. The information in Table I.3 shows woody debris counted during a survey done in 2002 above the project area.

Table I.3: Small, Medium, and Large Woody Debris counts in the Little Rattlesnake above the project area.

Pieces of Woody Debris per Mile Little Rattlesnake Creek m.p. 5 to 10.75			
Reach Number	Small Woody Debris	Medium Woody Debris	Large Woody Debris (LWD)
1	96	59	23
2	90	53	26
3	81	72	30
Average	89	61	26

While the total average count of all woody debris in the surveyed reaches exceeds the standard of >100 pieces per mile (ppm) (actual average count is 176 ppm) the pieces of wood counted are all potentially smaller than what would qualify according to the standard as defined by the WNF LRMP. If you accept the average medium and large size classes (presented in Table I.3) you see a total of 87 ppm. This is less than the prescribed standard. For more information on woody debris survey protocol and WNF LRMP standards, please see the project file.

Qualitative site surveys of the downstream 5 miles were done during project planning. They revealed inadequate wood loading levels. The Little Rattlesnake is deficient in wood of the appropriate size and the distribution is poor resulting in a diminished capacity for the stream to achieve the development of its potential habitat.

The present amounts of LWD are likely to be on the low side of the historic level, but within the natural range of variability for this system. In the project area the decreased levels of wood has resulted in decreased habitat complexity and availability for the resident fish populations.

The adjacency of FSR 1501 to the Little Rattlesnake Creek is likely to have effected wood recruitment and retention over time in the lower 5 miles. It parallels the stream which directly reduces the ability of the stream to receive wood contributions from the immediately adjacent riparian reserves. Hazard tree removal for safety directly reduces potential woody debris contributions and over time can have a considerable effect.

Pools and Riffles

The pool habitat within the analysis area is not meeting Forest Plan standards. Pools generally form as a result of natural processes where the stream excavates a pool next to a piece of large wood or boulders. Fish use pools for a variety of activities including feeding and resting. High quality pools are deep and provide hiding places for fish. There is some good habitat throughout the Little Rattlesnake system, which includes pools. Some of the existing pool habitat is a result of the stream being heavily influenced by an active beaver population. Much of Little Rattlesnake Creek is not receiving the benefits of the influence of beavers and as a result the stream has overall low levels of high quality pool habitat.

A decrease in quality pool habitat is a decrease in quality fish habitat. In the absence of quality habitat, fish populations will be stressed and have lower growth rates, decreased vigor, and decreased reproductive success. This will lead to a smaller, less healthy population. The pools, as represented by percentage of channel area, average only approximately 19% in the surveyed reaches. Current habitat observed in the project area does not meet the criterion presented in the WNF LRMP (pg. IV-86) regarding percentage of pool occupancy.

At this time, the habitat in and upstream of the project area does not meet Wenatchee National Forest Land and Resource Management Plan (WNF LRMP) criterion for pool quality and quantity or woody material. The deficiency results in lower quality fish habitat.

General Stream Channel Condition

Instream conditions are recovering from past natural and management-induced changes that have resulted in lower quality fish habitat. In addition to having reduced quality, there is also a reduced quantity of habitat. On a broader scale, the historic morphological (geologic and physical) characteristics of the entire stream valley in the Little Rattlesnake are similar to the existing conditions and currently within the natural range of variation. The basic stream patterns, channel gradients, and physical channel complexities are largely influenced by the underlying geology and have not been extensively manipulated by humans. It is likely that the channels themselves have not changed a great deal since the reference time frames, 100 years ago, but the instream conditions have been degraded by human induced influences.

Fish Biological Parameters

There are no documented fish bearing tributaries to Little Rattlesnake Creek according the Forest Service corporate GIS (global information systems) data. The Rattlesnake Creek Watershed Analysis (1997) documents one fish bearing unnamed tributary. There is conflict between these two records; however, it is more likely that the Watershed Analysis is correct. USFS stream surveys of Little Rattlesnake have documented the presence of rainbow trout, cutthroat trout, and sculpin. Other species verified to be present include steelhead, Bull trout and Chinook salmon. Other species may be present, but have not been verified. Brook trout are present in Rattlesnake Creek and could also be present in Little Rattlesnake Creek.

Macroinvertebrate populations appear normal in density and diversity as compared to other streams in this watershed.

None of the three fish species found on the Regional Foresters Sensitive Species list are known to be present in the project area and as such will not be discussed further in this analysis.

Bull Trout (Threatened species)

There is very limited documentation of observed presence of Bull trout in Little Rattlesnake Creek it is expected that Bull trout from Rattlesnake Creek utilize Little Rattlesnake Creek to some degree. The extent and distribution of that use is poorly studied and as a result poorly understood. There are no barriers which would prevent Bull trout from accessing Little Rattlesnake Creek and there is potential valuable habitat within the creek that a Bull trout population could access. Washington Department of Fish and Wildlife (WDFW) conducted electroshocking surveys on Little Rattlesnake Creek in 1990 and 1994, finding no Bull trout (WDFW 1990). In addition the Forest Service completed night snorkel surveys on this tributary in 2002 using the Bull trout presence/absence protocols developed by Peterson et al. (2002). No Bull trout were found during these surveys (USFS 2002). Technicians with the Yakama Nation Coho Program documented sub adult Bull trout in the lower portion of Little Rattlesnake Creek in 2006 and 2011 (T. Newsome, Yakama Nation, personal comm. As cited by Reiss in the FYBTAP).

Mid-Columbia Steelhead (Threatened species)

Mid-Columbia Steelhead are known to be present in the project area and utilize it primarily for rearing and refugia.

Designated Critical Habitat (MCR steelhead and Bull trout)

Steelhead in the Yakima River basin are part of the Mid-Columbia Distinct Population Segment (DPS), which were listed as Threatened by the National Marine Fisheries Service in 1999, and are federally protected under the Endangered Species Act (ESA). Critical Habitat was designated in 2005. Mid-Columbia River steelhead designated Critical Habitat in the Rattlesnake Creek watershed includes Little Rattlesnake Creek (to river mile 8.0).

Columbia River Bull trout were listed as Threatened by the U.S. Fish and Wildlife Service (FWS) in 1998. Critical Habitat was designated in 2004, and a final revised critical habitat was issued in October, 2010. Bull trout Designated Critical Habitat within the Naches Mainstem and Rattlesnake Creek watersheds includes the Naches River (entire length), Rattlesnake Creek (to river mile 24.4), and Little Rattlesnake Creek (to river mile 1.0).

Desired Future Condition

Project objectives and the desired future condition for the 1501 Flood Repair project area were derived from Forest Service direction. The desired future condition is one in which:

- Fish habitat within the Forest will be in at least as good condition as the current situation and should be improving (Wenatchee Management Plan).
- Maintain or restore the nine Aquatic Conservation Strategy Objectives (Northwest Forest Plan).

Purpose and Need for Action

The Inter-disciplinary Team (IDT) compared the existing condition to the desired condition developed consistent with the amended Wenatchee National Forest Land and Resource Management Plan and other relevant guidance. Based on this comparison, the following purpose and need was developed (Table I.4).

Table I.4: Need of the project area and subsequent purpose of the proposed action.

Need	Purpose
Address roads with serious damage caused by a natural disaster or catastrophic failure (Federal Highway Administration, 2013). Damage was sustained by May 2011 100-year flood event.	The project will address the damage on FSR 1501.
Reduce road and stream interactions.	The project will limit or completely remove the road and stream interactions. The project will minimize the release of sediment from the exposed damage areas.
Maintain aquatic and wildlife habitat standards in respect to the Forest Plan and national direction.	The project will minimize the release of sediment from the exposed damage areas. The project will meet aquatic and wildlife standards during project implementation.

Decisions to be Made Based on this Analysis

Based on the information contained in this environmental assessment, the Forest Service District Ranger for the Naches Ranger District will make the following decisions:

- Whether or not to proceed with the 1501 Flood Repair project
- Which developed alternative will best meet the project's purpose and need
- If the project is to proceed, what design criteria, mitigation measures, and monitoring will best meet various resource needs, the project objectives, and the desired future conditions within the project area

Scoping Summary and Public Involvement

After the 2011 flood event, the sites along FSR 1501 were granted Emergency Relief of Federally Owned Roads (ERFO) funding. For all of the 2012 and 2013 flood repair projects on the Naches and Cle Elum Ranger Districts, an Interdisciplinary Team was assigned.

The 2013 Flood Repair Project Proposals (scoping letter in Appendix A) contained the proposal for FSR 1501. The tribal scoping letter was sent to the Yakama Nation on July 10, 2012 and on July 20, 2012 the public scoping letter was sent to over 1,000 recipients. A complete summary of scoping efforts can be found in Chapter IV.

Topics brought up in scoping that are addressed by the proposed alternatives include safety concerns, firefighting access, travel access, illegal use, recreational access, hunting access, capital improvement retention, economics, wildlife habitat improvement, aquatic habitat improvement, access for allotments operations, and access for the elderly. Multiple commenters suggested that if FSR 1501 was closed permanently, it should be converted into a trail. This suggestion became an alternative that was eliminated from detailed study. For more information on making FSR 1501 into a Forest Service trail, see Chapter II page 3.

Unresolved Conflicts

No unresolved conflicts were identified.

CHAPTER II

Alternatives Considered

Introduction

This chapter is intended to describe the alternatives and how they were formulated. This chapter provides readers and the line officer with an executive summary of the entire project, displaying the alternatives and required mitigation.

Alternative Formation

Issues identified during scoping are used to analyze the need for alternative development. As this project is prepared under the most current Forest Service National Environmental Policy Act (NEPA) regulations and there are no unresolved conflicts concerning alternative uses of available resources, no additional alternatives were fully developed. A proposal from members of the public was presented during scoping and the explanation of its elimination from detailed study is on page II-3. The range of alternatives presented addresses all topics raised during scoping.

Please note the letter organization of alternatives (Alternative A vs. Alternative B) does not suggest which alternative is preferred. Both alternatives reasonably meet the Purpose and Need and are developed in detail.

No Action

- No Action Alternative

Under the No Action Alternative, the existing condition would continue. No repairs or road decommissioning would occur and FSR 1501 would remain closed. For more information on the No Action Alternative, see the Existing Condition section in Chapter I. Taking no action does not meet the purpose and need for this project for the following reasons:

P&N 1: Address roads with serious damage caused by a natural disaster or catastrophic failure. No action would result in the first 5 miles of FSR 1501 remaining blocked with cement barricades. The road would continue to be eroded and the travel-way width would continue to be reduced. Illegal motorized use around the barriers and on the first 5 miles of road would likely continue.

P&N 2: Reduce road and stream interactions.

No action would leave the damaged road, road shoulders, and ditches exposed and highly susceptible to more damage in the next flood season. Under the no action alternative the road would continue to erode into the channel contributing fine sediment along 800 feet of road/stream interface leading to detrimental effects on downstream aquatic habitat and water quality. Additional erosion above and below the currently affected sites could be anticipated as well.

P&N 3: Maintain aquatic and wildlife habitat standards in respect to the Forest Plan and National direction.

No action would allow continued erosion of the road into the Little Rattlesnake Creek, contributing asphalt and road fill at the damage sites. Predicted erosion at the stream and road interface could result in increases in fine sediment delivery to important aquatic habitat. For more information, reference the Fisheries Specialist Report in the project file.

Chapter II includes the effects of taking no action for all resources analyzed to enhance their description of the existing condition and/or their resource baseline. The No Action Alternative serves as a comparison for the effects of the action alternatives.

Action Alternatives

- Alternative A

Decommission and close the first 5 miles of FSR 1501

The Forest Service proposes to decommission approximately 5 miles of FSR 1501 from its beginning at FSR 1500 to its junction with FSR 1503 near the National Forest boundary. The road would be decommissioned first starting at the mp 5.0 site, working down the road to its junction with FSR1500. Decommissioning would be done in a manner that appropriately manages cost while minimizing the danger of large amounts of fine sediment being introduced to the stream. Decommissioning includes:

- The removal of all asphalt surfacing for recycling off site
- The removal of aggregate base and road fill material from sections within the floodplain. The Forest Service would use the material to partially fill road cuts not adjacent to the stream, shaping them to allow for drainage and revegetation. The remaining roadbed would be de-compacted to a minimum depth of 18”
- The removal of two wood bridges and concrete headwalls
- The removal of all (approximately 13) culverts and cross-drains along the road
- The construction of multiple log and rock structures (approximately 20) in the former road prism to prevent the stream from cutting into the newly disturbed soil. Specific location and design of these structures will be determined during the design process if this action is selected
- The revegetation of newly exposed areas
- Road closures barricades and turn-around areas at both ends of the decommissioned road.

- Alternative B

Repair FSR 1501 at mile post 0.5 and 2.0 and re-open road.

Mile post 0.5

This alternative proposed the road to be shifted west approximately 10 ft. for approximately 800 ft. away from the stream. The new road surface would be raised approximately 2 feet. The reconstructed road and stream interface would be hardened with rock and large wood. The

portion of the ditch that is currently occupied by the stream would be modified to produce a stream channel that can exist adjacent to the road. Reconstruction would include shaping the ditch into a stream channel with large rocks, woody debris, and live vegetation. This would produce a channel that can remain stable during high water flows and provide a continuation of aquatic habitat through the project site.

Mile post 2.0

The road would be shifted south away from the stream (10 to 20 feet) for approximately 200 feet centered on the damaged area. Material removed from the old roadbed will be used to construct the new roadbed. A floodplain will be constructed along the repaired section with rock, large wood, and live vegetation providing stabilization.

Alternatives Eliminated From Detailed Study

- Make FSR 1501 into a Forest Service trail

Close the first 5 miles of FSR 1501 to vehicular traffic and make it into a Forest Service trail.

This alternative originated during project scoping from members of the public that recreate in the Little Rattlesnake area. These comments suggested that if FSR 1501 would no longer be a system road, that it should at least become a trail that would allow for non-motorized access and recreational use. For typical recreational uses of this area, see the Recreational specialist report in the project file.

The Naches Ranger District determined to eliminate this alternative from detailed study for the following reasons:

- The first 5 miles of FSR 1501 is located on Washington State Department of Natural Resources land. The Forest Service does not build or maintain trails on WA DNR land
- Washington DNR made no proposal to create a trail along or near the existing FSR 1501

Please contact the Washington State DNR for further information on how the agency plans to manage this area for recreational use if FSR 1501 is decommissioned.

Applicable Standards, Guidelines, and Best Management Practices

A summary of applicable Forest Service Standards and Guidelines and Best Management Practices is included in Appendix B of this analysis. This includes relevant standards from the 2005 USDA Forest Service Final Environmental Impact Statement and Record of Decision for Preventing and Managing Invasive Plants, the 2002 USDA Forest Service Okanogan and Wenatchee National Forest Weed Management and Prevention Strategy and Best Management Practices, the National Historic Preservation Act of 1966, and the USDA National Best Management Practices for Water Quality Management on National Forest System Lands.

If rare species of plants, bryophytes, lichens, or fungi (threatened, endangered, sensitive, Survey & Manage) are found during project implementation, a botanist would establish protection measures so these species are not impacted.

In the event that cultural resources are discovered as a result project implementation, all work in the vicinity of the discovery would cease until professionally assessed.

Implementation Timeline

The Naches Ranger District plans to begin construction in July 2013. In-stream work is planned to occur during the in-water work window of July 1st- August 15th. The date of construction completion is dependent on the alternative selected. There is not an estimated date of completion at this time.

Summary of Alternatives in Relation to the Need for the Project

Table II-1: Purpose and Need Alternative Summary

Need	No Action	Alternative A -Decommission first 5 miles of FSR 1501	Alternative B -Repair and re-open road
Address roads with serious damage caused by a natural disaster or catastrophic failure (Federal Highway Administration, 2013). Damage was sustained by May 2011 100-year flood event.	No action would result in the first 5 miles of FSR 1501 remaining blocked with cement barricades. The road would continue to erode and the travel-way width would continue to reduce. Illegal motorized use around the barriers and on the first 5 miles of road would likely continue.	This alternative will permanently close the first 5 miles of FSR 1501, removing it from the FSR system. Alternative access to the other end of FSR 1501 is accessible by FSR 1503.	This alternative would shift the road away from the stream and armor the roadway. The lower portion of FSR 1501 would be re-opened to the public and to land managers.
Reduce road and stream interactions.	No action would leave the damaged road, road shoulders, and ditches exposed and highly susceptible to more damage in the next flood season. Additional erosion above and below the currently affected sites could be anticipated. The road and stream interaction would not be reduced.	The decommissioning of the road and removal of road fill would result in no further road and stream interactions.	The road would be shifted away from the stream at both damaged sites and the new road would be armored with rocks and woody debris. This would result in a decrease in the road and stream interactions at these locations.

Need	No Action	Alternative A -Decommission first 5 miles of FSR 1501	Alternative B -Repair and re-open road
Maintain aquatic and wildlife habitat standards in respect to the Forest Plan and national direction.	No action would allow continued erosion of the road into the Little Rattlesnake Creek, contributing asphalt and road fill at the damaged sites. Predicted erosion at the stream and road interface could result in increases in fine sediment delivery to important aquatic habitat.	Decommissioning the road would increase the potential floodplain for the Little Rattlesnake Creek and enhance the aquatic habitat. Closing the road would also remove human disturbance and allow the system to return to its natural state.	Shifting the road and adding large rocks and wood to the floodplain would enhance the aquatic habitat at the sites. This alternative includes design criteria and best management practices that protect aquatic organisms and limit degradation of aquatic habitat.

CHAPTER III

Environmental Consequences

Introduction

This chapter identifies the probable consequences of implementing Alternative A and Alternative B to the resources affected. It also describes the impacts of no action being taken. Chapter III summarizes the direct, indirect, and cumulative effects the alternatives may have to a reasonably foreseeable extent. Each resource area will emphasize the project's consistency with relevant environmental laws and guidance and outline if there are any impacts to Threatened, Endangered, Sensitive, or Survey and Manage species. If more information is desired, the specialist reports in their entirety are available in the project record. The resource areas detailed in this section are Hydrology, Fisheries, Wildlife, Botany and Invasive Species, Range, Fuels and Vegetation Management, Fire and Public Safety, Recreation, and Cultural Resources. An icon representing each resource area signifies the beginning of each effects analysis section.



The effects of past activities are represented in the baseline or existing condition for each issue area consistent with the President's Council on Environmental Quality's guidance on the Consideration of Past Actions in Cumulative Effects Analysis (June 24, 2005). This guidance states that "Generally, agencies can conduct an adequate cumulative effects analysis by focusing on the current aggregate effects of past actions without delving into the historical details of individual past actions". Noteworthy past activities include use of FSR 1501 as a groomed snowmobile trail and travel access for vegetation management activities and Rattlesnake Sheep Allotment operations.

Present and ongoing actions that in combination with the proposed action could have impacts to resources within the analysis area include:

- Recreation
- Road maintenance
- Venom Timber Sale along the 1501 Road above FSR 1503 junction on Forest Service land (above project area)

Future foreseeable actions that in combination with the proposed action could impact resources within the analysis area include:

- Angel Underburn
- Nelli Restoration Project includes proposals for temporary area closures for timber harvesting and fuels burning and proposals for approximately 25 miles of road decommissioning (occurring in Nile FSR 1600 area). A decision on this project is expected in July 2013.
- Washington Department of Natural Resources (DNR) is analyzing to build a connector road (R5220) if FSR 1501 is decommissioned or remains in its current closed condition. This road would be built between State Road R5100A and State Road R5200 and would

be approximately 1.2 miles long. A State Environmental Policy Act (SEPA) document would be prepared by the DNR prior to this road being built.

- If FSR 1501 is repaired and re-opened, the Washington State Parks and Recreation could develop it as a groomed snowmobile route once again.
- Okanogan-Wenatchee Forest Plan Revision and Travel Management (draft Environmental Impact Statements scheduled to be published in Summer 2013)

HYDROLOGY

No Action Alternative

With no action, continued erosion of fill material would occur at both project sites. Average annual high flow levels would continue to erode fine grained fill material, increase the undercutting of existing pavement and further reduce the width of the travel way. Fine sediment input to Little Rattlesnake Creek would increase and opportunities to improve habitat features and streamside vegetation would not occur. Other locations along the lower 4 miles of the 1501 Road would continue to be susceptible to future flood damage because of the proximity of the road to the stream channel.

Effects of Alternative A on Hydrology

Direct and Indirect Effects

This alternative would remove road fill material from the floodplain in the valley bottom for approximately 4 miles of road length and decommission an additional mile of road length that is located outside the Riparian Reserve. This alternative would increase the valley bottom width accessible for unrestricted channel migration by 5 to 10 percent. Short-term input of fine sediment would increase as a result of construction activities during decommissioning of road segments adjacent to the stream channel. In the long-term, as vegetation is reestablished in riparian areas, sediment input would decrease. Increased shading from riparian vegetation in the long-term would maintain and slightly reduce stream temperatures.

Increases in fine sediment levels are expected to be minimized by dewatering of inchannel work areas during construction activities. Short-term turbidity increases will occur during construction of coffer dams or diversion channels and when streamflows are restored to the repaired reaches.

Temporary increases in stream turbidity are expected during periods of inchannel construction. Background levels of turbidity in Little Rattlesnake Creek during the summer inchannel work window are expected to be 10 NTU's or less. Decommissioning the road prism along the lower 4 miles the 1501 Road will require dewatering the base of the fill slopes at locations where flowing water is adjacent to the road. During construction of dewatering structures to divert streamflow away from the base of the road prism, turbidity can be expected to increase up to a maximum of 250 NTU's but more typically in the 50 to 100 NTU range. The duration of this increase would be approximately 1 hour at both the M.P 0.5 site and at the M.P. 2.0 site. This time would be minimized by the use of sand bags or super sacks and plastic lining depending on flow levels at the time of construction. Based on past monitoring of similar type construction

activities, measurable increases in turbidity would not be expected to extend more than 1000 feet below the inchannel work sites. Turbidity levels at the wetted inchannel work areas would return to background levels immediately after the completion of any in water excavation during the water diversion structure construction. Any seepage water in the dewatered construction area would be pumped to a vegetated off channel location to filter out fine sediments. Temporary increases in turbidity would occur again when the dewatering structure materials were removed and water flows returned to the restored areas. The duration and levels of these increases would be less than during the initial construction of the dewatering structures.

Turbidity increases are not expected to be measurable beyond a distance of approximately 1000 feet or less below a particular wetted work site and only for the period of time when actual inchannel work is occurring. Dissipation and settling of fine sediment will occur below inchannel work areas so that increases in turbidity would still not be measurable more than 1000 feet below the lowest active work area. With this Decommission Alternative, short-term turbidity increases would occur over a wider length of Little Rattlesnake Creek and construction activities would require a longer work period. In the short-term during higher flow events, some increase in fine sediment levels may occur until vegetation is established on newly restored fill slopes. For this action alternative, no measureable change in sediment or turbidity is expected as a result of construction activities downstream in the mainstem Rattlesnake Creek either in the short-term or long-term.

Monitoring was conducted during construction repair of a flood damaged site on the 1900 Road along the Little Naches River in the summer of 2012. This site had much higher flows (25 to 35 cfs) and was more difficult to dewater the inchannel construction area than is expected in Little Rattlesnake Creek. Turbidity levels in the Little Naches River did not exceed state standards at any points further than 850 feet below the construction site during the repair activities.

In the long-term with this action alternative, sediment increase in Little Rattlesnake Creek is expected to be reduced due to the improved floodplain capacity and LWD habitat structure planned for the repair sites.

In the short-term, stream temperature increases are not expected to be measurable due to construction activities. In the long-term, stream temperatures may slightly decrease due to improved riparian vegetative shading following planting and removal of the road prism away from Little Rattlesnake Creek with this Decommission Alternative.

Risk of future flood damage to road systems is expected to be reduced with the design features planned at the decommissioned areas. Stream channel structures are designed to meet the 100 year flood event with associated debris which will reduce the risk of future failures.

Cumulative Effects

Cumulative effects from past, current and foreseeable future activities are an important concern in the Naches Basin and can be affected by actions on private lands as well as National Forest System lands. The cumulative effects analysis boundary for this project is the 5th field watershed scale. For the 1501 Flood Repair Project there are private lands within or immediately adjacent to the analysis area and there are approximately 5,300 total acres of private lands or 33 percent of

the entire Little Rattlesnake watershed. The time scale for cumulative watershed effects is considered the time required for vegetation to achieve hydrologic recovery. For riparian vegetation, this is achieved when greater than 90 percent ground cover and a closed canopy is established typically within 10 to 15 years.

The improved floodplain capacity and stabilization designs with this action alternative would result in an incremental benefit to overall watershed condition and improvement to water quality. However, at the 5th field watershed level the incremental change in sediment yield or stream temperatures due to this project would most likely be not measurable either as a short-term (1 to 5 years) increase or long-term (10 to 15 year) decrease.

Effects of Alternative B on Hydrology

Direct and Indirect Effects

Alternative B would restore safe travel access while including design and habitat features which is expected to reduce the risk of future road fill erosion at these sites. Shifting the road alignment away from the stream would slightly reduce the channel confinement within the valley bottom at the current damaged sites. At both sites log and rock structures would be designed to shift the channel thalweg away from the road prism and thus reduce the stream energy along the base of the fill slope. The addition of LWD to the fill slope will add complexity to the channel resulting in pool creation and increased roughness along the road which will reduce stream velocities and energy. Other locations along the lower 4 miles of the 1501 Road would continue to be susceptible to future flood damage because of the proximity of the road to the stream channel.

Increases in fine sediment levels are expected to be minimized by dewatering of inchannel work areas during construction activities. Short-term turbidity increases will occur during construction of coffer dams or diversion channels and when streamflows are restored to the repaired reaches.

Temporary increases in stream turbidity are expected during periods of inchannel construction. Background levels of turbidity in Little Rattlesnake Creek during the summer inchannel work window are expected to be 10 NTU's or less. Construction of the repair walls at both sites on the 1501 Road may require dewatering the base of the fill slopes if the active stream is flowing adjacent to the road during the work period. During the construction of a dewatering structure to divert streamflow away from the base of the wall, turbidity can be expected to increase up to a maximum of 250 NTU's but more typically in the 50 to 100 NTU range. The duration of this increase would be approximately 1 hour at both the M.P. 0.5 site and at the M.P. 2.0 site. This time would be minimized by the use of sand bags or super sacks and plastic lining depending on flow levels at the time of construction.

Based on past monitoring of similar type construction activities, measurable increases in turbidity would not be expected to extend more than 1000 feet below the work sites. Turbidity levels at the work sites would return to background levels immediately after the completion of any in water excavation during the coffer dam or other dewatering structure construction. Any seepage water in the dewatered construction area would be pumped to a vegetated off channel location to filter out fine sediments. Temporary increases in turbidity would occur again when

the coffer dam materials were removed and water flows returned to the repaired wall area. The duration and levels of these increases would be less than during the initial construction of the dewatering structures.

Turbidity increases are not expected to be measurable beyond a distance of approximately 1000 feet or less below a particular work site and only for the period of time when actual inchannel work is occurring. If both sites on the 1501 system are being constructed at the same time, measurable turbidity increases are not expected to overlap because of the more than 1.5 miles of stream length between sites. Dissipation and settling of fine sediment will occur between sites so that increases in turbidity would still not be measurable more than 1000 feet below the lowest site (MP 0.5). In the short-term during higher flow events, some increase in fine sediment levels may occur until vegetation is established on newly constructed fill slopes. For this action alternative, no measureable change in sediment or turbidity is expected as a result of construction activities downstream in the mainstem Rattlesnake Creek either in the short-term or long-term.

Monitoring was conducted during construction repair of a flood damaged site on the 1900 Road along the Little Naches River in the summer of 2012. This site had much higher flows (25 to 35 cfs) and was more difficult to dewater the inchannel construction area than is expected in Little Rattlesnake Creek. Turbidity levels in the Little Naches River did not exceed state standards at any points further than 850 feet below the construction site during the repair activities.

In the long-term with the repair alternative, sediment increases in Little Rattlesnake Creek are expected to be reduced due to the improved floodplain capacity and LWD habitat structure planned for the repair sites.

In the short-term, stream temperature increases are not expected to be measurable due to construction activities. In the long-term, stream temperatures may slightly decrease due to improved riparian vegetative shading following planting and shifting of the road prism away from Little Rattlesnake Creek.

Risk of future flood damage to road systems is expected to be reduced with the design features planned at these sites. Stream channel structures are designed to meet the 100 year flood event with associated debris which will reduce the risk of future failures.

Cumulative Effects

Cumulative effects from past, current and foreseeable future activities are an important concern in the Naches Basin and can be affected by actions on private lands as well as National Forest System lands. The cumulative effects analysis boundary for this project is the 5th field watershed scale. For the 1501 Flood Repair Project there are private lands within or immediately adjacent to the analysis area and there are approximately 5,300 total acres of private lands or 33 percent of the entire Little Rattlesnake watershed. The time scale for cumulative watershed effects is considered the time required for vegetation to achieve hydrologic recovery. For riparian vegetation, this is achieved when greater than 90 percent ground cover and a closed canopy is established typically within 10 to 15 years.

The improved road fill stabilization designs at both sites with this repair alternative would result in an incremental benefit to overall watershed condition and improvement to water quality. However, at the 5th field watershed level the incremental change in sediment yield or stream temperatures due to this project would most likely be not measurable either as a short-term (1 to 5 years) increase or long-term (10 to 15 year) decrease.

Consistency Findings for both Alternatives A and B

The following Consistency Findings are similar for both action alternatives at the M.P. 0.5 and M.P. 2.0 sites or the lower 5 miles of Road 1501.

The Little Rattlesnake Creek within and downstream of the planning area has exceeded the state temperature standard of 61 degrees daily maximum for several days during the summer sampling period. The Little Rattlesnake Creek has been designated as water quality limited (category 5) for temperature on the current (2012) Washington State 303(d) list. This project would have no effect on the stream temperatures within the planning area or the downstream segments of the Naches River. With design features for re-vegetating disturbed areas, none of the treatments will effect streamside vegetation or shading to measurable levels and therefore treatments will not affect this parameter or exacerbate the 303(d) listings downstream.

Because the Best Management Practices (BMP's) included in Appendix B would be fully implemented, water quality standards and the anti-degradation policy (Chapter 173-201A WAC) are expected to be met with the Proposed Action. The Proposed Action is not expected to substantially alter the water quality. Full implementation of BMP's has been shown to be an effective method in preventing and controlling nonpoint source water pollution (Rashin, 2006), (USDA Forest Service, 2000). Monitoring would be conducted during the project in order to validate implementation and effectiveness of BMP's and assure compliance with the Clean Water Act, State water quality regulations and forest plan standards.

Implementation of design features for Riparian Reserves will ensure compliance with EO 11988 Floodplain Management (11988, 1977), and EO 11990 Wetland Protection (11990, 1977). Design features are expected to improve and restore the function of this area and will meet the intent of these executive orders.

FISHERIES

Aquatic Resource Indicators

The following indicators will be used as measures of project effects on aquatic habitat and species and are addressed specifically throughout the remainder of this analysis:

- Distance to Occupied Listed Fish Habitat (miles)
- Distance to Proposed/Designated Critical Habitat (miles)
- Length of stream bank improved (miles)
- Area of floodplain restored (sq feet or acres)

- Downstream distance of temporary increased turbidity during construction (miles)
- Magnitude of increased turbidity (increased number of NTUs)

An analysis of potential pathways for project related effects on the fisheries resource identified three areas needing to be addressed. They include;

1. Fish habitat complexity
 - a. Habitat frequency and quality,
 - b. Substrate condition
 - c. Distribution barriers
2. Water quality
 - a. Temperature
 - b. Turbidity
 - c. Chemical contamination
3. Fish biological parameter's
 - a. Life history stages affected
 - b. Effects to Population Size, Density, Importance to the ESU
 - c. Food supply

The indicators described above informed the analysis pathways and their values provide for a means to measure effects on fish. Those are measurable indicators used in this analysis.

Potential water quality degradations such as increases in temperature, turbidity/sediment, or chemical contaminants have biologically relevant effects to fish but are not always measurable. If they occur, the proximity, magnitude, and duration of those changes to fish are important to consider. Decreases in bank stability and increases in areas of active erosion may negatively affect aquatic species. In this analysis the indicator of number of miles of stream bank restored informs changes to bank stability and the area for which active erosion is occurring. The expected increases in turbidity and distance downstream for which those disturbances are expected to occur can inform the analysis by providing context to identify proximity, magnitude and duration of exposure to aquatic species. The area of floodplain restored allows for a direct measurable which informs us as to how much area will be improved through implementation of the alternative.

Listed below are the aquatic species that are considered in this fisheries analysis. The full Biological Evaluation for Fish Species is available in the project file.

Table III.1: List of Proposed, Endangered, Threatened, or Sensitive (PETS) Fish Species found on the Okanogan Wenatchee National Forest and addressed under this analysis..

Endangered Species Act Listing by ESU	Date of Listing	Suitable Habitat Present	Species Present	Effects of Actions Alternatives	
Threatened					No Action Alternative A Alternative B
Columbia River Bull Trout	6/1998; 1/1999	Yes	Yes	MALAA	MALAA

Endangered Species Act Listing by ESU	Date of Listing	Suitable Habitat Present	Species Present	Effects of Actions Alternatives		
Threatened				No Action	Alternative A	Alternative B
(<i>Salvelinus confluentus</i>)						
Middle Columbia River steelhead (<i>Oncorhynchus mykiss</i>)	3/1999	Yes	Yes	MALAA	MALAA	MALAA
<i>Region 6 Forester's Sensitive Species</i>						
River lamprey (<i>Lampetra ayresii</i>)	12/2011	Yes	No	NI	NI	NI
Pygmy whitefish (<i>Prosopium coulterii</i>)	12/2011	No	No	NI	NI	NI
Umatilla dace (<i>Rhinichthys umatilla</i>)	12/2011	Yes	No	NI	NI	NI

Abbreviations/ Acronyms:

NE	No Effect
Unk	Species presence unknown but suspected
NI	No Impact
MIIH	May impact individuals or habitat, but would not likely contribute to a trend towards Federal listing or loss of viability to the population or species

No Action Alternative

Mile Post 0.5

Under the no action alternative the road would continue to erode into the channel contributing fine sediment along 800 feet of road/stream interface. Approximately 840 cubic yards (CY) of material are estimated to be delivered as a result of this erosion. Sixty of those would be asphalt road surface. The extent to which the road would erode is uncertain and would be driven by a variety of processes. Additional erosion above and below the currently affected site could be anticipated as well.

Under the no action alternative the road would persist in the sub watershed and continue to have effects on Little Rattlesnake Creek. Road related effects include constriction of the flood plain, reduced opportunity for Little Rattlesnake Creek to access and develop potential wetland and floodplain habitat, changes to natural sediment inputs, altered flow paths, and changes to water temperature. Potential future erosion at the stream/road interface could be predicted which could result in increases in fine sediment delivery to important aquatic habitat. This condition would

maintain the existing condition prior to the 2011 flood and would not improve conditions in the watershed for fish or other aquatic species.

Mile Post 2.0

Under the no action alternative the road would continue to be reclaimed by the creek and erosion of chip seal asphalt road surface and fill material would be delivered to Little Rattlesnake Creek.

The effects of the no action alternative for these individual project components (mp 0.5 and mp 2.0) are very similar and as such will be discussed together when possible. Generally speaking by not implementing one of the proposals the road would continue to persist on the landscape without repair. This would result in a variety of negative impacts to resident and anadromous fish species, as well as other aquatic species. Indicator values are show in Table III.2 below and a more complete discussion of the existing condition can be found in the fisheries BE.

Table III.2: Indicator values for No Action Alternative

Indicators	Proposed Sites	Distance to Occupied Listed Fish Habitat(miles)	Distance to Designated Critical Habitat(miles)	Length stream bank improved (feet)	Area of floodplain restored (sq ft.)	Downstream distance of temporary increased turbidity during construction(feet)	Magnitude of increased turbidity (increased number of NTUs @ 1000 ft.)
FS1501 mp 0.5	0	0	0	0	NA	NA	NA
FS1501 mp 2.0	0	1	0	0	NA	NA	NA

Effects of Alternative A on Fisheries

Direct and Indirect Effects:

Table III.3: Indicator values for Alternative A

Indicators	Proposed Sites	Distance to Occupied Listed Fish Habitat(miles)	Distance to Designated Critical Habitat(miles)	Length stream bank improved (feet)	Area of floodplain restored (acres)	Downstream distance of temporary increased turbidity during construction(feet)	Magnitude of increased turbidity (increased number of NTUs @ 1000 ft.)
FS1501 mp 0 to 5	0	0	26,400 (5 miles)	32	1000 from any point where there is a road/stream interface	^5	

1. Fish Habitat Complexity

1. a. Habitat Frequency/Quality

The obliteration of FS1501 from mp 0 to mp 5 would result in short and long-term changes to habitat frequency and quality. The short-term changes would be characterized by localized increases in sediment delivery (habitat degrading), increased risks of chemical contamination from construction equipment (potentially habitat degrading), and localized disturbances to stream banks and substrate. The long-term effects of obliteration of the road would be an increase in available habitat and restoration of multiple physical and biological natural watershed processes. Approximately 5 miles of Little Rattlesnake Creek would no longer be affected by road related issues. The restoration of watershed processes would allow for further development of high quality and quantity habitat in this sub watershed.

The removal of FSR 1501 would allow for recovery of the Riparian Reserves which would over time provide all the benefits needed for healthy streams. Wood recruitment rates would increase, the active utilization of the floodplain would promote higher retention rates of LWD and nutrients, and over time a healthier aquatic ecosystem would be present. This would better support resident and anadromous fish. An estimated 32 acres of riparian habitat would be restored. This was calculated with an expectation for an average area of improvement of 75 feet in width along the lower 3 miles of the 1501, and approximately 50% of the next mile (mp 3 to mp 4). Both active and passive restoration would occur. Previously disconnected areas of floodplain would become accessible, and natural processes could begin to recover. Over time those processes would be restored.

1. b. Substrate Condition

The implementation of this alternative would improve conditions with regard to reducing human caused fine sediment delivery. Under the current condition active erosion is delivering fine sediment from road fill to Little Rattlesnake Creek. The effects of obliteration of the road stream interface include the discontinuation of this erosion which can cause filling of pool habitat and reductions in the quality of spawning habitat. It is possible that current contributions of road fill are limiting interstitial spaces which have shown to result in negative impacts to aquatic species habitat.

A small amount of sediment could be contributed during construction, but it is expected that the first flushing flow would remove most if not all of the residual fine sediment. If localized changes in substrate occurred they would be of a short duration and with a limited magnitude. The changes could affect individual fish but would not likely have an effect on the population.

As the road is decommissioned and the watershed recovers it is expected that natural processes can begin to work without the influence of the road. The substrate conditions would improve over time and are expected to be driven by natural process and be dynamic in nature.

1. c. Distribution Barriers

The implementation of this alternative would remove any road related barriers discussed above and would prevent future road related barriers from developing. Two bridges would be removed, and migration pathways would be fully under natural physical processes.

Stream Peak and Base Flows

Implementation of this alternative would not likely result in any measurable change to peak or base flows when compared to the current regime.

2. Water Quality for Fish

2. a. Water Temperature

It is expected that stream temperatures would improve over time as the watershed recovers. The road will no longer functionally disconnect the floodplains and the upslope areas. More area would be available for the creek to access, more interstitial spaces would be available for subsurface utilization, and more connectivity with the hyporheic zone is expected. All of these things combine to allow for improved conditions for water temperature and fish.

2. b. Turbidity

Turbidity related effects associated with construction are expected. Construction equipment and alterations at the road stream interface can cause liberation of sediments into the waterway which can elevate turbidities. In areas where the stream back is directly adjacent to FSR 1501 there would be construction work done at the wetted edge of the stream. This area with a wetted edge would be an area of temporary disturbance which could increase turbidity locally. Much of the work associated with this alternative will be done on dry surfaces outside of the stream channel. A small amount of work will be done at the wetted edge of the channel as the road is being obliterated and the interface is being restored.

Fine sediments being contributed to the creek as a result construction activities can cause increases in turbidity which can result in gill irritation in fish. It is not expected that the effects of this action will result in turbidity effects which would reduce local population viability and vigor. Fish would be removed from the construction sites, and the sites would be isolated. Any individual fish which were missed in the removal would likely experience effects of elevated turbidity within the small isolation zone. It is possible that the effects to any fish in the isolated areas could be fatal. It is expected that negative effects will occur to macroinvertebrates in a much localized area, but not to a degree which would impact the fish population. The extent, duration, and magnitude of impacts would be very limited as a result of project design criteria which will provide for site isolation and water quality protection measures. It is expected that any elevations in turbidity will exceed the state standard of an increase of greater than 5 NTUs.

2. c. Chemical Contamination

Petro chemical contamination opportunities associated with this alternative and resulting negative impacts to fish are generally expected to be reduced from the existing condition. Once the road surface is removed, the opportunity for the introduction of asphalt (with a petro chemical component) will no longer be an issue. Any contract work will be done according to current BMPs. All equipment would be washed prior to any in-water work, and typical practices to prevent opportunities for spills will put in place. Spill response protocols will be designated in the contracts. There is always a risk of spills when construction activities occur. The general risks will also be present at these sites during construction.

In the long-term the removal of this road from the watershed will also remove the ongoing introduction of petrochemicals associated with regular motorized vehicle usage. This contamination has not been monitored or measured but it is likely that ongoing heavy use on this road has contributed chemical contaminants to Little Rattlesnake Creek over the decades. The magnitude and intensity of the effect of this contaminant are likely to be low (probably immeasurable). This risk of contamination would be alleviated.

3. Fish Biological Parameters

3. a. Life History Stages

As all life stages of resident fish are present along this 5 miles of creek, all stages of life history for resident fishes are likely to be affected by the implementation of this alternative. In the long-term they would be beneficial effects. In the short-term there could be negative impacts as the system comes into equilibrium.

3. b. Effects to Population Size, Density, Importance to the ESU

The effects of implementing this alternative would be positive in nature and in the long-term would benefit the local populations. There could be short-term negative effects to individuals but it would not translate into an effect to the whole population.

3.c. Food Supply

Implementation of this alternative could have short-term negative localized impacts on the macroinvertebrate population during and immediately following construction activities. There is an overall expectation for an improved condition once the current erosive state is arrested. The magnitude of this effect is low and it is not expected to reduce the available food source for resident and anadromous fishes at a biologically relevant level. There would be a long-term positive effect on the food supply for the aquatic species in the sub watershed as a result of implementing this project.

Cumulative Effects

The cumulative effects of obliterating the first 5 miles of the 1501 would be beneficial. The spatial boundary for this analysis is the HUC 12 level. The temporal boundary is defined by any overlap in effect of previously implemented projects which have an ongoing effect on the

fisheries resources. It also includes the time span where any expectation for a continuation of effects or new future effects which would overlap in time with existing affects to the fisheries resources. An example is the road was constructed in the past and it currently has effects on the fisheries resource and as such has temporal overlap and when taken into consideration alongside other work in the watershed would have a cumulative effect on fish. There will be both spatial and temporal overlap of effects of past, present, and reasonably foreseeable actions. These effects are primarily water quality related with a focus on woody debris recruitment, the streams ability to develop complex habitat, temperature, and sediment.

Overall reductions in sedimentation will occur as erosion from this road ceases to influence the creek. This will add positively to the overall condition which is representative of the cumulative effects of the actions listed above. Temporary immeasurable changes in water temperature could occur which would have a more negative than positive effect. These effects will be short lived, and the localized condition would return to the pre-flood condition within a short period of time, and would be improved over time as discussed above in the hydrology section. The removal of the first five miles of the 1501 would have a beneficial effect for this sub watershed and would remedy a long-term issue for aquatic resources. Over time the road has failed in multiple locations and each time it degrades Little Rattlesnake Creek. The removal of the road would resolve this issue.

Effects of Alternative B on Fisheries

Direct and Indirect Effects:

Table III.4: Indicator values for Alternative B

Indicators	Proposed Sites	Distance to Occupied Listed Fish Habitat(miles)	Distance to Designated Critical Habitat(miles)	Length stream bank improved (feet)	Area of floodplain restored (approx. sq feet)	Downstream distance of temporary increased turbidity during construction(feet)	Magnitude of increased turbidity (increased number of NTUs @ 1000 ft.)
FS1501 mp 0.5	0	0	800	5000	1000	≤5	
FS1501 mp 2.5	0	0	500	3000	1000	≤5	

1. Fish Habitat Complexity
 1. a. Habitat Frequency/Quality

Mile post 0.5

As the road is relocated to the toe of the slope and away from the creek there would be some sediment generated during construction. Through the implementation of water quality protection

measures the area would be isolated as much as possible and increases in sedimentation are expected to be low outside of the isolation area. The area within the isolation boundary would have increases in sediment and would take some time to recover. Effects to pool frequency or quality could occur under this alternative through fine sediment accumulation in pools in areas that could be impacted by temporary increases in sediment related to construction activities. These effects are likely to be of a short duration and have a low magnitude. This results in a condition of temporary diminished pool quality and quantity. Effects to off channel habitat would be that the current reduced level of available refuge habitat would persist. A small amount of new floodplain would be accessible and it is likely that it will be accessed almost immediately given the high level of beaver activity.

Dependent on changes in flows, channel pathways, and beaver activity a very small proportion of off channel habitat would be created. This increase would be of 800 feet of length. When compared to the 12 miles of stream length this equates to an approximate 1.2% increase in available off channel habitat. Under this action alternative the current reduced availability of wood could persist. Wood loading levels would change over time but would continue to be influenced by the presence of the road. The areas affected by the new road construction would no longer provide beneficial services to the stream, but this would be offset by the improvement to floodplain area, and immediate contributions of LWD. In the longer term Little Rattlesnake Creek would have more accessible habitat than currently exists and an overall net positive effect is expected.

Mile post 2.0

The processes that cause effects at mp 2.0 are essentially the same as what is described for the mp 0.5 site. There are some variations in magnitude and intensity though. The site at mp 2.0 is a shorter segment (approximately 200 feet) and the design is a little different. The nature of the channel is also different at this site. The main channel is flowing immediately adjacent to Little Rattlesnake Creek and as such there will not be off channel habitat development. This section of the project would elevate the new road onto an existing bench and away from the creek. There are a number of trees which would need to be removed but would be incorporated into the newly developed stream bank and what would be newly available floodplain. There is very little work at this site that would happen at the active interface between the stream and road and the isolated area would be much smaller than for the downstream section at mp 0.5. There is very little expected change to the availability, quality, or quantity of habitat as a result of implementing this alternative. It is unlikely that construction related sediment would decrease pool habitat in areas downstream of the construction site. The increase in habitat at this site is less than 1% of the length of Little Rattlesnake Creek. The actual section of active erosion at mp 2.0 at this time is 100 feet (approximately 0.15% of the length of Little Rattlesnake Creek).

1. b. Substrate Condition

Mile post 0.5

The implementation of this alternative would improve conditions with regard to reducing fine sediment delivery. Under the current condition active erosion is delivering fine sediment from road fill to Little Rattlesnake Creek. The effects of stabilization of the road stream interface

include the discontinuation of this erosion which can cause filling of pool habitat and reductions in the quality of spawning habitat. It is possible that current contributions of road fill are limiting interstitial spaces which results in negative impacts to aquatic species habitat.

A small amount of sediment could be contributed in the local area during construction, but it is expected that the first flushing flow would remove most if not all of the residual fine sediment. If localized changes in substrate occurred they would be of a short duration and with a limited magnitude. The changes could affect individual fish but would not likely have an effect on the population.

Mile post 2.0

The effects to substrate are the same for the 2.0 site as described for the 0.5 site. The duration and magnitude for this site would be even less than what is described about as this project site is a quarter of the size of the other site. The effects would be very focused, and the magnitude would be very small.

1. c. Distribution Barriers

Mile post 0.5

It is currently possible for fish to migrate up the side channel, over the road and into the ditch. If the water level drops while they are in the ditch it is possible for them to face an upstream migration barrier. There is also a stranding or isolation risk. The implementation of this alternative would alleviate this risk, and fix the upstream barrier.

Mile post 2.0

This project would not influence distribution as the road and current crossings do not result in any passage barriers.

Stream Peak and Base Flows

Implementation of this alternative would not result in any change to peak or base flows when compared to the current regime.

1. Water Quality for Fish
2. a. Water Temperature

Mile post 0.5

The changes to water temperature associated with the implementation of Alternative 2 would be associated with the continued presence of the road. There are no expected changes to temperature associated with construction activities. The presence of the road is likely to have an impact on temperature, but the stabilization of it at this site will not likely have an effect when compared to the conditions present prior to the 2011 event. If any changes would result from this

project an immeasurable decrease in temperature could occur as the floodplain is increased (allowing for more utilization of interstitial spaces).

Mile post 2.0

There is a possibility for increased solar loading at this site and potential increases in temperature as a result of the removal of some immediately adjacent trees for the rerouted road path. These trees will be utilized on site in the stream or on the new floodplain and will begin to contribute directly to improving instream conditions. Some of these improvements could contribute to immeasurable reductions in stream temperature. It is likely that the changes in stream temperature which could result from implementing this alternative would be immeasurable and that these changes would be biologically irrelevant to aquatic species.

2. b. Turbidity

The turbidity related effects are very similar for both project sites. The hydrology section of this chapter described construction related increases in turbidities in detail. Construction equipment and alterations at the road stream interface can cause liberation of sediments into the waterway which can elevate turbidities. The length of disturbance at the mp 0.5 site is approximately 650 feet. The length of disturbance at the mp 2.0 site is approximately 100 feet. Much of the work associated with this alternative will be done on dry surfaces outside of the stream channel. A small amount of work will be done at the wetted edge of the channel as the interface is being stabilized and restored.

Fine sediments being contributed to the creek as a result of construction activities can cause increases in turbidity which can result in gill irritation in fish. It is not expected that the effects of this action will result in turbidity effects which would reduce local population viability and vigor. Fish would be removed from the construction site, and the site would be isolated. Any individual fish which were missed in the removal would likely experience effects of elevated turbidity within the small isolation zone. It is possible that the effects to any fish which could remain in the isolated areas could be fatal. It is expected that negative effects will occur to macroinvertebrates in a very localized area, but not to a degree which would impact the fish population. The extent, duration, and magnitude of impacts would be very limited as a result of project design criteria which will provide for site isolation and water quality protection measures.

2. c. Chemical Contamination

Petro chemical contamination opportunities associated with this alternative and resulting negative impacts to fish are generally expected to be unchanged from the existing condition. Once the road/stream interface is stabilized at these sites and the current erosion is halted, the opportunity for the introduction of asphalt (with a petro chemical component) will no longer be an issue. Any contract work will be done according to current BMPs. All equipment would be washed prior to any in-water work, and typical practices to prevent opportunities for spills will be put in place. Spill response protocols will be designated in the contracts. There is always a risk of spills when construction activities occur. The general risks will also be present at these sites during construction.

3. Fish Biological Parameters

3.a. Life History Stages

As all life stages of resident fish are present at the sites, all stages of life history for resident fishes are likely could affected by the implementation of this alternative. It is expected that potentially juvenile MCR steelhead that may be in the vicinity could be affected. Any Bull trout which may be present could be affected but the likelihood of that is very low due to the low (almost undocumented) usage of Little Rattlesnake Creek.

3. b. Effects to Population Size, Density, Importance to the ESU

The distribution of the resident fish population along Little Rattlesnake Creek is unknown. If the population of resident fish is evenly distributed throughout the sub watershed less than approximately 1.35% of the population could be affected by this alternative. The extent of use of Little Rattlesnake Creek by Bull trout is unknown. There have been a few occasions where Bull trout have been documented in this creek but it has been rare. They are likely to utilize the lower reaches at times though at very low numbers. There are no expected direct effects to the Rattlesnake Creek population of Bull trout as a result of construction related activities.

In this alternative there will be discontinued erosion of the road. These effects within the sub watershed would also translate into downstream positive effects to Rattlesnake Creek and the resident and anadromous fish population there. Over all this would cause a reduction in contribution of fine sediment.

3.c. Food Supply

Implementation of this alternative could have short-term negative localized impacts on the macroinvertebrate population during and immediately following construction activities. There is an overall expectation for an improved condition once the current erosive state is arrested. The magnitude of this effect is low and it is not expected to reduce the available food source for resident and anadromous fishes at a biologically relevant level.

Cumulative Effects

The spatial and temporal boundary for the cumulative effects analysis for this alternative is the same as what is described for fishers for Alternative A. The cumulative effects of repairing the currently degraded sites on FS1501 at mp 0.5 and mp 2.0 would be beneficial in nature. There will be both spatial and temporal overlap of effects of past present and reasonably foreseeable actions. These effects are primarily water quality related with a focus on temperature and sediment. Generally speaking overall reductions in sedimentation will occur as erosion at these two sites is arrested. This will add positively to the overall condition which is representative of the cumulative effects of the actions listed above. Temporary immeasurable changes in water temperature could occur which would have a more negative than positive effect. These effects will be short lived, and the localized condition would return to the pre-flood condition within a short period of time.

Determinations for both Alternative A and Alternative B

Determination of Effects Including Essential Fish Habitat

Proposed activities for all alternatives in this project “May affect, and are likely to adversely affect” federally listed fish species (MCR Steelhead and Bull trout) and their designated or proposed critical habitat. Essential fish habitat would not be adversely affected. Proposed activities would not impact interior river lamprey, pygmy whitefish and Umatilla Dace individuals or habitat, and would not likely contribute to a trend towards Federal listing or loss of viability to either population or species. This determination is based on the known distribution of these species and their lack of presence in the project area.

Table III.5: Sensitive Species for the Okanogan-Wenatchee National Forest and effect determinations for project level analysis for the proposed 2011 South Zone ERFO Project.

Species	Special Status	Known to Occur in the Project Area	Suitable Habitat in the Project Area	*Determination
Fish				
River lamprey (<i>Lampetra ayresii</i>)	Forest Service Sensitive Species	No	Yes	NI
Pygmy whitefish (<i>Prosopium coulterii</i>)	Forest Service Sensitive Species	No	Yes	NI
Umatilla dace (<i>Rhinichthys umatilla</i>)	Forest Service Sensitive Species	No	Yes	NI

*Sensitive Species NI = No impact

BI = Beneficial impact

MAII = May adversely impact individuals, but not likely to result in a trend toward federal listing or loss of viability

LII = Likely to impact individuals and result in a trend toward federal listing or loss of viability

Determination of Project Consistency with the Northwest Forest Plan

Standards and guidelines from the NWFP plan were reviewed prior to project development and integrated into the project design for all alternatives. All action alternatives are consistent with this direction.

Determination of Project Consistency with the Aquatic Conservation Strategy

This project prescribes management within the Riparian Reserves. The repair alternative was designed to maintain the existing condition and the obliteration alternative was designed to improve the long-term function of the reserves in regard to providing high quality water and fish habitat conditions. This may involve some short-term negative effects that would be offset by long-term improvements

“Complying with the Aquatic Conservation Strategy objectives means that an agency must manage the riparian-dependent resources to maintain the existing condition or implement actions to restore conditions.”(NWP ROD pg. B-10).

The pertinent sections of the ACSOs are provided below as well as a description as to how this project meets them.

Forest Service lands within the range of the northern spotted owl will be managed to:

“1. Maintain and restore the distribution, diversity, and complexity of watershed and landscape-scale features to ensure protection of the aquatic systems to which species, populations and communities are uniquely adapted.”

Both action alternatives will maintain the distribution of aquatic species as they do not create any barriers to distribution, or reductions in the populations’ ability to naturally be diverse. The project will maintain the pre-flood conditions and will not create reductions in complexity above what was previously on site, or improve conditions through the obliteration alternative.

“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.”

This project will maintain the values described above in ACSO #2. The repair alternative works to maintain the pre-flood levels by bringing the conditions back to what was present prior to the flood events which eroded the road. The obliteration alternative will actively restore the spatial connectivity within the watershed by reconnecting the floodplain and discontinuing the interruption of network connections.

“3. Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.”

Both action alternatives are designed to maintain or restore the pre-flood conditions and will arrest the existing erosion conditions which are resulting in loss of integrity of the banks. The obliteration alternative will actively work to restore the watershed processes which drive the ability of a watershed to maintain physical integrity.

“4. Maintain and restore water quality necessary to support healthy riparian, aquatic, and wetland ecosystems. Water quality must remain within the range that maintains the biological, physical, and chemical integrity of the system and benefits survival, growth, reproduction, and migration of individuals composing aquatic and riparian communities.”

Both action alternatives are designed to maintain or restore water quality through the arrest of erosion at these sites or the removal of the road altogether. Specific project design criteria,

BMPs, and mitigations are incorporated to reduce short-term construction related effects and the long-term results for both action alternatives are an improvement to the existing condition of eroding banks.

“5. Maintain and restore the sediment regime under which aquatic ecosystems evolved. Elements of the sediment regime include the timing, volume, rate, and character of sediment input, storage, and transport.”

Both action alternatives are designed to maintain or restore the sediment regime at the same level as what existed pre-flood or at an improved level. The current sediment regime is within the natural range of variability and falls within the boundaries of what could be expected to occur during the evolution of the system. This project will remove anthropogenic sediment inputs which are resulting from erosive processes at these two sites on the FS 1501. If the decision is to obliterate the road, then the new trajectory of the system will be one of unencumbered active and passive restoration of the sediment regime.

“6. Maintain and restore in-stream flows sufficient to create and sustain riparian, aquatic, and wetland habitats and to retain patterns of sediment, nutrient, and wood routing. The timing, magnitude, duration, and spatial distribution of peak, high, and low flows must be protected.”

Both action alternatives are designed to maintain or restore the instream flows as it will have no influence on peak and base flows. The nature of the work for either action alternative will not influence this process.

“7. Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.”

Both action alternatives are designed to maintain or restore the current levels of floodplain inundation at the pre-flood levels. There are no project elements which will prevent the inundation of floodplains at a level higher than what previously existed. The obliteration alternative would open approximately 32 acres of previously disconnected floodplain.

“8. Maintain and restore the species composition and structural diversity of plant communities in riparian areas and wetlands to provide adequate summer and winter thermal regulation, nutrient filtering, appropriate rates of surface erosion, bank erosion, and channel migration and to supply amounts and distributions of coarse woody debris sufficient to sustain physical complexity and stability.”

The Rattlesnake Creek watershed as a whole is properly functioning in regards to large wood debris, but streambank condition and Riparian Reserves are functioning at risk.

In the long-term (15-25 years), the decommissioning of 5 miles of system road in the project area should begin to restore vegetation species composition along streams, and restore future streamside LWD supply when canopy cover is re-established on the obliterated road segments. The project is expected to slightly degrade this objective at the project scale in the short-term, but maintain and slightly restore at the watershed scale in the long-term.

“9. Maintain and restore habitat to support well distributed populations of native plant, invertebrate and vertebrate riparian-dependent species.”

Many stream segments within the 5th field watersheds have reduced streambank stability due to various management effects, and the conditions of Riparian Reserves overall have been degraded.

In the long-term (15-25 years), the decommissioning of 5 miles of system road in the project area should begin to restore native riparian vegetation species at the restored reaches. The project is expected to slightly restore this objective at the project and watershed scale in the long-term.

The project is expected to slightly degrade this objective at the project scale in the short-term, but maintain and slightly restore at the watershed scale in the long-term.

Determination of Project Consistency with the Wenatchee National Forest Land and Resource Management Plan (LRMP)

All goals and standards/guidelines from the LRMP were reviewed prior to project development and integrated into the project design for all alternatives. All alternatives are consistent with this direction. The MIS fish groups identified in the LRMP would continue to persist as viable populations if this project is implemented.

Determination of Project Consistency with the Endangered Species Act

This project has been designed to promote the conservation of ESA-listed Bull trout and Middle Columbia steelhead habitat. The project arrests the erosion which is currently occurring at these sites and has a beneficial effect in the long-term. The implementation of either action alternative would not jeopardize the continued existence of BT or MC Steelhead, or result in the destruction or adverse modification of designated critical habitat. This project is therefore consistent with ESA direction.

Determination of Project Consistency with the Magnuson-Stevens Fishery Conservation and Management Act

All streams currently or historically occupied by spring Chinook and Coho salmon in the project area have been designated as essential fish habitat by the NMFS. No negative effects to occupied and critical habitat are predicted to occur with either action alternative. This project is consistent with the MSA.

Determination of Project Consistency with Executive Order 12962

Recreational fishing is an identified use in the analysis area. The implementation of either action alternative would not result in any appreciable reduction in the fish population numbers or otherwise negatively affect the fishing opportunity. This project is consistent with this Order.

Determination of Project Consistency with Executive Order 11988

Floodplains are present in the analysis area. This project seeks to stabilize the existing floodplain interactions or increase floodplain access. Either action alternative would restore and preserve the natural and beneficial values served by floodplains. This project is consistent with this Order.

Determination of Project Consistency with Executive Order 11990

The implementation of either action alternative would minimize destruction, loss or degradation of wetlands. Streamside Riparian Reserves, seeps, and other wet habitats were assessed. This project is consistent with this Order.

Summary for Fisheries Effects Analysis

This project proposes to arrest erosion at the road/stream interface or remove the FS1501 from the lower five miles of the sub watershed. Some construction related short-term low magnitude increases in sediment delivery to the streams would occur through the implementation of either action alternative. The temporary negative impacts will result in long-term positive effects for fish.

WILDLIFE

Unlike the other resource sections in Chapter III, wildlife will be divided up by species or species group. Under each grouping, effects of each alternative will be displayed. Required consistency findings will also be disclosed in each section.

Roads can affect wildlife in a number of ways: displacement (animals altering their use of habitats in response to roads or road networks), disturbance at a specific site (includes disruption of animal nesting, breeding or wintering areas), and collisions between animals and vehicles (affecting the diversity of wildlife species, from large mammals to amphibians) (Gaines et al 2003). Impacts to wildlife may also result from culvert removal, road repair and reconstruction. This would primarily occur to relatively sedentary wildlife species or certain life stages within a species such as eggs, nestlings, larvae, etc. (USDA & USDI 2007). The activity associated with culvert removal, changing the existing road prism, road repair and reconstruction can result in noise above normal ambient level, which may cause short-term disturbance effects to wildlife that can result in displacement as well. Rerouting the road can affect wildlife directly by reducing habitat and introducing human activities to a previously undisturbed site.

Analysis Method and Area of Analysis

Collectively assessments of the species and habitats identified below are used to identify the scope of the proposed action and alternatives and ensure the viability of terrestrial wildlife species is maintained across the project area. Information used in this analysis includes site specific information collected during wildlife inventories of the project area; district-wide wildlife monitoring information; GIS coverage's and data sets related to wildlife habitat, site and landscape conditions. The scale of analysis varied according to species and often extended well beyond Forest Service Road (FSR) 1501 ERFO Project Area. Analysis area used for Direct and Indirect effects for wildlife is a defined area referred to as the FSR 1501 EFRO Project Area. This area includes approximately 5 miles of FSR 1501 buffered on both sides by 50 feet (approximately 61 acres); consists of FSR 1501 road segment between the junctions of FSR 1500/1501 and FSR 1503/1501. Analysis area used for cumulative effects consists of the Rattlesnake Creek and Naches Mainstem 5th field watersheds (approximately 171,869 acres).

For the analysis discussion, “Baseline Condition” is the condition that existed prior to the May 2011 flood and “Existing Conditions” are the present conditions (after the May 2011 flood with flood damage). For a list of wildlife species considered and the complete specialist report, refer to the project file.

All Wildlife Species

No Action Alternative

The present road closures are have not been effective in eliminating all vehicular use; therefore the current condition for security habitat is at baseline condition (prior to the flood damage). Under the No Action Alternative, the current 5 miles of FSR 1501 would remain non-effectively closed to motorized vehicles; having no change in baseline condition for security habitat. These sites are compacted and disturbed and do not provide habitat for most wildlife species and some wildlife species are known to avoid roads (Gaines et al. 2003). In Summary, the “No Action” alternative would not alter habitat or create disturbance for any wildlife species of concern. Therefore no direct, indirect or cumulative effect on any Proposed Endangered or Threatened Species (PETS), Management Indicator Species (MIS) or Survey and Manage (S&M) wildlife species or migratory bird species would result from the “No Action” Alternative. For more information on the existing and baseline condition of wildlife species, see the Wildlife specialist report in the project file.

Threatened, Endangered, and Sensitive Species

Regarding federally listed species the project area is located outside of the Grizzly Bear Recovery Zone, the Lynx Analysis Units (LAUs), designated critical habitat for the Canada lynx, and designated critical habitat for the northern spotted owl and the project area does not occur within the document range for the marbled murrelet. The project area does not occur in denning or source habitat for the wolverine (Copeland and Harris 1993). The FSR 1501 ERFO project will not affect species that do not occur or do not have present habitat within or adjacent to the

project area. Therefore, the grizzly bear, Canada lynx, marbled murrelet, Designated Critical Habitat for the Northern Spotted Owl, Designated Critical Habitat for the Canada Lynx, Pacific fisher and North American wolverine will not be discussed further. Federally listed species whose habitat and/or presence exist within the project area include the gray wolf and northern spotted owl.

This project will have “No impact” on sensitive species that do not occur and habitat that does not exist within the project area. These sensitive species will not be discussed further within this analysis. The sensitive species whose habitat and/or presence exist within the project area include the shiny tightcoil and bald eagle. Although shiny tightcoil habitat in the form of talus occurs within the project area, none of the proposed actions will disturb or alter talus habitat. No risk factors were concluded for the shiny tightcoil and no further discussion will occur. Therefore, the gray wolf and bald eagle are the only two TES species that could potentially be affected by the proposed project and thus will be discussed further in this analysis.

Gray Wolf and Bald Eagle

GRAY
WOLF &
BALD
EAGLE

Since no wolf den or rendezvous sites have been documented on the Naches Ranger District, potential for disturbance to wolves during denning will not be evaluated in this analysis. This analysis will evaluate potential for displacement of dispersing individual wolves. Indicators used to measure effects of the project will be the increase of human presence, changes to security habitat, and open road density. Since the nearest bald eagle nesting territory is located 15 miles from the 1501 project area and insufficient food source occurs within the project area for nesting bald eagles, disturbance to bald eagles during breeding/nesting season will not be evaluated. This analysis will evaluate the potential for displacement of wintering bald eagles. Indicators used to measure effects of the project will be alteration or removal of winter roost habitat and increase of human use during the winter time bald eagle use period.

Effects of Alternative A on Gray Wolf and Bald Eagle

Direct and Indirect Effects

Decommissioning five miles of FSR 1501 would be an effective closure; improving security habitat slightly for a localized area but not noticeable at the landscape level. This would slightly benefit local deer and elk populations that winter in or adjacent to the FSR 1501 project area; which would indirectly benefit the gray wolf and bald eagle. The decommissioning work may result in minimal effects to the wolf and bald eagle. There is the potential for localized displacement to wolves, bald eagles and their prey due to the increase of human presence during implementation. However, conservation measures are in place to reduce displacement potential if wolf den or rendezvous sites are found within or near project. Conservation measures are also in place to also reduce displacement potential to wintering bald eagles and wolves. Alternative A was determined to “May Affect, Not Likely to Adversely Affect the gray wolf” due to displacement potential. It was determined to “May Impact Individual bald eagles but not lead towards trends of federal listing or loss of population viability” also due to displacement potential.

Cumulative Effects

If FSR 1501 is decommissioned, a new connector road (R5220 tie road) would be constructed. The new road would be built between 2 existing roads (FSR 1501 and R5100A); thus connecting FSR 1501 to R5100A. Currently security habitat does not exist in the location of the proposed R5220 tie road, therefore, constructing this road would not affect security habitat. There would be no change to the baseline or existing condition of security habitat as a result of building the R5220 tie road. Constructing the R5220 tie road has the potential to remove bald eagle winter roost/perch trees and to occur during potential bald eagle winter use period. However impacts to bald eagles would be minor due the amount of area affected (approximately 5.5 acres). Due to the small scale of this project, the probability of effects to the gray wolf and bald eagle are so low that it could not be added to those from other ownerships, or other Forest Service past, present or future projects including all EFRO Flood Road Repairs, in a meaningful way. Therefore, Alternative A will not create any meaningful cumulative effects to the gray wolf and bald eagle.

Effects of Alternative B on Gray Wolf and Bald Eagle

Direct and Indirect Effects

Alternative B may result in minimal effects to the wolf and bald eagle. There is the potential for localized displacement to wolves, bald eagles and their prey due to the increase of human presence during implementation. However, conservation measures are in place to reduce displacement potential if wolf den or rendezvous sites are found within or near project.

Conservation measures are also in place to also reduce displacement potential to wintering bald eagles and wolves. The 1501 Road would be shifted in two places under the Alternative B. This would result in removing less than 1 acre of bald eagle winter roost/perch habitat. Effects to the bald eagle would be discountable due to the limited amount of habitat affected.

It was determined that Alternative B “May Impact Individual” bald eagles but would not lead towards trends of federal listing or loss of population viability” due to removal of habitat and displacement potential. Alternative B was determined to “May Affect, Not Likely to Adversely Affect the gray wolf” due to displacement potential.

Cumulative Effects

Due to the small scale and timing of this Alternative, the probability of effects are so low that it could not be added to those from other ownerships, or other Forest Service past, present or future projects including all EFRO Flood Road Repairs, in a meaningful way. Therefore, Alternative B will not create any meaningful cumulative effects to the gray wolf or bald eagle.

NORTHERN
SPOTTED
OWL

Northern Spotted Owl

Since no spotted owl nesting, roosting, foraging (NRF) habitat occurs within 0.25 mile of the project site, there is no risk for disturbance to nesting spotted owl. Therefore the potential for disturbance to nesting spotted owls will not be evaluated in this analysis. Dispersal habitat is located within 0.25 mile of the project area. This analysis will evaluate potential for affects to

dispersing spotted owls. Indicator used to measure effects of the project will be the potential to alter or modify dispersal habitat. .

Effects of Alternative A on Northern Spotted Owl

Direct and Indirect

Alternative A would not degrade or downgrade dispersal habitat. Alternative A was determined to “have no direct or indirect effects to the northern spotted owl.

Cumulative Effects

If FSR 1501 is decommissioned, a new connector road (R5220 tie road) is a foreseeable future action. The new road has the potential to remove less than 5 acres of dispersal habitat. Due to the small scale of this project the probability of effects to the northern spotted owl are so low that it could not be added to those from other ownerships, or other Forest Service past, present or future projects including all EFRO Flood Road Repairs, in a meaningful way. Therefore, the Alternative A will not create any meaningful cumulative effects to the northern spotted owl. It was determined that Alternative A would “May Affect, Not Likely to Adversely Affect” the northern spotted owl due to the removal of dispersal habitat.

Effects of Alternative B on Northern Spotted Owl

Direct and Indirect Effects

The road would be shifted in a two places under the Alternative B. This would result in the removal of 1/10 acre of dispersal habitat. Implementing the road repair work is expected to minimally affect northern spotted owl due to the small scale of habitat removed. Alternative B was determined to “May Affect, Not Likely to Adversely Affect” the northern spotted owl.

Cumulative Effects

Due to the small scale and timing of this project the probability of effects are so low that it could not be added to those from other ownerships, or other Forest Service past, present or future projects including all EFRO Flood Road Repairs in a meaningful way. Therefore, Alternative B will not create any meaningful cumulative effects to the northern spotted owl.

Management Indicator Species

Management Indicator Species (MIS) are selected species whose welfare is believed to be an indicator of the welfare of other species using the same habitat, or a species whose condition can be used to assess the impacts of management actions on a particular area (Thomas et al. 1979). The MIS approach is used in concert with other indicators to gauge the effects of management on wildlife. Table III.9 below lists the MIS species identified in the Wenatchee Land and Resource Management Plan, LRMP (USDA Forest Service 1990).

In 2011 a status review was completed for MIS of the Wenatchee National Forest (Status of Management Indicator Species on the Okanogan and Wenatchee National Forests, April 2011, unpublished document, 78pp). This document is incorporated in this section by reference. The 2011 status review used viability outcomes to describe the probability of the planning unit (Wenatchee portion of the Okanogan-Wenatchee National Forest) to support a population of each MIS based on current habitat and risk factors. It also included an estimate of the amount of habitat available at the Forest scale. Table III.6 below includes the viability outcome of each MIS and a description of those viability outcomes. Indicators used to measure effects of the project on MIS will be effects to available habitat at the Forest scale and consistency with the Wenatchee LRMP.

Although the FSR 1501 project does not occur on Forest Service land and does not have designated Forest land allocations, habitat has been defined for Wenatchee National Forest MIS within the project area. The 1501 Flood Repair Project area is located at the south end of the Okanogan-Wenatchee Forest (just outside the Forest), at the edge of all MIS habitat on the Wenatchee National Forest.

Table III.6: Management Indicator Species and their associated habitat for the Wenatchee National Forest

Species	Indicators for:	Available Habitat (ac)		Forest Level Viability Outcome ³	Species present in the Project Area (project area)
		Acres of Habitat on the Wenatchee NF	5 th field HUC and Project Area (project area)		
Rocky Mountain elk & mule deer	Big game species; with winter range identified as its limiting habitat	152,581	<20 acres of deer/elk winter range not designated (EW_1); off the Forest. < 1% of available winter range on the Forest	A	Documented
Mountain Goat	Rockland, alpine, high elevation old-growth conifer habitat	213,919	0 ac of habitat in the project area	B	NO
Northern Spotted Owl	Mixed conifer mature and old-growth habitat (western hemlock, grand fir, Douglas-fir, forests)	621,105	0 ac of NRF habitat in the project area	C	NO
Pileated Wood-pecker	Mixed conifer mature and old-growth habitat (medium-large trees, cool moist forests; montane & eastside-mesic forest type)	58,861	0 ac of habitat in the project area	C	NO
Three-toed Wood-pecker	Mixed conifer mature and old-growth habitat (subalpine & montane forest)	973,135	0 ac of habitat in project area	B/C	NO
American Marten ²	Mixed conifer mature and old-	166,310	0 ac of habitat in project area	B/C	NO

Species	Indicators for:	Available Habitat (ac)		Forest Level Viability Outcome ³	Species present in the Project Area (project area)
		Acres of Habitat on the Wenatchee NF	5 th field HUC and Project Area (project area)		
	growth habitat (cold moist and cold dry forests)				
Beaver	Riparian/deciduous forest habitat	177,118	Naches Mainstem & Rattlesnake Cr 5th field HUC contains 13,058 ac 32 acres of beaver habitat within the project area. < 1% of available habitat on the Forest	B/C	Documented
Ruffed Grouse	Riparian/deciduous forest habitat	276,457	Naches Mainstem & Rattlesnake Cr 5th field HUC contains 19,255 ac <5 acres riparian habitat within the project area. < 1% of available habitat on the Forest	A	Documented
Primary cavity excavators (PCE) (summary)	Dead & live defective standing trees/ dead & down tree habitat structure	No estimate	<5 acres of forested habitat in the project area. < 1% of available habitat on the Forest	See expanded version of PCEs below	Dead & live defective standing trees/ dead & down tree habitat structure
Primary Cavity Excavators (by species)	Pileated Woodpecker	58,861	0 ac of habitat in project area	C	NO
	Three-toed woodpecker	973,135	0 ac of habitat in project area	B/C	NO
	Black-backed woodpecker	No estimate	0 ac of habitat in project area	B/C	NO
	Downy woodpecker	No estimate	See PCE above	A	Documented
	Hairy woodpecker	No estimate	See PCE above	A	Documented
	Lewis' woodpecker	No estimate	0 ac of habitat in project area	C	NO
	White-headed woodpecker	No estimate	See PCE above	C	Documented
	Williamson's sapsucker	No estimate	See PCE above	B/C	Documented
	Red-naped sapsucker ¹	No estimate	<5 acres of deciduous tree habitat in the project area. <1% of available habitat on the Forest	B	NO
	Northern flicker	No estimate	See PCE above	A	Documented

¹The yellow-bellied sapsucker listed in the Wenatchee Forest Plan (USFS 1990), was taxonomically split into three species in 1983; red-naped, red-breasted, and yellow-bellied sapsucker (AOU 1983, Walters et al 2002); only the red-naped sapsucker occurs in Eastern Washington.

²Listed as Pine Marten in the Wenatchee Forest Plan

³**Outcome A** – Suitable environments are broadly distributed and of high abundance. The combination of

Species	Indicators for:	Available Habitat (ac)		Forest Level Viability Outcome ³	Species present in the Project Area (project area)
		Acres of Habitat on the Wenatchee NF	5 th field HUC and Project Area (project area)		
distribution and abundance of environmental conditions provides opportunity for continuous or nearly continuous intra-specific interactions for the MIS species. MIS species with this outcome are likely well-distributed throughout the planning area.					
Outcome B – Suitable environments are broadly distributed and of high abundance, but there are gaps where suitable environments are absent or only present in low abundance. However, the disjunct areas of suitable environments are typically large enough and close enough to permit dispersal among subpopulations and to allow the species to potentially interact as a meta-population. Species with this outcome are likely well-distributed throughout most of the planning area.					
Outcome C – Suitable environments are distributed frequently as patches and/or exist at low abundance. Gaps where suitable environments are either absent or present in low abundance are large enough such that some subpopulations are isolated, limiting opportunity for intra-specific interactions. There is opportunity for subpopulations in most of the planning area to interact, but some subpopulations are so disjunct or of such low density that they are essentially isolated from other populations. For species for which this is not the historical condition, reduction in the species' range in the planning area may have resulted. Species with this outcome are likely well-distributed in only a portion of the planning area.					

Habitat for the mountain goat, northern spotted owl, pileated woodpecker, black-backed woodpecker, Lewis' woodpecker, three-toed woodpecker or American marten does not exist within FSR 1501 project area. Since the FSR 1501 project will not alter these species habitat, it will not contribute to negative trend in viability on the Wenatchee National Forest for the mountain goat, pileated woodpecker, northern spotted owl, pileated woodpecker, black-backed woodpecker, Lewis' woodpecker, three-toed woodpecker or American marten. No further discussion will occur regarding these species.

Effects of Alternative A on Rocky Mountain Elk and Mule Deer

ROCKY
MTN. ELK
AND MULE
DEER

The project area lies within mule deer and elk winter range. Winter range was identified as the limiting and key factor and used to evaluate the viability of mule deer and elk as MIS on the Wenatchee National Forest (USDA Forest Service 1990). Elk and deer winter range on the Naches Ranger District is primarily within lower elevation areas where bitterbrush and other shrubs exist along with or adjacent to forested habitat to provide forage and cover. Details on habitat use, ecology, and amount of habitat on the Forest are in the Wildlife MIS Status Report (2011a). The amount of winter range habitat on the Forest is also listed in Table III.6. This analysis will describe effects to winter range. FSR 1501 project area does not contain forage or security habitat for deer and elk. It does supply a small quantity (approximately 32 acres) of hiding cover. Indicators used to measure effects of the project on elk and deer habitat will be Habitat Effective Index (HEI), cover/forage ratio, and open road density.

Direct and Indirect Effects

Implementing the decommissioning work will create little to no disturbance to deer and elk as implementation will take place during the non-winter use period. This alternative would result in little to no impact and would not lead towards trends of federal listing or loss of population "Viability" on the Rocky Mountain elk or mule deer. Reducing 5 miles of road in the riparian

habitat would be beneficial to the local herd of deer and elk using the area. This would improve security habitat slightly but not noticeable at the watershed level. Due to the small scale of habitat alteration, Alternative A would result in no change to the current cover-to-forage ratio or HEI in deer and elk winter range and no change to the open road density at the 5th field watershed. This alternative would be consistent with the Wenatchee National Forest LMR in that habitat capable to support deer and elk would be maintained at current condition.

Cumulative Effects

Currently security habitat for deer and elk does not exist in the location of the proposed R5220 tie road. Therefore there would be no change to security habitat baseline or existing condition as a result of building the R5220 tie road. Constructing the R5220 tie road may alter a small amount of hiding or forage habitat (less than 5 acres). This amount of winter range altered in comparison to available winter range on the Forest is insignificant (<1% of the available winter range). The probability of an effect is so low that it could not be added to other actions (past, present, and reasonably foreseeable future actions across land ownerships) in a meaningful way. Therefore, Alternative A will not create any meaningful cumulative effects to the Rocky Mountain elk and mule deer.

Effects of the Alternative B on the Rocky Mountain Elk and Mule Deer

Direct and Indirect Effects

Implementing the repair work will create little to no disturbance to deer and elk as implementation will take place outside the winter use period. This alternative would result in little to no impact and would not lead towards trends of federal listing or loss of population “Viability” on the Rocky Mountain elk or mule deer. This alternative could potentially remove less than 5 acres of hiding cover. Due to the small scale of habitat altered, Alternative B would not change the current cover-to-forage ratio or HEI in deer and elk winter range and no change to the open road density at the 5th field watershed. Therefore, this alternative would be consistent with the Wenatchee National Forest LMR in that habitat capable of supporting deer and elk would be maintained at current condition.

Cumulative Effects

The probability of an effect is so low that it could not be added to those from other ownerships in a meaningful way. Therefore, Alternative B will not create any meaningful cumulative effects to the Rocky Mountain elk and mule deer.

Effects of Alternative A on Beaver, Ruffed Grouse/Willow Flycatcher, and Calliope Hummingbird

Beaver and ruffed grouse were selected as Management Indicator Species (MIS) to be surrogates for riparian forested habitat. Both beaver and ruffed grouse prefer deciduous tree and shrub habitats in riparian areas (USDA Forest Service, Wenatchee National Forest, 1990). Along with deciduous trees, beaver generally use streams with less than 3% gradient and wide valley bottoms

BEAVER,
RUFFED
GROUSE,
WILLOW
FLYCATER,
CALLIOPE
HUMMING-
BIRD

Approximately 32 acres of riparian habitat for the ruffed grouse and beaver are located within the project area. A beaver pond system is located along the Little Rattlesnake (FSR 1501). Riparian habitat adjacent to the project sites is in good condition; shrub density and cover are high and deciduous tree components are abundant although the presence of roads can have adverse effects to riparian habitat. Most of FSR 1501 occurs within riparian habitat that is occupied by beaver and ruffed grouse.

Direct and Indirect Effects

Decommissioning FSR 1501 would reduce 5 miles of road in the riparian habitat; resulting in an improvement of approximately 32 acres. Implementing the decommissioning work has the potential to create temporary, short-term displacement to local beaver and ruffed grouse that use the project area. These effects would be minor and “May Impact Individuals, but not likely to lead towards trends of federal listing or loss of population “Viability” on the beaver and ruffed grouse, willow flycatcher and calliope humming bird.

Cumulative Effects

The construction of the R5220 tie road in combination with the proposed action would not impact the beaver, ruffed grouse, willow flycatcher or calliope humming bird since it does not occur within riparian habitat. Although reducing 5 miles of road in riparian habitat would benefit individuals, it would not be noticed at a 5th watershed level. The probability of an effect is so low that it could not be added to other actions in a meaningful way. Therefore, Alternative A will not create any meaningful cumulative effects to the beaver and ruffed grouse, willow flycatcher and calliope humming bird.

Effects of Alternative B on the Beaver, Ruffed Grouse/ Willow Flycatcher, and Calliope Hummingbird

Direct and Indirect Effects

Repairing FSR 1501 would result in minor (less than 5 acres) alterations of riparian habitat. Implementing the repair work has the potential to create temporary, short-term displacement to local beaver, ruffed grouse, willow flycatcher and calliope humming bird that uses the project area. These effects would be minor and “May Impact Individuals, but not likely to lead towards trends of federal listing or loss of population “Viability” on the beaver and ruffed grouse, willow flycatcher and calliope humming bird.

Cumulative Effects

The amount of riparian habitat altered in comparison to available riparian habitat on the forest is insignificant < 1% of the riparian/deciduous Forest habitat. The probability of an effect is so low that it could not be added to those from other ownerships in a meaningful way. Therefore Alternative B will not create any meaningful cumulative effects to the beaver and ruffed grouse, willow flycatcher and calliope humming bird.

Effects of Alternative A on Primary Cavity Excavators

Direct and Indirect Effects

Reducing 5 miles of road in the riparian habitat would be beneficial to species of woodpeckers such as the red-naped sapsucker and Williamson's sapsucker. Danger tree or woodcutting removal would no longer occur along the decommissioned portion of FSR 1501. This alternative would result in "No Impacts" and would not lead towards trends of federal listing or loss of population "Viability" on primary cavity excavators. Occasional hazard trees may be removed during project implementation. Due to the small scale of habitat change, Alternative A would result in no change (no reduction in) the current potential population level for primary cavity excavators. Therefore, this alternative would be consistent with the Wenatchee National Forest LRMP.

Cumulative Effects

The construction of the R5220 tie road in combination with the proposed action may impact individual woodpeckers, such as the white-headed woodpecker through the removal of less than 5 acres of forested habitat. Impacts would be minor due to the small amount of habitat removed. This decrease in habitat would not be noticed at a 5th watershed level. The probability of an effect is so low that it could not be added to other actions in a meaningful way. Therefore, Alternative A will not create any meaningful cumulative effects to primary cavity excavators.

Effects of Alternative B on Primary Cavity Excavators

Direct and Indirect Effects

Repairing FSR 1501 would result in minor alterations of woodpecker habitat (less than 5 acres). Therefore this alternative "May Impact individuals, but would not likely lead towards trends of federal listing or loss of population viability" on the primary cavity excavator. Due to the small scale of habitat change, Alternative B would result in no change (no reduction in) the current potential population level for primary cavity excavators. Therefore this alternative would be consistent with the Wenatchee National Forest LRMP.

Cumulative Effects

The amount of habitat altered in comparison to available habitat on the forest is insignificant (< 1% of the Forest winter range). The probability of an effect is so low that it could not be added to those from other ownerships in a meaningful way. Therefore, Alternative B will not create any meaningful cumulative effects to primary cavity excavators.

Birds of Conservation Concern and Landbirds

In January 2001, President Clinton issued an executive order directing federal agencies to avoid or minimize the negative impact of their actions on migratory birds, and to take active steps to protect birds and their habitat. The USFWS developed the Birds of Conservation Concern (BCC 2008) as the most recent means of implementing the order (USDI Fish and Wildlife 2008b). These are species, subspecies, and populations of migratory non-game birds that without additional conservation actions and will possibly become candidates for listing under the Endangered Species Act. Bird Conservation Regions (BCRs) were developed based on similar geographic parameters. The project area falls in BCR 9 (Great Basin). The following table (Table III-7) lists bird species in this BCR that may occur within the project area.

Table III-7: Bird Species of Conservation Concern that May Occur on the Forest (Marshall et al 2003, Seattle Audubon Society 2011).

Species	Habitat	Diet
Calliope hummingbird	Open woodlands, scrubby vegetation, riparian	Plant nectar.
Willow Flycatcher	Riparian, shrubby area with water	Flying insects

Special habitat considerations for the willow flycatcher are willow or alder thickets along riparian habitat with available perch sites. Breeding Bird Surveys (BBS) have noted a negative trend for the west in willow flycatcher populations (Sharp 1992). The Calliope hummingbird prefers thickets along streams and the borders of mountain meadows and conifers. Special habitat considerations for the Calliope hummingbird consist of available nectar sources. Breeding bird surveys have noted that the calliope hummingbird is rare to uncommon in the Cascade Forest (Sharp 1992). Effects of the project to these species were discussed within the previous MIS (beaver and ruffed grouse) section.

Two conservation strategies cover the Okanogan-Wenatchee National Forest; Conservation Strategy for Landbirds of the East-Slope of the Cascade Mountains in Oregon and Washington (Altman 2000), and Conservation Strategy for Landbirds in the Columbia Plateau of Eastern Oregon and Washington (Altman and Holmes 2000). Majority of the Forest is covered in the Conservation Strategy for Landbirds of the East-Slope of the Cascade Mountains in Oregon and Washington. It was published in June 2000 (Altman 2000). This plan covers mid to high elevation forest types along the eastern slope of the Cascades and identifies primary management needs for birds in this forest zone and covers majority of the Okanogan-Wenatchee National Forest. The principal issues affecting bird populations listed in this plan include habitat alteration from timber harvesting, changes in historic fire regimes and grazing by livestock (Altman 2000). The 2013 Flood Repair Project is by the East-Slope of the Cascade Mountains strategy.

This strategy identifies groups of focal species and their associated habitat attributes that can be used to identify desired landscapes. Table III-8 below lists the priority habitat features and associated focal species that may occur within the project area.

Table III-8: Priority Habitat Features and Associated Focal Species for Conservation in Priority and Unique Habitats within the project area.

Habitat	Habitat Feature	Focal Species for North Cascades
Ponderosa Pine	Large trees	Pygmy nuthatch

The project has the potential to alter a few large trees in the ponderosa pine habitat. Therefore effects to the pygmy nuthatch will be discussed in further detail. Indicators used to measure effects of the project on landbirds will be the potential to alter/remove habitat.

LANDBIRDS Effect of Alternative A on Landbirds

Direct, Indirect, and Cumulative Effects

Project work would result in no alteration of landbird habitat. Therefore, there would be no potential for direct, indirect, or cumulative effects resulting from Alternative A.

Effects of Alternative B on Landbirds

Direct and Indirect Effects

Less than 1 acre of pygmy nuthatch habitat (large trees) could be altered by Alternative B where the road is shifted. Impacts to pygmy nuthatch habitat are expected to not be measureable due to the small amount of habitat potentially altered. Therefore this alternative “May impact individual pygmy nuthatches, but not likely to lead towards trends of federal listing or loss of population viability”.

Cumulative Effects

It is unlikely that there would be negative cumulative effects to pygmy nuthatch habitat from repairing FSR 1501 when added to other actions because repairing FSR 1501 create only discountable or insignificant effects to habitat. Therefore, Alternative B will not create any measurable cumulative effects to the pygmy nuthatch or other neotropical migratory birds who depend on large trees in ponderosa pine habitat.

Survey and Manage Species and Late Successional Reserves

Survey and Manage Species

The FSR 1501 ERFO Flood Road Project is consistent with the Okanogan and Wenatchee Forest Land and Resource Management Plans as amended by the 2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage Protection Buffer, and other Mitigation Measures Standards and Guidelines (2001 ROD).

Using the 2001 Record of Decision Survey and Manage list, vertebrate and invertebrate species of interest within Northwest Forest Plan lands whose range includes the Okanogan-Wenatchee National Forest are: great gray owl, Larch Mountain salamander, Puget Oregonian, masked dusksnail, Chelan mountainsnail, and blue-gray taildropper. Pre-disturbance surveys are not

required for any of these Survey and Manage species as the FSR 1501 ERFO Flood Road Repair Project is outside the Chelan mountainsnail's range, outside the breeding range of the great gray owl (USDA Forest Service 2005) and habitat and/or presence does not exists for the Larch Mountain salamander, Puget Oregonian, masked duskysnail, and blue-gray tailedropper. Therefore this project will have "No impact" on any Survey and Manage species. For more discussion regarding survey and manage invertebrate and invertebrate species list for the Forest refer to Survey & Manage Tracking Form in analysis file.

Alternative A and B will have "No impact" on any Survey and Manage species. For more discussion regarding Survey and Manage invertebrates refer to the Survey and Manage Tracking Form in the analysis file.

Late-Successional Habitat/LSR/MLSA

The project area does not occur within late-successional habitat, LSR's or MLSA's land allocations. Therefore the proposed project will not affect the function of LSR's/MLSA's or late-successional habitat.

BOTANY AND INVASIVE SPECIES

The Botany and Invasive Species effects analysis includes Threatened, Endangered, and Sensitive plant species (TES), Survey and Manage plant species, and the threat of invasive/noxious plants within the project area. For other vegetation concerns, reference the effects analysis for Fuels and Vegetation Management on page III-40. The complete Botany specialist report can be found in the project file.

During field surveys along access points, roads and in the project footprint, seven invasives plants were identified common St. Johnswort (*Hypericum perforatum*), chicory (*Cichorium intybus*), absinth wormwood (*Artemisia absinthium*), Canada thistle (*Cirsium arvense*), Dalmatian toadflax (*Linaria dalmatica*), reed canary grass (*Phalaris arundinacea*) and diffuse knapweed (*Centaurea diffusa*).

No Action Alternative

Due to the nature of the eroding road surface, natural disturbance would continue to stimulate any invasive plant seeds present in the seed bank but the reduced use of the road would maintain the localized populations of invasive plants. Invasive plant populations would continue to increase overtime without treatment, thus impacting the native plant populations.

Effects common to Alternative A and Alternative B on Botany and Invasive Species

Direct and Indirect Effects

There will be no direct or indirect effects on these federally listed species in this project in all alternatives. No Sensitive or Survey & Manage species were identified within the project area; therefore all alternatives will have no effect on any listed species.

There is a risk that invasive plant seeds will be stimulated by the disturbance of the roadwork, however, integrated weed management of post construction native grass seeding and following prevention BMP's listed in Appendix B will promote competitive cover and promote the native grass communities to reestablish. Site conditions in the project area are favorable for weed establishment and growth because of the increase in light and disturbed, open soil. Therefore the use of Early Detection Rapid Response (EDRR) should be implemented along with all action alternatives as well as the integrated weed management approach with the use of manual, biological, chemical control of noxious weeds. Part of this integrated approach will include ecological restoration of these sites that will reduce these risks on major infestation with the use of native revegetation and mulching.

Effects of Alternative A on Botany and Invasive Species

Direct and Indirect Effects

The 0.5 site contained a substantial population of reed canary grass which is an invasive grass in riparian settings. This plant is very difficult to remove and reproduces by underground structures.

The current infestation of terrestrial invasive plants along the road will increase due to the ground disturbance associated with decommissioning. The close proximity to an aquatic system also poses a greater risk of seed propagules moving down river to other streambanks along the little rattlesnake. New populations of Canada thistle and Reed canary grass, invasive plants that thrive in moist soils could have impacts on wetlands downstream of these areas.

Cumulative Effects

The area of analysis considered the entire length of 1501 and major adjacent roads that are used for ingress/ egress to this area includes effects beyond implementation for 20 years or until a major canopy has reached at least 50% over the decommissioned road.

As this project is not located on the National Forest, no Forest Service herbicide treatments are planned. The decommissioning of the road without herbicide treatment could have long-term effects on the restoration of the native vegetation along the first 5 miles. Invasive plants would likely be stimulated by the decommissioning activities, especially plants which grow rapidly from underground stolons, such as Dalmatian toadflax, Canada thistle and reed canary grass. These plants thrive on ground disturbance and are often not recommended for hand pulling.

The rate of plant community conversion of invasive plants should decrease with the use of native vegetation and a heavy seeding of native grass, forb seed and a heavy layer of woody mulch. This road will likely see a dramatic increase in invasive plant communities until the road reaches a 50% canopy cover.

Effects of Alternative B on Botany and Invasive Species

Direct and Indirect Effects

The continued use by motorized and non-motorized traffic could impact the invasive plant and native plant populations as well as continued flooding due to the location of the road and it being within the floodplain. New invasive plants may be reintroduced by vehicles or flowing water within the footprint of the project area where bare dirt is present. However, a long-term revegetation with grass seeds, mulch and plants could provide cover within the next growing season and into the future to reduce the risk of reintroduction.

Cumulative Effects

The area of analysis considered the entire length of 1501 and major adjacent roads that are used for ingress/ egress to this area includes effects up to five years from implementation. In action alternatives a short-term stimulation of invasive plants may occur but overall health to these ecosystems, restoration to these sites will benefit native plant communities and make them more resilient.

The current infestation of invasive plants along the road will remain due to a current lack of herbicide treatment or removal. Construction during the fall will likely be at higher risk to new invasions of invasive plants on disturbed ground due to opening the canopy cover and the presence of seeds on the current plant populations. The close proximity to an aquatic system also poses a greater risk of seed propagules moving down river to other streambanks along the little rattlesnake. New populations of Canada thistle and Reed canary grass, invasive plants that thrive in wet soils could have impacts on wetlands downstream of these areas.

Consistency Findings for Alternatives A and B

The Forest Service Region 6, Sensitive Species policy requires the agency to maintain viable populations of all native and desired non-native wildlife, fish, and plant species in habitats distributed throughout their geographic range on National Forest System lands. Management “Must not result in a loss of species viability or create trends toward federal listing” (FSM 2670.32) for any identified Sensitive Species. We are consistent with this policy because no listed species were identified.

We are consistent the Executive Order 13112, The Okanogan-Wenatchee National Forest Weed Management and Prevention Strategy (USDA Forest Service, 2002) Federal Noxious Weed Control Act of 1974 (as amended 1990, 36 CFR 222.8b) and the 1999 Executive Order on Invasive Species (Clinton 1999) direct us to control populations of invasive species and use preventative measures to prevent new infestations and restoration of native species and habitat conditions in ecosystems that have been invaded by non-native invasive species. Following the Conservation standards and guidelines during implementation will provide for consistency with the Record of Decision was signed for the Region 6 Invasive Plant Management Environmental Impact Statement (EIS) (USDA, 2005b).

The 1501 Flood Repair project uses the species list from the 2001 Record of Decision and Standards and Guidelines for Amendments to the Survey and Mange, Protection Buffer, and other Mitigation Measures.

RANGE

Forest System Road 1501 provided the best and preferred access to the Little Rattlesnake portion of the Rattlesnake Sheep Allotment. Previously, the permittees' sheep were loaded on a semi-truck and hauled on FSR 1501. With FSR 1501 closed since 2009, the permittee has been limited to the use of FSR 1500 to access the Rattlesnake Sheep Allotment. Since that time, the permittee has (with FS permission and DNR trailing permit) utilized FSR 1501 to trail sheep off of the allotment. The term permit authorizes 1050 ewe/lamb pairs for a 73-day season of use from approximately June 20 to August 31st annually on the Rattlesnake Allotment.

No Action Alternative

Taking no management action would have a negative impact on permittee access to the Rattlesnake sheep allotment, as there would be no road repair activities implemented under this decision. This option would not restore the desired trucking access to the load out location, but the road bed would likely stay in place and could continue to be utilized to trail the sheep off of the allotment (as it has since 2009). Modifications to the grazing operation or deferment of grazing would not be necessary unless the DNR denied permittee trailing and load out authorization.

Effects of the Alternative A on Range

Direct and Indirect Effects

The decommissioning of the first 5 miles of FSR 1501 would increase travel distance to the Little Rattlesnake portion of the allotment by 16 miles. Because those 16 miles would be on roads and terrain that would make hauling the livestock from the current load out location not possible, this alternative would require Forest Service range managers to develop new routing, bed-grounds, and a load out location. This alternative would increase traffic on the first 5 miles of the remaining access road FSR 1500, which is also a one lane road with turnouts.

This alternative would require modification or deferment in the annual grazing instructions to allow range personnel and the permittee to locate, assess, and approve changes to route, bed ground and load out locations. This would require additional NEPA analysis. Given the most extreme situation, with respect to implementation and the necessary management changes needed for complete avoidance of the first 5 miles of the FSR 1501, there could be a reduced season of use or deferment if suitable route, bed ground and load out locations are not able to be identified prior to the turn out date for the Rattlesnake Allotment.

Permittee Access and Livestock Distribution

Two roads existing outside the allotment provide permittee access to authorized grazing areas on the Rattlesnake Allotment: FSR 1500 and 1501. Forest System Road 1501 provides the best access to the Little Rattlesnake portion of this allotment, where the load out has been authorized. Proposed decommissioning would have a high impact on permittee access, and would require long-term change in routing and distribution of livestock across the south range zone.

Cumulative effects

The area of analysis considered is the travel way that provides access to the southern portion of the Rattlesnake Sheep Allotment on the Naches Ranger District. This route is traditionally used to remove the livestock from the allotment at the end of the season (by semi-truck and/or trailing). In the short-term, this action, in combination with, other ongoing and reasonably foreseeable actions within the South Range Zone, restricts the use of range allotments by the permittees'. Other actions in combination with Alternative A could result in additional modifications (e.g., deferring and rerouting) to the current grazing plans. Multiple modifications resulting from multiple projects (e.g., fuels, recreation, travel management) occurring at the same time restrict the area and season of use available for livestock grazing.

Effects of the Alternative B on Range

Direct and Indirect Effects

The actual timing of implementation of the project or combinations of activities would ultimately determine the extent of the effects and the specific areas requiring modification or deferment in the annual grazing instructions. Given the most extreme situation, with respect to timing of implementation and specific activity areas, there could be a reduced season of use or deferment if the permittee's access is not restored prior to the load out date for the Rattlesnake Allotment.

Permittee Access and Livestock Distribution

Two roads existing outside the allotment provide permittee access to authorized grazing areas on the Rattlesnake Allotment. Forest System Road 1501 provides the best access to the Little Rattlesnake portion of this allotment, where the load out has been authorized. The proposed road repairs would restore permittee access, and would not require long-term change in routing and distribution of livestock.

Cumulative effects

The area of analysis considered is the travel way that provides access to the southern portion of the Rattlesnake Sheep Allotment on the Naches Ranger District. This route is traditionally used to remove the livestock from the allotment at the end of the season (by semi-truck and/or trailing). In the short-term, this action, in combination with, other ongoing and reasonably foreseeable actions within the South Range Zone continues to restrict the use of range allotments by the permittees. Repairing FSR 1501 would require continued modification to annual operations in routing and removal of the livestock but in the long-term would restore the

preferred removal route for use by Semi-truck. Other actions in combination with Alternative B could result in additional modifications (e.g., deferring and rerouting) to the current grazing plans. Multiple modifications resulting from multiple projects (e.g., fuels, recreation, travel management) occurring at the same time restrict the area and season of use available for livestock grazing.



FUELS AND VEGETATION MANAGEMENT

No Action Alternative

The analysis area combines the Little Rattlesnake drainage and the main stem Rattlesnake drainage and analysis time is considered the foreseeable future (40+ years). If this alternative is chosen, the road would remain closed to vehicle use and would make FSR 1503 the main travel path accessing the Angel Underburn and other Vegetation Management activities in the Little Rattlesnake drainage. By using this route personnel will have longer travel times and distances to these projects. Creating longer travel times and distances for project personnel increases costs and adds exposure. With a road closure this would remove a water fill site opportunities along the Little Rattlesnake Creek that fire engines could have used during the implementation portion of the Angel Underburn. However, being that FSR 1501 is still a system road and is passable by motor vehicle; administrative use could be an option if justified.

Effects of Alternative A on Fuels and Vegetation Management

Direct and Indirect Effects

The main effects of decommissioning the first five miles of road in relation to Vegetation Management projects are lengthening travel routes to projects which increase costs and adding drive time exposure to personnel involved. Access to water for fire engines in the upper portion of the drainage is limited and they would not be able to make use of known fill sites that would be in the decommissioned area. This could result in longer refill turnaround times as well as drive time exposure on tight, narrow, and winding roads.

The prescribed burning that is planned to take place in the Little Rattlesnake drainage is planned as a spring burn in which it's accomplishment is critical to the success of a larger project in the adjacent Mainstem Rattlesnake drainage. Due to the position and aspect that the alternate route (FSR 1503) has, it does not become passable do to snow in the spring time until conditions are often to warm and dry to perform any prescribed fire activities. By not being able to access the Little Rattlesnake by way of FSR 1501, and also not by way of FSR 1503 in the spring time, a large project that is critical to the Fuels and Vegetation Management program could be jeopardized.

Cumulative Effects

The analysis area combines the Little Rattlesnake drainage and the main stem Rattlesnake drainage and analysis time is considered the foreseeable future (40+ years). There are no past, current, or future actions that would contribute to the effects of the proposed action.

Effects of Alternative B on Fuels and Vegetation Management

Direct and Indirect Effects

Currently a prescribed fire planned (Angel Underburn) has a portion of the project area that lays in the Little Rattlesnake drainage. Under this alternative, access to this portion of the project would use FSR 1501 as a main travel path, which is shorter than alternative routes, both in time and distance. During the implementation of this project, fire engines could make use of multiple fill site opportunities that exist along the first five miles of road, lessening refill turnaround times and drive time exposure.

Cumulative Effects

The analysis area combines the Little Rattlesnake drainage and the main stem Rattlesnake drainage and analysis time is considered the foreseeable future (40+ years). There are no past, current, or future actions that would contribute to the effects of the proposed action.

FIRE AND PUBLIC SAFETY

No Action Alternative

The analysis area combines the Little Rattlesnake drainage and the main stem Rattlesnake drainage and analysis time is considered the foreseeable future (40+ years). If this alternative is chosen, the road would remain closed to vehicle use and the effects would include: longer travel times, increased roadway exposure, and restricted access to fire engine fill sites. However, being that FSR 1501 is still a system road and is passable by motor vehicle; administrative use could be an option if justified.

Effects of Alternative A on Fire and Public Safety

Direct and Indirect Effects

Decommissioning the first five miles of FSR 1501 would slow ground resource response times to new wildfire starts in the drainage, and remove access to multiple fill site opportunities for fire engines. Other effects to consider would be the use of FSR 1503. This road would become the main access and egress for the Little Rattlesnake drainage. In the event of a wildfire/natural disaster this road would become the primary egress route for firefighters and the general public. However, this drainage historically is not a high fire occurrence area and has had multiple Vegetation Management treatments implemented within it on Forest Service land, the risk of an uncharacteristically large wildfire is not considered high. FSR 1503 is a narrow, winding road with multiple blind corners. Decommissioning FSR 1501 would increase vehicle traffic and the associated impacts onto the 1503, raising the potential for motor vehicle accidents.

Cumulative Effects

The analysis area combines the Little Rattlesnake drainage and the main stem Rattlesnake drainage and analysis time is considered the foreseeable future (40+ years). Many of the cumulative effects of decommissioning the first five miles of road center on vehicle use. During fall hunting seasons, it is common for recreational vehicles and pickup trucks with trailers to use the drainage. The combination of an increase in these types of vehicles and the condition of FSR 1503 creates the potential for an increased public safety issue. Not only would this effect vehicle traffic in the Little Rattlesnake drainage, it will increase traffic on FSR 1500, which is the main travel path for a large and highly used area. FSR 1500 is also a tight and windy road with blind spots, and is already a road which takes caution while traveling upon. There is currently a sheep allotment in the Rattlesnake drainage which used FSR 1501 as the main travel path. With this alternative, FSR1500 would see a higher use of semi-trucks which greatly increases the risk to those operators as well as the agency personnel and recreationalists.

If the Washington State Department of Natural Resources determines a need to build a road into the drainage, limited vehicle access could still be attained in a response to a wildfire on DNR lands, which are directly adjacent to Forest Service lands.

Effects of Alternative B on Fire and Public Safety

Direct and Indirect Effect

Direct and indirect effects of repairing damaged portions of FSR 1501 and restoring the road for use in relation to fire and public safety would return the road to pre flood conditions. Restoring access and egress for the Little Rattlesnake drainage by way of FSR 1501 would provide a shorter, faster, and safer travel route for ground resources in response to new wildfire starts, as well as provide for less travel time exposure in the event of an extended attack wildfire. In the event of a large wildfire and or natural disaster in the drainage this route would also be considered a primary egress route for the general public.

Within the first five miles of FSR 1501, multiple water fill site opportunities would be available for fire engines due to the proximity of the road to Little Rattlesnake Creek. Due to inaccessibility of the creek to fire engines in the upper portions of the drainage these fill sites provide for quick and efficient refilling opportunities for wildfire suppression within the drainage.

Cumulative Effects

The analysis area combines the Little Rattlesnake drainage and the main stem Rattlesnake drainage and analysis time is considered the foreseeable future (40+ years). The cumulative effects of repairing and shifting FSR 1501 at two sites would allow for an overall shorter, faster, and safer travel path into and out of the Little Rattlesnake drainage. Re-opening FSR 1501 would help lower the higher volume of traffic that is currently using FSR 1500 due to the closure, which adds to an already highly used road system.

RECREATION

The type of access that will be provided under each alternative is the primary factor that affects this analysis; specifically, whether the 1501 will be reopened to motorized traffic or if it will not. The type of access will affect the recreation opportunities available to the public. Some recreationists prefer motorized access and related recreation opportunities, while others prefer non-motorized access and opportunities. The type of access that is decided upon could displace traditional users from an area while attracting new users. Displaced users who desire motorized access could move to another area that offers the opportunities they are seeking which could cause more use in the new area; they could change the type of activity they traditionally engaged in (less likely), or they could choose not to participate in an outdoor recreation activity offered in the National Forest.

The types of recreation activities occurring within the project area include driving for pleasure and exploration, view scenery and wildlife, system Off-Highway Vehicle (OHV) trail access, winter use including snowmobile system trails/Sno-parks/other winter uses, hunting, fishing, dispersed camping, nature exploration, geological study, plant identification/gathering, bird watching, mountain biking, walking, miscellaneous forest products gathering, and personal use firewood cutting. The baseline and existing condition of recreational activities at each project site can be found in the recreation specialist report in the project file.

No Action Alternative

Under the No Action Alternative, the existing conditions would continue. Forest System Road 1501 would remain closed to all motorized travel. Those accessing Trail 680 would continue to route around the beginning of FSR 1501 using FSR 1500 to FSR 1503 to get back on the upper end of FSR 1501. This adds additional miles and drive time to their trip. Unauthorized motorized use, which has been noted, would most likely continue if the road was not decommissioned. Non-motorized users would be able to use the road bed and structures at the stream crossings if these were left in place.

Effects of Alternative A on Recreation

Direct and Indirect Effects

Under this alternative, motorized access on FSR 1501 would remain prohibited for the 5 miles of road. Driving for pleasure and viewing scenery/wildlife opportunities would not be restored for motorized users. The 1501/1503/1500 driving loop opportunity would not be reestablished. Direct access to the start of Little Rattlesnake OHV Trail would not be reestablished, and the trail would need to be accessed from the 1500/1503 route, which would take more time and may result in a shorter season due to the higher road elevations. The 12.6 miles of previously groomed snowmobile trail on Roads 1501 and 1503 would not be reopened and the loop opportunity would be lost. Motorized access to known and previously recorded dispersed sites, hunting areas, and other traditional recreation activities would remain closed along the 1501 road corridor, and those opportunities available in the upper 1501, 1518 and 1593 road systems could

still be accessed through the longer 1500/1503 route, which may result in a shorter season due to the higher road elevations.

Recreationists who prefer the non-motorized opportunities presented by the 2011 closure would retain the opportunities, but would not be able to use the stream crossing structures or road bed as these would be removed.

Implementation of this alternative would meet the area's VQOs and ROS classes.

Cumulative Effects

The area considered for Cumulative Effects is the Mainstem Naches and Rattlesnake watershed combined. Past, Present, and Foreseeable Actions include the FSR1702/1702550, FSR1700 Road ERFO analyses, and the recent past, current, and future timber sales in the watersheds. The time period considered includes five years before and five years after this analysis.

Sno-Park and Groomed Snowmobile Trail Availability

There would be no additional cumulative effects to Sno-Parks or access points from decommissioning Road 1501, as the Sno-Park associated with the FSR1501 is located on adjacent FSR1500 and not affected by this analysis.

Under this alternative, 5 miles of groomed snowmobile trail previously located on the 1501 road prism would be decommissioned. Depending on alternatives selected in other ERFO analyses, an additional 14.3 miles of groomed snowmobiles trails could remain closed (up to 19.4 miles total). With the Nelli Timber Sale expected to occur beginning the winter of 2013, up to an additional 9.6 miles could be closed for about 3 years, until the timber sale was complete. Snowmobilers would be displaced to other trails in the analysis area, or displaced from the area altogether.

Access to Driving for Pleasure

Decommissioning FSR1501 would effectively eliminate the 1501/1503/1500 loop route. Depending on alternatives selected in other ERFO analyses, up to three additional routes may be closed to driving for pleasure. Recreationists driving for pleasure would be displaced from closed routes and have fewer choices in the analysis area. They would either choose a different route or not use the area.

Hunting Access

Under this alternative, FSR1501 would not reopen for motorized hunting access. Depending on the alternatives selected under the other ERFO analyses, up to two additional roads may remain closed to motorized access. Cumulatively, up to three roads in the analysis area could be closed to motorized hunting opportunities. Hunters dependent on motorized opportunities would either be displaced to a new hunting area with similar opportunities, or (less likely) change their style of hunting. Many areas open to motorized hunting on the Naches District are already heavily hunted, so displaced hunters would potentially increase use in an already heavily hunted area.

Conversely, those recreationists who prefer non-motorized hunting would have increased opportunities in up to three areas if roads remained closed.

Dispersed Campsite Access

Under this alternative, motorized access would remain closed to 17 sites on FSR1501. Up to 11 additional sites in the analysis area could be closed, depending on the alternatives selected under the other ERFO analyses. Dispersed campers who previously used these sites would either be displaced to other areas which could impact campers already using those areas, or (less likely) pack lighter and camp at the sites now closed to motorized access.

Motorized Trail/OHV Area Access

Under this alternative, direct access to OHV Trail 680 via Road 1501 would remain closed. Depending on the alternatives selected in other ERFO analyses, direct access could remain closed on up to two additional motorized destinations (one single tread motorized trail and the Funny Rocks/Manastash Ridge area trails). Not reopening direct access would lengthen the time required for recreationists to reach these motorized opportunities.

Personal Use Firewood Cutting Areas

Under this alternative, there would be no cumulative effects to access to personal use firewood cutting areas.

Cumulative Effects to ROS and Visual Quality

There would be no expected cumulative effects to ROS classes or visual quality under this alternative.

Effects of Alternative B on Recreation

Direct and Indirect Effects

Under this alternative, access on FSR 1501 would return to baseline conditions. Driving for pleasure, including driving the 1501/1503/1500 loop and viewing scenery/wildlife opportunities would be restored. Direct access to OHV Trail 680 would be reestablished. The 12.6 miles of groomed trail currently closed (5.2 miles on FSR1501, plus 7.4 miles on FSR1503) would reopen, reestablishing the 1501/1503/1500 loop opportunity for snowmobilers. Motorized access to dispersed sites within the currently closed road corridor and more direct, lower elevation access to sites on the upper 1501, 1518, and 1503 roads would be reestablished. Motorized access for hunters would return to baseline conditions. Motorized access for other recreation activities areas would also be reestablished.

Recreationists who prefer the non-motorized opportunities presented by the 2011 closure may be displaced by reopening the road to motorized traffic.

Implementation of this alternative would meet the area's Visual Quality Objectives (VQOs) and Recreation Opportunity Spectrum (ROS) classes.

Cumulative Effects

Sno-Park and Groomed Snowmobile Trail Availability

There would be no cumulative effects to Sno-Parks or access points under this alternative. 5.1 miles of groomed snowmobile trail located on FSR1501 would be reopened, and depending on alternatives selected in other ERFO analyses, up to 19.4 miles could be reopened in the analysis area. Reopening these trails would replace the opportunities lost in 2011.

Access to Driving for Pleasure

Under this alternative, the 1501/1503/1500 loop route would reopen. Depending on alternatives selected in other ERFO analyses, up to four additional loops and driving routes currently closed could reopen to motorized traffic. Reopening these routes would replace the opportunities lost in 2011.

Hunting Access

Under this alternative, the 1501 Road would reopen to provide motorized hunting opportunities. Depending on the alternatives selected in other ERFO analyses, up to three additional roads may reopen to motorized access or two may remain closed and provide non-motorized hunting opportunities. Motorized hunting opportunities lost in 2011 would be replaced.

Dispersed Campsite Access

Under this alternative, motorized access would reopen to 17 sites. Depending on the action alternatives selected in other ERFO analyses, up to 38 additional sites currently closed could reopen to motorized access. Dispersed site access opportunities lost in 2011 would be replaced.

Motorized Trail/OHV Area Access

Under this alternative, direct access to OHV Trail 680 via Road 1501 would reopen. Depending on the alternatives selected in other ERFO analyses, direct access could reopen to one or two other motorized trails. This would allow recreationists a shorter time to reach off road motorized opportunities.

Personal Use Firewood Cutting Areas

Under this alternative, there would be no cumulative effects to access to personal use firewood cutting areas.

Cumulative Effects to ROS and Visual Quality

There would be no expected cumulative effects to visual quality within the analysis area of the Naches Mainstem and Rattlesnake watersheds under this alternative.



CULTURAL RESOURCES

The National Historic Preservation Act (NHPA: the Act) of 1966 established the Federal government's policy and programs on historic preservation, including the establishment of the National Register of Historic Places (NRHP: the National Register). Section 106 of the Act (36 CFR 800) requires Federal agencies having direct or indirect jurisdiction over a proposed Federal or Federally assisted or permitted undertaking to take into account the effect an undertaking may have on historic properties listed on or eligible for the National Register, and it affords the Advisory Council on Historic Preservation (AHP) an opportunity to comment on such undertakings (16 U.S.C. 470f). The Washington State Department of Archaeology and Historic Preservation (DAHP) and the AHP are the respective state and federal agencies responsible for overseeing the management and protection of historic properties in compliance with the NHPA. Historic properties are cultural resources that are listed on or eligible for listing on the National Register. Historic properties, and cultural resources that have not been formally evaluated against National Register criteria (E.O. 11593), are given consideration in planning for licensed, approved or funded Federal undertakings.

The Forest Service 1501 Road Flood Repair project is located within the traditional use area of the Yakama Indian Nation. Trust responsibility is the U.S. Government's permanent legal obligation to exercise statutory and other legal authorities to protect tribal land, assets, resources, and treaty rights, as well as a duty to carry out the mandates of Federal law with respect to American Indian and Alaska Native Tribes. For the Forest Service, fulfillment of trust responsibility requires consultation with tribes.

Naches Ranger District cultural resource site and survey records were reviewed. There are no known prehistoric or historic properties within the area of potential effect from this project. NHPA Section 106 consultation for the 1501 Flood Repair Project was completed in accordance with the terms of the programmatic agreement regarding management of cultural resources on Washington State National Forests (1997). It was determined all Alternatives proposed would have "No effect" as there were no cultural resources within the project area (Buchholz 2012: Report 2012061708009).

No Action Alternative

Historic Properties

By not implementing the project, there would be no new risk of effects to any unknown historic properties as a result of project activities. Effects to unknown cultural resources would be limited to impacts from natural processes and current human use patterns. Anticipated impacts would include natural deterioration, decomposition, erosion, breakage, and displacement related to such causal factors as exposure to elements, natural catastrophes, storm events, and animal and human activity.

Forest Service Trust Responsibility

Effects to tribal use and practices in the 1501 Flood Repair project area would be limited to impacts from natural processes and current human use patterns. By not implementing proposed project activities, there would be no new risk of impacting or impeding Tribal use patterns and practices.

Effects Common to Alternative A and B on Cultural Resources

Direct, Indirect and Cumulative Effects of Alternative A and B on Historic Properties

As there are no known historic properties there would not be any direct or cumulative effects from either of the action alternatives. Contracts for the project will include the Standard Clauses BT6.24 (Protection of Cultural Resources) and CT6.24 (Site Specific Protection Measures for Cultural Resources). These clauses allow the Forest service to modify or cancel portions of the contract to protect any newly discovered cultural resources. In the event that cultural resources are discovered as a result of project activity, all work in the vicinity of the discovery would cease until professionally assessed.

Direct, Indirect and Cumulative Effects of Alternative A and B on Indian Practices

The project area is considered the boundary for effects analysis with respect to Indian practices. For both the preferred and alternative actions no direct, indirect or cumulative effects to tribal customs or practices are anticipated. The U.S. government maintains a permanent legal obligation to exercise statutory and other legal authorities to protect tribal land, assets, resources, and treaty rights, as well as a duty to carry out the mandates of Federal law with respect to American Indian and Alaska Native Tribes. The Forest Service will continue to fulfill its trust responsibility through consultation with tribes. Adjustments to project implementation strategies could be made in order to eliminate or minimize impacts as appropriate when the Forest Service is made aware of activities and practices within their control that are impeding Tribal activities and practices.

OTHER REQUIRED DISCLOSURES

Areas with Unique Characteristics or Uncertainty

It was found that no parklands, Inventoried Roadless Areas (IRAs), Potential Wilderness Areas, or Wilderness Areas were within the project area, adjacent to the project area, or would be measurably impacted by either action alternative.

Clean Air Act

Alternatives A and B do not include any burning or actions that would cause more than incidental dust. The project will not compromise air quality and is therefore consistent with the Clean Air Act of 1963 as amended.

Establishment of Precedent

Alternatives A and B do not establish a precedent for future actions. The decisions made and analysis completed was site and temporal specific. The purpose and need are only relevant to the specific affected environment.

Social Groups and Civil Rights

Alternatives A and B of the 1501 Flood Repair Project will not disproportionately affect any social groups or civil rights. This project includes purchase work, Forest Service contracted work, and Forest Service employee accomplished work. Under Executive Order 11246 (1965), companies with the Federal contracts or subcontracts are prohibited from job discrimination on the basis of race, color, religion, sex or national origin. The U.S. Department of Agriculture prohibits discrimination in its employment practices based on race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital and family status.

Alternatives A and B will not have any disparate effects on any consumers, minority groups, women, civil rights, or social/ethnic groups. All contracts would meet Equal Employment Opportunity requirements.

Prime Rangeland, Farmland, and Forest Land

Alternatives A and B comply with the federal regulations for prime land. None of the project areas is within prime forest, rangeland, or farmland; therefore there is no effect on any prime land.

Wild and Scenic Rivers

Alternatives A and B comply with the regulations of Wild and Scenic Rivers. This project will have no impact on designated Wild and Scenic Rivers as they are no way involved in this proposal.

CHAPTER IV

Public Involvement Summary

Public Scoping

Forest System Road 1501 sustained flood damage both in 2009 and 2011. In August 2011, a scoping letter proposed to prepare FSR 1501 and FSR 1900 from 2009 damage. It was later determined that the 1501 should be analyzed with the 2013 ERFO projects to incorporate the damage sustained from the May 2011 flood. The scoping comments and feedback for this project include both scoping periods.

The Project Initiation Letter (PIL) for the 2012 and 2013 ERFO projects was written on October 5, 2011 and directed the Inter-disciplinary Team (IDT) to address damage sustained from the May 2011 flood. A full list of IDT members and other individuals consulted is included in Chapter V.

The 2013 Flood Repair Project Proposals (scoping letter in Appendix A) contained the proposal for the 1501 Flood Repair Project. The tribal scoping letter was sent to the Yakama Nation on July 10, 2012 and on July 20, 2012 the public scoping letter was sent to over 1,000 recipients.

Additional public outreach included presentations and available information at:

- Forest Service Schedule of Proposed Actions (SOPA)
- 2012 & 2013 Central Washington Sportsmen Show
- Multiple (2011-2013) Trails and Wilderness Interest Group Meetings (TWIG)
- 2012 Central Washington State Fair
- Pacific Northwest 4-Wheel Drive Association meetings, both local and regional
- 2013 Backcountry Horsemen of Washington Rendezvous
- Dust Dodger Motorcycle Club meetings
- Cascade Quad Squad Club meetings
- Naches Ranger District foyer

Comments

The IDT received 59 comments total on the 1501 Flood Repair project during the 2011 and 2012 scoping period. Comments included:

- Individual public comments
- Pacific Northwest 4-Wheel Drive Association (PNW4WD)
- Washington State Department of Fish and Wildlife
- Washington State Department of Ecology
- NOAA Fisheries
- Yakama Nation
- S. Martinez Livestock Inc., Rattlesnake Sheep Allotment Permittee
- Washington State Parks and Recreation Commission
- Conservation Northwest

- Nile Cliffdell Fire Department

Topics within the comments included safety concerns, firefighting access, travel access, illegal use, recreational access, hunting access, capital improvement retention, economics, wildlife habitat improvement, aquatic habitat improvement, access for allotment operations, and access for the elderly.

For a complete list of comments and topics, see the project file. The majority of public comments were in favor of re-opening FSR 1501 either as a system road or a trail.

CHAPTER V

Organizations, Agencies and Persons Consulted

Forest Service

Naches and Cle Elum Ranger District Interdisciplinary Team

Mike Carroll	Team Leader, Engineer
Michelle King	NEPA Planner
KC Briggs	Fisheries
Bill Garrigues	Hydrology
Jo Ellen Richards	Wildlife
Kathryn Buchholz	Cultural Resources
Chris Ownby	Geographic Information Systems
Sue Ranger	Recreation, Visual Quality
Jason Emhoff	Fire, Public Safety, Fuels, Vegetation Management
Carla Jaeger	Range
Helen Lau	Botany
Lauren DuRocher	Recreation, Visual Quality

Other Participants

Irene Davidson	Naches Ranger
Judy Hallisey	Cle Elum Ranger
Jodi Leingang	Environmental Coordinator, Naches Ranger District
Marge Hutchinson	Engineer, Okanogan-Wenatchee National Forest
Richard Vacirca	Forest Fisheries Program Leader, Okanogan-Wenatchee National Forest

Agencies Consulted

NOAA Fisheries
US Fish and Wildlife Service

Agencies Notified

WA Department of Fish and Wildlife
WA Department of Natural Resources
WA Department of Ecology
WA State Parks and Recreation
Yakima County Sheriff's Office
Yakima Regional Clean Air Agency

CHAPTER VI

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► WHAT DOES IT MEAN TO MEET FEDERAL HIGHWAY STANDARDS AND WHY ARE WE HELD TO THEM?2



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○ OKANOGAN-WENATCHEE NATIONAL FOREST

○ JULY 2012

Flood Repair *projects*

PROPOSED ACTIONS FOR THE NACHES AND CLE ELUM RANGER DISTRICTS 2013 FLOOD REPAIR PROJECTS

In May 2011, the Naches and Cle Elum Ranger Districts experienced a 100-year flood impacting 40 roads, multiple campgrounds, and several other recreational areas. In June 2011, the Okanogan-Wenatchee South Engineering Zone documented the extent of the damage and was granted Federal Lands Highway funding for emergency relief.

Currently, the planning team has completed the analysis for four flood repair projects including: Forest System Road (FSR) 3100 mile post 0.9 - 2.2, FSR 3100 mile post 10.4, FSR 1808 mile post 4.2, and FSR 1601 mile post 0.3. All four of these projects are scheduled to be constructed July-September of 2012.

This brochure outlines the proposed actions for the five 2013 flood repair projects. The damaged sites are broken up into the following analysis groups: FSR 1501, FSR 1700, FSR 1901, FSR 3300, FSR 4517-117. All projects will undergo an environmental analysis consistent with the

National Environmental Policy Act (NEPA).

The Okanogan-Wenatchee National Forest will accomplish multi-use objectives by working with the Yakama Nation, WA Department of Fish and Wildlife, WA Department of Natural Resources, U.S. Fish and Wildlife, National Marine Fisheries Service, and several other vested parties. At this time, the team is asking for public comment and feedback. Please review the proposed actions and provide us with questions, comments, and concerns.



Is this a road or a stream? This is FSR 1708 in May 2011. In some places, the stream completely overtook the road.



Naches Ranger District
10237 U.S. Highway 12
Naches, WA 98937
(509) 653-1401

Cle Elum Ranger District
803 W. 2nd Street
Cle Elum, WA 98922
(509) 852-1100

Okanogan Wenatchee National Forest Supervisor's Office
215 Melody Lane
Wenatchee, WA 98801
(509) 664-9200

Project Objectives



The objectives of the 2013 Flood Repair Projects are:

- ◆ Address roads with serious damage caused by a natural disaster or catastrophic failure.
- ◆ Reduce road and stream interactions.
- ◆ Maintain aquatic and wildlife habitat standards in respect to the Forest Plan and national direction.

STAY INVOLVED:



Federal Highway Standards and Forest Service Roads



Did you know that all Forest Service Roads must meet Federal Highway Standards? Although Forest System Roads (FSRs) are managed at different levels, every road must meet basic Federal Highway Standards. For example, every road and crossing must be able to handle the weight and turning radius of a **loaded logging truck**. Even if a FSR is not paved, the river and stream crossing must be strong enough to handle the weight of these heavy vehicles. For more information on Federal Highway Standards visit: <https://fhwapap04.fhwa.dot.gov/nhswp/>.

Join the project mailing list to get updates on the status of the 2013 Flood Repair Projects.

Please contact Michelle King at 509-653-1420; mdking02@fs.fed.us

We thank those individuals who choose to be contacted via email as it helps the Naches Ranger District save paper and money.

Project Consistency and Environmental Protection

The objectives of the proposed 2013 Flood Repair Projects are consistent with recommendations present in relevant national and regional direction. Projects on the Forest will follow the direction for land and habitat management as per the **Wenatchee National Forest Land and Resource Management Plan** (1990) as amended by the **Northwest Forest Plan** Standards and Guidelines for Management of Habitat for Late Successional and Old-Growth Forest Related Species within the Range of the Northern Spotted owl (1994). By applying site specific road designs and implementing appropriate maintenance requirements, all projects on the Forest will be consistent with the **Aquatic Conservation Strategy** objectives.

In compliance with the **National Environmental Policy Act** (NEPA), each project is classified as an Environmental Assessment (EA) or a Categorical Exclusion (CE). Each EA will discuss the project's purpose and need, affected environment, potential alternatives, environmental and social effects, and public involvement. As part of the **Endangered Species Act** (1973) consultation process, a Biological Evaluation will be completed for each project. Each project will comply with the **Pacific Northwest Region Invasive Plant Program Record of Decision** (2005), the **Clean Water Act** (1972), the **Clean Air Act** (1963), **Executive Order 11988** for Floodplain Management, **Executive Order 11990** for Wetland Protection, and the **Magnuson-Stevens Fishery Conservation and Management Act**.

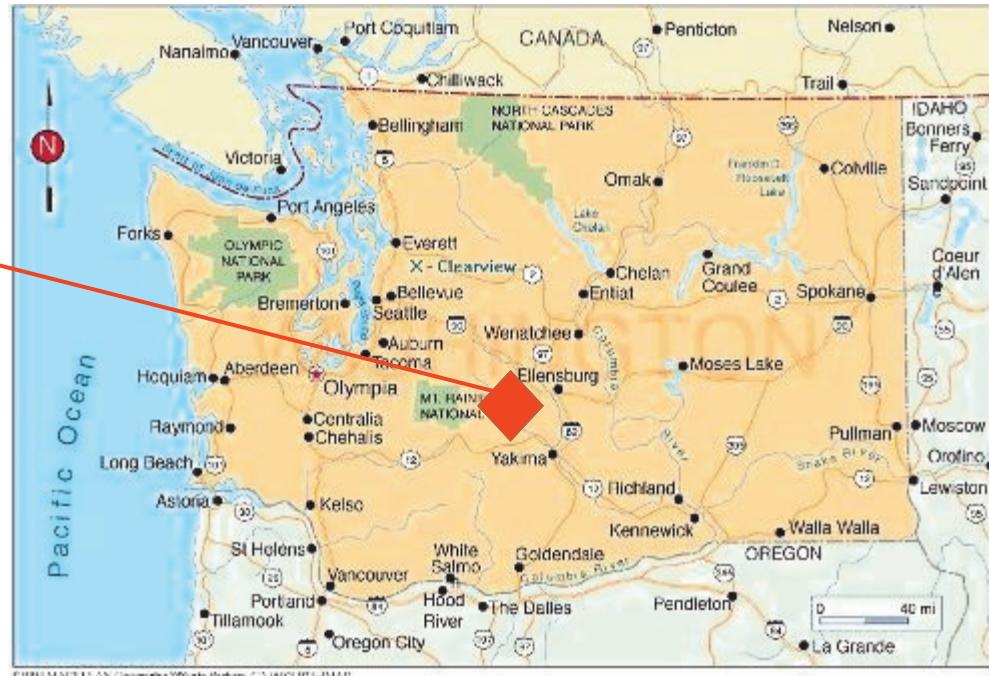
Although the Okanogan-Wenatchee is enacting public scoping for all of the 2013 proposed projects at the same time, each of the five projects will be individually analyzed and will have separate project files. The Potential Repair Options at each site represent possible actions the planning team has began to review. Your knowledge of the area and feedback could lead to the development of a new potential repair. Scoping is an important time for the planning team to gather additional information while beginning the environmental analysis.



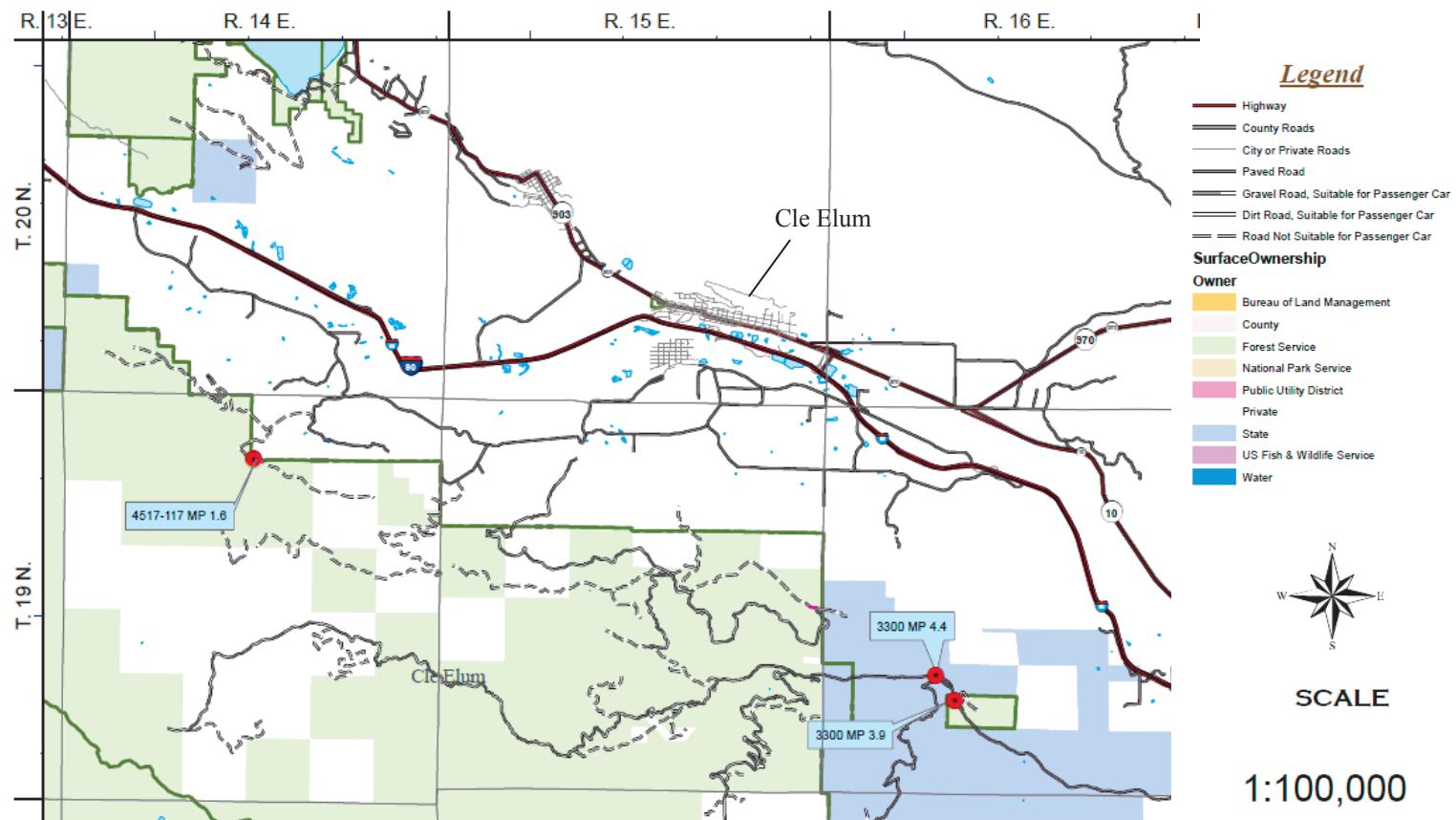
Project Locations

Washington State

General vicinity of the five project sites

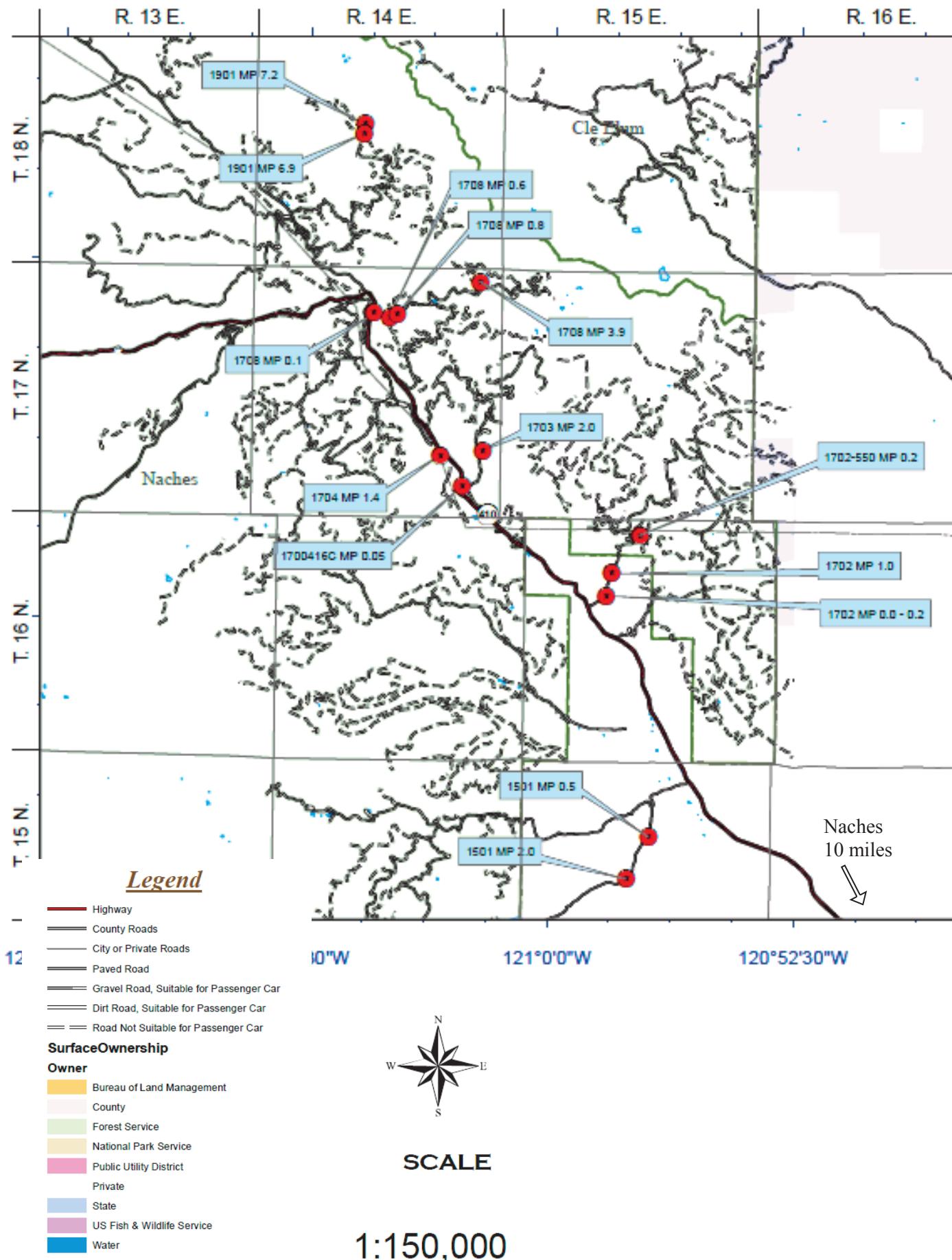


Cle Elum Ranger District Project Locations



A

Naches Ranger District Project Locations



Forest Service Road 1901

Naches Ranger District

Project Analysis Type: Categorical Exclusion, 36 CFR 220.6(d)(4)

This project is not required to have an Environmental Assessment but will still be subject to Appeal Regulations CFR 215. A Categorical Exclusion (CE) is a more streamlined method of analysis used in cases where the expected impact is limited. There will be an Official Comment Period and Decision Memo associated with this project.

Mile Post 6.9

Location

This damaged site is located in the Little Naches drainage on the Naches Ranger District. Forest System Road 1901 is also known as Quartz Creek Road. This site is located in Township 18N, Range 14E, Section 16 in Kittitas County. This area is currently closed at the FSR 1901 and 1916 junction. This is a maintenance level two road at the project site.



Flood Damage

During the May 2011 flood, flood water caused the road fill and slope to fail as it ran down and crossed the roadway. When the road began to erode, it caused a debris flow down the side of the slope. Approximately half of the existing road prism is missing at this location. The damaged area spans 46 feet.

Potential Repair

Option A: Repair the road in place. Excavate the existing shoulder slump area and install a 50 foot long wall with rock backfill upslope of the road. Re-vegetate the eroded slope and rebuild the aggregate road surface.

Option B: Close the road at the current junction with FSR 1916. Stabilize the slope to prevent further damage and sedimentation. This site is also in a potential restoration project area and the outcome of the road in its entirety will be analyzed in the future.

Forest Service Road 1901

Naches Ranger District

Mile Post 7.2

Location

This damaged site is located in the Little Naches drainage on the Naches Ranger District. The FSR is also known as Quartz Creek Road. This site is located in Township 18N, Range 14E, Section 16 in Kittitas County. This area is currently closed at the FSR 1901 and 1916 junction. This is a maintenance level two road.



Flood Damage

During the 2011 flood event, the existing 60 inch culvert failed to properly transport water below the road. The stream deposited streambed material upstream of the crossing and into the culvert. With the stream flowing over the road, a large amount of roadway and road fill washed away.

Potential Repair

Option A: The crossing will be fixed and the road would be repaired to pre-existing single lane width.

Option B: Close the road at the junction with FSR 1916. Remove roadway and road fill that could continue to put sediment into the stream. Remove the culvert and stabilize the roadway away from the crossing.

Forest Service Road 1501

Naches Ranger District

Project Analysis Type: Environmental Assessment

This project was first initiated in July of 2011 but has now been reinitiated to be included in the South-Zone flood repair projects. The previous proposed action should be disregarded.

Mile Post 0.5

Location

This damaged site is located in the Rattlesnake drainage. The FSR 1501 is also known as the Little Rattlesnake. This project is unique as the repair sites are within WA State Department of Natural Resources land, however, as a FSR it is maintained by the Naches Ranger District. This site is located in Township 15N, Range 15E, Section 10 and is in Yakima County. It is currently a maintenance level four road.



Flood Damage

Damage at this location occurred in 2009 and during the 2011 flood event. The stream began flowing into the road ditch and then across the road. From mile post 0.5 for 350 feet, the stream is now running across and on the road, eroding some of the asphalt pavement surface as well as the aggregate road base. From 350 to 800 feet beyond mile post 0.5, the stream is occupying and eroding the roadside ditch. It is continually eroding the road prism pavement, and road fill along the shoulder.

Potential Repair

Option A: Shift the roadway up and away from the channel at this location. Obliterate the old road section and restore a flood plain area with vegetation. The new road piece would be armored with rocks and large pieces of wood.

Option B: Decommission FSR 1501 from mile post 0.0 to 5.1. This would include obliterating the road, removing necessary road fill and asphalt that could wash out into the stream, and creating wood and rock structures to stabilize the area.

Forest Service Road 1501

Naches Ranger District

Mile Post 2.0

Location

This damaged site is located in the Rattlesnake drainage. The FSR 1501 is also known as the Little Rattlesnake. This project is unique as the repair sites are within WA State Department of Natural Resources land, however, as a FSR it is maintained by the Naches Ranger District. This site is located in Township 15N, Range 15E, Section 16 and is in Yakima County. It is currently a maintenance level four road.



Flood Damage

During a high water event, the Little Rattlesnake stream activated a side channel that cut into the road prism and eroded approximately three feet of road surface. The damage to the road surface extends 26 feet and damage to the road embankment spans a total of 74 feet.

Potential Repair

Option A: Shift approximately 200 feet of roadway up and away from the channel. Remove the old road bed and restore a flood plain area with vegetation. The new road would be armored with rocks and large pieces of wood for stabilization.

Option B: Decommission FSR 1501 from mile post 0.0 to 5.1. This would include obliterating the road, removing necessary road fill and asphalt that could wash out into the stream, and creating wood and rock structures to stabilize the area.

Forest Service Road System 1700

Naches Ranger District

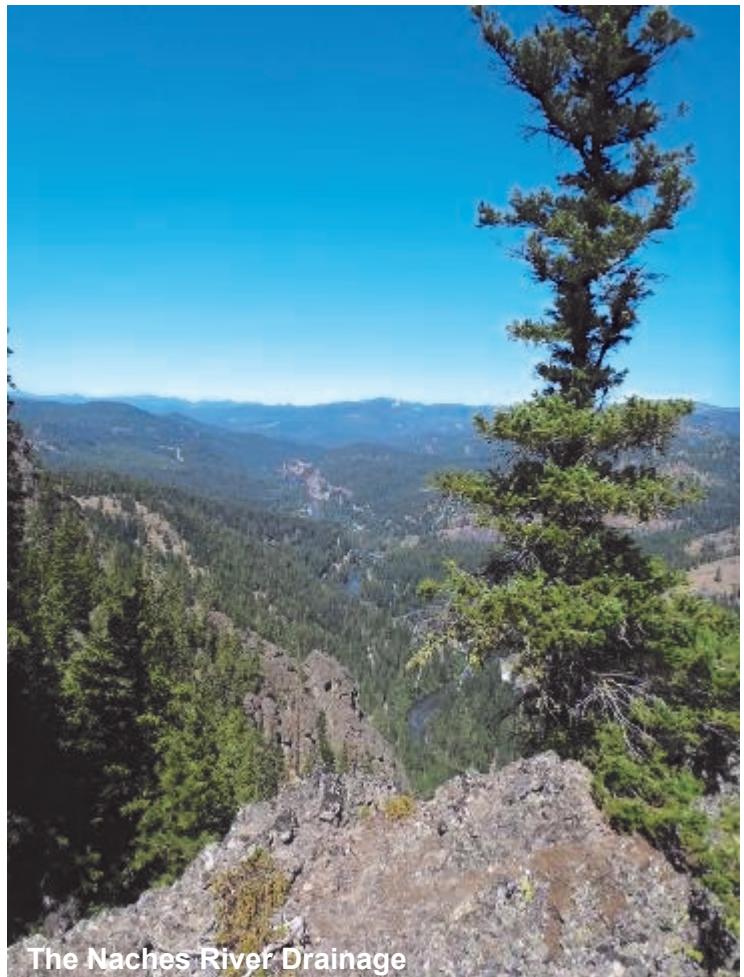
Project Analysis Type: Environmental Assessment Analysis Area

In order to properly address the cumulative and collective impacts of all of the repairs east of Highway 410, the planning team is analyzing multiple roads within one Environmental Assessment. There are six FSRs with a total of ten damaged sites:

- FSR 1700-416, mile post 0.1
- FSR 1702, mile post 0.0 and 1.0
- FSR 1702-550, mile post 0.2
- FSR 1703, mile post 2.0
- FSR 1704, miles post 1.3
- FSR 1708, mile post 0.0, 0.6, 0.8, and 3.9

Although the different damage sites may seem far apart, they are all near the Naches River or near a tributary of the Naches River.

Furthermore, these roads are inter-connected and provide access to the same system on the forest. For example, a closure in one area would impact travel on other roads near by. The analysis team will analyze all sites as one project to be able to better measure the total effects of all the potential repairs. Beyond effects to wildlife and aquatic species, the team must analyze the effects to recreation, vegetation management, fire management, cultural resources and other uses of this area.



In order to provide useful comments on this project, **please be clear as to which FSR and which exact damage site you are commenting on**. The analysis is one document but each site will have a separate repair selection.

Forest Service Road System 1700

Naches Ranger District

FSR 1700-416

Mile Post 0.1

Location

This damaged site is located in the Gold Creek drainage on the Naches Ranger District. The road is a connector road in a summer home tract. The site is in Township 17N, Range 14E, Section 36 within Yakima County. This road is classified as a maintenance level two road.



Flood Damage

In the 2011 flood, Gold Creek washed out a 30 foot wide section of the road at the location of two 48 inch culverts. The culverts did not fill with debris but were unable to handle the large amount of water flowing through. A significant amount of road, road fill, and road shoulder was washed downstream. There are summer homes on both sides of the washout and both tracts can be accessed by State Highway 410.

Potential Repair

Option A: Install an open bottom arch of approximately 15 feet in length to replace the two failed culverts.

Remove the two culverts, install arch, reconstruct the road, and re-vegetate exposed soil around the area.

Option B: Close the road at the crossing and remove approximately 100 feet of the road centered on the stream crossing. After removing the road and road fill, the stream bank would be stabilized and re-vegetated to prevent erosion.

Forest Service Road System 1700

Naches Ranger District

FSR 1702 Mile Post 0.0 Location

This damaged site is located along Rock Creek just off Okanogan-Wenatchee National Forest land. Rock Creek Road (FSR 1702) is currently closed from mile post 1.0-1.1, but before the flood damage occurred it accessed both Forest and State land. The site is located in Township 16N, Range 15E, Section 17. This road is a maintenance level three road and managed by the Naches Ranger District.



Flood Damage

In May 2011, flood water overtopped multiple culverts, forcing the creek over and down the road. The water moved over the road and damaged the aggregate surface for approximately 2,450 feet. Debris was deposited on the road and in the roadside ditches.

Potential Repair

Option A: Clean and repair approximately 1,900 feet of roadway ditch, install 430 feet of rock armor protection on the creek bank, and clear the existing culverts. Road will be resurfaced for approximately 200 feet.

Option B: Stabilize the crossings and relinquish the road easement. Permanently close FSR 1702 beyond mile post 1.

Forest Service Road System 1700

Naches Ranger District

FSR 1702

Mile Post 1.0

Location

This damaged site is located along Rock Creek just off Okanogan-Wenatchee National Forest land. Rock Creek Road (FSR 1702) is currently closed from mile post 1.0 to 1.1, and before the flood damage occurred it accessed both Forest and State land. The site are located in Township 16N, Range 15E, Section 8/9. This road is a maintenance level three road and managed by the Naches Ranger District.



Flood Damage

In the 2011 flood, high water flows eroded and damaged the road, road fill, and road shoulder. Rock creek narrows at this point in the valley with higher velocity flows. On the other side of the road is a steep slope.

Potential Repair

Option A: Build a precast concrete block wall to armor the road shoulder and prevent more erosion. Stabilize the area around the road.

Option B: Stabilize the road and bank and relinquish the road easement. Permanently close FSR 1702 beyond mile post 1.

Forest Service Road System 1700

Naches Ranger District

FSR 1702-550

Mile Post 0.2

Location

This damaged site is located on a spur road that connects with Rock Creek Road 1702. It is a maintenance level two road on the Naches Ranger District. The site is located in Township 16N, Range 15E, Section 4. The stream pictured is the righthand fork of Rock Creek.



Flood Damage

During the May 2011 flood, debris plugged the culvert and washed out 30 feet of road. There is currently no crossing and the 36 inch culvert is partially exposed.

Potential Repair

Option A: Clear and repair roadway and ditches. Install a 60 inch culvert to replace the 36 inch culvert. The crossing would be at the same location.

Option B: Reduce road to maintenance level 1 (closed) and stabilize the crossing. Remove the old culvert and road fill that could potentially be washed downstream.

Forest Service Road System 1700

Naches Ranger District

FSR 1703

Mile Post 2.0

Location

This damaged site is located along Gold Creek and is known as Gold Creek Road on the Naches Ranger District. This road is a loop road that connects with FSR 1705. The site is located in Township 17N, Range 14E, Section 25 in Kittitas County. This road previously was a snow mobile route in the winter and now is a maintenance level three road. The road is currently closed from mile post 0.0 to the FSR 1705 junction.



Flood Damage

Gold Creek washed out approximately 300 feet of road way. Above is the space where the road has washed away and where debris and boulders have filled in. During the 2011 flood event, the 60 inch culvert filled with rocks and debris and allowed the stream to overtop the road. The washout changed the course of the stream channel and created a large log jam that is causing river head-cutting.

Potential Repair

Option A: Rebuild the road in the same location allowing the stream to reclaim the old channel. The new crossing structure would be a 25 foot bottomless arch at the previous location of the culvert.

Option B: Reduce road to maintenance level 1 (closed) at crossing. Stabilize crossing and remove road and roadway fill that could erode further.

Forest Service Road System 1700

Naches Ranger District

FSR 1704

Mile Post 1.3

Location

This damaged site is located next to the main stem of the Naches River. Lower River Road (FSR 1704) and is classified as a maintenance level three road. The site is located in Township 17N, Range 14E, Section 26 in Yakima County. This is a connector road between two summer home tracts and is currently open with a narrowed capacity.



Flood Damage

During the 2011 flood, high flows eroded the bank, road shoulder, and roadway. There is approximately 90 feet of damage resulting in a slumped road shoulder and roadway with a reduced width. At this site, the road is confined between the Naches River and a vertical rock face.

Potential Repair

Option A: Reconstruct eroded portion of road armoring river interface with extensive large rock and woody debris. Reconstruct road surface to minimize sedimentation into the river.

Option B: Close 1,500 to 2,000 feet of the road allowing for a turn around area on each side. Remove two thirds of the roadway to prevent additional erosion. Keep some surfacing to assist in stability.

Forest Service Road System 1700

Naches Ranger District

FSR 1708 Mile Post 0.0 Location

This damaged site is located along Milk Creek Road on the Naches Ranger District. Milk Creek Road (FSR 1708) intersects with State Highway 410 and has previously been the location of a snow park and groomed snowmobile route. The site is located in Township 17N, Range 14E, Section 9, in Kittitas County. This is a maintenance level three road and typically is heavily used. The road is currently closed from mile post 0.0 to the FSR 1708-590 junction.



Flood Damage

In 2011, the culvert at the Milk Creek crossing filled and allowed water to overflow onto the road and down towards Highway 410. Approximately 1,700 feet of road surfacing was damaged below the failed crossing. The 72 inch culvert is still in place.

Potential Repair

Option A: Pull out wood and debris that is partially blocking the pipe. Repair washed out portions of the road surface with aggregate surfacing.

Forest Service Road System 1700

Naches Ranger District

FSR 1708 Mile Post 0.6 Location

This damaged site is located along the heavily used Milk Creek Road on the Naches Ranger District. Milk Creek Road (FSR 1708) intersects with State Highway 410 and has previously been the location of a snow park and groomed snowmobile route. The site is located in Township 17N, Range 14E, Section 10, in Kittitas County. This is a maintenance level three road and is currently closed at mile post 0.0 to the FSR 1708-590 junction.



Flood Damage

During the 2011 flood, high flows eroded the road shoulder and bank. Portions of the road shoulder and road way were washed away narrowing the width of the road.

Potential Repair

Option A: Re-align the road to go up through the adjacent spur road. The spur road goes to a near-by rock pit and connects back to FSR 1708 at mile post 0.8. The re-aligned road would be made to level three maintenance road standards. The existing road would be decommissioned and the slope would be armored to prevent excess erosion.

Forest Service Road System 1700

Naches Ranger District

FSR 1708

Mile Post 0.8

Legal Description

This damaged site is located along the heavily used Milk Creek Road on the Naches Ranger District. Milk Creek Road (FSR 1708) intersects with State Highway 410 and has previously been the location of a snow park and groomed snowmobile route. The site is located in Township 17N, Range 14E, Section 10, in Kittitas County. This is a maintenance level three road and is currently closed at mile post 0.0 to the FSR 1708-590 junction.



Flood Damage

During the 2011 flood, high flows and debris eroded the road shoulder and bank. Portions of the road shoulder and road way were washed away narrowing the width of the road.

Potential Repair

Option A: Re-align the road to go up through the adjacent spur road. The spur road goes to a near-by rock pit and connects back to FSR 1708 at mile post 0.6. The re-aligned road would be made to level three maintenance road standards. The existing road would be decommissioned and the slope would be armored to prevent excess erosion.

Forest Service Road System 1700

Naches Ranger District

FSR 1708

Mile Post 3.9

Legal Description

This damaged site is located along the heavily used Milk Creek Road on the Naches Ranger District. Milk Creek Road (FSR 1708) intersects with State Highway 410 and provides access to several four wheel drive trails. The site is located in Township 17N, Range 14E, Section 1, in Kittitas County. This is a maintenance level three road and is currently closed at mile post 0.0 to the FSR 1708-590 junction.



Flood Damage

The creek crossing the road is a tributary to Milk Creek and is in an area with high sediment dispersal. During 2011, the culvert plugged with debris and created a new crossing down the ditch and then over the road.

Potential Repair

Option A: Remove the existing buried culvert and replace it with a larger culvert (approximately 60 inches) in the same location. Repair the road and road shoulder and return the stream to the pre-flood channel. Road and ditch would be armored for protection from future flood events.

Forest Service Road 4517-117

Cle Elum Ranger District

Project Analysis Type: Categorical Exclusion, 36 CFR 220.6(d)(4)

⚠️ IMPORTANT: This project is not required to have an Environmental Assessment and is not subject to Appeal

Regulations CFR 215. This means that the public will have one opportunity to comment on this project during the Scoping Period (see page 24). This type of analysis is generally shorter than an Environmental Assessment and will not require an Official Comment Period or Decision Memo.

Mile Post 1.6

Legal Description

This damaged site is located on Granite Road on the Cle Elum Ranger District. The road is a maintenance level two road and the project site is Township 19N, Range 14E, Section 4 in Kittitas County.



Flood Damage

The damaged crossing is at the location of a stream alluvial fan. During the 2011 flood, high flows and debris washed away the road around the existing culvert and deposited debris all over the site.



Potential Repair

Option A: Remove the existing culvert and make the crossing a natural-material ford. The ford would not be armored and would allow for traffic to drive through the site in low-flow or no-flow periods. The surface of the ford would be compacted. There would be a widened road area added before the ford to allow vehicles that did not want to cross to be able to turn around.

Forest Service Road 3300

Cle Elum Ranger District

Project Analysis Type: Environmental Assessment

Mile Post 3.9

Legal Description

This damaged site is located along Taenem Road on the Cle Elum Ranger District. This is a maintenance level four road and is currently open with a narrowed driving width. This site is directly across from the Taenem Campground. The site is located in Township 19N, Range 16E, Section 28 in Kittitas County.



Flood Damage

During the 2011 flood, the gabion baskets and bank failed to protect the road and the road collapsed into the stream. Portions of the roadway and road shoulder are missing and the road width is narrowed. Currently, the stream is confined on the road and the campground side at this location.

Potential Repair

Option A: Replace failed gabion baskets with a pre-cast concrete block wall. Remove the berm between the stream and the campground, allowing the river to regain that portion of the floodplain. The historic structures of the campground will be protected, however, the picnic area and two campground locations will become part of the river flood plain. These sites are closest to the stream bank. The road would be repaired to pre-flood conditions.

Forest Service Road 3300

Cle Elum Ranger District

Mile Post 4.4

Legal Description

This damaged site is located in along Taenem Road managed by the Cle Elum Ranger District. This is a maintenance level four road and is currently open with a narrowed driving width. The road is managed by the Forest Service but the site is located on Washington Department of Fish and Wildlife land. The site is located in Township 19N, Range 16E, Section 29 in Kittitas County.



A

Flood Damage

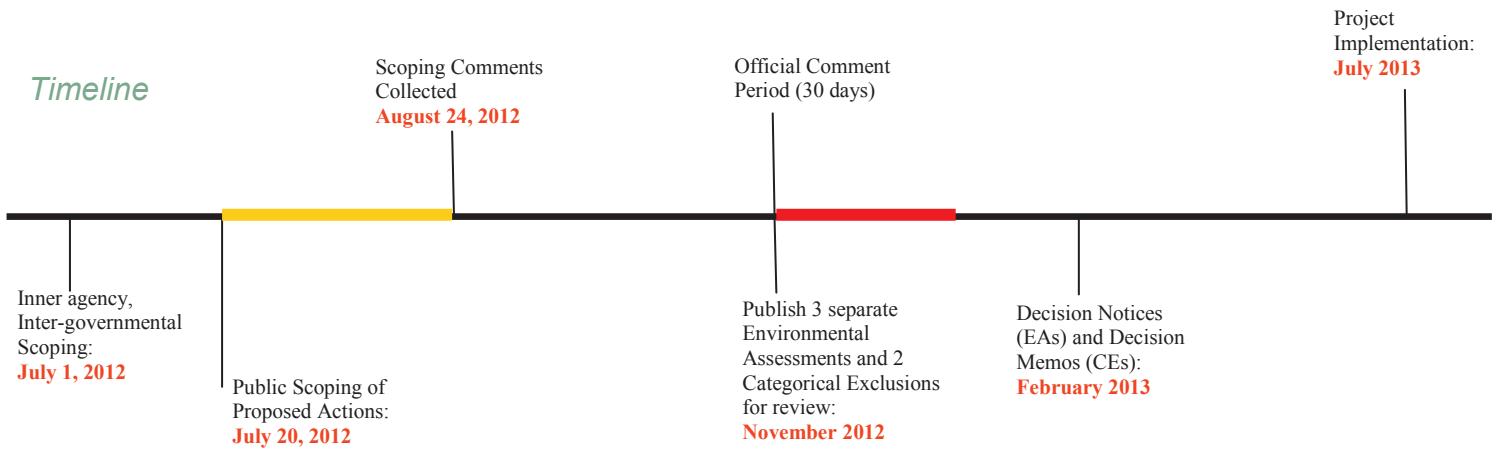
During the 2011 flood, the gabion baskets and bank failed to protect the road and the road collapsed into the stream. Portions of the roadway and road shoulder are missing and the road width is narrowed.

Potential Repair

Option A: Replace gabion baskets with a sheet pile wall. The wall would be made of connecting sheet piles that lock together and would be approximately 120 feet in length. Repair the road to pre-flood condition.



Getting Involved



The planning processes for all five Flood Repair Projects are currently underway. The proposed actions presented here represent the planning team's initial proposal to address specific issues in each project area. Your personal knowledge of this area can help the team identify additional issues and opportunities not previously defined. In addition, your comments can provide the input necessary to develop alternative proposals that address these issues. Specific scoping comments will be most helpful to the planning team by **August 24th, 2012**. Comments received anytime during the analysis period will be accepted and give consideration and all comments will be part of the public record for this project. Please be aware that unless you request that this information not be disclosed and provide an adequate reason, it will become public record. To establish appeal rights, individuals or groups must make a substantive comment during the '**Official Comment Period**'. The Official Comment Period begins once legal notice is published in the Wenatchee World and the specific document has been made public for review. Please note— after scoping, each of the five projects may follow a different timeline.

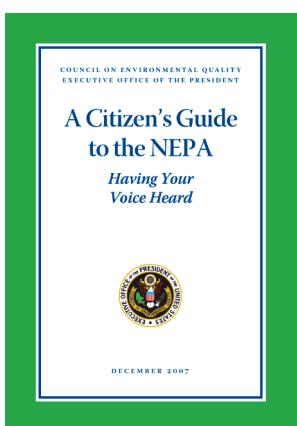
Navigating the NEPA Process

A valuable reference for anyone wishing to get involved in the NEPA process is *A Citizen's Guide to the NEPA, Having Your Voice Heard* (Council on Environmental Quality). A copy of the guide can be found at:

http://ceq.hss.doe.gov/nepa/Citizens_Guide_Dec07.pdf

Some highlights:

- Citizens who want to raise issues with the agency should do so at the earliest possible state in the process. Agencies are much more likely to evaluate a new alternative or address a concern if it is raised in a timely manner.
- Comments may be the most important contribution from citizens. Accordingly, comments should be clear, concise, and relevant to the analysis of the proposed action. As a general rule, comments should be polite and respectful.
- Comments that are solution oriented and provide specific examples will be more effective than those that simply oppose the proposed projects.
- Remember that decision makers also receive other information and data such as operational and technical information related to implementing an action that they will have to consider when making a final decision.



Comments or Questions?

The Naches and Cle Elum Ranger Districts are asking for questions, comments, and concerns on the presented proposed actions. Please send us your feedback by August 20, 2012. Visit the project websites to submit comments and find more information:

<http://www.fs.usda.gov/projects/okawen/landmanagement/projects>

Once on the Project webpage, scroll down to 'Forest Projects' to search for the project you are interested in.

OR

Mail comments to:

Michelle King
Naches Ranger Station
10237 U.S. Highway 12
Naches, WA 98937

For questions or more information, please contact:

Michelle King
mdking02@fs.fed.us
509-653-1420

Select the
project you are
interested in

Select
'Comment on
Project'

Copper City Mill and Granite Lake Prospect Cleanup

Forest Projects

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Most recent projects are displayed first for the (45) projects listed

Sort By Project: Name Status Management Unit Purpose

Developing Proposal

BART Cluster Grazing Analysis (EIS)

Revise and update 4 grazing allotments, Bannon, Aeneas, Revis, & Tunk; which includes 10 pastures. One alternative will consider additional range improvements including new water developments, moving one corral and constructing another.

Status: Developing Proposal

Management Unit: Tonasket Ranger District

Purpose: Grazing management

Forest Service Road 3300 Flood Repair (EA)

The Cle Elum Ranger District plans to analyze and repair damaged sites on the Forest Service Road 3300. Flood damaged sites are located at mile post 0.2, 3.9, and 4.4.

Status: Developing Proposal

Forest Service Road 3300 Flood Repair

The Cle Elum Ranger District plans to analyze and repair damaged sites on the Forest Service Road 3300. Flood damaged sites are located at mile post 0.2, 3.9, and 4.4.

Location Summary

The project is located on the Cle Elum Ranger District. Forest Service Road 3300 is also known as Taneum Road.

District: Cle Elum Ranger District

Project Documents

No documents are available for this project.

Project Navigation

- Project Overview
- Planning Detail
- Project Location

Get Connected

- Request More Info
- Comment on Project
- Public Comment Reading Room

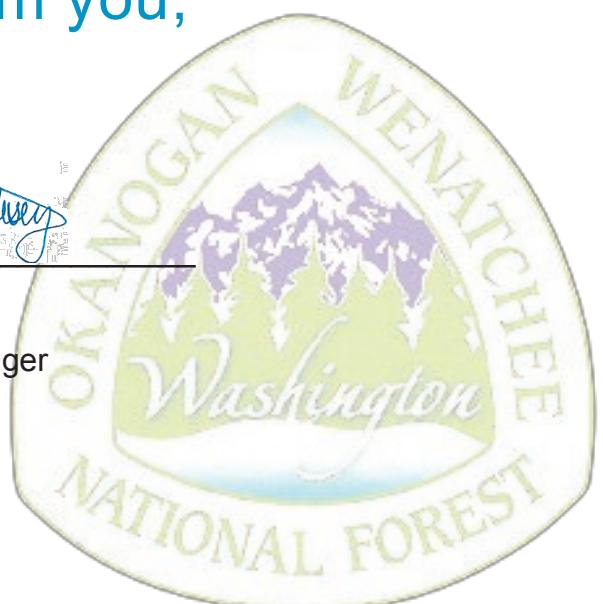
We look forward to hearing from you,

Irene L. Davidson

IRENE L. DAVIDSON
Naches District Ranger

Judy B. Hallisey

JUDY HALLISEY
Cle Elum District Ranger



APPENDIX B

Applicable Standards, Guidelines, and Best Management Practices

This is only a sampling of Forest Service standards that are relevant to the 3300 Flood Repair Project. As per Federal direction, the Cle Elum Ranger District during project implementation will follow all Forest Service applicable Standards and Guidelines, Best Management Practices, and other direction outlined in tiered Environmental Impact Statements.

- Applicable standards from the 2005 USDA Forest Service Final Environmental Impact Statement and Record of Decision for Preventing and Managing Invasive Plants and 2002 USDA Forest Service Okanogan and Wenatchee National Forest Weed Management and Prevention Strategy and Best Management Practices
 - All mud, dirt, and plant parts would be removed from all heavy equipment (bulldozers, skidders, graders, backhoes, dump trucks, etc.) prior to operation outside the limits of the road prism on National Forest System Lands. This also includes public service vehicles (USDA Forest Service 2005, ROD Standard 2).
 - All equipment would be cleaned prior to leaving the project site, if moving to uninfested areas (USDA Forest Service 2005, ROD Standard 2).
 - When equipment is moving from one portion of project area that is weed infested to another portion that is weed free, it would be required to be cleaned as described above. A District Noxious Weed Coordinator or District Botanist would provide locations of weed-infested treatment units on project maps.
 - Forest personnel would inspect, remove, and properly dispose of weed seed and plant parts on their clothing, equipment, and vehicles (USDA Forest Service 2005, ROD Standard 2).
 - Locally adapted native plant material or seeds are the first choice in revegetation or restoration where timely regeneration is not likely to occur. Under no circumstances will non-native invasive plant species be used for regeneration. (FSM 2070, 2008, USDA Forest Service 2005, ROD Standard 13).
 - Certified Weed free plant materials and mulch would be used for revegetation and site stabilization (USDA Forest Service 2005, ROD Standard 3).
 - All gravel, fill, sand, quarry and borrow material must be inspected by the county weed board or a district weed specialist before transport or used in the project area. Infested sources are required to be treated before any use of pit material is used (USDA Forest Service 2005, ROD Standard 7).
 - Road maintenance activities would be coordinated with invasive plant treatment (hand pulling, mowing, herbicide application, planting) to maximize efficacy (USDA Forest Service, 2002, BMP III-9.1; Standard 8).
- If rare species of plants, bryophytes, lichens, or fungi (threatened, endangered, sensitive, strategic, Survey & Manage) are found during implementation of the project, a botanist would establish protection measures so these species are not impacted.

- If weed (invasive species) abatement is necessary, the following native seed mix will be used:

Species	Lbs/Acre
Blue Wildrye <i>Elymus glaucus</i> 'Swauk'	10
California Brome (<i>Bromus carinatus</i>) 'Reecer'	17
Varied leaf Phacelia (<i>Phacelia heterophylla</i>) 'Squilchuck'	.05
Bluebunch Wheatgrass (<i>Pseudoerignieria spicata</i>) 'Squilchuck'	5

- Consistency with the National Historic Preservation Act of 1966 including if any new cultural resources are discovered during the course of project implementation, all work in that area would cease and the resources protected, until an archaeologist assess the find.
- Consistency with the National Best Management Practices for Water Quality Management on National Forest System Lands (USDA 2012).