TABLE OF CONTENTS

DRAFT VISUAL QUALITY TECHNICAL REPORT-REVISED

SUMMARY .................................................................................................................. 1
PROPOSED ACTION ................................................................................................. 2
STUDIES AND COORDINATION ........................................................................... 8
METHODS .................................................................................................................. 8
AFFECTED ENVIRONMENT .................................................................................... 13
IMPACTS OF THE PROPOSED ACTION ............................................................... 30
MITIGATION ............................................................................................................. 50
APPENDIX ...............................................................................................................

Photos
Photo 1: Existing Index-Galena Road near Milepost 6.4 within Landscape Unit 1 .......... 23
Photo 2: Existing Index-Galena Road between Milepost 6.4 - Milepost 6.9 within Landscape Unit 2 ................................................................. 24
Photo 3: Existing Index-Galena Road near Milepost 6.9 within Landscape Unit 3 ........ 25
Photo 4: Proposed Relocated Index-Galena Road at Station 15+50 near Milepost 6.4 on Trout Creek Road within Landscape Unit 4 ........................................ 26
Photo 5: Proposed Relocated Index-Galena Road near Station 21+50 within Landscape Unit 5 ................................................................. 27
Photo 6: Proposed Relocated Index-Galena Road near Station 29+24 within Landscape Unit 6 ................................................................. 28
Photo 7: Proposed Relocated Index-Galena Road near Station 34+57 within Landscape Unit 6 ................................................................. 29
Photo 8: Proposed Relocated Index-Galena Road near Station 54+24 within Landscape Unit 7 ................................................................. 30

Simulation Photos
Sim Photos A-Before and After Simulation Near Milepost 6.4 lower washout Landscape Unit .......... 42
Sim Photos B-Before and After Simulation between Milepost 6.4-6.9 washouts Landscape Unit 2 ..... 43
Sim Photos C-Before and After Simulation near Milepost 6.7-6.9 washout Landscape Unit 3 .......... 44
Sim Photos D - Before and After Visual Simulation at Station 21+50 Landscape Unit 5 ............. 45
Sim Photos E - Before and After Visual Simulation at Station 30+88 Landscape Unit 6 ............... 46
Sim Photos F - Before and After Visual Simulation at Station 54+20 Landscape Unit 7 ............... 47

Figures, Analysis Matrix Table, and Memo in Appendix
Table 1: Visual Quality Analysis Matrix .........................................................................
Figure 1: Proposed Index-Galena Road Project Milepost 6.4-6.9 ........................................
Figure 2: Visual Quality Landscape Units ........................................................................
Figure 3: GIS Visual Simulation Perspective 1: Looking Upstream from Trout Creek Bridge Near Milepost 6.4 washout
Figure 4: GIS Visual Simulation Perspective 2: Looking Downstream from near Milepost 6.9 washout
Memo: Summary of Chosen Structure Finishes For Visual Quality Index-Galena Road Flood Repair MP 6.4 to 6.9
Title VI and Americans with Disabilities Act (ADA) Information: It is Snohomish County’s policy to assure that no person shall on the grounds of race, color, national origin, or sex as provided by Title VI of the Civil Rights Act of 1964, as amended, be excluded from participation in, be denied the benefits of, or otherwise be discriminated against under any County sponsored program or activity. For questions regarding Snohomish County Public Works’ Title VI Program, or for interpreter or translation services for non-English speakers, or otherwise making materials available in an alternate format, contact the Department Title VI Coordinator via e-mail at spw-titlevi@snoco.org or phone 425-388-6660. Hearing/speech impaired may call 711.
1.0 Summary

This report presents the methods and results of a visual quality assessment that evaluates the effects on visual resources associated with the proposed Index-Galena Road Milepost 6.4-6.9 roadway project. The project proposes to construct a relocated two-lane roadway to replace the damaged Index-Galena Road.

The visual analysis was performed by Snohomish County staff following the guidelines of the U.S. Department of Transportation, Federal Highway Administration publication *Visual Assessment for Highway Projects, March 1981*. In addition to the FHWA guidelines, applicable standards and guidelines from the Mt. Baker Snoqualmie National Forest plan as amended were incorporated into the review.

Viewpoints were selected to show views looking from the proposed roadway alignment and looking toward the proposed roadway alignment. The selected viewpoints were chosen based on project visibility, accessibility to the public, frequency of public use, and the ability of the viewpoints to represent overall impacts within the study area. Viewer groups potentially affected by the proposed project include roadway users (motorists), and recreation users who take advantage of dispersed recreation and river-oriented recreation opportunities in the project area.

Sensitivity to visual quality changes would be greatest for those who travel on foot in the project area. Because of effective vegetative screening, sensitivity would be somewhat less for viewers who would look at the project area from the North Fork Skykomish River while rafting, kayaking, or fishing. River users would typically be the most sensitive viewers, but were determined to have minimal sensitivity to project related visual quality changes based on the effectiveness of area vegetation to obscure views from the river toward the proposed roadway. Roadway users would typically have the least sensitivity to visual quality changes but would have more frequent opportunities to see the visual quality changes related to the proposed project. Visual simulations were prepared to show how users of the road would be impacted visually.

The analysis yielded the following conclusions:

The proposed construction would result in temporary visual quality impacts associated with visually prominent construction equipment and activities, disturbed soils, and tree clearing. Construction of the relocated roadway would create a prominent permanent linear feature across the sloped forested landscape. The impacts would be greater where the roadway crosses forested slopes areas as compared to either of the terminus points where the relocated roadway would match into the existing roadway. Vegetation clearing and site grading would modify the existing slopes with excavation cuts and fills that are required to accommodate a level asphalt roadway surface and other hard features, and bare mineral soils would be exposed that would create color contrasts with the existing forested duff layer and understory vegetation.

Permanent changes to views of all landscape units within the relocated roadway alignment would include removal of mature vegetation and replacement with the linear roadway prism and “hardscape” features associated with the new roadway such as
retaining walls, reinforced slopes, a bridge, and roadway culverts. Retaining walls and reinforced slopes would be used in steep slope areas for slope stability to minimize the project’s footprint.

New openings created by the clearing and roadway grading would expand views currently limited to foreground views. The expansive views would include more distant middle ground and background views that reveal more of the North Fork Skykomish River valley and mountain ridges and peaks. These expanded background views may counter some of the adverse effects in the foreground for roadway users.

Impacts would be reduced by limiting construction activities to only those areas needed to accommodate roadway construction, and would be offset by mitigation measures that include providing more aesthetically pleasing finishes to hard surfaces and structural elements and providing riparian restoration in the area now occupied by the existing damaged roadway. Temporary impacts would be reduced by limiting construction staging areas to areas of existing pavement. The project’s decision to use Low Volume Roadway design standards has been able to achieve reduction of project footprint impacts as compared to the Design Report estimates developed at the 30% design stage.

Implementation of best management practices and proposed mitigation measures would be incorporated into the final design to ensure consistency with applicable visual quality standards and guidelines and avoid significant adverse effects to visual quality. Proposed mitigation includes design elements that would reduce potential glare, and soften the visual appearance of the hard features of the roadway that include the roadway embankment fills, guardrails, and bridge structure. The use of earth tone pigments and textural surfacing treatments would enable the completed project to blend in with the background forest environment. These measures are discussed further in the mitigation section of the report.

2.0 Proposed Action

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 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 Bridge 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.

**Project Area Scenery**

The Index-Galena Road Milepost 6.4 to Milepost 6.9 project area and the greater project vicinity provides opportunities to experience a variety of scenery. The project area lies in a very rural and remote portion of the lower North Fork Skykomish River valley. The closest town, Index, is located approximately 6 miles southwest of the project. The upstream reaches of the river in the upper North Fork Skykomish River allows for views of scenic Cascade Mountain peaks. The valley draws thousands of recreational users to the area every year, with peak visitation occurring in the late summer months.

Snohomish County maintains Index-Galena Road to Milepost 14.1. The U.S. Forest Service maintains the roadway beyond this point to its terminus at Milepost 18.5, the North Fork Skykomish trailhead. The road parallels the North Fork Skykomish River its entire length, and includes vantage points that enable views of vast expanses of the forested river valley, forested mountain slopes, and visual backdrops of several mountain peaks.
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 present 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.

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 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 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 black asphalt with yellow centerline striping and white fog lines on both sides of the road, with 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 12.2 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 12.2 acres, approximately 3.3 acres would be permanently impacted for the roadway prism footprint and 8.9 acres would be cleared to accommodate roadway cuts and fills. These 8.9 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.

### 3.0 Methods

#### Visual Quality Assessment

Existing visual resources were characterized during multiple site visits at different seasons of the year and documented through photos and field notes in order to assess the project area visual quality. Locations were selected in the study area as observer viewpoints. These viewpoint areas were selected to represent both sensitive and typical areas, and to provide a more efficient method than random selection to characterize visual quality. This selection method is intended to minimize bias in representation of the proposed action’s visual quality effects by including. Accordingly, not only areas of particular sensitivity, such as those closer to where viewers would be most likely to congregate (such as the river) and critical viewpoints were evaluated, but also areas more typical of the project area such as the sloped forested areas upslope from the river.

Observer viewpoints used during the field work provided views from the proposed project and of the proposed project from adjacent areas. Existing conditions were evaluated according to guidance provided by FHWA publication Visual Impact Assessment for Highway Projects. This visual impact assessment guidance was used because it is the most applicable method to use for roadway projects. The U.S. Forest Service’s Landscape Aesthetics A Handbook for Scenery Management was also used to gain additional understanding of visual quality considerations for impact assessments in
areas located on National Forest lands. The visual impact methodology provided for in the FHWA guidance provides a systematic method for identifying visual impacts. Once impacts have been identified, it aids project designers to incorporate design elements into the project that will promote consistency with U.S Forest Service visual quality objectives as outlined in the Mt. Baker Snoqualmie National Forest Plan as amended (MBSNF Plan).

Applicable standards and guidelines from the MBSNF Plan were also incorporated into the assessment to ensure consistency with the Forest Plan’s goals and objectives. The existing visual quality was compared to the visual quality changes that would be associated with the proposed project design. These changes include design features such as roadway location, cut and fill slopes, and roadway hardscape features such as retaining walls, reinforced slopes, guard rails, and cross-culverts.

The principal visual characteristics evaluated, as outlined in the methodology discussed in FHWA’s *Visual Impact Assessment for Highway Projects*, include the following:

**Vividness**—landscape features that combine to create a distinct visual impression through contrasts in form, line, texture, or color. Vividness heightens when a viewer encounters dramatic features in the viewshed. The various elements that combine to shape vividness include landforms, waterways, vegetation and manmade structures.

**Intactness**—Evaluating intactness considers the degree to which the landscape retains its natural features or integrity. The extent of human-made features in the landscape is compared to the natural landscape in place prior to development. While not always the case, manmade elements often have adverse aesthetic impacts related to encroachment of discordant visual features (signs, roadways, structures) that can cause a cluttered appearance that does not blend with the natural environment.

**Unity**—Consideration of unity looks at how all visual elements combine to form a coherent, harmonious visual pattern. Elements in the view, such as buildings, roadways, signs, vegetation and above ground utilities can create a chaotic appearance if they are not combined in a harmonious way.

**Overall Visual Quality**

Overall visual quality is determined by assessing the extent to which vividness, intactness, and unity combine. One element may be out of balance with other elements. For instance a highly vivid area may be so cluttered with discordant manmade development such that overall visual quality is reduced. In another case, certain characteristics such as dramatic topography or waterforms that contribute to vividness may be absent. Absence of these characteristics reduces overall vividness and contributes to a potential lack of balance between vividness, intactness and unity.

**Viewer Groups**

Changes in visual quality would affect viewers that include roadway users and recreationists engaged in rafting, kayaking, or fishing on the river. Some guidance
documents refer to users as constituents, the primary consideration being what are the expectations and views of those most affected by visual quality.

In the absence of residences and formal trails in the project area, the primary groups affected by visual quality changes would be future users of the proposed roadway (motorists) and those who presently use the informal trail that has been created in the project area upslope from the existing damaged roadway and in proximity to the proposed roadway relocation alignment. Pedestrians and bicyclists are expected to be a secondary group in the project area due to the remote rural nature of the roadway and long distances between destination points. It is not clear to what extent the informal trail user viewers would continue to use the area once the roadway is relocated. Future pedestrian use is expected to be associated with river recreation use that would be focused near the Milepost 6.9 washout location.

Based on comments with property owners during public meetings and encounters during field work site visits, this trail has been established primarily by property owners so that they can hike to their properties during the winter months when Jack Pass roadway access is blocked by snow. The trail user’s sensitivity to visual changes would typically be greater than motorists because they would see the project area more frequently and for longer durations. Increased sensitivity for these viewers would also be expected because they have the most familiarity with the project area and have seen it close up in the immediate foreground view that extends approximately 300 feet. Dispersed recreation in the form of hikers curious about the damaged roadway has been added to the residential access foot traffic in the project area. Consequently, multiple boot beaten paths have been established that parallel the damaged roadway and the proposed roadway alignment. The most used path is located down slope from the proposed roadway centerline.

Roadway users who have not ever visited the area, or since the 2006 damage event would see the changes on the landscape only after the relocated roadway is constructed, and may not be able to discern where the original roadway was located.

The most noticeable changes for motorists relative to existing conditions would likely be where the relocated roadway matches into the existing roadway at both ends of the project. The modifications that would be most apparent after construction would likely be “laid back” slopes and retaining walls that would contrast with the natural slope topography. The existing damaged roadway removal and restoration to natural riparian conditions would likely be seen as an area that has been improved visually as more natural conditions develop, especially over the long term.

There are no structures associated with commercial businesses or residents in proximity to the proposed roadway relocation. However, one commercial rafting company uses private property access near Trout Creek to gain access to the North Fork Skykomish River. More in-depth discussion of these viewer groups is provided below.
**Roadway Users/Motorists**

Motorists using the relocated roadway would comprise the largest viewer group. The relocated roadway would be constructed to re-establish roadway connectivity to enable residential and recreation related motor vehicle traffic access to destinations farther upstream in the North Fork Skykomish River valley. The relocated road would also be used by other frequent roadway users such as U.S. Forest Service staff, Snohomish County road maintenance crews, and emergency service providers.

Viewers who would frequently travel on the proposed roadway would generally possess lower visual sensitivity to their surroundings. The passing landscape becomes familiar to these viewers with frequent viewing, and their attention is typically not totally focused on the passing views. At standard roadway speeds, views are typically of short duration and roadway users are fleetingly aware of surrounding traffic, road signs, their immediate surroundings within the automobile, and other visual features. Those traveling through the area infrequently, those new to the area, and roadway users destined for recreation locations farther up the valley would be expected to divert their attention to distant background and middle ground views of the Cascade Mountains that would be provided by the finished project. These views are somewhat limited at present due to a relatively closed canopy forest cover that obscures more distant views. The notable exception is near the Milepost 6.9 washout where upvalley and downvalley views expand to encompass the river valley floor, steep mountain slopes and mountain peaks rising from the river valley.

**Recreationists**

Recreationists in the project area would include those driving on the road to destinations farther upvalley, a portion of which may be engaged in scenic driving. River recreation, including river rafting, kayaking, and fishing, is one of the more popular outdoor recreation activities in the project area. Commercial rafting access is presently provided near the Milepost 6.4 washout location in proximity to where the roadway would relocate from the river valley floor onto adjacent slopes.

Dispersed recreation in the form of hiking on informal trails and the now closed Trout Creek Road has been growing in the project area since the road was damaged. The primary route is a boot beaten path that has been established that parallels the damaged roadway. Established by private property owners seeking winter access to their properties when the Jack Pass vehicular access is not available, the trail sees use also by those exploring the area in proximity to the damaged roadway. There are locations where side trails connect to remnants of the existing Index-Galena Road that remain intact between the two primary damage locations at milepost 6.4 and milepost 6.9.

**Viewpoint Locations and Simulations**

Digital photographs were taken at ground level at key points along the proposed alignment and the existing roadway. Some of these were subsequently modified to illustrate visual quality impacts that would result from roadway construction. Aerial...
orthophotos were used to show the project’s placement and context within the larger landscape. The project’s CAD drawings were superimposed into the aerial images.

**Ground Level Digital Visual Simulations**

These visualizations were created by taking high resolution digital photographs at specific locations along the proposed roadway alignment. These locations were determined by identifying points in the project that would represent the change in the visual experience resulting from the project or the effect of a viewer group. These photos were put into a computer and digitally manipulated to create new images that show the proposed changes as called for in the project plans.

**GIS Generated Visual Simulations**

In addition to generating visual simulations that used digital manipulation techniques for modifying photographs for visual simulations, additional simulations were created that employed Geographical Information System (GIS) software. Oblique aerial perspectives were generated in ESRI’s 3-Dimensional Visualization software. A Digital Elevation Model (DEM) of the project area was created with ESRI’s Arc/Info Geographic Information System (GIS) software by combining Light Detection and Ranging (LIDAR) derived elevation data and contour information found in the CAD design plan. The DEM provided the reference elevation for all of the features and allows for the creation of “virtual” perspectives. In order to enhance the realism of these perspectives, a variety of features were added to the images such as a 2012 aerial photo, the existing roadway, the project alignment and associated features, and simulated trees.

The future conditions of the proposed relocated roadway are presented using these simulation techniques to illustrate what the project area is expected to look like after project construction. The simulations are intended to provide a graphic illustration of the relative changes in the landscape expected from the road project, but they cannot show exactly what the project area would look like after the roadway is constructed.

**Applicable U.S. Forest Service Visual Quality Standards and Guidelines**

The Mt. Baker Snoqualmie Forest Plan (MBSNF Plan) as amended identifies several visual quality standards and guidelines applicable to the proposed Index-Galena Road project. Visual resource management is implemented through application of these standards and guidelines to projects that potentially affect viewsheds. The project has identified the applicable standards and guidelines in coordination with the U.S. Forest Service and has evaluated the project for consistency with the applicable USFS standards and guidelines. A discussion of how the project would be consistent with these standards and guidelines is provided in the Mitigation section of this report.

**Applicable Snohomish County Visual Quality Policies**

The Snohomish County Growth Management Act Comprehensive-General Policy Plan Transportation Element identifies the following goals, policies, and objectives related to aesthetics:
Transportation Goal 6

Implement transportation improvements that have positive or minimal adverse impacts on the natural environment, air quality, water quality and energy consumption

Transportation Policy 6 A. 3 associated with this goal states:
Aesthetic and visual values shall be considered in the location and design of transportation facilities.

In addition, the transportation and circulation element of the adopted Shoreline management Program contains the following policy for transportation projects that undergo Shoreline review:

- Minimize visual and environmental impacts to adjacent shoreline and critical areas.

4.0 Affected environment

Summary of Existing Conditions- Landscape Character

The project area, including Index-Galena Road from Milepost 6.4 to Milepost 6.9 and its visually linked outlying areas, is endowed with a variety of visual resources. These visual resources include vast expanses of the forested river valley and forested mountain slopes, and visual backdrops of mountain peaks. These visual resources provide scenic vista opportunities for area visitors. The extent of these scenic vistas from Index-Galena Road is somewhat constrained by vegetation and topography that obscures more distant views in most of the project area.

The project area has a high level of scenic integrity because there are no evident discordant elements (such as visually unappealing roadway signs, poorly maintained buildings or litter) or deviation from the existing forested valley characteristics that are valued for its aesthetic appeal. The project area has not always had a high level of scenic integrity. Its present day appearances belies the fact that a large portion of the North Fork Skykomish River valley was extensively cleared for timber that supported both the mining and railroad industries of the early 20th century. The North Fork Skykomish River valley and the Trout Creek basin were denuded of forest cover to satisfy demand for lumber.

At the time of its development, the Mt. Baker Snoqualmie National Forest Plan (as amended) characterized much of the North Fork Skykomish River valley area as “moderately altered.” This visual condition was used to designate areas where visual quality changes were easily noticed by the average visitor and where changes were likely to attract attention, and disturbances were apparent. The plan expected that visual quality conditions would improve in the 10-50 year timeframe taken into consideration.
The project area lies in a very rural and remote portion of the lower North Fork Skykomish River valley. The closest town, Index, is located approximately 6 miles southwest of the project. Overhead utilities do not extend into the project area. The scenic beauty of the Cascade Mountains seen from this river valley draws thousands of recreational users to the area every year, with peak visitation occurring in the late summer months. Prior to the November 2006 river high flow event that damaged the roadway, the primary visitors included motorists traveling through the project area to gain access to upper valley campgrounds and trailheads, and river recreationists. Motorists and river recreationists are considered the major viewer groups potentially affected by the proposed project. There are no formally established and maintained trails or campgrounds in the project area.

When clear skies prevail, ridges and peaks of the Cascade Mountains are prominent from a couple of vantage points in the project area. For most of the project area, especially along the proposed realigned roadway alignment, these more distant background views are obscured by relatively dense forest cover that limits views to closer foreground viewpoints. Foreground views are those that extend up to one-quarter mile from the viewer. Densely vegetated steep topography that slopes upward from the valley floor to the south further limits views.

Middleground views are those that extend one-quarter mile to 3 miles, and background views are those that extend 3-5 miles from the observer. In most of the project area, the vegetative cover presents a visual environment that screens dominant focal points for the forest visitor. While most of the project area lacks background views with dominant focal points, opportunities for more expansive background views are available in the more open areas closer to the river’s mainstem channel where the most extensive roadway damage occurred between Milepost 6.7 and Milepost 6.9. The river’s avulsion that formed a new side channel created a new opening in the vegetation, and has enabled middleground views and background views that are otherwise absent in the project area. Consequently, it is at this location that the most scenic vistas of the valley and distant mountain peaks become available to viewers.

Cloudy conditions often obscure these more distant background views depending on the height of the cloud cover. When sky conditions allow for better viewing, snow-covered peaks and mountain slopes may be viewed, especially in the winter and spring months. Under these conditions, the river valley provides outstanding scenery, and prominent features of the valley’s landscape become strong focal points. Vegetation on the forested slopes is characterized by dense stands of dark green conifer trees on higher slopes and a lighter green mixed conifer and deciduous stands more common along the river’s riparian corridor closer to the river valley floor.
Index-Galena Road - U.S. Forest Service Visual Quality Standards and Guidelines

Visual Quality Objectives

The Mt. Baker Snoqualmie Forest Plan (MBSNF Plan) implements visual resource management by evaluating projects and other activities to determine consistency with visual quality objectives stated in the forest plan. The overall goal is to provide an attractive forest setting that emphasizes the natural appearance of areas seen from major roads and recreation sites. The plan identifies viewsheds and establishes criteria for determining consistency with the visual quality objectives. The plan defines viewsheds as the “seen” landscape visible to most Forest users from roads, trails, rivers, and recreation areas.

Most viewsheds are corridors, one-quarter to two miles wide. Viewsheds viewed from primary travel routes in a Primary Viewshed Corridor are evaluated to determine consistency with Sensitivity Level 1 Visual Quality Objectives, whereas viewsheds from secondary travel routes and use areas are Sensitivity Level 2. The MBSNF Plan designates the North Fork Skykomish River valley as a Primary Viewshed Corridor with Sensitivity Level 1 standards.

Visual quality objectives for Sensitivity Level 1 also apply to the project due to its location in the North Fork Skykomish River valley and the river’s status as a recommended Wild and Scenic Recreation River. This recommended status applies to the 12-mile long segment of the river that flows from Troublesome Creek to the river’s confluence with the South Fork Skykomish River downstream from Index. (More discussion of recommended Wild and Scenic requirements is included in the Land Use and Recreation Discipline Report). The applicable visual quality objectives from the MBSNF Plan include the following:

Partial Retention - pertains to middleground and background views in the viewshed. In these areas, human activity may be evident, but must remain subordinate to the characteristic landscape. Partial retention also applies in foreground views but modification may be used for necessary structural facilities.

At the time of the plan’s inventory of existing visual quality levels, Partial Retention areas included areas where changes in the landscape may be noticed by the average forest visitor but they do not attract attention. The natural appearance of the landscape still remains dominant, and changes appear to be minor disturbances. It was estimated that 24.5% of the forest exhibited this visual quality level at that time.

The inventory identifies Modification as areas in which changes in the landscape are easily noticed by the average forest visitor, and where human activity may dominate the characteristic landscape. However, human activity must also follow naturally established form, line, color and texture so that the human activity appears as a natural occurrence when viewed in foreground or middleground views. Under these conditions, changes appear to be disturbances but resemble natural patterns. It was estimated that 17.8% of
the forest exhibited this visual quality level at that time. The inventory also identified that the existing visual quality of Forest Road 63, also known as Index-Galena Road, was heavily altered. The plan identified that the expected visual condition of the North Fork Skykomish River valley would improve over time though achievement of visual quality objectives.

The MBSNF Plan identifies additional visual quality standards that are applied to designated scenic viewsheds. Views from The North Fork Skykomish River valley viewsheds are not managed as part of a designated scenic viewshed. The closest designated scenic viewshed is located on the US 2 Stevens Pass Highway. Another is located on the Mountain Loop Scenic Byway north of the project area.

**Visual Impact Assessment**

**Identifying Landscape Units**

Consistent with the FHWA visual impact methodology, the project area was divided into landscape units to facilitate characterization of the project area’s visual resources. Landscape units are defined as areas of distinct landscape character that form spatially enclosed units at ground level, and may be composed of different landscape types. For instance, along the proposed relocated roadway alignment, the forested steep slopes juxtapose the relatively flat river valley floor where the existing roadway is located. The landscape units are located in these two distinct areas, separated by elevation and with regard to relative position within the North Fork Skykomish River valley.

**Landscape Unit Inventory**

The project area was subdivided into seven landscape units based on specific vantage points and their relationship to viewers potentially affected by the proposed project. Because the Index-Galena MP 6.4-6.9 project would relocate and construct a replacement roadway that has no established roadway mileposts, this report will refer to the project’s “design stationing” when referring to a specific location along the relocated roadway alignment. The proposed roadway’s design stationing includes a series of reference points located at 100-foot intervals along the full extent of the alignment. These points would be typically referenced to a number such as 22+00 or 85+00. The 22+00 number refers to a location that would be the 22nd 100-feet interval along the alignment and the 85+00 location would be at a point that lies at the 85th 100-foot interval located along the alignment. You can see these stationing points in the map that is provided in Exhibit 1: Proposed Index-Galena Road Alignment. On the existing roadway, established milepost locations identify the approximate landscape unit boundaries. Landscape Units 1 through 7 are shown in Figure 2-Visual Quality Landscape Units) and include the following:

- *Landscape Unit-LU 1 Existing roadway MP 6.1-6.5*
- *Landscape Unit-LU 2 Existing Roadway MP 6.5-6.7*
- *Landscape Unit-LU 3 Existing Roadway MP 6.7-7.0*
- *Landscape Unit-LU 4 Station 10+00 to Station 20+00*
Landscape Unit-LU 5 Station 20+00 to Station 28+00
Landscape Unit-LU 6 Station 28+00 to Station 45+00
Landscape Unit-LU 7 Station 45+00 to Station 59+90

**Existing Damaged Roadway Landscape Units LU 1 -LU 3**

**Landscape Unit 1-Existing Roadway near Milepost 6.4-Milepost 6.5**

Landscape Unit 1 extends from the area at the project’s beginning near the existing roadway’s downstream washout at Milepost 6.4 to an area located upstream at approximately Milepost 6.5 mile where a remnant of damaged intact roadway is located in the stream channel. A visual connection links the viewer to a foreground area of intact undamaged and damaged roadway and river side channel flows through the damaged roadway. Portions of this area now have re-established stream channels where the roadway was washed out. The edges are framed by adjacent riparian vegetation on the valley floor toward the river and vegetation on the adjacent slopes on the landward side. When clear skies allow, the visual connection extends through openings in the vegetation beyond the unit’s physical on-ground area to areas more distant in the middleground that include the forested lower slopes of surrounding mountain slopes that enclose the valley.

The juxtaposition of intact roadway and damaged roadway can be seen in this landscape unit. As in all of the landscape units located in the existing roadway alignment, there are no utility lines or other unnatural elements other than the roadway itself. Roadside litter and illegal dumping has been a recurring issue in this area since the road was damaged. During the winter months after leaf fall, it is easier to see that this landscape unit is part of an extensive river valley floor. The views open up to reveal more of the valley. Mixed conifer and deciduous forest stands form distinct edges within this unit, between the existing roadway and the adjacent upslope areas and between the existing roadway and the main channel of the river. The vegetative cover and vertical separation provides visual separation from the upslope Landscape Units 4, 5, 6, and 7 that are located along the proposed relocated roadway alignment.

Ever since the 2006 event that damaged the roadway, a side channel has continually down cut into native alluvial cobble and gravel deposits that lie beneath the roadway surface. The stream current has re-established a streambed that has partly restored the river mainstem channel’s connectivity to the floodplain. Upstream from the Milepost 6.4 washout there is an island of intact asphalt roadway that is surrounded by flowing water. The asphalt continues to erode with each passing season. Since the 2006 event, subsequent stream branching at several locations such as this location has created additional side channels that have enabled salmon to migrate and spawn where previously there was no access. An approximate .25-mile long intact fragment of asphalt roadway forms the upstream boundary to this unit.

Viewer groups in Landscape Unit 1 include only recreation visitors to the project area. The side channel flows are not conducive for rafting and are not likely to attract many kayakers due to the debris in the channel that limits navigability and poses safety concerns. The area no longer includes motorists traveling up the river valley due to the extensive roadway damage and associated road closure. A potential future viewer group...
would include motorists using the proposed relocated roadway. They would be able to see glimpses of the former roadway corridor from the relocated road. The viewer position would vary from ground level for hikers down on the valley floor to slightly elevated for those walking on the adjacent slopes. Future motorists on the relocated road would be positioned above the valley floor.

**Landscape Unit-LU 2 Milepost 6.5-Milepost 6.7**

Landscape Unit 2 extends from the farthest downstream portion of intact undamaged roadway to the damaged cross-culvert that is located where the intact roadway asphalt ends at the Milepost 6.7 washout. Somewhat similar to Landscape Unit 1, mixed conifer and deciduous forest forms the distinct edges between the roadway and the upslope forested areas and the riparian forest that extends to the river’s main channel. What differs in LU 2 is that the river side channel lies further riverward from the damaged roadway and is not visually evident, except for the areas where the side channel has its inlet from the river’s main channel and where the channel flows close to the road at the downstream portion of the intact roadway near Milepost 6.5.

The upslope areas have a somewhat higher conifer forest percentage relative to Landscape Unit 1 while the floodplain areas are predominately deciduous with species such as black cottonwood, bigleaf maple, and red alder the most common. Understory shrubs are more common in this Landscape Unit, with salmonberry the predominate species. Extensive areas in the floodplain exhibit tree mortality, a result of flooding caused by the side channel migration and recent beaver activity. The extensive tree mortality has caused trees to defoliate and has opened up views to the north and northwest that provide middle ground views to ridges on the opposite side of the river. Leaf litter and downed trees cover the intact roadway as the lack of continued road maintenance lengthens since the 2006 washout.

A visual connection to a foreground area of intact asphalt roadway is framed by the adjacent riparian vegetation. The visual connection extends beyond the unit’s physical on-ground area to areas more distant in the middleground that include the forested lower slopes and higher slopes of surrounding forested ridges and mountains. These slopes provide a scenic backdrop to the foreground views. As in Landscape Unit 1, the vegetative cover and vertical separation provides visual separation from the upslope Landscape Unit 4 and Landscape Unit 5 areas that are located along the proposed relocated roadway alignment.

In contrast to Landscape Unit 1, the viewer is visually disconnected from the side channel and the river’s flows for approximately 500 feet in length until reaching the Landscape Unit 2 upstream boundary at Milepost 6.7. At Milepost 6.7 there is an abrupt transition to an area where views expand to reveal the river’s mainstem channel and upvalley background glimpses of mountain ridges and distant peaks further up the valley. This extensive opening in the vegetation was created by the river’s lateral migration and side channel forming flows in 2006.

Viewer groups in Landscape Unit 2 are the same as Landscape Unit 1 and include recreation visitors who hike in the project area. The area no longer includes motorists.
traveling up the river valley due to the extensive roadway damage. A potential future viewer group could include motorists using the proposed relocated roadway. It is expected that they would be able to see glimpses of the former roadway corridor from the relocated road. The viewer position would vary from ground level for hikers down on the valley floor hiking along the damaged road alignment to a position slightly elevated from the valley floor along the informal trail near the toe of the adjacent slopes. Future motorists on the relocated road would be positioned above the valley floor.

*Landscape Unit-LU 3 Milepost 6.7-Beyond Milepost 6.9*

Landscape Unit 3 includes the area that lies upstream from the Milepost 6.7 washout area to slightly beyond the Milepost 6.9 terminus of the washout. Viewers are strongly connected visually to the river at this location. It is at this location that viewers in the project area most fully experience the combination of river, the more expansive river valley, and surrounding mountain views. The river’s force is made evident by the jumbled sections of damaged roadway that remain in the river’s side channel and scattered on the adjacent shorelines. The river has deposited large woody debris near the side channel’s inlet and has formed a sandy beach at the upstream portion of the washout.

The upper boundary of landscape Unit 3 forms further upstream from the washout where the damaged roadway transitions to the intact undamaged roadway. A portion of the damaged roadway has been removed at this location by Snohomish County to restore more natural riparian river bank conditions, and includes a planting area established to restore a forest plant community where the roadway was previously located. The river’s mainstem channel flows parallel and adjacent to the existing roadway in Landscape Unit 3.

The openings in the forested vegetation created by the river channel’s migration connect viewers to the river, with the river’s turbulent flows often manifested as white water during high flow periods. The river’s widened valley becomes more visually prominent, and the rivers meanders and gravel bars present a dynamic view that interfaces with adjacent mountain slopes. Views to visually distinct mountain ridges and peaks are also prominent in background views that exhibit strong focal points. These views possess a greater sense of grandeur as contrasted with the limited views seen in the other landscape units along the river valley floor. The sense of enclosure that was provided by vegetation in Landscape Unit 1 and Landscape Unit 2 has been diminished and one is more able to discern the river’s incision in the valley relative to the surrounding mountains.

LU 3 transitions the viewer from the less open LU 1 and LU 2 areas further downstream and also transitions the viewer back to the more enclosed areas associated with the intact roadway that is located upstream from the Milepost 6.9 upper washout. Looking down valley from the sand beach area at Milepost 6.9, one sees beyond the forested and wood debris strewn areas in the foreground and middle ground. The views expand to seasonally snow-covered Snowslide Gulch and Ragged Ridge. The up valley view also expands to more distant peaks. Though the landform continuity is disrupted somewhat by the jumbled appearance of the existing damaged roadway and its modifications to the
topography, the mountain views are prominent, especially so on clear days when the mountains are more visible.

Viewer groups in Landscape Unit 3 are similar to those in Landscape Unit 1 and 2, recreation hikers, with the addition of river recreationists such as kayakers, raft boats, and those fishing in the river due to the ease of river access. Due to the opening in the vegetation created by the meandering river, this is the only location where river recreationists would be expected to see the proposed relocated roadway. The prominence of the new roadway would be somewhat reduced by the fact that river recreationists would be at river level and would not be situated to see the roadway very well. At present, the area receives occasional motorists traveling from up valley locations, primarily residents who have property upstream from the washout who have access to the area. A potential future viewer group would include motorists using the relocated roadway that would be able to see glimpses of the former roadway corridor from the relocated road. The viewer position would be from ground level for motorists and hikers and river recreationists down on the valley floor.

**Proposed Relocated Roadway Landscape Units LU 4-LU 7**

**Landscape Unit-LU 4 Station 10+00 to Station 20+00**

Landscape Unit 4 begins where the relocated roadway would shift south and upslope from the existing Index-Galena road alignment, downstream from the Milepost 6.4 washout. The relocated road would follow the existing gravel roadway alignment for Trout Creek Road (also designated as U.S. Forest Service Road # 6320) for its first 1,000 linear feet. This alignment on Trout Creek Road enables the relocated road to gain elevation from the floodplain and channel migration zone. Landscape Unit 4 ends near where Trout Creek Road switches back to go further up the Trout Creek drainage basin. The project proposes a new intersection to maintain connectivity to Trout Creek Road and the upper watershed area accessed by the road.

Views in LU 4 are primarily limited to foreground scenes of mixed conifer/deciduous forest stands on moderate to steep slopes adjacent to both Trout Creek Road and Index-Galena Road. The river’s side channel and Index-Galena Road are visible downslope and to the north through a narrow band of trees that separates Index-Galena Road from Trout Creek Road. The gravel roadway surface on Trout Creek Road is marred visually by recurring roadside illegal dumping and littering that detracts from the overall forested and riparian corridor environment.

Current viewer groups in Landscape Unit 4 include those who hike along the road to either gain access to the informal trail located in proximity to the proposed relocated roadway centerline or who hike further up the now closed Trout Creek Road. Future viewers would include motorists using the relocated roadway that would be able to see glimpses of the former roadway corridor from the relocated road. The viewer position would be from ground level for motorists, and hikers and river recreationists down on the valley floor would look up at the relocated roadway. Due to the side channel’s constricted flow through large woody debris, river recreationists such as kayakers and raft boats
would not likely be located below the roadway in this area. Substantial vegetative screening would block the view of the relocated roadway from the river’s main channel.

**Landscape Unit-LU 5 Station 20+00 to Station 28+00**

Landscape Unit 5 traverses forested slopes in the area that lies beyond the Trout Creek Road switchback near Station 20+00. This area is characterized by moderate slopes that become increasingly steeper as one proceeds up the valley along the relocated roadway alignment. Views are primarily limited to foreground scenes of mixed conifer/deciduous forest stands that cover moderate to steep slopes. As one enters the forest past Station 20+00, stumps, fallen trees colonized by moss, and shrubs and tree saplings are scattered in the understory. Sword ferns comprise the dominant understory plant. In early spring, patches of trillium, bleeding heart, and fringe cup can be seen amongst the ferns. A small seasonal stream flows down the slope but it is not visually prominent. Leaf litter and decomposed conifer needles and cones provide an organic duff layer that covers the forest floor. While glimpses of the river valley and the river side channel can be seen through the trees, their prominence is muted by the relatively thick forest cover that obscures more distant visual features. Viewers are not visually connected to the river and the river valley to the extent as experienced in the Landscape Units located on the river valley floor.

Current viewer groups in Landscape Unit 5 include residents hiking along the existing informal trails that have been established to gain upper valley access, and recreationists seeking access to upper valley destinations. The primary path used by hikers traverses the slopes with ups and downs, and is located in proximity to the proposed relocated roadway’s centerline in some areas, while in other areas the trail lies down slope from the proposed centerline. This informal trail would be disturbed by roadway construction roadway excavations and fills in several locations and its use would discontinue after the roadway is relocated due to its obliteration. Accordingly, it is expected that the future viewers in landscape Unit 5 would be primarily future roadway users. The viewer position would be from ground level from the proposed relocated roadway. Views of the roadway from adjacent river channel areas would not be prominent from most vantage points because of the separation provided by vegetation and topography. These viewers would be below the roadway looking up.

**Landscape Unit-LU 6 Station 28+00 to Station 44+00**

LU 6 includes the area that extends from Station 28+00 to Station 44+00. The character of this area is similar to Landscape Unit 5. Steep slopes with mixed conifer/deciduous forest cover characterizes the landform. While the understory vegetation is predominately swordfern, other species such as vine maple, piggy-back plant, bleeding heart, and devil’s club are common in some of the moist openings in the forest canopy. The Landscape Unit 6 upstream boundary lies near where the proposed relocated roadway would transition from the forested side slopes back down to the valley floor to match into the existing undamaged roadway upstream from the Milepost 6.9 washout.
Several small streams flow down the slopes in LU 6. Some of the streams maintain flow year round but most slow to a trickle during the late summer. Except for the stream near 29+50, the stream corridors are not visually prominent. The openings in the forest canopy that accompany the streams provide contrast to the overall character exhibited by the forested overstory/swordfern understory that predominates for the bulk of Landscape Unit 6. Exposed mineral soils and streambed materials provide evidence of the erosive power of flowing water. This influences the visual character of the environment by exposing cobbles and boulders. Large boulders and outcropping of bedrock can also be seen on the slopes in proximity to the proposed roadway alignment. The moss covered outcroppings provide dramatic foreground views within the deep forest environment.

In LU 6, more distant views are limited by the forest cover and steep topography. Occasional glimpses of the river valley can be seen through small openings, more so in the fall and winter months after leaves have fallen off the deciduous trees. Views of the side channel in the river valley below tend to become obscured the farther one moves up valley.

Viewer groups in Landscape Unit 6 include those hiking along the existing informal trail. As in LU 5, this trail tends to go up and down, and is located in proximity to the proposed relocated roadway centerline at some locations. This informal trail would be disturbed by roadway construction excavations and fills in several locations and its use would discontinue after the roadway is relocated. Accordingly, it is expected that the future viewers will be primarily future roadway users. The viewer position would be from ground level to the proposed relocated roadway, and views of the roadway would not be prominent from most vantage points because of the separation provided by vegetation and topography.

Landscape Unit-LU 7 Station 44+00 to Station 59+90

LU 7 extends from Station 44+00 to the roadway’s upstream terminus at 59+00. This area is located where the relocated roadway would transition from the upslope area down to a lower river terrace landward of the river valley floor. This area is characterized by relatively level ground and moderate slopes with mixed deciduous and conifer stands. The area in proximity to Station 54+00 includes an extensive seasonally inundated wetland vegetated primarily with shrubs and herbaceous plants and littered with woody debris. A seasonal stream flows through the wetland. Beaver activity is evident in the area and drainage from adjacent slopes promotes seasonal ponding. The ponding typically dries by late summer. Open areas occur where the depth of the seasonal ponding limits establishment of trees. While views are not expansive in LU 7, there are visual linkages to the river and the more open areas in Landscape Unit 3 along the existing roadway alignment that are enabled by glimpses through the vegetation openings to the now nearby river channel. Views to distant points are hindered by lack of topographic breaks and the dense understory shrubby vegetation of willows, salmonberry, and elderberry that transitions to conifer and deciduous trees in the adjacent upland areas.

Viewer groups in Landscape Unit 7 include those hiking along the existing informal trail to its juncture with the existing intact roadway upstream from the Milepost 6.9 washout.
The trail within LU 7 is mostly level and located in proximity to the proposed relocated roadway centerline. This informal trail would be removed by roadway construction fills or cuts in several locations and its use would discontinue after the roadway is relocated. Accordingly, it is expected that the future viewers would be primarily future roadway users and river recreationists using the planned river access point near the Milepost 6.9 washout. The viewer position would be from ground level to the proposed relocated roadway. Views of the roadway would not be prominent from most vantage points because of the separation provided by vegetation and topography.

**Landscape Unit Visual Quality Assessment**

Visual quality assessment scores are determined by assigning numerical scores ranging from 0 (non-existent) to 7 (very high) based on the visual characteristics evaluated (vividness, intactness, unity) and then dividing by a factor of three to obtain the overall visual quality score. The overall visual quality of the project area falls within the moderate to moderately high range. While some elements of visual quality approached the high range in the more open areas of LU 3, the combination of all elements were averaged according to the assessment methodology and were lowered by either lack of certain elements (water) or low-quality factors such as lack of distinctive features that would promote lower scores.

A summary discussion of the visual quality assessment for each landscape unit’s existing conditions is provided below. A summary of the complete scores is provided in a table in Appendix A.

**Existing Damaged Roadway Landscape Units LU 1 - LU 3**

**Landscape Unit 1**

Landscape Unit 1 provides moderate overall visual quality. The vividness element of Landscape Unit 1 is dominated by a strong vegetation component, provided by stands of conifer and deciduous. The horizontal outline formed by the trees creates a sense of enclosure and frame the limited foreground views up and down the river valley. LU 1 views do not extend toward more distant foothills and Cascade peaks. Flowing water provides the most distinct visual element and elevated what would otherwise be a low overall vividness assessment score. As a result, although this part of the project area provides generally pleasing views, it only provides a slightly greater than average vividness. Encroachment associated with the existing roadway diminishes the natural character and relative harmony of natural and manmade features and results in low levels
of intactness and unity. The limited ability to see distant views of foothills and Cascade peaks outside of the unit underscored that the visual quality in this unit is largely influenced by visual linkage to foreground features in the immediate area.

The Visual Quality of this landscape unit is moderate (From The Road VQ is 3.66), Of The Road VQ is 4.0).

**Landscape Unit 2**

Landscape Unit 2 provides a moderate overall visual quality. Landscape Unit 2 lacks a prominent water feature for most of its length and the presence of distinct human created features is prominent with the undamaged roadway. These elements contribute to a reduced vividness level that would have been otherwise higher due to the visual linkages to the river side channel and more distant background views located at the upstream edge of Landscape Unit 2. Vegetation is similar to Landscape Unit. There are extensive areas of dead trees on the river side of the existing roadway due to high water and extended inundation that accentuates the natural wild feel. A northward up-sloping topographic break from the river valley provides the distinct landform feature within the unit. The most dramatic vivid landform features are provided by background views to distant Cascade peaks that appear in the opening near the upper washout. Intactness is
moderately low and unity and vividness levels are moderate because this is the area where the roadway was not damaged as extensively. Except for the roadway and strong visual associated with damage debris near the washout, Landscape Unit 2 presents a natural environment quality relatively uncluttered by discordant visual elements.

The Visual Quality of this landscape unit is average. (From The Road VQ is 3.50), Of The Road VQ is 3.5).

Photo 2- Existing Index-Galena Road between Milepost 6.4 - Milepost 6.9 within Landscape Unit 2

Landscape Unit 2 lacks a prominent water feature for most of its length and the presence of distinct human created features is prominent with the undamaged roadway. These elements contribute to a reduced vividness level that would have been otherwise higher due to the visual linkages to the river side channel and more distant background views located at the upstream edge of Landscape Unit 2. The existing damaged roadway diminishes the natural character and relative harmony of natural and manmade features.

Landscape Unit 3

Landscape Unit 3 provides slightly greater than average overall visual quality attributed to dramatic background views toward distant Cascade peaks and panoramic views up and down the valley that are afforded by openings in the vegetation. This results in high vividness levels for landform. Elevated vividness level also result from the strong visual linkage to the river’s mainstem channel. Intactness scores are moderate due to proximity to the existing undamaged roadway upstream from the Milepost 6.7 and 6.9 washout and views of the damaged debris that are seen downstream in Landscape Unit 2. However, these discordant elements are somewhat diminished by the natural landform and strong visual linkages to the river valley and more distant mountain peaks and ridges. Despite
the encroachment of the intact roadway unity levels are slightly greater than moderate. Unity in this area is slightly greater than moderate due to the relatively pleasing arrangement of potentially but minimal discordant elements. Viewers see a sequence that diminishes human made features in the foreground, while openings transition the viewer to a middleground landscape of the river valley framed by forested mountain slopes. This view culminates with background glimpses toward distant forested and rocky ridges and Cascade peaks.

The Visual Quality of this landscape unit is slightly above moderate. From The Road VQ and Of The Road VQ is 4.08).

Photo 3 - Existing Index-Galena Road near Milepost 6.9 within Landscape Unit 3.

Landscape Unit 3 provides slightly greater than average overall visual quality attributed to dramatic background views toward distant Cascade peaks and panoramic views up and down the valley that are afforded by openings in the vegetation. This results in high vividness levels for landform. Elevated vividness levels also result from the strong visual linkage to the river’s mainstem channel. Intactness scores are moderate due to proximity to the existing damaged and undamaged roadway upstream from the Milepost 6.7 and 6.9 washout.

**Proposed Relocated Roadway Landscape Units LU 4-LU 7**

**Landscape Unit 4**

Landscape Unit 4 provides moderate overall visual quality, attributed primarily to the existing gravel road and its roadside character which has been adversely affected by litter and illegal dumping since the 2006 roadway washout of Index-Galena Road. There are
limited views of the river side channel downslope from the gravel road, contributing to moderate vividness levels for landform. Intactness and unity scores are moderate due to the gravel road and its proximity to the existing undamaged roadway near Milepost 6.4. These discordant elements are somewhat diminished by the natural landform upslope from the gravel roadway and moderate visual linkages to the river valley. More distant mountain peaks and ridges are not visually evident. The encroachment of the roadway keeps unity levels below average. Unity in this area is somewhat diminished by these discordant elements where views are dominated by a sequence composed of manmade features in the foreground. The Visual Quality of this landscape unit is below moderate, VQ is 2.66 Of The Road and 3 From The Road is 3.0).

Landscape Unit 5

Landscape Unit 5 traverses a northward facing slope elevated above the river valley floor. The unit provides average overall high visual quality attributed to high intactness and unity scores that compensate for low vividness totals due to the lack of dramatic scenery that contributes to low vividness landform levels. The unit is visually separated from the river valley by relatively dense forest vegetation that limits views to foreground features. The lack of prominent water features contributes to a low vividness score. There are no encroachments in this area contributing to high intactness levels, and unity is also
relatively high due to the harmonious relationship between this landform area and its features. The Visual Quality of this landscape unit is moderately high. Of The Road is 5.58 and 5.66 From The Road.

Photo 5 - Proposed Relocated Index-Galena Road near Station 21+50 within Landscape Unit 5

Landscape Unit 5 provides average overall high visual quality attributed to high intactness and unity scores that compensate for low vividness totals due to the lack of dramatic scenery that contributes to low vividness landform levels.

Landscape Unit 6

Landscape Unit 6 is similar to LU 5 in that it traverses a northward facing slope elevated above the river valley floor. LU 6 extends for a longer length and provides the transition from the upper slopes to the toe of slope and river terrace where LU 7 is located. The unit is visually separated from the river valley by relatively dense forest vegetation that limits views to foreground features. Landscape Unit 6 tends to have steeper slopes than those encountered in Landscape Unit 5. The more rugged landscape of this unit provides a sense of enclosure that is reinforced by distinct edges provided by the river valley floor below and increasingly steeper slopes and rock outcroppings further upslope. LU 6 provides more than moderate overall visual quality and similar to Landscape Unit 5 is distinguished by lack of dramatic background views. Moderate vividness levels are countered by high intactness and unity scores, and occasional glimpses of the North Fork Skykomish valley through vegetation openings during the winter months when deciduous trees are without foliage that obscures more distant views during the spring and summer months.
Middle ground features are not prominent due to a lack of broad expanses that would provide more views. The side slope streams are not a visually dominant water feature in Landscape Unit 6 except for the stream near 29+50. A lack of encroachment helps to maintain high intactness. Unity is also high because of the harmonious relationship between the landform elements.

The Visual Quality of this landscape unit is moderately high. VQ is 5.75 Of The Road and 5.75 From the road.

Photo 6- Proposed Relocated Index-Galena Road near Station 29+24 within Landscape Unit 6

Landscape Unit 6 provides more than moderate overall visual quality and similar to Landscape Unit 5 is distinguished by a lack of dramatic background views. Moderate vividness levels are countered by high intactness and unity scores, and occasional glimpses of the North Fork Skykomish valley through vegetation openings.
Photo 7- Proposed Relocated Index-Galena Road near Station 34+57 within Landscape Unit 6
This additional view from Landscape Unit 6 provides a view of the proposed staked centerline (wood stakes with pink ribbon flagging). This view also illustrates moderate vividness levels that are countered by high intactness and unity scores. A glimpse of the North Fork Skykomish River valley can be seen through vegetation openings.

Landscape Unit 7

Landscape Unit 7 lies along the toe of slope, partially on a river terrace, and transitions from the slope traverse of Landscape Unit 5 and Landscape Unit 6 to descend to the river valley floor where the relocated roadway would match into the existing roadway beyond the Milepost 6.9 washout. Visual cues relating to relative position are provided by the increasingly moderate to relatively level ground one encounters as one proceeds up the proposed relocated roadway alignment. This unit is densely vegetated with a shrub understory in some areas. A seasonally inundated wetland near Station 54+00 is located where the proposed alignment approaches the Milepost 6.9 washout. The unit provides moderate overall visual quality due to a low level of vividness. There are moderately distinct landforms, including the wetland water feature. The landscape unit is relatively free of encroachment despite its proximity to the existing roadway, with a moderately high intactness and unity levels. The overall visual quality is somewhat lowered by the relatively low vividness.

The Visual Quality of this landscape unit is greater than moderate VQ is 5.08 Of The Road and 5.08 From The Road.
5.0 Impacts of the Proposed Action

Construction Impacts

Roadway construction activities would reduce visual quality temporarily by introducing heavy equipment activity, delivery and storage of construction materials, locating staging areas that will store stockpiles of imported storage materials and excavated spoils on pavement areas located in the existing roadway alignment. The changes in views of the project area would be one of cluttered discordant elements that are in distinct contrast to the surrounding forested environment. These views would be seen in proximity of the proposed relocated roadway and existing damaged roadway. There are no residential properties or recreation facilities located in proximity to the existing or relocated roadway alignment. Consequently, visual impacts will be experienced by relatively few viewers.

Safety and directional signage would also be a visible element. Construction for the project is expected to require approximately two years but could potentially extend to three years depending on construction timing constraints. While most construction would take place during normal business hours, some work could potentially be scheduled to
occur after 6:00 p.m. or weekdays or occasionally on weekends. Potential viewer groups in the project area and vicinity would not be accustomed to seeing construction activities and equipment; their sensitivity to such impacts would be moderate.

The locations that are most sensitive to visual impacts during construction would include the following:

- Areas that are located and able to be seen from the river –this area is located near the Milepost 6.9 washout in Landscape Unit 3
- Private property currently used for commercial river raft access located near Trout Creek near Milepost 6.4 in Landscape Unit 1

Other dominant construction-related activities that would reduce visual quality temporarily would include vegetation clearing and ongoing modification of the topography to create fill slopes and excavated cut slopes that would create unsightly areas of exposed bare soils. Potential opportunities for increased particulates resulting from clearing, grading and grubbing during dry periods could decrease visibility and visual quality in localized areas. Additional construction-related elements that would present changes in views would be related to traffic control signage and lighting needed to maintain safety for motorists and construction crews. Localized glare and visual clutter would be associated with the temporary signage, flaggers, and lighting.

**Permanent Impacts**

The visual simulations shown in Sim Photos A- Sim Photos F simulate the before and after visual images associated with the project at several locations along the alignment. The simulation photos can be found beginning on Page 43.

**Summary**

Permanent impacts that would result from the proposed project include permanent changes in views as a result of construction, potential glare and light impacts, and visual impacts resulting from topography and grade changes, removal of vegetation and resulting reduction of vegetative screening. In general, cut slopes would be located on the upslope side of the roadway (toward the south) and fill slopes would be located on the down slope side (to the north).

Impacts associated with establishing a roadway prism would primarily affect only the four landscape units located along the proposed relocated roadway alignment, while overall impacts would potentially affect all seven landscape units in the project area. Positive permanent impacts are expected where asphalt removal and restoration is proposed in the existing roadway alignment.

New retaining walls, reinforced soil slopes, mechanical stabilized earth walls (MSE walls), and rock fill slopes to support the newly established roadway prism would increase human-made elements in sections of Landscape Units 4, 5, 6 and 7. The visual impacts to Landscape Unit 4 would be less because the relocated roadway would be established where there is an existing gravel roadway.
Fourteen culverts and one bridge are proposed that will introduce additional hard features associated with the roadway prism that would be established.

**Permanent Changes in Light and Glare**

**Nighttime Light**

No nighttime lights are proposed for the project.

**Daytime and Nighttime Glare**

No reflective surfaces are proposed. Project implementation would require that existing vegetation be removed along much of the proposed right of way, increasing the impact of glare from headlights at night and roadway glare on sunny days. Existing vegetation shades the area adjacent to the proposed roadway in certain sections, and removal of this vegetation in conjunction with an increased surface area of the roadway would increase the amount of reflective glare from the roadway surface. No residences or other sensitive viewers would be affected

**Retaining Walls**

Retaining walls and other support structures would be constructed as part of the project’s earthwork. These structures have large surfaces that could result in increased reflective glare from sunlight during the day and from traffic headlights at night if large flat surfaces with high sheen are used.

The proposed retaining walls and other structures and their locations are identified below:

- Station 14+50 - Station 17+05 Reinforced Soil Slope (LU 4)
- Station 21+65 - Station 28+50 Reinforced Soil Slope (LU 5)
- Station 23+00 - Station 28+30 Reinforced Soil Slope (LU 5)
- Station 30+00 - Station 35+00 Reinforced Soil Slope (6) (down slope side)
- Station 42+75 - Station 44+75 Soldier Pile Wall upslope cut side (LU 6)
- Station 45+20 - Station 46+25 Soldier Pile Wall (LU 7) (up slope side)
- Station 49+80 - Station 52+55 Soldier Pile (LU 7) (upslope side)
- Station 52+55 - Station 54+12 Structural Earth Wall- MSE (LU 7)
- Station 55+93 - Station 56+50 Structural Earth Wall- MSE (LU 7)

**Culverts and Bridges**

The project proposes 14 culverts and one bridge. It is noted below where the culverts are located at a stream crossing rather than for providing drainage conveyance. They are proposed at the following locations:

- Culvert 1- Station 13+28
- Culvert 2- Station 15+87
- Culvert 3-Station 17+25
- Culvert 4-Station 19+70 (stream)
- Culvert 5-Station 26+57 (stream)
- Culvert 6-Station 28+98 Box Culvert Vented Ford Crossing (stream)
- Culvert 7-Station 31+61
- Culvert 8-Station 33+61 (stream)
- Culvert 9-Station 35+90 (stream)
- Culvert 10-Station 44+84 (stream)
- Culvert 11-Station 46+39 (stream)
- Culvert 12-Station 47+25 (stream)
- Culvert 13-Station 50+20
- Culvert 14-Station 51+20
- Bridge – Station 54+10-55+90 (stream)

**Permanent Visual Changes Resulting from Vegetation Removal**

Along the proposed relocated roadway corridor, the existing topography and grades would be modified to accommodate roadway construction. Existing vegetation along the proposed right of way would be removed throughout the project area within the planned 22-foot wide roadway prism and adjacent areas to accommodate sideslope cut and fill embankments, guardrails, and retaining walls/reinforced slopes where required.

Prominent clearing would occur in the forested areas located in Landscape Units 4-7 where the corridor is densely vegetated. Removing existing trees and vegetation along the corridor would change the current visual character of the entire corridor.

The project would remove asphalt and concrete from the existing damaged roadway and from the river side channel. Asphalt removal would be followed by placing topsoil and mulch in the areas where the extensive intact asphalt roadway is located outside of the channel. This area would be planted with native species and restored to enable the development of more natural riparian area characteristics over a time period of greater than 10 years. Restoration is expected to increase visual quality by restoring intactness that would result in greater unity and vividness.

Vegetation in the proposed right-of-way easement for the roadway would provide an attractive and natural visual barrier between the existing roadway and the proposed roadway alignment. This vegetation would be present throughout the project length under post-project conditions except where the roadway would be located in close proximity to the damaged roadway and clearing is required to accommodate construction. Future drivers would be introduced to a new alignment that passes through the remnants of the existing vegetation and will see exposed views of the restored river side channel and the restored planted area where openings occur.

The proposed project would alter the existing moderately closed canopy forested character of areas traversed by the roadway by introducing a new constructed linear feature. This would reduce visual quality in the landscape units traversed by the relocated roadway. However, no objects of outstanding scenic resource value would be eliminated.
or significantly impaired by the project, nor is it expected that the relocated roadway would be visually prominent outside of the project area.

In all cases, the more substantial impacts are associated with potential views of the proposed road rather than views from the road. Establishing the new roadway in a largely undeveloped linear corridor would by its very nature increase the level of encroachment. Intactness is reduced by encroachment that disrupts the established visual pattern formed by topography, vegetation, and other features. Placing extended roadway fill and excavating extended cut segment lengths to accommodate the desired roadway grade would reduce unity through landform modifications that disrupt harmonious relationships between the project area’s various visual quality elements.

**Landscape Unit Impact**

While the project would affect views from the road, reducing some elements of visual quality, such as vegetation, that contribute to intactness, to a great extent vividness would be enhanced by opening more expansive views. Opening up vistas would reveal views of middle ground and background features of mountains and ridges that are otherwise now obscured. A more in-depth discussion of impacts specific to individual landscape units are described below. **Table 1: Visual Quality Ratings With and Without Proposed Project** in Appendix A provides a tabulated summary of the visual quality assessment scores. The tabulated summary shows the before project/existing conditions and post project impacts associated with the project, including the visual quality improvements that result from mitigation.

The numerical score results address impacts associated primarily with views *from the road* because these are the impacts that would be most directly experienced by recreation users and motorists in the future, the main viewers in the project area. Views “from the road” for this project’s assessment describes the visual quality that viewers see as they pass through each Landscape Unit. The “from the road” approach is intended to focus the visual quality assessment, and avoids duplication of effort to separate out additional assessments associated with views “of the road” that are not as important to this assessment. The absence of substantial viewers that would be looking at either the existing road or the relocated road from points outside of their respective units would be few. To the extent that visual quality impacts would be potentially seen, they are described in the text.

The existing road, which comprises Landscape Units 1-3, would be removed after the project is completed. Visual quality would be improved in these areas when the roadway is removed and the area restored to natural riparian conditions. There would be no views “of the road” after the project is completed. Conversely, there is no existing road where Landscape Units 4-7 are located so there are no views “of the road” prior to the project. Visual quality would be impacted adversely with the relocated road being established within these landscape units. As reflected in the scores, the adverse visual quality effects associated with the relocated roadway would be less at the beginning and end of the project’s terminus points because of proximity to already altered landscapes. Visual quality effects would be greatest where the roadway would traverse forested slopes that
are relatively pristine. *(See Sim Photos A-F starting on Page 42 for before and after photo simulations of several locations along the existing damaged roadway alignment and the proposed relocated roadway alignment. For GIS generated oblique aerial simulation, refer to Appendix A for the following: Figure 3: GIS Visual Simulation Perspective 1: Looking Upstream from Trout Creek Bridge Near Milepost 6.4 washout; and Figure 4: GIS Visual Simulation Perspective 2: Looking Downstream from near Milepost 6.9 washout.)*

**Landscape Unit 1**

| The overall vividness, intactness, and unity of this unit would be increased by the proposed project. |

The proposed project would alter the existing visual character of this unit in a positive way. The existing roadway, including asphalt and culverts, would be removed and the area restored to natural riparian conditions. Clearing and grading associated with constructing a linear roadway corridor upslope from the existing alignment would be seen through openings in the second growth mixed conifer deciduous forest located south of the areas to be restored. *(See Sim Photos A- Before and After Simulation Near Milepost 6.4 lower washout Landscape Unit 1)*

After project implementation, motorists on the new roadway would view the recently restored riparian area and the river side channel. The new roadway would be intermittently screened from recreation users that would potentially continue to visit the area after roadway construction was completed.

Visual quality improvement for recreation users in Landscape Unit 1 would result principally from removing the roadway encroachment that reduces intactness and decreases unity for their views of the surrounding area. In the long term it is expected that restoration planting and natural plant recruitment from adjacent forested areas would screen the relocated roadway.

It is expected that increases in vividness would be associated with asphalt removal due to the more pristine river channel conditions and adjacent riparian corridor that would result from asphalt removal. It is expected that views of the relocated roadway would not deter from the visual quality improvements.

It is expected that views of the restored area would be pleasing because removing the existing roadway would provide pleasing foreground and middleview scenes that would complement views of mountains and the river valley that would potentially be more visible from the relocated roadway.
Landscape Unit 2

The vividness, intactness, and unity of this unit would be increased by the proposed project.

Similar to LU 1, this unit’s visual quality impacts would be associated with removing the extensive area of intact asphalt that was not damaged by the 2006 damage event and excavation for the buried rock revetment. In addition to asphalt, concrete material such as Jersey barriers and culverts that were damaged by the 2006 damage event would also be removed. Vegetation clearing would not occur in this area but clearing associated with the proposed relocated roadway would be visible, at locations near the upstream end of LU 2. This would potentially affect recreation viewers who would potentially visit the area after the relocated roadway is completed. Existing native vegetation would help to screen the relocated roadway. After construction, travelers on the relocated roadway would view the restored riparian area in LU 2. (See Sim Photos B - Before and After Simulation between Milepost 6.4-6.9 washouts Landscape Unit 2.)

Visual quality would increase principally from reduced encroachment associated with the existing roadway that presently reduces intactness and unity. The asphalt removal and restoration would enhance visual quality seen by recreation viewers who would continue to visit the area after the roadway is completed. Increases in vividness would be associated with vegetation plantings that come after asphalt removal. Clearing and construction on the forested slopes would be seen from LU 2. It is expected that the relocated roadway would not substantially affect the visual quality improvements that would occur in LU 2. In the long term it is expected that restoration planting and natural plant recruitment from adjacent forested areas would screen the relocated roadway.

Landscape Unit 3

The overall vividness, intactness, and unity of this unit would be increased by the proposed project.

Vegetation clearing would not occur in this area, but clearing associated with the proposed relocated roadway would be in close proximity and would be visible in the areas adjacent to LU 3 where the relocated road transitions down to lower terrace areas to approach the existing undamaged road upstream from Milepost 6.9. Proposed measures to maintain and improve river access are expected to slightly improve visual quality as vehicular traffic is reduced from historic levels. The existing signs of the damaged roadway that are visually apparent from Landscape Unit 3 would be removed. Restoration plantings at Milepost 6.9 would become more fully established in the coming years. These changes would potentially affect recreation viewers who would visit the area for river access after the relocated roadway is completed. Existing native vegetation would help to screen the relocated roadway so that it blends into the surrounding environment. After construction, travelers on the relocated roadway would view the restored riparian area in LU 3. (See Sim Photos C - Before and After Simulation near Milepost 6.7- 6.9 washouts Landscape Unit 3.)
Visual quality would increase principally from reduced encroachment associated with the existing damaged roadway that presently reduces intactness and unity. The area in proximity to Milepost 6.9 would be planted and reconfigured to provide limited parking and an unpaved pedestrian path would be installed so that recreationists can take their kayaks and rafts back and forth from the river. Current panoramic views of the river valley and distant mountain peaks and forested ridgelines would be maintained and left undisturbed. Increases in vividness would be associated with vegetation plantings that mature with time.

There would be no extensive fills and cuts in this area where the relocated road matches into the existing roadway. Intactness and unity impacts would be minor, with somewhat lesser impacts to vividness. The roadways would match into each other at existing grade, which would moderately alter foreground views while middleground and background views that are the most prominent in this location would not be adversely affected. Unity would only be minimally impacted. The roadway construction would not obscure the natural river valley landform in this area.

Landscape Unit 4

The overall vividness, intactness, and unity of this unit would be minimally decreased by the proposed project. Proposed mitigation includes design elements that would reduce potential glare, and soften the visual appearance of the hard features of the roadway that include the roadway embankment fills, guardrails, and bridge structure. The use of earth tone pigments and textural surfacing treatments would enable the completed project to blend in with the background forest environment. These measures are discussed further in the mitigation section of the report.

The relocated roadway would traverse moderate slope areas in the alignment currently occupied by Trout Creek Road, an existing gravel road. Conifer and deciduous trees on both sides of the road would be cleared, and grading would modify the slopes to accommodate the relocated roadway. An established linear corridor would be made wider with excavation cuts occurring on the upper slopes and fills on the down slope area.

Clearing impacts would occur south and upslope from recreation viewers on the river valley floor in LU 1 area. These would include recreationists who would visit the area after the roadway is completed and white water river recreationists at a nearby private property location where commercial whitewater trips gain access to the river. The prominence of the relocated roadway to recreation viewers from the river valley floor would vary by location. Its visual prominence would be somewhat diminished by the fact that Index-Galena Road has long provided roadway access to the area and is not an entirely new alignment in this location as it would be in other locations along the alignment. Some areas would be screened effectively by vegetation and grade separation while other areas closer to the beginning of the relocated road would be less effectively screened. The relocated roadway would not be seen from the river’s mainstem channel where whitewater boating and other recreation activities would occur.
Though partially screened from future recreation viewers, the relocated roadway would impose a moderate level of a visual encroachment. Extensive encroachment and unity decreases would be less apparent in views from the roadway for roadway users due to the minor cuts and fills that would be associated with modifying an existing gravel road. Modifying the existing gravel road and adjacent area would disrupt the natural landform to a lesser extent than the modifications that would occur at other locations along the relocated roadway alignment.

**Landscape Unit 5**

The overall vividness, intactness, and unity of this unit would be decreased by the proposed project. Adverse effects would be reduced by mitigation. Proposed mitigation includes design elements that would reduce potential glare, and soften the visual appearance of the hard features of the roadway that include the roadway embankment fills, guardrails, and other features. The use of earth tone pigments and textural surfacing treatments would enable the completed project to blend in with the background forest environment. These measures are discussed further in the mitigation section of the report.

The relocated roadway would traverse moderate to steep slope areas. Conifer and deciduous trees would be cleared to establish a new linear corridor with alternating excavation cuts and fills to accommodate the roadway construction. Clearing impacts would occur south and upslope from potential recreation viewers that would potentially continue using the river valley floor area after construction is completed. The prominence of the new roadway to viewers from the river valley floor would vary by location. Viewers of the road would include recreation users that may continue to use the area near the river after roadway construction is completed. Most areas are expected to be effectively screened by grade separation and existing vegetation, and would not be seen from the river mainstem channel where the most sensitive viewers would be located. *(See Sim Photos D - Before and After Visual Simulation at Station 21+50 Landscape Unit 5)*

The roadway would result in a substantial visual encroachment. The visual impacts associated with clearing and grading would not be readily apparent from a great distance, and would be limited to foreground and middleground views in the project area but would not be evident to viewers outside of the project area. Roadway excavation cuts would be as deep as 20 feet and fills would be up to 20 feet or greater.

Retaining walls and other support structures would create large surface areas that could potentially result in increased reflective glare from sunlight during the day. It is not expected that wall structures would present a significant source of glare given that the roadway would be screened from viewers along the river’s main channel.

Extensive encroachment and unity decreases would be apparent in views from the roadway for roadway users due to the extensive cuts and fills that would disrupt the natural landform. Encroachment would be made more apparent by retaining walls and
other supporting features that would provide roadway support and slope stability. The support structures help to reduce the project footprint that would be substantially greater if the design used conventional cut slopes and fill slopes throughout the length of the project. Views would be opened up to the north, northeast, and east where openings would enable more expansive views of the river valley and mountain ridges and peaks.

Landscape Unit 6

The vividness, intactness, and unity of this unit would be decreased by the proposed project, with adverse effects minimized by mitigation. Proposed mitigation includes design elements that would reduce potential glare, and soften the visual appearance of the hard features of the roadway that include the roadway embankment fills, guardrails, and other features. The use of earth tone pigments and textural surfacing treatments would enable the completed project to blend in with the background forest environment. These measures are discussed further in the mitigation section of the report.

Similar to Landscape Unit 5, proposed forest clearing and roadway construction in LU 6 would decrease visual quality. (See Sim Photos E - Before and After Visual Simulation at Station 30+88 Landscape Unit 6)

After roadway opening, travelers on the relocated road would view the infrastructure of the new roadway and see pleasant middleground and background views toward the river valley. Vegetative screening would shield the relocated roadway from potential recreation users located downslope from the roadway corridor. Foreground views from the road would see reduce intactness and unity levels resulting from the extensive modification of the moderate to steep slope topography within the right-of-way easement to accommodate roadway construction. Vividness would be reduced to a lesser extent because the existing closed forest enclosure has moderate vividness. Roadway construction would introduce a hard linear element into the sloping landscape, altering intact forested vegetative communities and intact natural aquatic resources. Foreground views available to future roadway users would be most affected, whereas newly available middleground and background views to the river valley and mountain slopes and peaks would increase vividness. Recreation users, ranging in distances from approximately 100 feet to 200 feet away, would see these visual quality impacts. It is not expected that the visual changes would be visible to recreation users on the mainstem river channel.

Retaining walls and other support structures would create large surface areas that could potentially result in increased reflective glare from sunlight during the day. It is not expected that wall structures would present a significant source of glare given that the roadway would be screened from viewers along the river’s main channel.
Landscape Unit 7

The vividness, intactness, and unity of this unit would be decreased by the proposed project, with adverse effects minimized by mitigation. Proposed mitigation includes design elements that would reduce potential glare, and soften the visual appearance of the hard features of the roadway that include the roadway embankment fills, guardrails, and bridge structure. The use of earth tone pigments and textural surfacing treatments would enable the completed project to blend in with the background forest environment. These measures are discussed further in the mitigation section of the report.

Proposed project ground modifications and vegetation clearing in LU 7 would reduce intactness and unity levels. Vividness would be reduced to a lesser extent than in other areas of the project because ground modifications and clearing would not be as extensive in this portion of the project. Only foreground views would be adversely affected. The primary impacts would be focused where the relocated roadway crosses the stream/wetland area as it approaches the existing undamaged Index-Galena Road upstream from the Milepost 6.9 washout. A bridge is proposed that would avoid project footprint fill impacts to the wetland and stream. Sensitive viewers would include recreation users who would be using the nearby area located near the Milepost 6.9 washout for river access. This area in proximity to the project’s eastern terminus provides the transition for matching into the existing roadway. This portion of the project would have minimal overall visual quality reduction due to its overall average existing visual quality level. (See Sim Photos F - Before and After Visual Simulation at Station 30+88 Landscape Unit 7)

The most apparent visual quality changes apparent to recreation users would be associated with the relocated roadway matching into the existing roadway. The relocated roadway would be located farther from the river relative to the existing roadway alignment. The roadway is expected to blend back into its surroundings once roadside areas have had an opportunity for trees and shrubs to mature. It is not expected that roadway users would be sensitive to these visual quality changes given that they would be passing quickly through the area.
Sim Photos A - Before and After Simulation Near Milepost 6.4 lower washout *Landscape Unit 1*

This simulation shows how the project’s proposed removal of asphalt at the lower washout could potentially modify the existing landform and remove the existing roadway encroachment. It is expected that this would improve intactness and unity, resulting in increased visual quality. The river’s side channel flows would continually transport streambed cobbles and gravels and the appearance would change frequently.
Sim Photos B - Before and After Simulation between Milepost 6.4-6.9 washouts Landscape Unit 2
This simulation shows how the project’s proposed removal of asphalt islands could potentially modify the existing landform and remove the existing roadway encroachment. It is expected that this would improve intactness and unity, resulting in increased visual quality. The river’s side channel flows would continually transport streambed cobbles and gravels and the appearance would change frequently.
Sim Photos C Before and After Simulation near Milepost 6.7- 6.9 washout Landscape Unit 3
This simulation shows how the project's proposed removal of asphalt and concrete debris could potentially modify the existing landform and remove the existing roadway encroachment. It is expected that this would improve intactness and unity, resulting in increased visual quality in the area of the project with the highest visual quality. The river's side channel flows would continually transport streambed cobbles and gravels and the appearance would change frequently.
Sim Photos D - Before and After Visual Simulation at Station 21+50 Landscape Unit 5
This simulation shows how the proposed design’s extensive cut through Landscape Unit 5 would modify the existing landform, affecting intactness and unity, and resulting in reduced visual quality. Guardrail would be placed on the left side of the alignment where required. The after view is what would be expected after vegetation has become re-established over time.
Sim Photos E - Before and After Visual Simulation at Station 30+88 Landscape Unit 6
This simulation shows how the proposed design’s extensive cut through Landscape Unit 5 would modify the existing landform, affecting intactness and unity, and resulting in reduced visual quality. Guardrail would be placed on the left side of the alignment in this area and a rock fill slope would extend downslope. This simulation shows the standard galvanized guardrail. Compare to the brown guardrail that is proposed as shown in Sim Photos F for comparison.
Sim Photos F - Before and After Visual Simulation at Station 54+20 Landscape Unit 7

This simulation shows how the wetland/stream would be affected by the proposed bridge crossing. A steel girder bridge would span the wetland. The bridge crossing would modify the existing landform, affecting intactness and unity, and resulting in reduced visual quality. This simulation uses the Trout Creek Bridge crossing to help understand the potential visual quality impacts. The guard rail has been shown in the rust brown color that would be used for all project guardrails. A different type of bridge rail would be used for this bridge crossing. See memo in Appendix for more bridge related visual quality information.
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.

### 6.0 Mitigation

The project would consider several measures to reduce visual quality impacts associated with construction and operation of the relocated roadway.

**U.S. Forest Service Visual Quality Objectives**

Coordination of visual elements, such as signing, guardrails, bridge color, and retaining wall textures would be planned for the roadway corridor in coordination with the U.S. Forest Service (USFS) and would be included in the final design to ensure consistency with applicable USFS standards and guidelines. Implementation of these measures would reduce adverse impacts to less than substantial levels. The specific design elements and applicable measures are identified under the Permanent Impact Mitigation section below. Overall project elements that promote consistency with MBSNF Plan visual quality objectives for Partial Retention within the Recommended River Recreation River Management Area (MA) 5A include: relocating the road out and further away from the recommended Recreation River, removing the damaged roadway sections from the recommended Recreation River, restoring the damaged roadway corridor with native plantings, reducing the project footprint as much as practicable with appropriate design standards, and employing visual elements as part of the project design that help the roadway to blend into the forest environment. Project related design elements such as footprint reduction as achieved by low volume roadway design standards, and the use of visual elements and native plantings as described above, also promote consistency with
the Maximum Modification visual quality objectives associated with the portion of the project area allocated for Timber Management MA 17 in the MBSNF Plan.

**Reducing Project Footprint**

As part of the design process, the project has undertaken measures to reduce visual quality impacts. The use of low volume roadway design standards in coordination with evaluating alignment shifts and the use of retaining walls, reinforced soils slopes and MSE walls has reduced the project’s roadway permanent footprint from 9.5 acres estimated at the time of the 30% design report to approximately 3.3 acres at the 60% design stage. This reduces permanent vegetation clearing impacts which in turns reduces adverse effects associated with clearing that reduce the elements of overall visual quality such as vividness, intactness, and unity.

**Temporary Impact Mitigation During Construction**

Visual quality reduction impacts associated with staging areas would be minimized by locating these areas away from visually sensitive areas to the extent practicable, and would be based on the availability of land areas that could be used for staging. The project proposes to use existing Index-Galena Road pavement areas in proximity to the project for staging areas.

**Limit Construction to Daylight Hours**

Construction activities would be limited to daylight hours to eliminate the need to introduce high wattage lighting sources to operate in the dark. Implementation of this measure would avoid a temporary adverse visual impact related to an introduced light source for construction.

**Permanent Impact Mitigation**

The project would preserve vegetated natural areas to the extent practicable, limiting the amount of clearing within the proposed right-of-way easement to that needed for construction.

Right-of-way easement areas adjacent to the roadway would be evaluated to see where plant restoration planting should occur to address not only ecological concerns but also provide visual buffering that screens the roadway and softens the appearance from offsite viewers. The existing damaged roadway asphalt pavement and other materials such as culverts and concrete would be removed and riparian restoration would establish natural riparian conditions. Revegetation plans would be included in the final design of the project that are consistent with USFS standards and guidelines, and would be incorporated into the final design plans.

Side slopes would be covered with wood mulch, salvaged downed trees/logs, and native duff salvaged during construction to cover bare mineral soils exposed by construction. Logs and other large woody debris would be placed near culvert outfalls to help blend outlet rock protection into surrounding areas. These measures would help to reduce
erosion during construction, would help the constructed area blend in with the surrounding area, and is expected to promote revegetation by retaining organic matter. Revegetation through planting and natural site recruitment over the course of ten years is expected to help the finished project blend in visually with the adjacent forested environment.

Other measures to improve the aesthetics of the hard features of the project such as retaining walls, culverts, and guardrails would be incorporated in to the final plans to promote consistency with USFS Partial Retention visual quality standards that require avoiding and minimizing impacts to middleground and background views in the viewshed. Partial Retention standards recognize that human activity may be evident, but must remain subordinate to the characteristic landscape. Partial retention also applies in foreground views but modification may be used for necessary structural facilities.

To implement these aesthetic considerations into the final project’s hard features, the project would construct retaining walls and other support structures with low-sheen and non-reflective surface materials to reduce potential for glare. Where determined appropriate, walls would have color (pigmented sealer with color pigment) and/or texture applied to the surface to blend with the surrounding environment. The finish would be matte and roughened, and the use of smooth trowelled surfaces and glossy paint avoided. The use of form liners that mimic natural stone surfaces would also be considered. Guardrails would be installed that mimic a weathered steel (rust colored) appearance. The guardrails selected for installment would be either painted or weathered steel. The project would also incorporate aesthetic treatment (materials, pattern, texture, concrete stain color) on any retaining walls, and the bridge proposed at Station 54+00, and other hard feature constructed elements.

The specific mitigation measures that would be used to provide texture finishes and colors consistent with U.S Forest Service standards and guidelines are listed below. A memo summarizing these measures including illustrations is provided in Appendix A.

<table>
<thead>
<tr>
<th>DESIGN FEATURE</th>
<th>AESTHETIC TREATMENT-STRUCTURAL FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guardrail</td>
<td>Rusty-Brown Patina Stain</td>
</tr>
<tr>
<td>Soldier Pile Wall Texture</td>
<td>WSDOT form liner Fractured Granite</td>
</tr>
<tr>
<td>Soldier Pile Wall Color</td>
<td>WSDOT Mt St Helens Gray</td>
</tr>
<tr>
<td>Soldier Pile Conc. Barrier Texture</td>
<td>WSDOT Class 2 concrete finish (smooth)</td>
</tr>
<tr>
<td>Soldier Pile Conc. Barrier Color</td>
<td>WSDOT Mt St Helens Gray</td>
</tr>
<tr>
<td>Bridge Rail Type</td>
<td>Texas T223, concrete rail on concrete posts</td>
</tr>
<tr>
<td>Bridge Rail Texture</td>
<td>WSDOT Class 2 concrete finish (smooth)</td>
</tr>
<tr>
<td>Bridge Rail Color</td>
<td>Rusty-Brown Concrete Stain</td>
</tr>
<tr>
<td>Bridge Girder Color</td>
<td>Painted with Federal Standard 30045 Brown (or match with Guardrail color)</td>
</tr>
<tr>
<td>Bridge Abutment Texture</td>
<td>WSDOT form liner Cascadian Stone</td>
</tr>
<tr>
<td>Bridge Abutment Color</td>
<td>WSDOT Mt St Helens Gray</td>
</tr>
<tr>
<td>Bridge Approach walls</td>
<td>Gabion facing. (rock filled wire basket)</td>
</tr>
<tr>
<td>Reinforced Soil Slopes</td>
<td>The slope will be constructed at 0.5:1 (horizontal: vertical) and planted. Initial installation will likely include USFS approved</td>
</tr>
</tbody>
</table>
The project would be consistent with *Snohomish County General Policy Plan* Transportation Policy 6.A.3 which states: “Aesthetic and visual values shall be considered in the location and design of transportation facilities,” and the applicable implementation landscaping standards contained in the *Snohomish County Engineering Development and Design Standards*.

**Implement Project Landscaping Plan to Reduce Visual Quality Impacts and to Improve Aesthetics**

The project would adhere to the following practices in implementing the project landscaping plan to compensate for clearing within the right-of-way easement and to create a landscaped setting that reduces visual impacts:

- The species composition would reflect species that are native and indigenous to the project area. The species list should include trees, and shrubs, and an herbaceous understory of varying heights, as well as evergreen and deciduous types. The planting design would be randomized to mimic natural patterns.
- Vegetation would be planted within the first year following project completion.
- A maintenance and monitoring program would be implemented during the plant establishment period and subsequent years to ensure performance standards are achieved.

The following Best Management Practices are also proposed:

- Mulch or hydro-seed all locations with exposed soil and steep slopes with Washington native grasses meeting U.S. Forest Service requirements to prevent soil erosion, reduce water pollution, and help preserve the existing landscape character. Utilize other erosion control and water pollution prevention practices.
- Once a roadway design plan has been finalized, it is required that landscape revegetation and erosion control plans be prepared for the project plans, specifications, and estimates development.

**7.0 References**

Visual Impact Assessment for Highways (Department of Transportation FH-11-9694), reprinted September 1990

Mt. Baker-Snoqualmie National Forest Plan (as amended) 1990. Applicable amendments include:

- Final Environmental Impact Statement on Management of Habitat for Late Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl, as adopted and modified by the April 1994 Record of Decision (1994 ROD) which provides the additional standards and guidelines (referred to as the “1994 ROD”)


APPENDIX
<table>
<thead>
<tr>
<th>Alternative</th>
<th>VIEW DISTANCE</th>
<th>VIEWER POSITION</th>
<th>VIVIDNESS</th>
<th>INTACTNESS</th>
<th>UNITY</th>
<th>Total Visual Quality</th>
<th>Rating</th>
<th>Total Visual Quality With Mitigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Existing (No-Action) or Relocated Index-Galena Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Existing LU 1</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>5 6 4 1</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>5 6 4 1</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>LU1 with Proposed Relocation</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>5 6</td>
<td>0/2</td>
<td>3.5/4.25</td>
<td>3/3.25</td>
<td>2/3</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>5 6 4 3</td>
<td>4.75</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Existing LU 2</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>5 6 4 2</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>5 6 4 2</td>
<td>4</td>
<td>4</td>
<td>1</td>
<td>2.5</td>
</tr>
<tr>
<td>LU 2 with Proposed Relocation</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>4 5 3</td>
<td>1/3</td>
<td>3.25/3.75</td>
<td>3</td>
<td>2/3</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>5 6 4 2</td>
<td>4.25</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Existing LU 3</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>7 7 5 2</td>
<td>5.25</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>7 7 5 2</td>
<td>5.25</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>LU 3 with Proposed Relocation</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>6 7 4</td>
<td>1/3</td>
<td>4.5/5</td>
<td>3</td>
<td>2/3</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>7 7 4 3</td>
<td>5.25</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Existing LU 4</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>4 3 5 2</td>
<td>3.5</td>
<td>2</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>4 3 5 2</td>
<td>3.5</td>
<td>2</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>LU 4 with Proposed Relocation</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>3 3 4</td>
<td>2/3</td>
<td>3/3.5</td>
<td>2/3</td>
<td>2/3</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>4 3 4</td>
<td>2/3</td>
<td>3.25/3.5</td>
<td>2</td>
<td>2/3</td>
</tr>
<tr>
<td>Existing LU 5</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>5 1 6 0</td>
<td>2.75</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>5 1 6 0</td>
<td>2.75</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>LU 5 with Proposed Relocation</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>4 1 4</td>
<td>0/2</td>
<td>2.5/2.75</td>
<td>4</td>
<td>4/4.5</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>4 1 4</td>
<td>0/3</td>
<td>2.5/3</td>
<td>4</td>
<td>4/4.5</td>
</tr>
<tr>
<td>Existing LU 6</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>5 2 6 0</td>
<td>3.25</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>5 2 6 0</td>
<td>3.25</td>
<td>7</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>LU 6 with Proposed Relocation</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>4 2 5</td>
<td>0/3</td>
<td>2.75/3.5</td>
<td>4</td>
<td>4/4.5</td>
</tr>
<tr>
<td>Existing LU 7</td>
<td>OF ROAD</td>
<td>X</td>
<td>X</td>
<td>4 4 5 5</td>
<td>4.5</td>
<td>3.5</td>
<td>6</td>
<td>4.75</td>
</tr>
<tr>
<td></td>
<td>FROM ROAD</td>
<td>X</td>
<td>X</td>
<td>4 4 5 5</td>
<td>4.5</td>
<td>3.5</td>
<td>6</td>
<td>4.75</td>
</tr>
</tbody>
</table>
Snohomish County disclaims any warranty of merchantability or warranty of fitness of this map for any particular purpose, either express or implied. Any user of this map assumes all responsibility for use thereof, and further agrees to hold Snohomish County harmless from and against any damage, loss, or liability arising from any use of this map.

Figure 1: Proposed Index-Galena Road Project Milepost 6.4-6.9
Key to Features:

- Landscape Unit 1
- Landscape Unit 2
- Landscape Unit 3
- Landscape Unit 4
- Landscape Unit 5
- Landscape Unit 6
- Landscape Unit 7

- Proposed Alignment
- Existing Right-of-Way
- Creek
- Wild Sky Wilderness Boundary

Snohomish County disclaims any warranty of merchantability or warranty of fitness of this map for any particular purpose, either express or implied. Any user of this map assumes all responsibility for use thereof, and further agrees to hold Snohomish County harmless from and against any damage, loss, or liability arising from any use of this map.

Figure 2: Visual Quality Landscape Units
This perspective looks upstream from the Trout Creek Bridge towards the lower washout area near Milepost 6.4. The proposed relocated road is shown as a darker color roadway with centerline striping. The relocated roadway would use the existing Trout Creek Road alignment for approximately 750 feet before traversing forested slope areas. A new intersection would be constructed where Trout Creek Road switches back and ascends the Trout Creek drainage. The light gray roadway with centerline striping is the existing roadway from which the new alignment would turn off from. The lighter gray roadway alignment without centerline striping is where the existing roadway pavement would be removed. The relocated roadway would be located further landward from the river and its side channel and is expected to not be visibly prominent from the river’s main channel where river recreation is concentrated. The relocated roadway may be seen partially from the river near the upper washout as shown in Perspective 2. In both Perspective 1 and Perspective 2, the green areas adjacent to the new roadway depict the sideslope areas that would be affected by construction cut and fill.

Figure 3: GIS Visual Simulation Perspective 1: Looking Upstream from Trout Creek Bridge Near Milepost 6.4 washout
This perspective looks downstream from the upper washout area near Milepost 6.9. As in Perspective 1, the proposed relocated road is shown as the darker color roadway with centerline striping. As illustrated by this simulation, the relocated road’s traverse of forested slopes is screened from the river’s main channel by forest vegetation. The locations where views of the relocated road may potentially be seen from the river are concentrated where the river’s side channel has washed out the existing road and adjacent vegetation between Milepost 6.7 and Milepost 6.9. Also shown here is the proposed river recreation access turnoff upstream from the Milepost 6.9 washout.

Figure 4: GIS Visual Simulation Perspective 2: Looking Downstream from near Milepost 6.9 washout
MEMORANDUM

DATE: March 7, 2014

TO: Eric Ozog-Reality Specialist, USFS

FROM: Larry Brewer, Project Manager

SUBJECT: Summary of Chosen Structure Finishes For Visual Quality
Index-Galena Road Flood Repair MP 6.4 to 6.9

This memo documents the proposed Index-Galena Road Flood Repair project recommended structure finishes that have been concurred with by the U.S. Forest Service.

February 6, 2014 I sent you a memo and an exhibit discussing structure finish options for walls, barriers, and bridge elements. In the month since then I have exchanged emails and phone calls with you, Ann Dunphy, landscape architect, and Peter Wagner, bridge engineer, to coordinate and develop the list of recommended structure finishes. Listed below is the summary of finish recommendations.

<table>
<thead>
<tr>
<th>DESIGN FEATURE</th>
<th>AESTHETIC TREATMENT-STRUCTURAL FINISH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guardrail</td>
<td>Rusty-Brown Patina Stain</td>
</tr>
<tr>
<td>Soldier Pile Wall Texture</td>
<td>WSDOT form liner Fractured Granite</td>
</tr>
<tr>
<td>Soldier Pile Wall Color</td>
<td>WSDOT Mt St Helens Gray</td>
</tr>
<tr>
<td>Soldier Pile Conc. Barrier Texture</td>
<td>WSDOT Class 2 concrete finish (smooth)</td>
</tr>
<tr>
<td>Soldier Pile Conc. Barrier Color</td>
<td>WSDOT Mt St Helens Gray</td>
</tr>
<tr>
<td>Bridge Rail Type</td>
<td>Texas T223, concrete rail on concrete posts</td>
</tr>
<tr>
<td>Bridge Rail Texture</td>
<td>WSDOT Class 2 concrete finish (smooth)</td>
</tr>
<tr>
<td>Bridge Rail Color</td>
<td>Rusty-Brown Concrete Stain</td>
</tr>
<tr>
<td>Bridge Girder Color</td>
<td>Painted with Federal Standard 30045 Brown (or match with Guardrail color)</td>
</tr>
<tr>
<td>Bridge Abutment Texture</td>
<td>WSDOT form liner Cascadian Stone</td>
</tr>
<tr>
<td>Bridge Abutment Color</td>
<td>WSDOT Mt St Helens Gray</td>
</tr>
<tr>
<td>Bridge Approach walls</td>
<td>Gabion facing. (rock filled wire basket)</td>
</tr>
<tr>
<td>Reinforced Soil Slopes</td>
<td>The slope will be constructed at 0.5:1 (horizontal:vertical) and planted. Initial installation will likely include USFS approved non-native grass seed mix so root mass can begin to develop and provide greening of the slope. Most USFS grass seed mixes are not persistent past a few years. Willow stakes and red-osier dogwood stakes have been used in RSS, but final plant material selection will require coordination with USFS.</td>
</tr>
</tbody>
</table>
Recommended finishes exhibits

GUARDRAIL

Rusty brown patina stain applied to standard galvanized guardrail is shown on the right. Standard galvanized rail is shown to the left.
SOLDIER PILE WALL

Typical section through soldier pile wall.

Soldier Pile Wall texture
WSDOT standard formliner exhibit

WSDOT standard colors (Color shown here may not be true.)

The single slope traffic barrier will be smooth WSDOT Class 2 finish. Both surfaces will be coated with a pigmented sealer colored WSDOT Mt. St. Helens Gray.
Rendition of bridge rail type T223 stained rusty-brown, and bridge girder painted brown. The proposed bridge rail be smooth.

**Traffic Rail Type: T223**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>This railing is 32 inches high with a continuous concrete top beam 19 inches high by 15.5 inches wide on 13-inch high concrete posts that are 4 ft. long and spaced a maximum of 10 ft. apart. Its minimum height after maintenance overlays is 30 inches.</td>
</tr>
</tbody>
</table>

The T223 railing has been evaluated and approved for TL-4 (NCHRP 350) use.

Detail drawing of the traffic railing type T223.
Cascadian Stone Finish

WSDOT standard formliner exhibit.

Fitzgerald “Zion Rock” is an acceptable alternate.
REINFORCED SOIL SLOPES

The project will use RSS for several extensive fill slopes to reduce the project footprint near the river. The slopes will be constructed at 0.5:1 (H:V).

The RSS slopes will incorporate native duff and imported topsoil to help support vegetation. We will likely include USFS approved non-native grass seed mix during initial installation so that some root mass can begin to develop and provide greening of the slope. Most USFS grass seed mixes are not persistent past a few years. Willow stakes and red-osier dogwood stakes have been used in RSS, but we have not yet specified suitable plant material for the RSS. Final plant material selection will require coordination with USFS.

Trees can be planted beyond the bottom of the RSS that will provide additional screening in time.

Waldheim Slide Repair, Mt. Loop Highway. December 2013

Photo representing look at time of installation.

End of Memo