Index-Galena Road Milepost 6.4 to 6.9
Environmental Assessment

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December 2015
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Title VI and Americans with Disabilities Act (ADA) Information: It is Snohomish County’s policy to assure
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Title VI Coordinator via e-mail at spw-titlevi@snoco.org or phone 425-388-6660. Hearing/speech impaired
may call 711.
I. Summary

The proposed Index-Galena Milepost 6.4-6.9 project lies in the North Fork Skykomish River valley, in a rural area outside of the Urban Growth Area (UGA). The proposed project would be constructed on undeveloped National Forest lands in the Mt. Baker-Snoqualmie National Forest (MBSNF) managed by the U.S. Forest Service (USFS). These forest lands are managed for multiple-use consistent with the adopted 1990 Mt. Baker Snoqualmie-National Forest Land and Resource Management Plan, as amended (MBSNF Plan). (See Figure 1: Proposed Index-Galena Road Project Milepost 6.4-6.9 in Appendix A.)

There are areas of privately-owned rural residential properties located on Index-Galena Road upstream from the town of Index. These residential areas are concentrated in multiple locations in proximity to the North Fork Skykomish River. The properties located upstream from the project area in the upper North Fork Skykomish River valley are within the boundaries of the National Forest lands. The November 2006 flooding related damage that washed out Index-Galena from Milepost 6.4 to Milepost 6.9 isolated these residential properties. They currently have limited seasonal vehicular access by way of an extensive detour route that requires traveling on Beckler River Road, which originates near the town of Skykomish, to cross Jack Pass. (See Appendix B- Photos for photos of the proposed project area.)

Land use policy and regulation in the project area is governed principally by the MBSNF Plan. The 1990 plan and its multiple subsequent amendments designate land areas throughout the MBSNF for Land Allocations and other applicable designations. The adopted Land Allocations and designations identify standards and guidelines for allowed land uses, and the conditions that specific land uses must comply with to be approved by the U.S. Forest Service.

Outdoor recreation plays a substantial role in the use of MBSNF lands in the North Fork Skykomish River valley. The USFS manages recreation through implementation of the MBSNF Plan. This study evaluates land use and recreation related issues together because of the strong relationship between land use and recreation in the greater project vicinity.

Snohomish County land use policy and development regulations also apply in the project area. They apply to the proposed project because Index-Galena Road is located in unincorporated Snohomish County and the Snohomish County Public Works proposed project is considered to be nonfederal development that would be undertaken within an easement on lands owned by the federal government. A new easement would be required for the proposed relocated roadway and would need to be reviewed and approved by the U.S. Forest Service and the Federal Highway Administration. Accordingly, the proposed project is subject to certain elements of the Snohomish County Growth Management Act General Policy Plan (GMA Plan) and Snohomish County development regulations that implement the broad policy goals and objectives identified in the GMA Plan.
Index-Galena Road is designated as a Major Collector (Rural) roadway in the Snohomish County GMA Plan’s Transportation Element. It is also designated as U.S. Forest Service Forest Road 63 in the Mt. Baker Snoqualmie National Forest road system. Snohomish County maintains the roadway from its beginning at the Index turnoff from US 2 to Milepost 14.1. The roadway’s location and functional classification as a major collector arterial is consistent with the transportation and other elements of the GMA Plan.

II. Introduction

Land use information was gathered from the existing adopted Snohomish County GMA Plan and development regulations referenced in the report text, zoning regulations and maps, and several U.S Forest Service information sources, primarily the Mt. Baker Snoqualmie National Forest Plan, as amended. These were examined to determine the proposed route’s consistency with applicable Snohomish County and U.S Forest Service plans. More recent recreation information was obtained from the recently prepared Wild Sky Wilderness Area Trail Plan.

III. Project Description

Purpose and Need

Purpose

The purpose of the proposed Index-Galena Milepost (MP) 6.4 to MP 6.9 project is to restore essential travel and prevent future damage to the roadway. Essential travel includes re-establishing access for property owners with land holdings in the North Fork Skykomish River valley upstream from the town of Index, re-establishing vehicular access for emergency service providers to these properties, re-establishing public recreational access to the North Fork Skykomish River valley, and re-establishing administrative access for the U.S. Forest Service to manage their lands located in the Mt. Baker Snoqualmie National Forest.

Need

In November 2006, a major flood event caused catastrophic damage to Index-Galena Road. High flows from the North Fork Skykomish River washed out multiple sections of the roadway between MP 6.4 and MP 6.9 that eliminated vehicular through-access. A side channel of the river now occupies extensive sections of this portion of the Index-Galena Road roadway alignment. The 2006 flood damage event resulted in Index Galena Road being closed at MP 6.4, just east and upstream of the Snohomish County Trout Creek Bridge #494 at MP 6.05.

The sole vehicular access to the area east of this point can be reached now only by using Beckler River Road (a U.S. Forest Service road) located east of the town of Skykomish in northeast King County. The Beckler River Road gains nearly 1,000 feet in elevation in
order to cross Jack Pass (also known as Jack’s Pass). Vehicles descend from Jack Pass on U.S. Forest Service Road #65 to gain access to the North Fork Skykomish valley and intersect with Index-Galena Road at MP 14.3.

This approximate 40-mile detour route to arrive at the upper end of the Index-Galena Road washout at Milepost 6.9 is typically available only seasonally for five months (usually late May to early November) and provides the sole vehicular access for property owners, emergency service providers, recreational users to camp sites and trailheads, and U.S. Forest Service personnel.

After the 2006 flood damage, Snohomish County determined that Index Galena Road shall be repaired and most likely relocated in order to re-establish roadway network connectivity. Snohomish County Public Works (SCPW) has coordinated with the Federal Highway Administration (FHWA) and the Washington State Department of Transportation (WSDOT) to secure Emergency Relief (ER) funding to determine the best method of repairing the road and avoid further flood damage. Additional coordination has also involved the U.S. Forest Service, on whose lands any relocated roadway would need to be constructed.

To date, the project has conducted an extensive feasibility analysis and developed a preliminary design report to identify a safe, reliable, and cost-effective solution that restores roadway connectivity and essential travel while limiting impacts to the surrounding environment. The proposed project has been developed based on findings that resulted from design analysis undertaken during the feasibility and design report stages. Further refinement has occurred as environmental considerations evaluated during the environmental review phase have been integrated into further development of the project design.

The following factors have been identified that contribute to the need for road repair and relocating the damaged road out of the floodplain:

- **The Index-Galena Road is a direct and vital transportation link to the upper North Fork Skykomish River area for residential property owners, and National Forest administrative and public recreational access. Forest recreationists and recreational property owners who live west of Index now must drive approximately 40 miles (10.5 miles on gravel road) to reach the Galena area at the Silver Creek/North Fork Skykomish confluence, via US 2 and the Beckler River Road (Forest Road 65) over Jack’s Pass. Aside from the inconvenience and additional fuel consumption and emissions, this extended detour presents a safety risk to the public due to the increased drive time exposure and potential hazards of traffic and road conditions.**

- **Forest Road 65 over Jack’s Pass is a single-lane gravel road with turnouts, and has steep mountain grades and switchbacks. Although the U.S. Forest Service appreciates that Snohomish County Public Works has partnered with the U.S. Forest Service to perform road maintenance to address additional wear and tear, this road is not designed to safely accommodate**
increased passenger car traffic that was displaced from Index-Galena Road. This access route provides additional challenges for horse recreationist use in the upper North Fork Skykomish valley.

- The Forest Service’s Troublesome Creek and San Juan Creek campgrounds cannot be fully utilized by campers who drive motor homes or pull trailers, due to the inconvenience and hazard of driving the steep narrow grade over Jack’s Pass.

- The Forest Service’s timber sale planning and administration is hampered due to adverse log haul conditions over Jack’s Pass from the North Fork Skykomish drainage. Recent planned timber harvest units and timber sales were dropped because of poor access. In addition, watershed restoration projects, and road maintenance or decommissioning contracts are more expensive to implement due to the detour.

- Since the washout, response times have increased for emergency services, such as vehicle accidents, search and rescues, and fire suppression, due to the long detour.

- Reestablishing the connectivity of the Index-Galena Road is important for providing an alternate access route into the North Fork Skykomish and upper Beckler River watersheds in case a major flood event were to wash out the Beckler River Road.

The Proposed Project

The proposed project would shift the project area roadway alignment to the south and establish a relocated roadway upslope from the existing damaged roadway. The alignment would shift from the existing Index Galena Road approximately 200 feet east from Snohomish County Trout Creek Bridge #494 (near Milepost 6.1, at approximately 841 feet in elevation). The relocated roadway would extend for 0.95 mile and match into the existing roadway approximately 400 feet east of the Milepost 6.9 washout. At the project start, the roadway would ascend the sideslopes at a 9 percent grade in order to raise the roadway out of the 100-year floodplain and channel migration zone. The relocation would enable the roadway to be elevated above the 100-year flood elevation and channel migration zone for most of the project length and to be located landward of the river side channel stream that has formed in the existing roadway alignment.

This initial climb would use approximately 700 feet of the existing Trout Creek Road, a gravel road maintained by the U.S. Forest Service. It will be necessary to excavate (cut) into the adjacent upslope areas to accommodate the roadway relocation, and fill would be placed on the downslope area. This type of cut and fill construction would be lesser in extent at the beginning of the project due to the existing roadway. More extensive cut and fill would occur for much of the proposed alignment, except where retaining walls, reinforced soil slopes, or other stabilization measures are installed instead of cut and fill slopes. A new Index-Galena Road/Trout Creek Road intersection would be constructed near Station 19+50 to allow for future continued use of Trout Creek Road by the U.S.
Forest Service to carry out its long-term land management plans in the Trout Creek sub-basin. Trout Creek Road is presently closed to motor vehicle use until the U.S. Forest Service re-opens it for future use. Its closure is unrelated to the Index-Galena Road damage.

After the initial climb from the existing roadway, the roadway grades would be more moderate for the remainder of the project length. The relocated roadway would cross the side slopes and parallel the existing roadway. With slight curves in the alignment, the distance from the relocated roadway to the existing roadway would range from 40-100 feet for most of the project length. At the upper end of the project, extending from Station 39+50 the relocated roadway would more closely parallel the existing road. The highest elevation achieved by the project, 920 feet, would be near Station 35+00. The roadway would begin its descent to the existing roadway near Station 36+00 and would tie back into the existing roadway at Station 59+93, near milepost 7.0 (at approximately 884 feet in elevation).

All culverts would be sized to convey the 100-year flow and associated debris flows and would be constructed where the roadway crosses non-fish bearing slope streams. A concrete box culvert vented ford structure would be installed in proximity to Station 29+00 where there is a debris chute with evidence of historic debris flows. The concrete box culvert vented ford may have a removable top that would facilitate culvert clean out and debris removal by road maintenance crews in the future. Specific design features would be determined during final design.

A 180-foot bridge would be constructed near the project’s east end near Station 54+00 to provide for unimpeded flow of a seasonal stream located in the large wetland located in this area. The proposed bridge would be a steel girder single span structure with a concrete slab deck and concrete parapet. The bridge would be supported by a deep foundation and concrete abutments. There will also be concrete cheek walls at the sides of the abutment. Steel girders would be galvanized and then top coated with paint in accordance with U.S. Forest Service visual quality requirements for structures constructed near recommended wild and scenic rivers. The bridge would maintain existing water levels in the wetland that provides important habitat for wildlife and winter/spring seasonal use by juvenile salmon. The bridge would also help to prevent future blockages that would be anticipated from seasonal high flows and extensive beaver activity in the project area, and prevent blockages that could potentially occur from landslide debris near Station 53+00.

Where the relocated roadway is located adjacent to or within the channel migration zone, from approximately Station 35+00 to 45+00, a buried rock revetment would be placed adjacent to the toe of the roadway embankment slope. Subsurface areas located within the existing undamaged roadway, including the underlying road base materials and native alluvial materials, would be overexcavated to remove materials subject to scour erosion and replaced with large rock material. This buried rock revetment is intended to prevent future scour erosion damage to the roadway. In the absence of further migration of the river prior to roadway construction, this would not require in-water work. The trench
would also be filled with large woody debris on the river side so that in the event of channel migration large woody debris would be launched in place and exposed. A two foot layer of salvaged forest duff and other organic materials would be placed on top of the overexcavated revetment in preparation for riparian restoration planting.

**Proposed design standards**

The proposed roadway design is based on design standards contained in the *2001 AASHTO Guidelines for Geometric Design of Very Low-Volume Roadways (ADT < 400)*. The use of these design standards responds to comments made by the public during the NEPA scoping period to consider use of design standards that would help to reduce the footprint of the proposed roadway relocation repair. These design standards enable the project to match the character of the existing roadway and fit in with the forested natural environment in the project area.

The proposed design would include a pavement width of 22 feet that would feature 10-foot travel lanes and 1-foot shoulders. Additional land area would be required to install guardrail where warranted. The roadway posted speed limit would be 35 MPH. Based on these lane width design standards and other design criteria, including laying back of cut slopes, the project would require an estimated 11.5 acres of land disturbance. The project’s design report estimated 9.5 acres of disturbance. The additional two acres of disturbance is associated with design changes, including additional excavation of potentially unstable soils from Station 44+00 to Station 48+00. The increase in area also assumes an additional 10 feet offset beyond the cuts and fills to account for accommodation of equipment access. It was determined based on further geotechnical soil analysis that removal and laying back of slopes could be more feasible and pose less risk than constructing retaining walls in this area of the project, but the final determination would be made in final design. Of the 11.5 acres, approximately 3.2 acres would be permanently impacted for the roadway prism footprint and 8.3 acres would be cleared to accommodate roadway cuts and fills. These 8.3 acres would be restored after construction is completed.

The use of low-volume roadway design standards enables the roadway width to be reduced by 26 percent from the 30-foot width standard identified previously in the design report. The proposed project would require a new right-of-way easement from the U.S. Forest Service due to the newly aligned roadway’s location on U.S. Forest Service lands in the Mt. Baker-Snoqualmie National Forest. The existing damaged roadway would be decommissioned and restored where feasible to natural riparian habitat once the new roadway has been constructed. The restored areas and adjacent areas downslope from the roadway that would be used for roadway stormwater runoff dispersion would be included in the new roadway easement and would be permanently protected from future development.
Design Features

Areas that would be disturbed by clearing and grading in addition to the roadway travel lanes would include cut and fill side slopes, and retaining walls and reinforced soil slopes where necessary, to support the roadway. Reinforced soil slopes in fill sections would typically be 0.5 Horizontal (H):1: Vertical (V), approximately 63 degree slopes, in most areas. Along the cut side of the alignment, slopes would range from 1.5 (H) to 2 (H):1(V) depending on whether the cuts are made through colluvium (landslide) and lacustrine (former glacial lake) deposit areas. Soldier pile retaining walls would be constructed in areas based on geotechnical recommendations, and are currently proposed from Station 42+75 to 44+75, 45+20 to 46+25 and 49+80 to 52+55, subject to change as the design progresses. The remaining retaining walls would be structural earth walls (SEWs). The linear extent of these features may change during final design based on further analysis of detailed survey, geotechnical, seismic, hydrologic, and hydraulic information and construction considerations. The current estimates for the linear extent (linear feet) of the various types of retaining walls or reinforced slopes includes the following:

- Reinforced Soil Slopes (RSS): 1,255 Linear Feet
- Structural Earth Walls (SEW): 200 Linear Feet
- Soldier Pile: 575 Linear Feet
- Rock Fill Slopes: 1,505 Linear Feet

Near Station 53+00, a diversion berm would be constructed in the upslope area and would tie into the roadway fill. The berm would prevent debris slide deposition onto the roadway in an area where geotechnical investigations have identified a risk for future debris flows.

Asphalt, concrete, and other debris from the decommissioned section of the damaged existing roadway would be removed. Roadway debris would be removed from the river channel to the extent that it would be safe and practicable. The decommissioned roadway would then be restored with soil preparation and plantings where feasible to provide a forested riparian corridor adjacent to the North Fork Skykomish River. Natural stream channel conditions would be restored with the asphalt removal where plantings do not occur. Large woody material would be placed in areas adjacent to the side channel to enhance riparian habitat.

Roadway stormwater runoff quality treatment and flow control would be provided through natural dispersion in accordance with *Highway Runoff Manual* provisions and U.S. Forest Service standards and guidelines. Accordingly, the relocated roadway would be “outsloped” to the areas downslope from the roadway to maintain sheet flow throughout the project length. Natural dispersion treats stormwater by infiltration into the existing soils and through vegetation root zones; evaporation; and uptake and transpiration by the vegetation. Sheet flow (not concentrated or otherwise channelized) runoff is intercepted without containment or conveyance and uses the infiltration capacity of the roadside soils to effectively infiltrate the stormwater. Those areas that maintain 100 linear feet of flow path through established native vegetation provide both runoff flow...
control and quality treatment per the state drainage standards. The existing forested slopes downslope from the project, and the area where the existing damaged roadway would be removed and enhanced with riparian restoration, would be preserved to provide the needed area for dispersion. These areas would be protected with permanent protection in the project’s right-of-way easement.

**IV. Existing Conditions**

*History*

Prior to Euro-American settlement, the upper Skykomish River valley, including the north and south forks of the Skykomish River, was used by Native Americans for fishing, hunting, and food gathering. Seasonal villages were established by the Skykomish people, and trade with tribes east of the Cascade Mountain crest was facilitated by routes that used the river valleys to access cross-mountain routes.

With the coming of Euro-American settlement, the river valleys also provided a route for the Great Northern Railroad, which completed a route over Stevens Pass in 1893. The railroad led to development of railroad related settlements in Skykomish, Index, Baring, Grotto, Berlin (now Miller River), Berne, and Wellington (now Tye) and several other communities. Development of the railroad created a large demand for timber that that was cut locally and used for railroad trestles and river crossings. Logging and timber mills became an economic mainstay and led to more settlement. Quarrying of local granite also created another source of economic activity in Index.

Mining was another important source of economic activity and led to further settlement in the North Fork Skykomish River upriver from Index with the operation of the Sunset Mine in the Trout Creek sub-basin. The increased access afforded by the railroad enabled tourism to become part of the local economy as settlers from Puget Sound sought out the hot springs, fishing opportunities, and campgrounds that were being established. Easier access increased population in the area with roadways to Index and Galena constructed in 1911, and also with the opening of the Cross Cascade Highway to Wenatchee that opened in 1925. A logging railroad was also established along the alignment of the existing Index-Galena Road alignment to transport logs to the Great Northern Railroad mainline.

Changes in railroad technology, shifts in world markets for copper, decreasing use of granite for construction in favor of reinforced concrete have all contributed to de-populating the upper Skykomish River communities. Jobs are primarily located in economic centers in the Central Puget Sound region and areas east of the Cascade Crest in central Washington. Recreation tourism that began with the advent of rail and automobile travel continues to draw visitors to the area’s mountains, lakes, and rivers for hiking, equestrian recreation, skiing, and rafting and provides an economic base for the communities that is hoped will grow with the recent 2008 designation of the Wild Sky Wilderness.

*Population*

Census data indicates no population within the immediate project area. This is due to the fact that the project is located on U.S. Forest Service land where there has been no residential development. The project area is part of a larger census area, Census Tract
538.01, which includes a large area extending north from the Snohomish County/ King County boundary to areas located in proximity to Monte Cristo in the South Fork Sauk River drainage. This census tract extends west toward Monroe and includes the sparsely populated areas south of US 2. Index is the only incorporated town within the census tract. Population in the census tract 538.01 totals 3,630 based on recent 2010 census data, a modest increase from total of 3,455 provided by American Communities Survey (ACS) data provided by the Census Bureau in the interim between the 2000 census and the recent 2010 data.

Block Group 4 within Census Tract 538.01 excludes areas west of Index. Its population also experienced modest growth from a total population of 812 in the ACS data and more recent total of 919 in 2010. The Town of Index in the 2000 census had a population of 154, which increased to 178 in the 2010 census.

Low population growth in the greater project vicinity can be attributed to relatively distant vehicular commuter access to employment areas located primarily west of the study area in the Puget Sound area and lack of utilities and other services that support more dense residential growth. However, availability of more affordable housing and a desire to reside in a more rural setting continues to attract and retain residents in the greater project vicinity.

**Land Use Policies and Regulations**

**Snohomish County**

**Snohomish County Growth Management Act Comprehensive Plan**

The Snohomish County GMA Comprehensive Plan designates land areas for low intensity land uses in the greater project area. The County’s Forestry designation applies only to privately owned land parcels not located in the Mt. Baker-Snoqualmie National Forest. This low density residential use designation is intended to protect the character of rural areas and avoid interference with adjacent resource lands which include forest uses and mineral lands. (In Appendix A, See Figure 2: Snohomish County Comprehensive Plan and Zoning Designations)

**Land Use/Transportation Issues**

Index-Galena Road provides the only year-round vehicular roadway link between Index in the lower North Skykomish River valley to private lands located further upstream in the North Fork Skykomish valley. Since the 2006 flood damage to the roadway, roadway connectivity has been severed and an extensive detour is required for property owners to access their properties.
The 40-mile detour originates on US 2 from the Index turnoff from US 2 and continues eastward to the Beckler River Road east of the town of Skykomish in northeast King County. Vehicles then turn north from US 2 onto Beckler River Road (also known as Forest Road 65) to ascend to and cross over Jack Pass to access the undamaged Index-Galena Road upstream from the flood damage washout. Beckler River Road as an alternative access route is limited seasonally due to high snowfall totals in the Jack Pass area and its gravel surface can present challenges to low clearance vehicles. Typically the roadway can be used from late May to early November.

The land use and transportation relationship within the project study area is particularly important because at present there is no year round roadway connectivity providing vehicular access for land owners, recreation users, emergency service providers, and U.S. Forest Service personnel to land areas managed by the Skykomish Ranger District. The existing underdeveloped gravel road network on National Forest lands must accept increased traffic volumes associated with land owner and increasing recreational traffic.

The U.S. Forest Service has started to evaluate its road system in the Mt. Baker Snoqualmie National Forest, including the project study area, as part of a process to reassess its road network through its Sustainable Roads Initiative, which may include closing and decommissioning former logging roads. Any proposals to close roads would be subject to U.S. Forest Service NEPA review and involve public participation.

The low-density land-use patterns in the greater area are not conducive to the development of transit routes.

**Zoning**

Zoning regulations implement the Snohomish County *GMA Plan* goals and policies by applying the broad guidelines established by the comprehensive planning process and developing them into more specific regulations. Various zones are established where allowed uses are specified, and bulk requirements such as lot size, placement of structures, spacing, height of structures and density are identified for legally defined and described parcels.

Another function of zoning is to avoid the siting of potentially incompatible uses in proximity to each other. Often a related goal is to protect property values. The overall goal is to provide for the health, safety and general welfare of a community and its citizens.

Snohomish County has zoned land areas for *Forestry*, a resource land designation, for areas that are subject to County jurisdiction. These areas are primarily concentrated along the North Fork Skykomish River downstream and upstream from the project area. The intent of the *Forestry* zone is to conserve and protect forest lands for long-term forestry and related uses. Forest lands are normally large tracts under one ownership and located in areas outside of UGAs and away from residential and intense recreational use. Some of the land areas zoned for forestry in the greater project vicinity are smaller tracts used primarily for vacation homes on a seasonal basis with some year round residences also
present. (In Appendix A, see Figure 2: Snohomish County Comprehensive Plan and Zoning Designations.)

**Snohomish County Shoreline Management Program**

In the project area, the North Fork Skykomish River is designated as a Shoreline of Statewide Significance under the Shoreline Management Act. Certain shoreline areas have been given this special status because they are major resources from which all people in the state derive benefit. Substantial development activities in areas within 200 feet of the river, including associated floodplains and wetland areas are regulated by the adopted Snohomish County Management Program and shoreline ordinance (Snohomish County Code Chapter 30.44 Shoreline Permits and Chapter 30.67 Shoreline Management Program). Substantial development is any development of which the total cost, or fair market value, whichever is higher, exceeds $5,000, or any development that materially interferes with the normal public use of the water or shorelines of the state.

The shoreline area within the project limits has been designated as a Rural Conservancy environment according to the County’s adopted Shoreline Master Plan. The purpose of the Rural Conservancy shoreline environment is to allow low intensity development, while at the same time protecting ecological functions and providing public access and recreational opportunities in shoreline areas. The preferred uses are low intensity development, including but not limited to low density residential, water dependent commercial and recreation.

Shoreline permit review takes into consideration several factors when evaluating applications. Some of the principal factors specific to Rural Conservancy designated areas include the following:

**Management Policies:**

- The county's comprehensive plan is the primary guide for the location, type, density and distribution of uses in the Rural Conservancy shoreline environment designation. Regulations for the Rural Conservancy environment may limit uses and modifications to ensure consistency with these management policies and the Shoreline Uses in the Rural Conservancy environment should be limited to those which sustain the shoreline area's physical and biological resources and uses of a nonpermanent nature that do not substantially degrade ecological functions or the rural or natural character of the shoreline area.
- Water dependent and water enjoyment recreation facilities that do not deplete the resource over time, such as boating facilities, wildlife viewing trails, and swimming beaches, are preferred uses, provided any significant adverse impacts to the shoreline are mitigated.
- Developments and uses that would substantially degrade or permanently deplete the biological resources of the area should not be allowed.
- New development should be designed and located to preclude the need of shoreline armoring, flood control structures, vegetation removal, and other
shoreline modifications. Any shoreline modifications shall be integrated with stormwater management, grading, clearing and other beach policies in order to minimize adverse impacts. Armoring should be prohibited in areas planned for shoreline restoration.

- New shoreline stabilization, flood control measures, vegetation removal, and other shoreline modifications should be designed and managed to ensure that the natural shoreline functions are protected. Such shoreline modification should not be inconsistent with planning provisions for restoration of shoreline ecological functions.
- Construction of new structural shoreline stabilization and flood control works should only be allowed where there is a documented need to protect an existing structure or ecological functions and mitigation is applied consistent with the applicable shoreline modification requirements. New development should be designed and located to preclude the need for such work.
- Access, utilities, and public services should be available and adequate to serve existing needs and/or planned future development.

The Index-Galena Road Milepost 6.4-Milepost 6.9 project would be evaluated for several considerations as part of the Shoreline Substantial Development review including recreation, vegetation management, shoreline restoration and enhancement, fill, and flood protection measures. The most directly applicable policies for roadways are discussed below.

**Transportation, Circulation and Parking Facilities**

The transportation and circulation element addresses the general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other public facilities, all correlated with the shoreline use element. The transportation system provides access to shoreline areas and scenic viewpoints but at the same time can damage shoreline ecological functions. The transportation goals and policies must balance the requirements needed to support shoreline uses with the protection of the shoreline ecology.

**Goals**

- Permit safe and convenient circulation systems appropriate to the shoreline environment which cause minimum disruption to shoreline access, shoreline environment, and minimum conflict between the different users.

**Policies**

- New nonwater oriented transportation facilities should be located outside of shoreline jurisdiction unless there is no reasonably feasible alternative alignment or location.
To the extent feasible, encourage joint use transportation corridors by consolidating transportation and utility facilities in shared rights-of-way when they must cross shoreline areas.

New and expanded transportation facilities should be designed and located away from shoreline areas so as to ensure no net loss of shoreline ecological functions, preserve the natural landscape, and minimize conflicts with existing and planned uses.

Locate and design new and expanded transportation facilities so as to avoid the need for structural shoreline stabilization within a channel migration zone or floodway.

Permit the repair and maintenance of transportation structures within a channel migration zone or floodway so as to minimize significant ecological impacts.

Encourage the use of waterborne transportation and commuter ferry service.

Require development and redevelopment with shoreline areas to manage stormwater impacts consistent with the county’s surface water management program or current stormwater management manual.

Encourage low impact development techniques.

Locate and design new circulation systems consistent with the Snohomish County GMA comprehensive plan to provide for alternative modes of transportation in the shoreline jurisdiction.

New transportation facilities should be located outside of shoreline areas wherever feasible.

Encourage provision of view points, rest areas and picnic facilities in public shoreline areas along transportation corridors.

Retain portions of old highways having high aesthetic quality as alternative scenic routes, unless this conflicts with agriculture or fish and wildlife habitat.

Promote the use of abandoned railroad rights-of-way for trail systems, especially where they would provide public access to or enjoyment of the shorelines.

Encourage creation of trail systems adjacent to new roads and railroads where feasible and safe.

Transportation facilities should be located and designed to avoid, or if that is not feasible, minimize impacts to shoreline ecological functions, especially channel migration and conveyance of flood waters and large woody debris.

When necessary in shoreline areas, transportation facilities should be located where routes will have the least impact to shoreline ecological functions and will not adversely impact existing or planned water dependent uses.

Road and railroad bridges should be designed to accommodate the existing floodways of streams and rivers.

Design and maintain roads to minimize erosion and preserve natural drainage ways.

Construction debris, overburden and other waste materials should not be allowed to enter into any water body by disposal or erosion from drainage, high water or other means.

Provide safe pedestrian and other non-motorized travel facilities in public shoreline areas.
Parking is not a preferred shoreline use and should be allowed only to support a use authorized under the SMP.

Parking facilities should be located outside of shoreline jurisdiction or as far landward from the ordinary high water mark as feasible. When located within shoreline jurisdiction, the location and design of parking facilities should:

- Minimize visual and environmental impacts to adjacent shoreline and critical areas.
- Provide for pedestrian access through the facility to the shoreline; and
- Facilitate public access to and enjoyment of the shoreline.

Parking, storage, loading and service areas and facilities serving commercial uses should minimize their visual impact on the shorelines, utilize low impact development techniques and be placed a minimum of 200 feet away from the ordinary high water mark.

Provide public transportation services that support and are supported by the land use element, natural environment element, and economic development element of the county comprehensive plan.

Plan, design, program, construct, and promote use of non-motorized transportation facilities in Snohomish County and in cooperation with WSDOT and the cities.

A safe system of bicycle and pedestrian facilities shall be planned for, tying together residential areas, schools, recreation areas, business areas, transit stops and transfer points, and centers.

Ensure that new development accommodates non-motorized transportation facilities in its site planning.

A substantial development permit may be granted only when the development proposed is consistent with the policies and procedures of the Shoreline Management Act, the adopted local master program, the provisions of the State Environmental Policy Act, and other applicable county plans, policies, objectives, and land use regulations.

**U.S. Forest Service**

**National Forest Management Act**

Land use actions occurring in the proposed project area are required to be consistent with the requirements of the National Forest Management Act (USC 1604(g)(3)(E)) and its implementing regulations (36 CFR 219). The proposed project must also conform to the Land and Resource Management Plan (LRMP) for the Mt. Baker-Snoqualmie National Forest, as amended (USDA, USDI 1994, 2001, 2004). The plan and its amendments are referred to collectively as the MBSNF Plan in this study.
**Land Use policies and regulations**

The following discussion of U.S. Forest Service (USFS) related land use policies and regulations is in accordance with USFS regulations for implementing NEPA, and is tiered to the Final Environmental Impact Statement (FEIS) for the Mt. Baker-Snoqualmie Land and Resource Management Plan (USDA Forest Service 1990), as amended. Major plan amendments since 1990 include:

- **Final Supplemental Environmental Impact Statement on Management of Habitat for Late Successional and Old-growth Forest Related Species Within the Range of the Northern Spotted Owl**, as adopted and modified by the April 1994 Record of Decision, which provides additional standards and guidelines (USDA, USDI 1994, and commonly known as the ROD, or the Northwest Forest Plan (NWFP)).

- **Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and Other Mitigation Measure Standards and Guidelines** (USDA, USDI 2001).


The 1994 Record of Decision (ROD) includes seven land allocations, which amend the allocations in the 1990 Forest Plan. There is considerable overlap among some allocations, and more than one set of standards and guidelines may apply. Where the standards and guidelines of the 1990 Forest Plan are more restrictive or provide greater benefits to late-successional forest-related species than do those of the 1994 ROD, those existing standards and guidelines apply. The 1994 Forest Plan amendment also includes Forest-wide Standards and Guidelines, in addition to those in the 1990 Plan, and an Aquatic Conservation Strategy (ACS) designed to help improve the health of the aquatic ecosystem. The standards and guidelines that will be applied to the proposed Index-Galena Road project are discussed further in following sections.

**Standards and Guidelines**

An overarching goal stated in the MBSNF Plan with regard to Forest-wide standards and guidelines for land uses directs the Forest Service to "be responsive in the consideration of the use and occupancy of the Forest by private individuals, Federal, State and local governments when such use is consistent with Forest management objectives, is in the public interest, and cannot be reasonably served by development on private land" and "grant needed easements to State and local governments for existing and relocated roads and highways" (MBS 1990 Forest Plan, page 4-137).

Several standards and guidelines are taken into consideration when evaluating proposed projects occurring on MBSNF lands, these include suitability of the proposed use, resource protection, safety, water quality, fish and wildlife habitat, and visual quality.
issues are evaluated in the Visual Quality Specialist/Discipline Report prepared for the project.)

**Land Allocations**

The 1994 ROD and the 2001 and 2004 amendments include additional Forest-wide Standards and Guidelines, which guide management of this National Forest. The Mt. Baker-Snoqualmie National Forest encompasses the following land allocations (which function similarly to zoning classifications as found in city and county regulations):

- **Congressionally Withdrawn Areas:** Reserved by Act of Congress, these areas include portions of the Wild Sky Wilderness Area [Management Area (MA) 10] which borders the project area to the south and upslope from the proposed roadway relocation. None of these lands are located within the proposed project boundaries.

- **Administratively Withdrawn Areas:** These include certain recreation and wildlife emphasis, and other allocations from the 1990 Forest Plan that are not scheduled for timber harvest. Included are: MA 1B – Semi-Primitive Non-motorized Dispersed Recreation; MA 12 – Habitat for Mature and Old Growth Wildlife Habitat; MA 15 – Mountain Goat Habitat; MA 19 – Mountain Hemlock Zones; and MA 27 – Alpine Lakes Management Area, which includes Alpine Lakes Special Area and Alpine Lakes Dispersed Recreation. None of these areas are located in the project area.

- **Late Successional Reserves:** The main objective for these reserves, in combination with other land allocations and standards and guidelines, is to maintain a functional late successional and old growth forest ecosystem as habitat for late successional and old growth related species. None of these areas are located in the project area.

- **Riparian Reserves:** This allocation, an Aquatic Conservation Strategy (ACS) component, includes areas along all streams, wetlands, ponds, lakes, and unstable or potentially unstable areas. Riparian Reserves are mapped overlaying all other allocations. Silvicultural practices can be applied to control stocking, reestablish and manage stands, and acquire desired vegetation characteristics needed to attain ACS Objectives. Riparian Reserves are located in the project area and are discussed in more depth following this section.

- **Matrix:** The matrix allocation includes federal lands not in the other allocations. It is the area in which scheduled full and partial yield timber harvest may occur. Matrix may also include non-forested areas and lands that are technically unsuited for timber harvest. (In Appendix A, see Figure 3: U.S. Forest Service Land Allocations in Index-Galena Road Project Area)

In the Index-Galena Road project area, matrix allocations include:

- **Management Area (MA) 17 (Timber Emphasis),** where timber removal is allowed
- **MA-5A (Recommended Recreation River)** for this segment of the North Fork Skykomish River; and
- **MA-14 (Deer and Elk Winter Range)**
- **MA 145A: Deer and Elk Winter Range, Recommended Recreation River**
Matrix Allocation Related Goals and Policies

The applicable related goals and policies of the Matrix Allocations are outlined below:

Management Area (MA) 17 (Timber Management Emphasis)

The goal of this allocation is to provide for timber production. Areas allocated for this designation may be applied to any suitable forest acres. These areas take on the appearance of intensively managed timber lands, typified by even aged stands, well developed crown ratios, and low mortality levels. Granting of rights-of-way must meet Forest-wide Standards and Guidelines. Location of road facilities should minimize impacts on dedicated or sensitive lands, such as wilderness areas or semi-primitive dispersed recreation where practicable.

MA-5A (Recommended Recreation River)

The goal of this allocation is to protect from degradation the outstanding remarkable values and wild, scenic, and recreation characteristics of recommended rivers and their environment, pending a decision on inclusion into the National Wild and Scenic River System. This allocation is generally applied to National Forest lands .25 mile either side of the main channel of each river that has been recommended for inclusion into the system. Until designated by Congress, jurisdiction does not extend to outside of National Forest boundaries.

This recommendation is a preliminary administrative recommendation that will receive further review and possible modification by the Chief of the Forest Service, Secretary of Agriculture, and the President of the United States. Congress has reserved the authority to make final decisions on designation of rivers to be included in the National Wild and Scenic Rivers System. Until Congressional action, the values contributing to a river’s particular classification will be protected on National Forest Lands. Forest lands in the 1/4 mile corridor on each side of the rivers are managed to maintain the river’s eligibility. Standards and guidelines for managing suitable rivers are provided in the Forest Plan. While roads and bridge crossings are allowed, the desire is to maintain natural conditions in streamside bank areas so that water quality can be maintained to keep rivers fishable and swimmable.

Recommended Wild and Scenic River Outstanding Remarkable Values

The North Fork Skykomish River has outstandingly remarkable values for the following: scenic, recreation, fisheries, and wildlife. Prominent features along the river include Deer Falls, Bear Falls, Troublesome Mountain, Bear Mountain and Keyes Peak. Its landscapes range from the small town of Index to extraordinary mountain and river scenes. The North Fork Skykomish is one of Washington State’s most continuously challenging whitewater rafting runs. Eleven miles of the river is classified as Class III or Class IV, and is also a favorite for expert kayakers. Campers and many visitors drive Index-Galena Road for scenic driving in addition to access to trailheads and U.S. Forest Service campgrounds.
The river corridor provides an extensive winter range for black-tailed deer, and provides habitat for both bald eagles and golden eagles. The river supports populations of Chinook salmon, coho and pink salmon, steelhead and resident trout. The recommended river’s designation is Recreation in the Index-Galena Road project area. This designation extends from Troublesome Creek (near milepost 11) to the confluence with the South Fork Skykomish River. Recreation rivers are typically readily accessible by road and usually have some level of development along their shorelines.

**MA-14 (Deer and Elk Winter Range)**

The goal of this allocation is to manage winter range to benefit deer and elk in terms of vegetational habitat. Winter range is generally located below 2,200 feet in elevation and contains a mix of successional stages to meet the forage and cover requirements for deer and elk. Optimum habitat is provided by the canopy cover, forest floor litter and understory vegetation found in mature and old growth forest. These provide for the thermal cover and forage needs of wintering deer and elk. Second growth as found in the project area may also provide habitat.

Typically, these areas would provide for different successional forest stages by having a mix of old growth, second growth stands, clearcuts, and plantations. Management activities would generally be scheduled to minimize disturbance between December 1 and April 1. Road design should be coordinated with a biologist to determine and reduce impacts. Road construction shall not be permitted between December 1-April 15.

**MA 14/5A: Deer and Elk Winter Range, Recommended Recreation River**

This allocation combines the goals and policies of both the Recommended Recreational River and Deer and Elk Winter Range allocations discussed above.

**Aquatic Conservation Strategy**

The Aquatic Conservation Strategy (ACS) is a primary component of the *MBSNF Plan* for the protection of aquatic and riparian-dependent species. The ACS was developed to restore and maintain the ecological health of watersheds and aquatic ecosystems contained with them on public lands. Designation of land areas as *Riparian Reserves* along with specific standards and guidelines to protect them are a component of the ACS. Riparian Reserves are lands along streams and unstable and potentially unstable areas where special standards and guidelines direct land use.

There are nine objectives that collectively help to assure protection of the ecosystem functions provided by Riparian Reserve areas. The standards and guidelines are designed to focus review of proposed projects to determine compatibility with ACS objectives. Project consistency determinations are made during review of a proposed project to determine whether projects “meet” ACS objectives. Alternatively, determinations may also conclude that a proposed project “does not prevent attainment.” Projects that do not
maintain the existing condition or lead to improved conditions in the long term would be determined to not meet the intent of the ACS and would not be recommended for implementation or approval.

The nine ACS objectives include:

- **Objective 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.
- **Objective 2**: Maintain and restore spatial and temporal connectivity within and between watersheds, Lateral, longitudinal, and drainage network connections include floodplains, wetlands, upslope areas, headwater tributaries, and intact refugia. These network connections must provide chemically and physically unobstructed routes to critical areas for fulfilling life history requirements of aquatic and riparian-dependent species.
- **Objective 3**: Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.
- **Objective 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.
- **Objective 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.
- **Objective 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.
- **Objective 7**: Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.
- **Objective 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.
- **Objective 9**: Maintain and restore habitat to support well-distributed populations of native plant, invertebrate and vertebrate riparian dependent species.

Roads in river valleys that parallel a river in close proximity, such as Index-Galena Road in some areas, typically limit the recruitment of large trees into the river. Extensive areas of large trees that would otherwise be located in the streamside zone are not there, due to the initial roadway construction clearing and then the ongoing maintenance of the road, or may be disconnected from the river by the roadway. During high flow flood events, the road itself limits channel migration of the river that would otherwise move laterally
into the adjacent hillside slopes where it would recruit trees. Consequently, recruitment of trees is generally limited to those growing between the road and the river. Trees that fall onto the road from the landward side of the roadway would have less opportunity to contribute debris to the river because, during road maintenance, such trees are typically cut into smaller pieces and removed.

**Riparian Reserves**

Riparian Reserves are specified for five categories of streams or waterbodies:

- *Fish-bearing steams* – Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of two site-potential trees, or 300 feet slope distance (600 feet total, including both sides of the stream channel), whichever is greatest.

- *Permanently flowing non-fish-bearing streams* – Riparian Reserves consist of the stream and the area on each side of the stream extending from the edges of the active stream channel to the top of the inner gorge, or to the outer edges of the 100-year floodplain, or to the outer edges of riparian vegetation, or to a distance equal to the height of one site-potential tree, or 150 feet slope distance (300 feet total, including both sides of the stream channel), whichever is greatest.

- *Constructed ponds and reservoirs, and wetlands greater than 1 acres* – Riparian Reserves consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of unstable and potentially unstable areas, or to the distance equal to the height of one site-potential tree, or 150 feet slope distance from the edge of the wetland greater than 1 acre or the maximum pool elevation of constructed ponds and reservoirs, whichever is greatest.

- *Lakes and Natural Ponds* – Riparian Reserves consist of the body of water and the area to the outer edges of the riparian vegetation, or to the extent of seasonally saturated soil, or to the extent of unstable and potentially unstable areas, or to the distance equal to the height of two site-potential trees, or 300 feet slope distance, whichever is greatest.

- *Seasonally flowing or intermittent streams, wetlands less than 1 acres, and unstable and potentially unstable areas* – This category applies to features with high variability in size and site-specific characteristics. At a minimum, the Riparian Reserves must include:
  - The extent of unstable and potentially unstable areas (including earthflows),
  - The stream channel and extend to the top of the inner gorge,
  - The stream channel or wetland and the area from the edges of the stream channel or wetland to the outer edges of the riparian vegetation, and
  - Extension from the edges of the stream channel to a distance equal to the height of one site-potential tree or 100 feet slope distance, whichever is greatest.
Because Riparian Reserves are established along streams or waterbodies, they typically include a mosaic of riparian, wetland, and upland vegetation. Based on the above defined criteria, the whole extent of the Index-Galena Road project is located in designated Riparian Reserves due to its proximity to the fish-bearing North Fork Skykomish River. The whole project area is designated Riparian Reserves. Some of these areas are considered modified (such as the existing damaged Index-Galena Road asphalt roadway) while other areas are more natural or pristine in character.

**Riparian Reserves Standards and Guidelines for Roads Management**

The following Riparian Reserves standards and guidelines apply to the Index-Galena Road project:

**RF-1** - Federal, state, and county agencies should cooperate to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy objectives.

**RF-2** - For each existing or planned road, meet Aquatic Conservation Strategy objectives by:
- a. minimizing road and landing locations in Riparian Reserves.
- b. completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
- c. preparing road design criteria, elements, and standards that govern construction and reconstruction.
- d. preparing operation and maintenance criteria that govern road operation, maintenance, and management.
- e. minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.
- f. restricting sidecasting as necessary to prevent the introduction of sediment to streams.
- g. avoiding wetlands entirely when constructing new roads.

**RF-3** - Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by:
- a. reconstructing roads and associated drainage features that pose a substantial risk.
- b. prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.
- c. closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs.

**RF-4** - New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk
to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.

**RF-5** - Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes.

**RF-6** - Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams.

**RF-7** - Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the Aquatic Conservation Strategy objectives. As a minimum, this plan shall include provisions for the following activities:

a. inspections and maintenance during storm events.

b. inspections and maintenance after storm events.

c. road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources.

d. traffic regulation during wet periods to prevent damage to riparian resources.

e. establish the purpose of each road by developing the Road Management Objective.

**Recreation**

**Section 4 (f) Resources**

The project area was evaluated to determine applicability of Section 4(f) requirements for the proposed project. Although Section 4(f) requirements are codified at 23 U.S.C. Section 138 and 49 U.S.C. Section 303, the requirements regarding its applicability continue to be commonly referred to as Section 4(f) because of its origin in Section 4(f) of the Department of Transportation Act of 1966. The specific regulations for the Federal Highway Administration (FHWA), the project’s lead federal agency, are codified at 23 CFR Part 774 – Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Site.

The statute specifies that Section 4 (f) applies when a U.S. DOT agency approves a transportation program or project that uses Section 4(f) property. FHWA’s approvals apply specifically to projects rather than programs. For the statute to apply to a proposed project, there are three conditions that must be met:

- The project must require an approval from FHWA to proceed
- The project must be a transportation project
- The project must require the use of land from a property protected by Section 4(f)
Section 4(f) requires consideration of:

1. Parks and recreational areas of national, state, or local significance that are both publicly owned and open to the public
2. Publicly owned wildlife and waterfowl refuges of national, state, or local significance that are open to the public to the extent that public access does not interfere with the primary purpose of the refuge, and
3. Historic sites of national, state, or local significance in public or private ownership regardless of whether they are open to the public

In coordination with U.S. Forest Service staff, it was determined that the following applicable land management allocation designations are currently in place in the project area as provided for by the Mt. Baker-Snoqualmie National Forest Land and Resource Management Plan, as Amended:

- 5A Recommended Recreation River
- 17 Timber Management Emphasis
- 14/5A Deer and Elk Winter Range, Recommended Recreation River

It was further determined that the land management allocations identified above are consistent with the Mt. Baker-Snoqualmie National Forest Plan’s management for multiple uses. Section 4(f) policy and regulations require coordination with the official(s) of jurisdiction to determine Section 4(f) applicability when there are multiple-use properties affected. More specifically 23 CFR 774.11 (d) states:

(d) Where Federal lands or other public land holdings (e.g., State forests) are administered under statutes permitting management for multiple uses, and, in fact, are managed for multiple uses, Section 4(f) applies only to those portions of such lands which function for, or are designated in the plans of the administering agency as being for, significant park, recreation, or wildlife and waterfowl refuge purposes. The determination of which lands so function or are so designated, and the significance of those lands, shall be made by the official(s) with jurisdiction over the Section 4(f) resource. The Administration will review this determination to assure its reasonableness.

The following conclusions were developed as part of coordination with the U.S. Forest Service:

- There are no formal designations for recreation in the project area and there are no formally designated recreation areas such as campgrounds, picnic areas, boat ramps, or trails/trailheads. While dispersed recreation is an allowed use in the project area, it is part of an area administered for multiple purpose management, and this does not constitute a major purpose for Section 4(f) applicability.
- Portions of the project area were recommended as a Recreation River for potential inclusion in the National Wild and Scenic River System (WSRS) in the Final Environmental Impact Statement for the MBSNF Forest Plan. Section 4(f)
applicability for Wild and Scenic Rivers is limited to rivers and the adjacent area within the boundaries of a component of the National Wild and Scenic Rivers System (National System), pursuant to Section 3 (a) and 2 (a) (ii) of the National Wild and Scenic Rivers Act (WSRA) (36 C.F. R. 297.3). Accordingly, significant publicly owned recreation areas in a WSR corridor are subject to Section 4(f). The Wild and Scenic River designation also applies to designated “Study Rivers.” Recreation issues associated with the river’s recommendation for inclusion in the National System would still be evaluated as part of the project’s NEPA process. However, its review would be consistent with U.S. Forest Service management requirements to manage this land area as if it was a designated river. These review requirements prohibit any activities that would or could potentially change the area from being designated. Based on the river’s current status, it was concluded that significant publicly owned recreation areas are not located in the project area because the project area is not included as a component of the National System nor is it identified as a Study River at this time. Accordingly, the recommended Recreation River status does not constitute a major purpose for Section 4(f) applicability.

- There are no adverse effects to Historic Properties

It was concluded that there are no Section 4(f) recreation resources in the project area. Additionally, it was also concluded that based on field investigations and other background research that there are no publicly owned wildlife and waterfowl refuges of national, state, or local significance or historic sites of national, state, or local significance in public or private ownership regardless of whether they are open to the public in the project area. Consequently, there are no Section 4(f) resources requiring Section 4(f) documentation or review.

**National Forest Recreation Opportunities**

Index-Galena Road provides the primary vehicular access to areas located in the North Fork Skykomish River valley east of Index. The valley area stretching east of Index to the Cascade Crest provides multiple outdoor recreation opportunities. The area’s scenic beauty and proximity to Seattle and Everett population centers make it an attractive destination for outdoor recreationists that include primarily weekend trips to area wide lakes, rivers, campgrounds, and hiking trails. Roadway access to several trailheads afforded by Index-Galena Road also provides opportunities for more extended outings on a well-established trail network in the Mt. Baker-Snoqualmie National Forest. All of the recreation areas located in the upper North Fork Skykomish River valley are managed by the U.S. Forest Service. (In Appendix A, see Figure 4: U.S. Forest Service Campgrounds and Trailheads.)

**Wild Sky Wilderness**

The Wild Sky Wilderness Act was signed into law on May 8, 2008. The law designated 106,577 acres within the Mt. Baker Snoqualmie National Forest as protected wilderness. The wilderness designation prohibits logging, mining, motor vehicle use, including off-road vehicles and virtually all motors. The wilderness designation protects 25 miles of
salmon and steelhead habitat and about 80,000 acres of old-growth trees - including 14,000 acres of rare low-elevation old growth. Hunting, fishing, rafting, and other outdoor recreation activities are permitted in the designated wilderness areas. The Wild Sky Wilderness flanks both the Beckler River and North Fork Skykomish River but does not include the rivers. The proposed Index-Galena Road project is located outside of the wilderness boundaries.

**Hiking Trails**

There are several trailheads directly accessed by Index-Galena Road and its continuation as USFS-maintained Forest Service Road 63 east of the Index-Galena Road intersection with Beckler River Road/Forest Road 65. Some of these trails also connect with a trail network that provides access to additional trails. These networks allow for loop trips and access to the Pacific Crest Trail. These trailheads provide access for hikers and horse recreationists to backcountry areas located in the Henry M. Jackson Wilderness and Wild Sky Wilderness. The trailheads include the following:

- Blanca Lake Trail 1052
- North Fork Skykomish Complex: North Fork Skykomish Trail 1051, West Cady Ridge Trail 1054, Quartz Creek Trail 1050, Bald Eagle Mountain Trail #650 (connects with Quartz Creek Trail 1050) Pass Creek Trail #1053 (connects with North Fork Skykomish Trail 1051). Pacific Crest National Scenic Trail #2000 is accessed via Pass Creek Trail, North Fork Skykomish Trail 1051, and West Cady Ridge Trail #1054.
- Troublesome Creek Nature Trail #1079

All of these trails were inaccessible after the November 2006 floods due to flood damage to the road access system. In late summer 2008 road access was restored to Blanca Lake and the North Fork Skykomish Complex trailheads, via Jack Pass. The Jack Pass route adds at least an hour of driving time as compared to the more direct Index-Galena Road route from Index, and presents additional challenges for horse recreationists transporting horses in horse trailers.

Trail use figures prior to the November 2006 flood event for the Blanca Lake Trail, based on trailhead registration cards adjusted for noncompliance (about 50% do not register), totaled 4,062 hikers for the summer of 2006. Similarly, 2006 summer use figures for the North Fork Complex Trailhead was 3,626 visitors (hikers and equestrians). Data is not available for the period after the road was reopened via Jack Pass in late summer 2008, but based on USFS observations use is about half of the pre-November 2006 flood event due to the additional hour driving time via Jack Pass.

**Campgrounds**

There are two U.S. Forest Service maintained campgrounds located on Index-Galena Road, San Juan Campground and Troublesome Creek Campground. They are fee sites...
operated by a concessionaire. They were closed for public use for several years after the 2006 high flow flood events due to extensive site damage and poor site access due to the elimination of the Index-Galena Road access. The campsites re-opened in June 2012 after extensive repairs to the campgrounds and completed repairs to the upper segments of Index-Galena Road.

These campgrounds typically operate Memorial Day weekend to Labor Day weekend. With sole vehicular access to the upper part of Index-Galena Road now provided by the Jack Pass via Beckler River Road/Forest Road 65 detour, opening of the campgrounds may often be after the Memorial Day weekend due to snow at the pass. Prior to the 2006 flood damage, the sites generated the following camper use and revenues in the Summer of 2006:

- San Juan Campground - 226 campsite nights; Gross Revenues of $3,569
- Troublesome Creek Campground - 1,230 campsite nights; Gross Revenues of $25,468

A description of the campgrounds is provided:

**Troublesome Creek Campground**

Located near Milepost 11 on Index-Galena Road, each of the 25 campsites has a picnic table and a fire ring. Six vault toilets are provided. A day-use picnic area with four sites and an ADA-accessible well is also available for potable water. A mile-long nature trail is also accessed from the campground. The campground was refurbished and reopened in June, 2012 after having been closed since it was heavily damaged from the November 2006 flood, as well as damage to Index-Galena Road.

**San Juan Campground**

Located near Milepost 13 on Index-Galena Road, each of the 9 campsites has a picnic table and a fire ring. Three vault toilets are provided. A day-use picnic area is also available. Potable water is not provided at the site. Campers may use water from the river but it needs to be filtered or treated. This campground sustained some minor damage in the November 2006 flood and was closed. After the damage was repaired and large hazard trees were removed, the campground reopened in August, 2012.

**Dispersed Camping**

The U.S. Forest Service allows campers to camp anywhere in the National Forest outside of a designated campground not posted as closed. Campers are encouraged to use a campsite on bare or compacted soil when possible, or in areas that have already been established. Campers have historically used dispersed sites along the river and Trout Creek Road.

**Backpacking**
Backpackers use trails accessed from Index-Galena Road and Forest Service Road 63 for overnight or more extended trips, including access to the Pacific Crest trail via the North Fork Skykomish Trail to Dishpan Gap or via West Cady Ridge. Backpacking is also very popular at Blanca Lake.

**Horse Riding/Horse Camping**

Equestrian use is extensive on West Cady Ridge. Some equestrian use also occurs on the other North Fork Complex trail system. Horse recreationist access is presently more difficult due to the lengthy Beckler River Road/Road 65/Jack Pass detour that includes steep grades and sharp curves on the route from Jack Pass to the North Fork Skykomish River valley.

**River Rafting**

Currently nine outfitter/guide companies are authorized under special-use permit from the U.S. Forest Service to provide rafting opportunities on the North Fork Skykomish River. The North Fork Skykomish is considered more challenging than the South Fork Skykomish. Only one company, Wave Trek, has continued rafting trips subsequent to the November 2006 flood event. They put in at Trout Creek on private property, and typically provide services for 50 rafter days per year.

Access to the North Fork Skykomish River was available at several locations for rafters and kayakers prior to the 2006 washouts at Milepost 6.4 and Milepost 6.9. Put in locations were located at Milepost 11.7 (near the Drumbeater rapid) for challenging upper canyon runs and at Milepost 10.9 where the river closely parallels Index-Galena Road. Prior to the 2006 road washouts, Trout Creek was a commonly used take out location. An additional take out location was also available at Milepost 6.9 near the upper washout.

Providing river access for river recreation was one of the major issues that was voiced by river recreationists during the NEPA scoping comment period. The area near Milepost 6.9 was identified as a key location for access, both as a take-out location and as a put-in location.

**Kayaking**

Kayaking is a growth sport in the Skykomish valley. Use of the expert level North Fork Skykomish is currently very low but it is estimated that use could increase to reach a few hundred visitors per year if Index-Galena Road is re-opened and river access is expanded. With removal of the gate at MP 13.2 in June 2012, kayakers once again began using Milepost 10.5 as a put-in location and Milepost 6.9 just upstream from the upper washout as a take-out location.
**Mountain Climbing**

Mountain climbing activity was not extensive in the areas accessed by Index-Galena Road, but some climbing does occur in the area in proximity to Blanca Lake.

**Wild Sky Wilderness Area Trail Plan**

The *Wild Sky Wilderness Trail Plan* was recently completed by the Mt. Baker Snoqualmie National Forest and released to the public on May 23, 2013. The plan was prepared as required by the legislation that designated the wilderness area. The plan was prepared in consultation with interested parties for National Forest System lands within the Wild Sky Wilderness and adjacent areas, including a system of hiking and equestrian trails within the Wild Sky Wilderness, and adjacent areas that provide access to the Wild Sky Wilderness. Public comments were received during the course of the planning effort and were used to develop criteria to prioritize which trails would be considered for improvement and new trail construction.

The trail plan identifies 67 miles of existing summers trails associated with the Wild Sky Wilderness, and 12.7 miles of winter trails adjacent to the wilderness. As part of the planning effort to identify additional trails, the trail plan has identified three categories of trails. They include:

- High/Moderate Priority
- Future Study
- Drop from Further Consideration.

Trails that could be potentially accessed by use of Index-Galena Road include:

- **High/Moderate Priority**
  - Frog Mountain-trail users could elect to use Index-Galena Road rather than Beckler River Road to access trailhead near Jack Pass
  - North Fork Skykomish River-has direct access at end of Index-Galena Road
  - Blanca Lake-has direct access to Index-Galena Road
  - Iron Mt. Conglomerate Pt.-trailhead access road (Trout Creek Road #6320) intersects with Index-Galena Road
  - Mineral Butte-trailhead access road (Road 6330) intersects with Index-Galena Road at Milepost 9.1

- **Future Study**
  - Hubbard’s Grove-trailhead would be near uppermost bridge crossing of North Fork Skykomish River near Index-Galena Road and Beckler River Road intersection-access would be quicker with use of Index-Galena Road
  - Twin Lakes-access would be near existing Troublesome Creek campground directly accessed by Index-Galena Road
Silver Lake- trailhead access road (Road 6340) would intersect with Index-Galena Road near Milepost 9.1
Old North Fork Skykomish-this trail would parallel Index-Galena Road and potentially connect the Troublesome Creek and San Juan campgrounds

**Keeping up with increased recreation demand**

As population grows in the greater Puget Sound region, there is a corresponding increase in the demand on existing recreational areas. This increased demand results in a greater need to update and expand existing facilities and create additional facilities. The *Wild Sky Wilderness Trail Plan* estimates that trail use increases 10 percent per decade and that the rate of trail use on the 150 miles on the Skykomish Ranger District has met or exceeded this growth rate. In the greater project vicinity, the U.S. Forest Service has recently made improvements at various sites, including repairs at the Troublesome Creek and San Juan campgrounds on Index-Galena Road to keep existing facilities operational. Snohomish County Parks is presently coordinating with the Friends Of Heybrook Ridge to create a new Snohomish County Park that will create a trail system to connect to the Heybrook Ridge Lookout trail that gains access from US 2.

A permit system requiring purchase of parking passes has been developed by the U.S. Forest Service to help pay for recreation improvements in local ranger districts. The fees have helped in part to repair and improve trails and trailhead areas. Other programs that have contributed to improve U.S. Forest Service recreation facilities include Secure Rural Schools, FHWA Recreational Trails, and the Recreation Conservation Office.

**Recreation Tourism**

Recreation also plays a vital role in the growing tourism industry in Washington, and Snohomish County ranks third in the state in terms of visitor spending. Visitors spend $579.2 million each year in Snohomish County based on recent data, with recreation accounting for $100.4 million of the total. Tourism generates 8,480 jobs in Snohomish County with a payroll totaling $158 million. Areas such as Index and Skykomish provide a gateway to nearby scenic and recreational opportunities and typically attract day visitors passing through due to its proximity to nearby lakes, rivers, and wilderness areas. While Index and Skykomish do not have the highly developed travel industry of destination resorts and more urban areas that provide commercial accommodation facilities, their proximity to scenic outdoor recreational opportunities provides potential economic opportunities because day visitors spend the greatest portion of their travel dollars on food, beverages, and ground transportation, particularly motor fuel.
V. Impacts

Direct Impacts

Construction-Temporary Impacts

There would be minimal land use temporary construction-related impacts associated with the proposed relocation of Index-Galena Road from its existing alignment. Impacts are expected to be minimal because the existing roadway has been closed for vehicular use since the November 2006 washout and there are no residences in the project area. The primary impacts would be to recreation users who have walked on the damaged roadway and informal trails that have been established upslope from the existing roadway since the November 2006 damage event. These trails appear to be used primarily by upstream property owners during the months when vehicular access by way of the Jack Pass detour route is not open, but are also used by those exploring the area in proximity to the damaged roadway.

Pedestrian hiker access on these informal trails would be eliminated during construction because roadway construction would occur in these areas for two construction seasons. The area where the existing informal boot-beaten trails are located would be incorporated into the construction footprint although some remnants could potentially remain undisturbed. It is assumed that most of the potential future need for use of these informal paths would be eliminated once the relocated roadway is in place and through-route vehicular access is restored. Temporary impacts would include construction-related noise and traffic that would occur mostly near the Milepost 6.4 terminus and to a lesser extent near the Milepost 6.9 terminus. Disruption to established vehicular traffic patterns is expected to be minimal because most construction would occur either on a currently closed road or on a new roadway alignment away from traffic. Construction related traffic would potentially affect access to the one adjacent privately owned parcel where river access is provided for commercial rafting trips.

Transport of construction materials and other roadway construction activities could potentially increase traffic congestion in proximity to the Index turn off from US 2 and the area on Index-Galena Road near the Index Bridge #122 crossing of the North Fork Skykomish River to the town of Index.

Land areas designated by the U.S. Forest Service as Riparian Reserves impacts would include temporary and permanent effects. Temporary impacts would include a short-term disturbance of vegetation, soils, or riparian function when asphalt is removed in the existing damaged roadway alignment. The principal short-term impacts include exposure of mineral soils and subsequent potential for erosion. Some temporary impacts may persist for longer periods. For example, loss of riparian shade associated with removal of vegetation in order to access the asphalt areas to be removed would persist until the vegetation has regrown. For the purposes of this analysis, impacts lasting for up to a few
years are regarded as temporary, because they can be monitored and full restoration ensured within the timeframe of the project.

**Operation-Permanent Impacts**

The proposed project would not require the use of 4(f) properties in the Recreation, Conservation land use categories or historic properties. The proposed project would construct a relocated roadway that would not adversely affect designated recreation areas. No campgrounds, trails, or other areas formally designated for recreational uses would be directly affected by the roadway construction. The relocated roadway in proximity to the Milepost 6.9 washout would cross near areas suitable for river access by white water recreationists and presently used for dispersed recreation. This area has a longstanding use for river access, both as a put-in and take-out location. The project would not eliminate this access. Project related design efforts would maintain and enhance river access, and are discussed in the mitigation section of this report.

Opening of the relocated roadway would likely attract additional recreational users to the North Fork Skykomish valley that would match or result in an increase from previous use levels prior to the 2006 damage event. These uses would be consistent with current forest plans and Snohomish County goals to promote recreation and recreation tourism. By re-establishing more year round and more direct access to the recreation areas in the North Fork Skykomish valley, the re-established route is expected to provide economic benefit for businesses in the greater Index area that provide services to recreation users. This would be consistent with one of the adopted GMA General Policy Plan Economic Development Element goals to encourage sustainable use of resources for economic development.

Index-Galena Road is located outside of the boundaries of the Wild Sky Wilderness. No designated wilderness areas would be affected. Direct roadway access would be restored to U.S. Forest Service campgrounds, Troublesome Creek Campground at Milepost 11 and San Juan Campground at Milepost 13. More direct access is expected to enable campground use to return to historic levels that occurred prior to the flood damage to Index-Galena Road.

No private property acquisition would occur as part of the project. The project would acquire a new right-of-way easement from the U.S. Forest Service. The existing easement area where the damaged roadway is located would be abandoned for vehicular use but would be rehabilitated through riparian restoration. This area and other land areas downslope from the relocated roadway to be used for stormwater runoff dispersion would be incorporated into the new permanent easement for the roadway. Approximately 0.9 miles of new right-of-way easement would need to be acquired for the relocated roadway alignment. A portion of the easement near the downstream terminus at MP 6.4 would be located on the present Trout Creek Road #6320. Right-of-way easement approval and acquisition would reduce the amount of land available for ongoing timber management. The impact is not considered significant because the National Forest has sufficient land reserves to accommodate anticipated future timber harvest levels. Where construction
would occur in the established roadway easement in proximity to the existing roadway, right of way easement acquisition needs would be minimized through maximizing use of the existing right of way easement.

The relocated Index-Galena Road roadway would not establish new access to areas currently without access. The roadway would match back into the existing roadway in proximity to the Milepost 6.4 and Milepost 6.9 washouts. In proximity to Milepost 6.4, the existing U.S. Forest Service Road #6320 (Trout Creek Road) and Index-Galena Road intersection would be relocated upslope from its existing location when Index-Galena Road is relocated. Re-establishing vehicular access to land areas upstream from the existing washed-out sections is not expected to exert more land development pressure to undeveloped private property areas. This impact is not considered to be substantial in the area along the existing roadway based on current zoning in place, and other factors that control development growth such as lack of availability of utilities, sewage disposal, and municipal water service.

Roadway construction would not occur in the bed or on the banks of the river, and would require minimal vegetation removal adjacent to the river’s side channel. Accordingly, the project is not expected to adversely affect outstandingly remarkable values for which the river was recommended for future Wild and Scenic River designation. The relocated roadway would be screened from the river’s main channel by vegetation in most areas, but would be visible from some areas along the side channel until riparian vegetation becomes established in the area where asphalt would be removed and planted. This mitigation work would enhance outstandingly remarkable values in this reach of the river based on preliminary coordination and review by the U.S Forest Service.

The project would not adversely affect deer or elk winter range due to the small size and scope of the tree falling for the new roadway relative to the potential habitat in the greater project area. Tree felling for road construction could potentially improve forage habitat by letting more sunlight to the ground, which in turn will potentially create more forage currently unavailable due to the canopy cover present at the site. Project implementation would not occur during the winter range season (December 1 to April 15). Wildlife impacts are discussed in greater depth in the Wildlife Report prepared for the project.

Permanent impacts occur when project actions cause a lasting change in vegetation or a change in functional characteristics of the affected Riparian Reserve. For example, riparian shade, fine litter inputs to streams, and stream microclimate may be permanently affected by removal of Riparian Reserves forests. The most extensive permanent impacts are those that involve removal of all vegetation, essentially negating riparian functions. This would occur in the area that would be occupied by the roadway’s travel surface. Under the Proposed Action, a total of approximately 9.5 acres of Riparian Reserves would be affected, all of which is currently in native vegetation types except for the damaged roadway that would be removed and restored. Of this total, approximately 3.3 acres would be converted to a new roadway prism footprint, while 6.2 acres would be long term temporary impacts associated with grading cuts and fills that would be restored with native vegetation planting after construction is completed. Of the native vegetation
affected, most of the area is mature forest with small areas in scrub-shrub cover. The land area where the existing roadway is located would be considered modified and/or developed (1.58 acres). Roadway removal and subsequent restoration would offset the removal of riparian forest for the relocated road, resulting in net lost riparian reserves totaling 7.9 acres.

When Index-Galena Road is re-opened to through access, it is expected to reduce upper Index-Galena Road bound vehicular traffic volumes using the current Beckler River Road/Road 65 detour route. This would be expected to reduce wear and tear on the Road 65 gravel roadway’s travel surface and reduce maintenance needs.


Outlined below are preliminary findings of how the proposed Index-Galena Road Milepost 6.4-6.9 project would be consistent with adopted plans, policies, standards and guidelines. Final findings of consistency and conditions that would be applied to the proposed project would be determined during the respective Snohomish County and U.S. Forest Service reviews that would occur as part of applications for development approval.

Consistency with Mt. Baker Snoqualmie National Forest Plan - Aquatic Conservation Strategies (ACS)

The project as proposed would be consistent with Aquatic Conservation Strategies as provided in the Mt. Baker Snoqualmie National forest Plan, as amended. The following discussion outlines how the proposed Index-Galena Milepost 6.4-6.9 project would potentially prevent, retard, or contribute significantly to the achievement of the Aquatic Conservation Strategy Objectives at the scale the ACS Objectives were described. It is expected that the project as proposed at a minimum would not prevent achievement of ACS Objectives and would help to contribute significantly to achievement of some of the ACS Objectives. A brief description of how the proposed project relates to each objective is provided below in italics:

- Objective 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.

  The project would relocate the roadway from the river and its floodplain to restore roadway connectivity. Relocation would contribute to maintaining diversity and complexity of watershed features by relocating the roadway out of the floodplain and restoring free flow of the North Fork Skykomish River. Portions of the roadway would also be located out of the channel migration zone. Relocation enables the existing damaged roadway asphalt to be removed and natural riparian site conditions to be restored. This promotes aquatic restoration including benefits to in-stream habitat, and the adjacent riparian habitat that
would provide greater habitat diversity and promote enhanced wildlife habitat conditions in proximity to the river. River flow conditions would also be restored to more natural conditions without the existing roadway’s constrictions to channel migration. Removal of the failing, eroded roadway is expected to maintain the distribution, diversity, and complexity of watershed and landscape scale features by preventing future roadway failure. Incorporation of habitat restoration plantings and LWD placement would add habitat complexity and roughness elements in the channel.

Approximately 1.5 acres of riparian buffer would be enhanced by abandoning the existing roadway. This area would be replanted with native shrubs and trees. This would occur in the area near the project’s beginning at Milepost 6.1, upstream from Milepost 6.4 and extend to Milepost 6.7, and in some of the area upstream from Milepost 6.9. All temporarily disturbed areas associated with asphalt removal and access to this area would be treated with salvaged duff and mulch and planted with native trees and shrubs above the ordinary high water mark, out of the most flood susceptible zone.

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

The project would maintain and restore hydrologic connectivity within the watershed. The damaged roadway would be removed and the roadway relocated further landward of the North Fork Skykomish River outside of the floodplain and substantial portions out of the channel migration zone. Effects from vegetation clearing and road construction would be offset in part by removing the damaged roadway in the river side channel and adjacent riparian areas that would restore hydrologic connectivity by restoring floodplain connectivity. The project would restore existing connectivity within the watershed and would not affect connectivity between watersheds. The proposed action would maintain and enhance the integrity of the riparian buffer over the long term. Removal of the existing roadway and relocation further landward is expected to enhance aquatic refugia as side channel development over time has a positive effect on riparian connectivity. Similarly, the project is not expected to obstruct the movement of terrestrial species, dependent upon riparian corridors for their habitat needs or movement between habitat areas. The long-term improvement in the riparian buffer in the project area would ultimately result in increased LWD recruitment, which could contribute to an increase of complex in-stream wood features that, in turn, would enhance the connectivity of productive rearing and foraging habitats for native fish and aquatic macroinvertebrates.
• **Objective 3:** Maintain and restore the physical integrity of the aquatic system, including shorelines, banks, and bottom configurations.

The project would maintain and restore the physical integrity of the river aquatic system, including shorelines, banks, and bottom configurations with relocation of the damaged roadway landward from the river. During construction, the physical integrity of the aquatic system would be maintained with limiting all in-water work associated with the project to the dry season and containment systems and other measures would be installed to separate construction activity from the active flow of the river. After construction is completed, riparian mitigation in proximity to the river would include removing existing roadway asphalt located both from the channel and adjacent to the river. Restoration plantings would aid in restoring the overall integrity of the aquatic system. Large woody debris would be placed as part of the riparian restoration efforts. Restoring this area to a more natural channel and riparian buffer corridor would maintain and restore the physical integrity of the streambed configuration and would have a positive effect on sediment transport and deposition processes within the North Fork Skykomish River.

• **Objective 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.

The project’s relocation of Index-Galena Road would aid in prevention of catastrophic failure of the roadway for the long term, eliminating a source of material that could be potentially introduced to the river that does not promote healthy riparian, aquatic ecosystems. Short term water quality impacts associated with construction would be managed by implementing project sedimentation control best management practices. All stormwater runoff on the completed roadway would be dispersed on the downslope adjacent areas, before sheet flowing and infiltrating through vegetated buffer areas. This process would filter and infiltrate the runoff. Thus, no measurable increases in the concentration or loading of stormwater contaminants would be expected to enter the North Fork Skykomish River, and indirect effects to aquatic species would be nonexistent or insignificant.

Although water quality would be maintained over the long term, construction activities may cause minor, short-term increases in sedimentation and turbidity in the river and in sideslope streams crossed by the relocated roadway. However, sediment would be minimized or eliminated because construction will be limited to the dry season and appropriate sediment and erosion control construction best management practices (BMPs) would be employed; and all water quality standards imposed by state and federal laws (e.g., Clean Water Act 404/401) will
be met. Temporarily disturbed areas would be mulched and planted to reduce sediment mobilization after construction.

Likewise, the proposed riparian buffer restoration along the damaged portion of Index-Galena Road to be removed would provide improvement in long-term water quality in the river by removing existing impervious surface area adjacent to the river, and replacing it with a vegetated riparian buffer. Short-term effects from asphalt removal could occur. BMPs would be in place to reduce sedimentation levels while conducting in-water work. Therefore, no measurable adverse effects to water quality are expected.

- **Objective 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.

  The project would not adversely affect the sediment regime in the North Fork Skykomish River, which is greatly influenced by recessional glacial material deposition and subsequent alluvial transport and deposition. The project design would prevent catastrophic failure of the road for the long term and is anticipated to meet Objective 5 at the project and reach scale, and promote restoration at the watershed scale by improving the long-term sediment filtration process, and by relocating the damaged roadway and converting the existing damaged roadway into native riparian vegetated buffer habitat. An area where debris torrents could be expected will be designed so that debris slide deposition would still occur. Culverts would be designed to maintain current sediment transport processes. Use of appropriate BMPs, management requirements, and mitigation measures would minimize and mitigate potential short-term increases in sediment mobility associated with any soil disturbance from construction activities. At both the reach and watershed scale, changes in the overall sedimentation rates attributable to the project would likely be non-detectable given the high variability in natural rates of sediment input along the river.

- **Objective 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.

  No effect to in-stream flows for the North Fork Skykomish River is expected from the Index-Galena Milepost 6.4-6.9 project. The project would contribute to maintaining stream flows because stormwater associated with the project is not expected to alter the hydrologic cycle, including low or peak river flows. Relocating the roadway further landward out of the floodplain would reduce the potential for floodwaters to overtop roadway surfaces, erode roadway prisms and associated roadway embankments. There would be a net decrease in impervious surface compared to the pre-damage roadway conditions, and stormwater would be intercepted and filtered by the existing native vegetation buffers as part of the
project’s stormwater runoff dispersion with sheet flow. In addition, approximately 1.5 acres of impervious surface would be removed in proximity to the project as part of project mitigation. Therefore, any changes would be negligible and unmeasurable.

- **Objective 7:** Maintain and restore the timing, variability, and duration of floodplain inundation and water table elevation in meadows and wetlands.

  The current floodplain function would be maintained and conveyance improved with the project due to the removal of the damaged roadway from the floodplain, relocation of the roadway above the floodplain, and restoration of more natural vegetated buffer floodplain conditions. The project would enable more extensive floodplain inundation than currently exists with the existing roadway and would help to restore water table conditions at both the project and the watershed scales. Floodplain connectivity would be enhanced with removal of obstacles and constructions presented by the existing roadway and its roadway prism. This would improve flood conveyance in the project area and not contribute to elevated flood flows. The hydrology of the wetland located near the project’s upstream terminus would be maintained by spanning the wetland with a bridge that maintains hydrological connectivity at the roadway crossing of the wetland. The project has minimized wetland impacts.

- **Objective 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 project would maintain and restore the current plant communities in the riparian areas located where the existing roadway would be removed and restored to natural riparian conditions. The project would contribute to the restoration of Objective 8 over the long term at both the project and watershed scales. While the project would disturb and remove riparian trees and shrubs further landward of and upslope from the river as part of the road relocation, the disturbance and removal would be offset by riparian restoration. The mitigation would contribute to long-term improvement of riparian vegetation that would provide shade, nutrient and sediment filtering, and a source of woody debris and other organic matter.

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

  The project would maintain and restore the composition and diversity of plant communities in the riparian areas adjacent to the river. The project would contribute to the restoration of Objective 9 over the long term at both the project
and watershed scales. While the project would disturb and remove riparian trees and shrubs further landward from the river, restoration in the riparian zone that extends from Milepost 6.4-6.7 would contribute to a long-term improvement of riparian vegetation that would provide shade, nutrient and sediment filtering, and a source of woody debris and other organic matter that promotes beneficial riparian habitat for riparian dependent invertebrate and vertebrate species. Salvage of native duff during construction for placement on disturbed soils after construction is anticipated to promote re-establishment of native plant species and help to restore conditions suitable for invertebrate and vertebrate riparian dependent species.

Consistency with Riparian Reserves Standards and Guidelines for Roads Management

The following describes how the proposed Index-Galena Milepost 6.4-6.9 project would be consistent with Riparian Reserves standards and guidelines that apply to the Index-Galena Road project. A brief description of how the proposed project relates to each objective is provided below in italics:

**RF-1** - Federal, state, and county agencies should cooperate to achieve consistency in road design, operation, and maintenance necessary to attain Aquatic Conservation Strategy objectives.

The Snohomish County project team has coordinated with U.S. Forest Service, the Washington State Department of Transportation, the Federal Highway Administration and other agencies to ensure that road design and operation and maintenance will promote attainment of Aquatic Conservation Strategy objectives. Specific measures are discussed further below.

**RF-2** - For each existing or planned road, meet Aquatic Conservation Strategy objectives by:

a. minimizing road and landing locations in Riparian Reserves.

The project proposes to use the AASHTO Low Volume Roadway Design Standards to minimize the project footprint of the relocated roadway. The use of these design standards enables the proposed project design to match the character of the existing roadway. Use of these standards and incorporation of design features such as retaining walls, structural earth walls (SEW walls), and reinforced slopes have reduced the clearing required for construction. With the proposed design, approximately 3.3 acres would be converted to a new roadway prism footprint, while 8.9 acres would be long term temporary impacts associated with grading cuts and fills that would be restored with placement of native duff and native vegetation planting after construction is completed. The existing damaged roadway would be removed from the river’s side channel and floodplain and natural conditions restored through asphalt removal and revegetation where site conditions are favorable outside of the wetted river channel. When the roadway is relocated, there will be a net reduction of impervious surface compared to the pre-damage roadway prism footprint, and approximately 1.2
acres would be restored that is located within the channel migration zone and 100-year floodplain.
b. completing watershed analyses (including appropriate geotechnical analyses) prior to construction of new roads or landings in Riparian Reserves.
The U.S. Forest Service has completed a watershed analysis for the North Fork Skykomish watershed. The project has completed a channel migration zone analysis that was prepared as part of the project’s early feasibility analysis. Roadway design efforts have been closely integrated and coordinated with extensive geotechnical analysis to determine the best location for the relocated roadway. The proposed design relocates the roadway out of the floodplain, moves most of the relocated roadway out of the channel migration zone, and has been located to minimize disturbance to the slopes located above the floodplain.
c. preparing road design criteria, elements, and standards that govern construction and reconstruction.
The project’s design criteria, project elements, and standards have been closely coordinated with U.S. Forest Service oversight to ensure consistency with the MBSNF Plan.
d. preparing operation and maintenance criteria that govern road operation, maintenance, and management.
Snohomish County will coordinate with the U.S. Forest Service to ensure that long term road operation, maintenance and management are consistent with USFS standards and guidelines as established in roadway right-of-way easement and special use permit requirements.
e. minimizing disruption of natural hydrologic flow paths, including diversion of streamflow and interception of surface and subsurface flow.
The project design has been developed to maintain natural hydrologic flow paths and minimize disruption of natural flow patterns. Removing the damaged roadway from the river, dispersing roadway stormwater flow, maintaining surface flow channels, constructing a bridge to span the wetland and seasonal stream near Milepost 6.9, and minimizing net new impervious surface area as compared to the existing roadway, help to achieve these objectives.
f. restricting sidecasting as necessary to prevent the introduction of sediment to streams.
The project proposes no sidecasting. Excavated spoils would either be incorporated into the roadway prism as part of constructed roadway embankments or exported from the project site to approved disposal sites. Native duff that is salvaged during construction would be placed both upslope and downslope from the finished roadway to help stabilize exposed soils and to provide a good source of organic debris that would promote revegetation and site restoration post construction.
g. avoiding wetlands entirely when constructing new roads.
The relocated road would avoid impacts to most of the wetland areas with the roadway design but roadway geometric constraints would require that wetland impacts occur. The project would compensate for unavoidable wetland impacts (0.02 acre current estimate) in compliance with federal, state, and local regulations.
RF-3 - Determine the influence of each road on the Aquatic Conservation Strategy objectives through watershed analysis. Meet Aquatic Conservation Strategy objectives by:

a. reconstructing roads and associated drainage features that pose a substantial risk.

Relocating the damaged section of Index-Galena Road would reduce risk for catastrophic damage that poses a substantial risk to in-stream and riparian habitat. Reconstructing the roadway above the floodplain would promote better floodplain connectivity by removing asphalt and the roadway prism fill that constrict flood flows. The relocated roadway would be constructed and operated in accordance with U.S. Forest Service standards and guidelines and consistent with management recommendations developed as part of the U.S. Forest Service watershed analysis prepared for the North Fork Skykomish River as part of its Two Forks Watershed Analysis.

b. prioritizing reconstruction based on current and potential impact to riparian resources and the ecological value of the riparian resources affected.

The proposed Index-Galena Road reconstruction would provide beneficial impacts and enhance riparian resources by restoring natural floodplain and riparian habitat where the damaged roadway would be removed from the river side channel and adjacent riparian areas. Its reconstruction has been prioritized because reconstructing the roadway in its current alignment would continue to have adverse effects to riparian resources and the ecological value they provide.

c. closing and stabilizing, or obliterating and stabilizing roads based on the ongoing and potential effects to Aquatic Conservation Strategy objectives and considering short-term and long-term transportation needs.

Relocating the existing damaged roadway and obliterating the asphalt pavement to restore natural riparian conditions would promote Aquatic Conservation Strategy objectives as described above and will promote long-term transportation needs by restoring roadway connectivity that provides access for residents, recreation users, emergency service providers, and U.S. Forest Service personnel.

RF-4 - New culverts, bridges and other stream crossings shall be constructed, and existing culverts, bridges and other stream crossings determined to pose a substantial risk to riparian conditions will be improved, to accommodate at least the 100-year flood, including associated bedload and debris. Priority for upgrading will be based on the potential impact and the ecological value of the riparian resources affected. Crossings will be constructed and maintained to prevent diversion of streamflow out of the channel and down the road in the event of crossing failure.

Proposed roadway culverts and the bridge crossing of the wetland near Milepost 6.9 would be designed to accommodate the 100-year flood including the associated bedload and debris. The box culvert vented ford near Station 29+00 would be designed to withstand 100-year flow events and associated debris. In more extreme events greater than the 100-year flow, debris would be conveyed through the ford over the top of the roadway. Road maintenance crews would then remove deposited debris as necessary to restore traffic.
RF-5 - Minimize sediment delivery to streams from roads. Outsloping of the roadway surface is preferred, except in cases where outsloping would increase sediment delivery to streams or where outsloping is unfeasible or unsafe. Route road drainage away from potentially unstable channels, fills, and hillslopes. *Outsloping the roadway surface is proposed to promote natural dispersion of roadway stormwater runoff. The project design would minimize sediment delivery to project area streams by dispersing stormwater runoff and providing conveyance at roadway culverts and the proposed bridge to route roadway drainage from unstable channels, fills and hillslopes. A Stormwater Pollution Prevention Plan would be developed and implemented during construction to address construction-related sediment and erosion control.*

RF-6 - Provide and maintain fish passage at all road crossings of existing and potential fish-bearing streams. *The one road crossing that has a fish-bearing stream, located at the proposed bridge crossing near Milepost 6.9, has been designed to maintain fish passage. All proposed cross-culverts are located at non-fish-bearing streams located on steep slopes.*

RF-7 - Develop and implement a Road Management Plan or a Transportation Management Plan that will meet the Aquatic Conservation Strategy objectives. As a minimum, this plan shall include provisions for the following activities: 

*Snohomish County will inspect and maintain Index-Galena Road in accordance with the Regional Road Maintenance ESA Guidelines at or near wetlands and streams, and the following standards and guidelines:*

a. inspections and maintenance during storm events.
b. inspections and maintenance after storm events.
c. road operation and maintenance, giving high priority to identifying and correcting road drainage problems that contribute to degrading riparian resources.
d. traffic regulation during wet periods to prevent damage to riparian resources.
e. establish the purpose of each road by developing the Road Management Objective.

**Consistency with Recommended Wild and Scenic River allocation**

The project’s proposed relocation of Index-Galena Road, including roadway pavement removal from the river side channel and restoration of riparian areas to natural conditions, would promote protection from degradation the outstanding remarkable values and wild, scenic, and recreation characteristics of the North Fork Skykomish River. The proposed project would include maintaining natural conditions in streamside bank areas so that water quality can be maintained to keep rivers fishable and swimmable.

The proposed Index-Galena Road relocation would protect and enhance the free-flowing condition, water quality, and outstandingly remarkable values of the North Fork Skykomish River. The relocation is designed to prevent repeated roadway washouts (and resultant effects) that Index-Galena Road has experienced in past events.
With the river channel’s 2006 migration and resultant erosion of the Index-Galena Road pavement, the proposed roadway relocation above the active flood plain would enhance free-flowing conditions by accommodating lateral channel migration that would not adversely affect the road. By relocating the road and enabling river migration to the extent practical (within the project area), there is decreased constriction of the floodplain.

The effects on water quality associated with the relocation construction would be of short duration and minimal when compared to background sedimentation rates that would occur with future roadway washout damage. Long term effects are beneficial for water quality with the roadway located further landward from the active channel flow.

The effects of construction on fisheries would be short-term to accommodate roadway removal, related to short-term increases in roadway construction related noise and sediment. Long term effects are beneficial and in-stream spawning and side channel refugia habitat is expected to be enhanced by roadway removal and restoration of natural riparian conditions.

Changes in wildlife habitat and wildlife populations would be slight due to the relatively small amount of habitat change, and this change occurring in very small areas separated by relatively large distances. There are no substantial effects to wildlife beyond a temporary increase in noise during construction.

The roadway and views would be improved relative to the pre-damage condition and the scenery would be enhanced in areas in proximity to the river. Areas upslope from the river would have bare soils resulting from construction activities. These would be stabilized and revegetated to minimize erosion potential. At the expected effectiveness for these mitigation measures, impacts to scenery would likely be short term.

Impacts to visual quality would be addressed with aesthetics as a consideration. Techniques such as colored and/or textured concrete or rock gabion walls would be considered. Guardrail color would be a muted earth tone color, specifically a guard rail that has been painted with Natina, a paint product that provides a weathered appearance. Restoration plantings in critical visually sensitive areas would also consider placement of earth berming and rock boulders to promote a naturalized appearance for the proposed relocated road. For more discussion of visual quality considerations, see the Visual Quality Technical Report.

Secondary and Cumulative Impacts

The proposed project would not contribute to cumulative impacts to adjacent land areas and planned land uses. When considered together with the Index-Galena project, the following projects would be expected to contribute noise, dust, and traffic congestion to the greater project area during their respective construction periods, which would add to temporary construction impacts to adjacent land uses with no measurable adverse impacts to planned land uses.
Indirect Effects

Re-establishing Index-Galena Road in combination with other planned improvements is not expected to indirectly stimulate land use changes in Index and unincorporated communities. The land areas in proximity to the project are primarily under U.S. Forest Service ownership and management and would not experience land use changes associated with residential and commercial development. The limited areas on private land in-holdings are limited by land use regulations and a lack of sewer and municipal water utilities that would be needed to support growth.

These harvest units were originally considered for advertisement. While harvest could have occurred and then delivered to market through the longer Jack Pass route, the harvest was withdrawn due to the increased high costs associated with this sole remaining alternative route since the roadway damage closure. It is expected that re-establishment of through route access would provide for more economically feasible hauling of harvested timber, and that the Forest Service could conceivably reoffer the planned harvest units for sale (estimated 1.2 MMbf of volume on 62 acres) from this previously approved timber sale in the Salmon Creek drainage (approximately 3 miles north of the project site, on FS Road 6330). If the Index-Galena Road is repaired, the Forest Service is expected to re-evaluate those units through NEPA, and potentially offer for sale in a new contract if the timber is still suitable.

Restoring and maintaining long established year-round access to the upper North Fork Skykomish valley is likely to encourage future land uses that focus on services to recreation through traffic. These services are likely to be located in already established settlements such as Index or Skykomish. These may become more prominent than at present once historic recreation use levels are restored after the roadway is constructed. These changes are not expected to result in substantial effects that would exceed recreation use levels already contemplated and addressed by Snohomish County and the U.S. Forest Service as part of their respective adopted plans.

Cumulative Effects

The proposed project represents one of multiple planned Snohomish County roadway capital improvements located on Index-Galena Road identified in the adopted 2013-2018 Six-Year Transportation Improvement Plan (TIP). None of the planned improvements would increase roadway capacity. Other improvements that are currently being evaluated include the following from the adopted TIP:

- **TIP # 41.16 Flood Repair Index-Galena (Milepost 5.8)**
- This FHWA Emergency Relief (ER) funded project would excavate unstable soils and construct a rock buttress to stabilize the roadway embankment. The majority of the work would occur 100 feet or further landward of the river.
- **TIP # F. 41** Howard Creek Bridge #496 Replacement (Milepost 9.014)
  - This planned project with FHWA bridge replacement funds would replace a structurally deficient timber stringer bridge.
- **TIP # F. 50** Trout Creek Bridge #494 (Milepost 6.057)
  - This more long-term planned and currently unfunded bridge replacement project would replace a scour critical concrete span with a longer span with a deep foundation to resist scour.

Past roadway repairs have occurred at multiple locations on Index-Galena Road, including storm damage repairs that required in-water work to maintain roadway connectivity. An extensive repair occurred in the early 1990s near the current Milepost 6.7 washout. Regular road maintenance activities include roadside mowing for brush/weed control, hazard tree removal after wind damage events, snow plowing, and pavement maintenance.

In addition to Snohomish County Public Works multiple planned roadway capital improvements projects, the U.S Forest Service has had past projects and may have future projects in the project vicinity. These are described below.

**Past U.S Forest Projects**

In 2009, a Forest Service contractor performed maintenance on Trout Creek Road 6320 to maintain the road at a Maintenance Level 2 (for high clearance vehicles). The contract work included constructing water bars and dips, repairing sags, replacing culverts, and adding riprap and surface rock. Closure barriers were also constructed on the road prior to the Wild Sky Wilderness boundary to prevent vehicles from entering the designated wilderness area.

**Reasonably Foreseeable projects**

**Sunset Mine CERCLA Cleanup**: The Sunset Mine CERCLA project is located on Forest Road 6320 (Trout Creek), approximately 1 mile southeast of the Index-Galena repair site. A Sampling and Pre-removal Action Inspection and Monitoring Report was completed in July 2011. The proposed Removal Action alternative consists of excavating heavy-metal laden (primarily arsenic and copper) mine and mill waste rock and local soils, then disposing in a constructed repository. Also, a pilot study for passively treating the lower adit’s discharge on site is being considered. Subject to funding, in 2014 the Forest Service plans to revise the 2008 Engineering Evaluation/Cost Analysis to include the costs of reconstructing the access route for heavy equipment access. There is no time frame for reconstructing the road or the cleanup, which is subject to CERCLA funding.

With past and reasonably foreseeable future actions taken into consideration, the proposed project is not likely to have substantial, if any, influences on growth and development factors and therefore is not expected to be a major catalyst to future growth in the North Fork Skykomish river valley. In addition to consideration of past and future...
reasonable foreseeable projects, additional factors such as the recent Wild Sky wilderness designation, the reduced timber harvest from historical levels, and management for recommended wild and scenic river considerations, as well as the various components of the Forest Plan (ACS, riparian reserves, etc.) contribute toward achieving non-significant levels of cumulative impacts. Use of current roadway design standards and implementation of the adopted Forest Plan are expected to promote a net beneficial impact over the long term.

Cumulatively, impacts from the Index-Galena Milepost 6.4-Milepost 6.9 project would not be expected to contribute to impacts associated with other proposed and future changes that may occur in the upper North Fork Skykomish River valley area. The Index-Galena Milepost 6.4-Milepost 6.9 project has been integrated in planning efforts for this area. Efforts on the part of recreation users and others to promote recreation access would likely have a greater influence on the future of this area than would the proposed project alone.

**7.0 Mitigation**

**Temporary Impact Mitigation During Construction**

Incompatible impacts associated with construction activity, such as disruption of local traffic patterns would be minimized with construction of a new alignment that avoids and minimizes conflicts with existing roadway traffic. Traffic may be impacted by construction-related delivery of materials and transport of equipment during the work week but would not typically occur on weekends when recreation related traffic is heavier. These conflicts would be minimized to the extent practicable by scheduling work during the week, notifications to surrounding communities regarding project-related traffic delays, and implementing a traffic control plan closer to the project site.

Construction flagging and signage would be provided to direct traffic. Continued access for law enforcement, emergency vehicles, and other vehicular traffic as appropriate would be maintained to the greatest extent practicable. At least one lane would remain open at all times with priority given to emergency vehicles. Road closures are expected in proximity to the actual construction project limits. Construction activity would typically occur during the daylight hours, generally between 7 a.m. and 8 p.m. on weekdays, although work could potentially occur on weekends. Notification of potential delays would be sent to area residents, property owners, and business owners prior to construction.

**Permanent Impact Mitigation**

**Fair Value Purchase/Relocation**

The fair market value for timber cleared as part of the project would be determined for the portions of U.S. Forest Service land areas slated for right-of-way easement acquisition and subsequent land disturbance. An agreement would be reached between the County and the U.S. Forest Service for compensation prior to construction and an easement developed consistent with U.S Forest Service requirements and in coordination
with the Federal highway Administration. No right-of-way purchases of private property or relocation would occur as part of the project. If acquisition would occur, it would be conducted in accordance with the Civil Rights Act Title VI legislation and Uniform Relocation Assistance and Real Property Acquisitions Act of 1970, as amended.

**Consistency with Adopted Plans**

Due to the fact that Index-Galena Road is part of the road system plan adopted by both Snohomish County as part of its GMA plan and the U.S Forest Service as part of the Mt. Baker-Snoqualmie National Forest Plan as amended, the established land use patterns in the project vicinity would continue to be consistent with these plans and development regulations. The roadway alignment and its proposed relocation in the project area have been developed in accordance with these respective plans. The relocation alignment has been developed to minimize riparian and aquatic system impacts, habitat fragmentation, and impacts to steep slope areas. The route relocation is consistent with the County’s long-term economic development goals to increase recreation tourism. No further land use impact mitigation is proposed.

**Conforming to Snohomish County adopted development regulations**

The proposed Index-Galena Milepost 6.4-Milepost 6.9 project would be constructed subject to permit conditions associated with Snohomish County development review. Applicable development regulations and regulatory review include SCC 30.44 Shoreline Permits; SCC 30.67 Shoreline Management Program; SCC 30.62 Wetlands and Fish & Wildlife Habitat Conservation Areas; SCC 30.62B Geologically Hazardous Areas; SCC 30.65 Special Flood Areas. Critical areas such as wetlands and fish and wildlife habitat conservation areas are addressed in other discipline reports prepared for the project such as the Wetlands and Streams and Wildlife discipline reports, and Special Flood Areas are addressed in the Floodplains discipline report. Final mitigation requirements will be identified during these regulatory review processes and integrated into the construction plans and specifications as required.

**River Recreation Access**

There is an existing user-made path to the river at Milepost 6.9 which would remain available (and unimproved) for river recreation users. A portion of the area in proximity to the Milepost 6.9 washout was restored after the 2006 damage event as mitigation for another damage repair. Asphalt was removed and soils and mulch placed to provide for site restoration. The project would reconfigure the existing remaining roadway near the Milepost 6.9 washout to maintain this dispersed recreation river access. A turnoff from the relocated roadway would provide vehicular access that would enable river recreation users to use the site as both a put-in or put-out access. A path would be provided for river recreation users to take their rafts and kayaks to and from the low-bank access currently in use at the dispersed recreation site. (In Appendix A, see Figure 5: Index-Galena Road Milepost 6.9 Preliminary River Access Plan.)
Summary

Overall, the Index-Galena Road Milepost 6.4-Milepost 6.9 project would help preserve key ecological functions of the designated Riparian Reserves in the project area. Riparian Reserves include lands along streams and unstable and potentially unstable areas where special standards and guidelines direct land use. The project, designed to maintain existing roadway access to land areas in the upper North Fork Skykomish River watershed, would have temporary impacts to the watershed during construction, but through project design, mitigation measures and best management practices as described, the project would be consistent with all nine ACS objectives at the site and watershed scales.

Because riparian planting of an existing road section will be conducted as a conservation measure, the project will preserve the physical integrity of the soils in the river buffer, allowing the re-establishment of woody vegetation after asphalt removal and site preparation. Long-term preservation of buffer soils and protection of riparian vegetation and soils will maintain connectivity of riparian habitats and watershed functions.

8.0 References

Record of Decision and Standards and Guidelines for Amendments to the Survey and Manage, Protection Buffer, and Other Mitigation Measure Standards and Guidelines (USDA, USDI 2001).


USDA Forest Service and USDI Bureau of Land Management. 1994. Record of Decision For Amendments to Forest Service and Bureau of Land Management Planning Documents Within the Range of the Northern Spotted Owl and Standard and Guidelines for Management of Habitat for Late-Successional and Old-Growth Forest Related Species Within the Range of the Northern Spotted Owl. Pacific Northwest Region. Portland, OR.


APPENDIX A– FIGURES

Figure 1: Proposed Index-Galena Road Project Milepost 6.4-6.9
Figure 2: Snohomish County Comprehensive Plan and Zoning Designations Map
Figure 3: U.S. Forest Service Land Allocations in Index-Galena Road Project Area
Figure 4: U.S. Forest Service Campgrounds and Trailheads
Figure 5: Index-Galena Road Milepost 6.9 Preliminary River Access Plan
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Appendix B- Photos
Existing damaged Index-Galena Road at the downstream Milepost 6.4 washout.

Existing damaged Index-Galena Road at the upstream washout that extends from Milepost 6.7 to Milepost 6.9. Asphalt pavement and concrete debris, and damaged culverts would be removed from the floodplain areas. Pavement removal areas would be restored with native plantings.
This part of the existing Index-Galena Road (above and below) between the downstream and upstream washouts is an undamaged roadway remnant that would be removed and riparian restoration would occur as part of the proposed project.
This is a dispersed recreation site near the Milepost 6.9 washout. The top photo looks upstream and the bottom photo looks downstream. Existing river recreation access will be maintained at this location as part of the proposed project design.
The proposed relocated roadway would begin its alignment shift at the Trout Creek Road intersection. In this area, the existing roadway would be removed and riparian restoration would occur. Below is a view of Trout Creek Road near the beginning of the project's alignment shift.
This above view is near Station 21+50, soon after the proposed alignment enters the forested slopes. Steep slopes would be modified by cut and fill construction to accommodate road construction and dense forest cover would be cleared prior to grading. The below photo is near 23+50. The existing roadway can be seen downslope.
The staked centerline, above, near Station 26+00 shows the general steep slope and forest cover character of the proposed relocated roadway alignment. Below, near Station 29+24, other common characteristics such as boulders are also shown.
Above is the proposed roadway staked centerline near Station 34+57. Glimpses of the North Fork Skykomish River valley can be seen through the forest cover during the winter months prior to spring leaf out. Below is where the project proposes a bridge to cross the wetland/stream near Station 54+24.