Columbia River Gorge Commission  
57 NE Wauna Avenue • PO Box 730 • White Salmon WA 98672 • 509-493-3323

**Land Use Application**

<table>
<thead>
<tr>
<th>Applicant(s):</th>
<th>Property Owner(s):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angie Haffie, SW Region Environmental Manager</td>
<td>Washington State Department of Transportation (WSDOT)</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th>Mailing Address:</th>
<th>Mailing Address:</th>
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<tbody>
<tr>
<td>11018 NE 51st Circle, Vancouver, WA 98682</td>
<td>11018 NE 51st Circle, Vancouver, WA 98682</td>
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<table>
<thead>
<tr>
<th>Phone:</th>
<th>Email:</th>
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<tbody>
<tr>
<td>(360) 905-2176</td>
<td><a href="mailto:haffiea@wsdot.wa.gov">haffiea@wsdot.wa.gov</a></td>
</tr>
</tbody>
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**Location of property:**

<table>
<thead>
<tr>
<th>Township:</th>
<th>Address:</th>
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<tr>
<td>T3N</td>
<td>SR 14 milepost 73.18-73.89</td>
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<table>
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<tr>
<th>Range:</th>
<th>County:</th>
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<tr>
<td>R12E</td>
<td>Klickitat</td>
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<tr>
<th>Section &amp; Qtr Section:</th>
<th>Tax Lot No(s):</th>
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<tr>
<td>S32</td>
<td>WSDOT Right-of-way</td>
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| | Parcel Nos. and size: |
| | 03123200000600; 34.29 acres |

| | Affected project area: |
| | 3 acres |

**Existing development and use of parcel:** WSDOT right-of-way. Transportation corridor.

**Proposed use or development:** Proposed project will not change existing development and use.
Use of Adjacent Parcels:
WSDOT Right-of-way, Forest Service property, & Railroad

Signature of the property owner(s) indicates that the property owner(s) is/are aware that an application is being made on the subject property. Signature of the property owner(s) also authorizes the Gorge Commission or the Commission’s designee(s) reasonable access to the site in order to evaluate the application.

Applicant(s) signature  date  2/9/21

Property owner(s) signature  date

Application checklist: The following is required to complete your application.

- Application form completed and signed
- Project description
- Site plan
- Elevation drawings
- Key viewing areas checklist
- Names and addresses of adjacent property owners
- Any additional information as required

Project description: Describe your proposed project including details on all uses proposed; the size, height, color, and construction materials of all structures; and any other details which explain how your proposal meets the requirements of the Scenic Area Land Use Ordinance.

Please see complete description in the Visual Quality Assessment Technical Memorandum (Jan 24, 2020)

The proposed project will address rockfall and associated safety issues on three tall rock and talus slopes between SR-14 MP 73.18 and 73.89, immediately west of the Chamberlain Lake Rest Area in the Columbia River Gorge National Scenic Area. The project will involve intensive, strategic rock scaling, bolting, and targeted tree removal on near-vertical basalt slopes exceeding 90 feet in height, with an overall project length of 3,750 linear feet/0.71 miles along SR-14. In addition, two of the slopes will require the construction of approximately 1,600 feet/0.30 miles of Stage 3 rockfall ditch and associated 48” concrete barrier to provide adequate rockfall catchment at the base of the cliffs. The proposed project does not include any new metal rockfall fencing, blasting, shotcrete, illumination, expanded areas of pavement, or stormwater facilities.
Site Plan

A plan drawn in black ink at a scale of 1 inch equals 200 feet (1:2400) or at a scale providing greater detail must be included with the application.

If the parcel is very large, you may show on the portion of the parcel affected by the proposed use. Be sure, however, to show enough of the parcel or some adjacent features, such as roads, so that the planners can orient themselves on your map. A small vicinity map showing the subject parcel and surrounding parcels may help.

At a minimum, you must show the features listed below; other site plan information may be required depending on the type or location of development being proposed. Please see the Handbook for details. An example site plan appears in the Handbook.

You may use the back of this sheet to draw your site plan.

All site plans must include:

☐ applicant(s) name
☐ location and width of existing and proposed roads, driveways, and trails
☐ scale and north arrow
☐ location and size of existing and proposed structures
☐ boundaries of parcel with dimensions and size
☐ location of existing and proposed services including wells or other water supplies, sewage disposal systems, power and telephone poles and lines and outdoor lighting
☐ significant terrain features or landforms
☐ location and depth of all proposed grading and ditching
☐ groupings and species of trees or other vegetation on the parcel
☐ location and species of vegetation that would be removed or planted
☐ bodies of water and water courses
Site Plan

SEE ATTACHED VISUAL ASSESSMENT

Each grid equals 50’ x 50’ at a scale of 1” = 200’.
Elevation Drawings

Elevation drawings showing the appearance of all proposed structures are required for all applications. Elevation drawings depict the entire length and width of each structure as seen from a horizontal view. The drawings must also include the natural and finished grade and be drawn to scale.

SEE ATTACHED VISUAL ASSESSMENT

Each grid equals 2' x 2' at a scale of 1" = 8'.

Key Viewing Areas:

Key Viewing Areas are important public viewpoints and areas that afford opportunities to view the Gorge scenery. Key Viewing Areas are listed below.

Please check those sites which can be seen from your property.

- Historic Columbia River Highway
- Crown Point
- Highway I-84, including rest stops
- Multnomah Falls
- Washington State Route 14
- Beacon Rock
- Panorama Point Park
- Cape Horn
- Dog Mountain Trail
- Cook-Underwood Road
- Rowena Plateau and Nature Conservancy Viewpoint
- Portland Women's Forum State Park
- Larch Mountain
- Rooster Rock State Park

- Bonneville Dam Visitor Centers
- Columbia River
- Washington State Route 141
- Washington State Route 142
- Oregon Highway 35
- Sandy River
- Pacific Crest Trail

Special Management Area only:

- Old Washington State Route 14 (County Road 1230)
- Wyeth Bench Road
- Larch Mountain Road
- Sherrard Point on Larch Mountain

Landscape Details

If your project is visible from Key Viewing Areas, siting, existing topography, colors and other tools are used to blend your development into the landscape. Trees and other landscaping may be necessary to further screen the development. Site plans and project descriptions should include details showing how your project will be screened from key viewing areas, including:

- location of plants used
- number of plants
- size of plants
- type of plants
- irrigation provisions or other measures to ensure the survival of landscaping planted for screening purposes
- location of existing and proposed topographical features which would screen your project.
Adjacent Property Owners

If your project is included in one of the categories below, then you must submit names and address of adjacent property owners within a specified distance (200 feet or 500 feet) of the perimeter of your parcel. The following list specifies the distance within which property owners must be notified of your proposal. You only need to provide the names and address (along with the parcel number); the Commission will send the notice.

Your county Assessor’s Office can assist you in obtaining this property owner information. You may use the back of this form to record the names and addresses or you may submit forms which the county may provide you.

Notification of landowners within 200 feet

☐ Uses within Residential designation (except single-family dwellings located adjacent to Agriculture or Forest designations - see notification of landowners within 500 feet)

☐ Uses within Agriculture designation (except non-farm single-family dwellings in Large-Scale Agriculture designation - see notification of landowners within 500 feet)

☐ Uses within Forest designation (except utility facilities, railroads, home occupations, cottage industries, wineries, agriculture product processing and packaging, mineral resources, geothermal resources, aquaculture, boarding of horses, temporary asphalt/batch plants, expansion of non-profit camps-retreats-conference centers, bed and breakfasts, and non-profit learning/research facilities - see notification of landowners within 500 feet)

☐ Uses within Commercial designations

☐ Uses within Recreation designations

☐ Uses within Open Space designations

☐ Uses within Agriculture-Special designations

☐ Uses within Special Management Areas

Notification of landowners within 500 feet

☐ Single-family dwellings within Residential designation located adjacent to Agriculture or Forest designations

☐ Non-farm single-family dwellings within Large-Scale Agriculture designation

☐ Utility facilities, railroad, home occupations, wineries, agriculture product processing and packaging, mineral resources, geothermal resources, aquaculture, boarding of horses, temporary asphalt/batch plants, expansion of nonprofit camps-retreats/conference centers, and bed and breakfasts, non-profit learning/research facilities within Forest designations
<table>
<thead>
<tr>
<th>Township, Range, Section, Tax Lot Number</th>
<th>Name and Address</th>
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<tbody>
<tr>
<td>PARCEL NUM: 03123200000500</td>
<td>LEGAL: LOT 1 LESS R/W PART OF TL 1 32-3-12</td>
</tr>
<tr>
<td>Township: T3N</td>
<td>NAME: UNITED STATES OF AMERICA</td>
</tr>
<tr>
<td>Range: R12E</td>
<td>ADDRESS: 902 WASCO AVE STE 200 HOOD RIVER OR 97031</td>
</tr>
<tr>
<td>Section: S32</td>
<td></td>
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</tbody>
</table>

| PARCEL NUM: 03123200000300              | LEGAL: E 440' GOV LOT 2 LY N OF CO RD; TAX LOT 2-A IN LOTS 2 & 3; 32-3-12 |
| Township: T3N                           | NAME: SAUTER, THEODORE |
| Range: R12E                             | ADDRESS: 33 SAUTER RD LYLE WA 98635 |
| Section: S32                            | |

| PARCEL_NUM: 03123200000900              | LEGAL: RW |
| Township: T3N                           | NAME: BNSF RAILWAY CO |
| Range: R12E                             | ADDRESS: PO BOX 961089 FORT WORTH TX 76161-0089 |
| Section: S32                            | |

| PARCEL NUM: 03123200000200              | LEGAL: TAX LOT 3 IN GL 3 N OF HWY 32-3-12 |
| Township: T3N                           | NAME: TOAN, DONALD |
| Range: R12E                             | ADDRESS: 32 SAUTER RD LYLE WA 98635 |
| Section: S32                            | |
PARCEL NUM: 03123200001100
Township: T3N
Range: R12E
Section: S32
LEGAL: TAX LOT 1 IN LOT 4  32-3-12
NAME: TOAN, DONALD
ADDRESS: PO BOX 100 LYLE WA 98635

PARCEL NUM: 03123200000400
Township: T3N
Range: R12E
Section: S32
LEGAL: TAX LOT 2 IN GOVT LOT 2 LYING NORTH OF HWY  32-3-12
NAME: UNITED STATES OF AMERICA
ADDRESS: 902 WASCO AVE STE 200 HOOD RIVER OR 97031
VISUAL QUALITY ASSESSMENT
TECHNICAL MEMORANDUM

VISUAL IMPACT ASSESSMENT AND MITIGATION RECOMMENDATIONS REV 2

SR-14 73.18 – 73.89 Chamberlain Lake RA Vic.
Slope Stabilization

Klickitat County, WA

Prepared by
WSDOT SW REGION
ENVIRONMENTAL SERVICES

Daniel R. Corlett, MLA, MRP, PLA #725
SW Region Roadside and Environmental Mitigation Program Manager

December 18, 2020
Revised January 28, 2021 (48-inch single slope barrier)
**Project Description**
The proposed project will address rockfall and associated safety issues on three tall rock and talus slopes between SR-14 MP 73.18 and 73.89, immediately west of the Chamberlain Lake Rest Area in the Columbia River Gorge National Scenic Area (Figure 1). The project will involve intensive, strategic rock scaling, bolting, and targeted tree removal on near-vertical basalt slopes exceeding 90 feet in height, with an overall project length of 3,750 linear feet/0.71 miles along SR-14. The identified unstable slopes included in the project are slope 2125 (western project limits), 3337 (central project limits), and 3338 (eastern project limits, Figure 2). In addition, two of the slopes (2125, 3338) will require the construction of approximately 1,600 feet/0.30 miles of Stage 3 rockfall ditch and associated 48” concrete barrier to provide adequate rockfall catchment at the base of the cliffs. The proposed project does not include any new metal rockfall fencing, blasting, shotcrete, illumination, expanded areas of pavement, or stormwater facilities.

![Project Vicinity Map](image1.png)

Figure 1. Project Vicinity Map (not to scale).

All proposed rockfall work is consistent with methods and visual mitigation commitments made during the 2004 SR-14 Slope Stabilization EA (Site 25), associated USFS Consistency Review, and FHWA Finding of No Significant Impact (FONSI).

![Unstable Slopes in Project Limits](image2.png)

Figure 2. Unstable Slopes in Project Limits.
**Project Setting**

SR-14 in the project area is partly exposed to the Columbia River with directional views to the east and more expansive views to west along SR-14, with intermittent views over the river into Oregon. The northern edge of the view corridor is bounded by the 90-foot tall cliff system that runs the entire length of the project and beyond. Minimal talus exists at the toe of the larger vertical slopes which are generally maintained as highway rockfall catchment areas, however a large talus slope located between slopes 2227 and 3338 supports larger specimen trees and small clumps of mature Ponderosa Pine, Oregon White Oak, and Bigleaf maple. Non-vertical areas of the project corridor support native bunch grasses, forb, and shrub species such as Sukdorf’s Lomatium, Artemisia Sp., and in season, Balsamroot. While most of the project area lacks significant vegetative cover, the springtime wildflower bloom, exposed cliffs and outcrops, and isolated clumps of trees contributes to an overall high visual quality (figure 3).

This section of SR-14 is located within a **General Management Area** zone of the Columbia River Gorge National Scenic Area. The landscape setting in this area is designated as **Oak Woodlands** which encompasses SR-14 as it traverses the length of the project area (figure 4). The Land use designation for the entire project area is **Small Scale Agriculture** (figure 5). SR-14 is a designated **Scenic Travel Corridor** in the Scenic Area Management Plan and is also the primary Key Viewing Area visually affected by construction of the highway project. SR-14 is also designated as the Lewis and Clark Trail Scenic Byway and is state-designated Scenic and Recreational Highway. WSDOT will adhere to the **Visually Subordinate** scenic standard for all components of project development as applicable.

![Figure 3. Late fall corridor view looking east.](image-url)
Figure 4. NSA Landscape Settings.

Figure 5. NSA Land Use Designations.
This memorandum provides an analysis of existing visual conditions, visibility from National Scenic Area (NSA) Key Viewing Areas (KVA) and other Key Views, and projected visual impacts and mitigation alternatives associated with project implementation. It is intended to satisfy both NSA and Federal Highway Administration (FHWA) standards for visual quality analysis/visual impact assessment.

The project contains four primary components that may potentially affect visual or scenic values that will be analyzed in this document. These components include:

1. Construction of a Stage 3 Rockfall Ditch between Milepost 73.18 to 73.33, and 73.75 to 73.89, for a total of 1,600 feet/0.30 miles.
2. Intensive scaling of loose and fractured rock on slopes 2125 and 3337 (Figure 20).
3. Strategic bolting/dowelng of large loose blocks on slopes 2125 and 3337 (Fig 20).
4. Targeted tree removal on all slopes to reduce rockfall potential (Appendix A).

**Existing Visual Conditions**

**SR-14 Eastbound.** The Eastbound view corridor provides focused views along the cliffs adjacent to SR-14, with long sightlines associated with the tangent section of highway leading the eye directly along SR-14 toward the Chamberlain Lake Rest Area. Short cut slopes and trees (especially during the growing season) to the south of SR-14 enhances the constrained view corridor effect of the area, while providing intermittent views over the Columbia River to the Memaloose Hills. The north edge of the view corridor is contained by the presence of the 90+-foot tall rock face and talus slopes. Views up the cliff face of layers of columnar basalt, exposed outcrops, and clumps of Ponderosa Pine trees are dramatic for those able to sightsee. While manmade elements including the BNSF rail line that parallels SR-14, guardrail along south edge of SR-14 throughout most of the project corridor, the wide maintained rockfall catchment areas below slopes 2125 and 3338, and overhead utilities are present, the overall view corridor is generally natural in character with limited encroachment by development and high in overall unity. A combination of overall landscape unity, dramatic topography, vegetation, and presence of the Columbia River combine to provide a “high” visual rating (5.5) in the eastbound direction. See Figures 6-10 and Table 1.

![Figure 6. Eastbound View Corridor – west section.](image-url)
Figure 7. Eastbound View Corridor – east section.

Figure 8. Oblique aerial image of Slope 2205, Western Project Area – showing vertical rock slope, chutes, and trees located on or near the face.
SR-14 Westbound. The westbound view corridor contains nearly identical features to the eastbound corridor. Drivers parallel the various rock faces for the entire length of the project corridor, with intermittent views south over the Columbia River and Memaloose Hills. As SR-14 sweeps slightly to the north, the westbound viewshed encompasses longer duration views of more distant high areas including Burdoin Mountain and Tracy Hill. Views up the cliff face of layers of columnar basalt, exposed outcrops, heavily vegetated gullies, and clumps of Ponderosa Pine trees are dramatic for those able to sightsee.
While manmade elements including guardrail, the wide maintained rockfall catchment area, and overhead utilities are present, the overall view corridor is generally natural in character with limited encroachment by development and high in overall unity. A combination of overall landscape unity, dramatic topography, vegetation, and presence of the Columbia River combine to provide a “high” visual rating (5.5) in the eastbound direction. See Figure 8-10, 11a and 11b, and Table 1.

Figure 11a. Westbound View Corridor, West End.

Figure 11b. Westbound View Corridor, Slope 2125.
Existing visual quality of the overall SR-14 view corridor is considered High to Very High, with the eastbound and westbound viewsheds scoring a combined average visual quality score of 5.5 in both directions. A previous (2004) WSDOT Scenic Rating of SR-14 using the continuous rating methodology developed in the Scenic 2.0 software recorded similar high visual quality scores at the project location noting vivid landform, dramatic water views, and high intactness and view composition (Figure 14).

**Historic Columbia River Highway (State Trail, Mosier Twin Tunnels vicinity), I-84 and the Columbia River.** The relative openness of this section of the Columbia River Gorge generally provides expansive views of the project area from any point on the Columbia River or along I-84 in either direction. The upper cliff sections throughout the entire project corridor are continuously visible as a background view from I-84, the river, and the sections of the Historic Columbia River Highway above Memaloose State Park and Rest Area. Project area visibility occurs as background views and part of a much larger, highly scenic cliff, grassland, and forest landscape, especially when viewed far above the river from the Historic Highway overlook. See Figures 12 and 13).

The existing visual quality for the I-84/Columbia River/Historic Columbia River Highway view corridor is considered Very High, with the viewsheds scoring a combined visual quality of 5.9. Vivid vegetation patterns and landform, high intactness, and a high vividness score for the presence of water (Columbia River) factored into the evaluation.

![Figure 12. Oregon Visibility: Project Area from the Memaloose State Park and Rest Area, looking north.](image-url)
Landscape Setting and Scenic Standards
The Landscape Setting is defined as the combination of land use, landform, and vegetation patterns which distinguish an area in appearance and character from other portions of the Scenic Area. As previously noted, the project corridor traverses an area generally classified as the Oak Woodlands landscape setting by the National Scenic Area. This landscape setting and GMA designation requires that any project meet the “Visually Subordinate” scenic standard. As defined in the National Scenic Area Management Plan, this standard provides for development or uses that do not noticeably contrast with the adjacent landscape as viewed from various KVA’s and are not visually dominant in relation to their surroundings.

Scenic Travel Corridors: SR-14 is a designated Scenic Travel Corridor as defined in the National Scenic Area Management Plan. In GMA areas, the document encourages WSDOT to implement several measures to maintain and improve the visual quality of scenic travel corridors. These measures include, but are not limited to, the removal of unnecessary highway signs and consolidation of signs where possible, the construction of berms to emulate natural contours and features (using berms and topography to help screen adjacent or proposed structures and highway features), and the use of native plants for screening or restoration plantings to the maximum extent practicable.

FHWA Visual Analysis
WSDOT utilized the numerical evaluation methodology based on the FHWA publication Visual Impact Assessment for Highway Projects (1988, 2015) to assess the overall scenic condition of the project corridor. This methodology refined and expanded the Scenic and Recreational Highway Program Corridor Study (WSDOT 1990), and was codified in RCW 47.39. The corridor methodology involves continuous linear measurement of vividness, intactness, and
unity/composition of five specific elements: **landform**, **vegetation**, **waterform**, **ephemeral features**, and **human built features**. This section of the project corridor is generally considered to be very scenic with an eastbound combined score of 5.5, and a westbound combined score of 5.5, due to the mix of long duration views of dramatic vertical landforms, expansive views over the Columbia River, framing and specimen vegetation (figure 15), and a general lack of encroaching manmade features. Table 1 summarizes existing visual conditions, and includes visual quality scores associated with project development (non-mitigated), and the projected visual quality once anticipated standard visual mitigation measures are implemented and established.

<table>
<thead>
<tr>
<th>Viewer Groups and Sensitivity</th>
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<tr>
<td>The two primary viewer groups established for this analysis are Residents/Local Commuters and Recreational Travelers. While a handful of residences are located in the immediate area of the project, the project corridor is mostly undeveloped, with SR-14 connecting the nearby communities of Bingen/White Salmon and Lyle. The Bingen/White Salmon area includes busy port and downtown areas, fruit and lumber processing plants, high-tech companies, local businesses, farms, and schools. Lyle is a small residential community supporting a small downtown core with limited businesses and a historic hotel. Several wineries are located in the area. Residents of both communities live in the area year round and commute locally; many commute to Hood River or The Dalles, OR directly across the Columbia River.</td>
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This area is a major outdoor tourism destination, not only for the many outstanding recreational opportunities available in the area, but as a destination for scenic driving along SR-14 and the Columbia River and SR-142 along the Wild and Scenic Klickitat River. The popular Coyote Wall, Catherine Creek, and Burdoin Mountain areas are located a short distance to the west of the project corridor, and the Cherry Orchard hike just to the east of downtown Lyle. The Klickitat River Trail’s southern terminus is located just west of the Lyle Klickitat River Bridge on SR-14; hikers accessing these areas via the Bingen or Lyle communities and Oregon must traverse the project corridor to and from their destination. Lyle is close to the popular windsurfing destination of Doug’s Beach State Park, and the spring wildflower season sees an influx of local and regional visitors that drive this portion of the Gorge for wildflower viewing.

Both user groups are known to value landscape setting and scenic quality, have a vested interest in where they live, work, and recreate, and would be considered highly sensitive to landscape change. Advocacy groups established with the intent of supporting the preservation of scenic landscapes have historically had some level of interest in this type of highway improvement project.

Figure 14. Cumulative Scenic Quality Rating of the Project Area Using Scenic 2.0 (Corlett, 2004). Project area occurs between SR-14 MP 73.89 to 73.18 to the left of the chart.
The viewpoints used to analyze potential visual change from project construction are a combination of National Scenic Area Key Viewing Areas (KVA’s) and points selected using the established FHWA methodology known as Key Views. This analysis describes existing visual conditions and potential change to visual resources at four primary viewpoints (Figure 7). Two of these, the SR-14 eastbound and westbound KVA’s, are continuous corridor viewsheds (views experienced sequentially and continuously in a moving vehicle traversing the project area), while two Oregon KVA’s, I-84/Columbia River/Memaloose Rest Area and State Park, are represented by a single point selected from a viewpoint in the Memaloose Rest Area immediately north of I-84 and above the shoreline of the Columbia River. The Historic Columbia River Highway KVA has limited glimpse views of the project area depending on location, viewing direction, and viewing speed, but is represented by a single viewpoint located on a promontory above Memaloose State Park and includes expansive views of the project area. Analysis of certain KVA’s are required by the NSA Management Plan if a proposed action or impact will be visible from one or more of the points established by the Scenic Area Act.

Figures 16, 17, and 18 show the location of the project Key Viewing Areas and associated viewsheds (points A and B representing eastbound and westbound view corridors or SR-14 KVA, point C representing the combined I-81/Columbia River/Memaloose RA/SP view corridor KVA’s, and point D representing the Historic Columbia River Highway KVA).

Field analysis conducted for this project showed that the proposed rockfall safety work is primarily visible from the SR-14 KVA, with distant background views from I-84, the Columbia River, and the Historic Columbia River Highway KVA’s. The proposed project is not visible from any other designated KVA’s in the Central Gorge including the developed viewpoint at Rowena Crest.

Figure 15. Mature pine below slope 3337 (central area).
Figure 16. Project Key Viewing Areas C and D and Associated Viewsheds (Oregon Visibility).
Figure 17. Project Key Viewing Area A Eastbound and Associated Viewshed.
Figure 18. Project Key Viewing Area B Westbound and Associated Viewshed.
National Scenic Area Key Viewing Area Analysis

The project area is located in the Oak Woodlands landscape setting of the Central Gorge. While the project corridor and the proposed highway improvements are directly visible from all four primary KVA’s, the nature of the proposed work will primarily affect visual quality to the SR-14 viewsheds, and much of it on a temporary basis. For Key Views C and D (Oregon KVA’s), the background views of project implementation will be experienced primarily as a temporary construction activity in the background, with much of the SR-14 roadway surface obscured by topography and vegetation.

The development of the Stage 3 Rockfall Ditch will permanently change the physical characteristics at the toe of the rock face at eye level along SR-14, however, the existing ditches are already actively managed as rockfall catchment areas and proposed 48” single slope concrete barrier sections match highway guardrail and similar barrier runs throughout the National Scenic Area. Barriers are not unexpected highway features. Current highway safety design standards require the placement of reflective impact attenuators at the end of each run of concrete barrier, which will be the most visible feature associated with project implementation. Areas of intensive scaling will temporarily produce visible areas of unweathered rock that will contrast with existing weathered rock on surrounding faces visible from SR-14 and Oregon KVA’s, but will blend with the overall rock face following application of the rock weathering agent Permeon. Scaling will not alter the overall slope structural appearance, affect slope pitch, height, or aspect, or realign any structural elements of SR-14. No shotcrete, blasting or slope flatting is proposed.

Vegetation removal (trees and large shrubs growing in cracks, fissures, and within 5 feet of the slope crest) will occur as part of the project to reduce future rockfall potential, but will be minimized to the greatest extent possible. The larger clumps of established trees and understory vegetation on the lower talus slopes and the large chute area between slopes 3337 and 3338 will not be disturbed. Vegetation removal will be primarily noticed by viewers on SR-14 in both directions, however the long-term visual effect of targeted tree removal, while permanent, will not appreciably alter the larger landscape composition experienced by views at each of the KVA’s. Please see Appendix A for communications with WSDOT Geotechnical Engineers regarding targeted tree removal.

SR-14: The SR-14 corridor KVA encompasses the proposed project in both eastbound and westbound directions (see figures 17 and 18). View type is considered “continuous” as drivers experience the entirety of the corridor as they travel through the area. Due to the close proximity of the rock faces to the highway and drivers, most views and anticipated visual impacts are to foreground areas, meaning that any change will be immediately and directly noticed by drivers throughout the length of the project corridor. The SR-14 view corridor is considered a long duration view, occurring where areas are visible at the end of a long tangent section of highway between curves or where the view corridor parallels a long, continuous surface. The primary long duration view is of the dramatic rock face north of SR-14, visible the length of the project area in both view corridor directions. The proposed scaling and bolting activities will be highly visible during construction, but blend into the larger landscape following visual mitigation. As noted above, removal of trees and shrubs will not be noticeable within in the context of the corridor in the long term. The Stage 3 Rockfall Ditch and two sections of associated permanent 48” single slope concrete barrier and attenuators will be permanently visible at or just above eye level to the north of the painted fog line on SR-14. The sections of barrier, however, are long (approximately 800 feet for each section) and continuous, and will create long sight lines and blend with background rock color following treatment with the Natina coloring agent. The four
impact attenuators (two per barrier run) will be the most visible of all permanent project elements by design, but visible only from SR-14. Galvanized steel components will be treated with Natina during the manufacturing process.

It is anticipated that overall visual quality in the SR-14 eastbound viewshed will be reduced slightly from 5.5 to 4.9 in the foreground due to the new manmade concrete barrier and attenuator features at eye level, but at some distance as viewed across two lanes. Visual quality in the westbound viewshed will be reduced to a greater degree from 5.5 to 4.8 as the 48” barrier will be at or slightly-above eye level and within 4 feet of the lane (see figure 21). While the barrier and steel portions of the impact attenuators will be treated with Natina to help blend into the background, the slight negative change in total visual quality is related to the alteration of overall landscape composition, encroachment of manmade elements into the view, and permanent loss of trees. It should be noted that the application of visual mitigation techniques (Permeon, Natina, tree preservation as possible) improves the total visual quality over non-mitigated project conditions. See Table 1.

**Oregon visibility:** Background visibility of the project would occur within the viewsheds of the Columbia River, I-84, and the Historic Columbia River Highway. The proposed scaling may be temporarily visible from Oregon as limited background views for stationary viewers (vehicle passengers, recreational users of various trails); drivers along I-84 or recreational users on the Columbia River are unlikely notice any temporary change due to viewing speed, view angle (perpendicular to the direction of travel), and distance (see figures 16 and 19).

Temporary impacts to background views will occur within the visual context of much larger landscape including the tall cliffs and highly variable vegetation patterns north of SR-14, and distant ridges.

![Figure 19. Oregon Visibility: Eastern project area at 105mm telephoto zoom from Memaloose Rest Area Looking North](image)
**Proposed Impacts, Analysis, and Mitigation**

The proposed rockfall mitigation project is designed to improve safety to the travelling public by removing and/or loose, unstable rock and providing enhanced rock catchment areas within the context of the Scenic Area Management Plan and its restrictions.

**Scaling and Bolting**

Scaling will occur in areas of exposed basalt primarily on slopes 2125 and 3337 (Figure 20), and bolting/dowels will be installed on all three slopes within the scaling limits. The intent is to remove known areas of loose, unstable rock not only to protect SR-14, but workers conducting scaling operations as well. Rock bolts and dowels are intended to stabilize larger blocks of fractured rock that cannot be removed by scaling, including blocks that occur above the primary scaling areas. It is anticipated that the proposed rock scaling work will have only temporary visual effects to the analyzed Key View Areas and other associated viewpoints. Rock scaling and bolting will not alter the overall slope structural appearance, affect slope pitch, height, or aspect, or realign any structural elements of SR-14. Primary temporary impacts from all Key Viewing Areas will be the appearance of unweathered rock, increasing reflectivity of sunlight and visibility. The weathering agent Permeon will be applied to all newly-exposed rock faces to reduce visibility and reflectivity, and blend with adjacent natural rock faces. Rock bolts are visible primarily during construction as drill equipment is suspended from the slopes, and during grouting of the bolt ends. All dowel and bolt ends will be recessed, and the grout plug finished flush with the rock surface. Cured grout will be treated concurrently with the Permeon applied to scaled areas to produce a single treated surface. More than one application of Permeon may be needed to reach the desired blending with adjacent weathered rock surfaces.

Figure 20. Estimated Scaling Areas Slope 2125 above and 3337 following page (from WSDOT Geotechnical Office preliminary report)
Stage 3 Rockfall Ditch

A Stage 3 Rockfall ditch will be constructed in two segments within the project corridor below slopes 2125 (western area) and 2228 (eastern area near the rest area) for a total of 1,600 linear feet, or 800 linear feet per section. Specific mileposts are 73.18 to 73.33, and 37.74 to 73.89. As illustrated in Figures 22 and 22b, these areas currently function as maintained rockfall catchment ditches, but are not wide enough to safely contain rock falling from higher slope elevations. In lieu of heavy steel rockfall fencing, the existing ditch width provides the minimum catchment necessary using a 48” single slope concrete traffic barrier. Barrier will be placed 4-feet north of the fog line, the minimum offset allowed by highway safety design standards. The large gap in barrier placement between slope 3337 and the large tree-filled chute between slopes 3337 and 3338 will provide a long visual break in the new highway feature and allow unobstructed views to the lower talus slope areas, chutes, and trees. Optimum ditch width is 20 feet, with the ditch bottom excavated approximately 4-feet below the edge of the highway shoulder to provide catchment and contain any energy (bounce) from rocks falling from the top of the face. The bottom of the excavated ditch will be filled with gravel or similar material to absorb energy from rocks falling from the adjacent face (figure 21). Since the ditch is depressed below the surface of SR-14 and barrier, the constructed rockfall ditches will be visible only from the SR-14 KVA, however the taller barrier and close proximity to the lane will encroach into the westbound viewshed to a greater extent than standard 36” barrier. Geotechnical calculations found that the shorter 36” standard barrier, while preferred visually, would not provide adequate protection from rockfall generated in the tallest slope areas. Varying between 36” and 48” inch barrier for the tallest portions of the slope would create odd “battlement” undulations along the top of the barrier runs, so WSDOT has elected to use the taller barrier continuously throughout the corridor to maintain visual consistency. All concrete barrier will be treated with the dark brown Natina weathering agent preferred by the USFS for visual mitigation on concrete and steel structures to blend with background rock colors and be visually subordinate within the context of the larger landscape and Oak Woodland landscape setting.

To meet current highway design safety standards, each barrier end section will be fitted with a galvanized traffic impact attenuator with safety reflectors. These attenuators reduce injury in potential end-on collisions. While the reflective end sections cannot be altered, WSDOT will specify the Natina weathering agent on galvanized sections as part of the manufacturing process.
Figure 21. WSDOT Stage 3 Rockfall Ditch Cross Section with Barrier Alternate and Geotech Notes (WSDOT Design Manual 1239-6, 2020), 48” single slope concrete barrier (example below), and proposed Impact Attenuator (example). Rock Protection Fencing is not proposed as part of this project.

48-inch single slope concrete barrier as viewed from standard sedan eye level.
Figure 22a. Slope 2125 Existing Rockfall Catchment Area looking east.

Figure 22b. Slope 2138 Existing Rockfall Catchment Area looking west.
**Tree and Shrub Removal**

As noted previously, WSDOT will removed targeted trees and mature woody shrubs that grow on and above the various rock faces to reduce future rock failure as the trees and root mature and expand into fissures. Targeted removal will also reduce risk associated with wind action on tree trunks/canopies that can lever rocks loose during winter storm events, and to reduce current and future roadway hazards from trees poorly or precariously rooted into rock fissures or undercut trees above the highway. See Appendix A for estimated tree removal limits. It is not anticipated that the tree removal as described will produce significant long-term visual effects to the larger landscape or within the Oak Woodland landscape setting. Due the highly exposed and steep slopes of the project area, and targeted nature of tree removal, WSDOT is not proposing any revegetation/reforestation as part of the visual mitigation strategy. WSDOT will focus instead on tree protection during construction, and working with geotechnical engineers to limit contractor access and tree removal to the greatest extent possible.

**Cumulative Effects to Scenic Resources**

Cumulative effects of the proposed project were analyzed in compliance with the Columbia River Gorge National Scenic Area Act (1986) and Revised Management Plan (2011). The need to address long-term, cumulative effects of new development and land use on the character of existing landscapes within the Scenic Area is as crucial as measures addressing the impacts of individual developments. Implementation of the applicable management plan requirements serves as a cumulative effects analysis, as the combination of strictly defined land use designations and resource protections work collectively to ensure no adverse effects to scenic, natural, and cultural resources.

Using publically available data on County building permit web sites and known WSDOT maintenance and construction actions, a review of potential or immediate past projects within 2 miles east and west of the proposed project was conducted to provide context to potential larger physical changes over time. A 2-year analysis period was selected as WSDOT will implement all visual mitigation requirements for the proposed project and meet the Visually Subordinate scenic standard within that timeframe.

Table 2 lists previous projects, as well as known and foreseeable actions two miles east and west of the project location based on available information. This list was used to assess combined cumulative effects for scenic resources.

<table>
<thead>
<tr>
<th>PROJECT NAME/TYPE</th>
<th>ACTIONS</th>
<th>LOCATION/DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>WSDOT SR-14 1.7 Miles East of Bingen Slope Stabilization</td>
<td>Implementation of a large rockfall safety project; scaling, talus removal, trim blasting.</td>
<td>SR-14, summer 2022</td>
</tr>
<tr>
<td>WSDOT SR-14 Bingen Port Access Improvements Project (Bingen Urban Area)</td>
<td>Development of a new Port of Klickitat County access point from SR-14 to improve safety and reliability crossing BNSF mainline tracks.</td>
<td>SR-14, Bingen Urban Area, summer 2022</td>
</tr>
<tr>
<td>Utility Maintenance</td>
<td>ROW/Easement Management; Pruning and mowing.</td>
<td>Throughout Scenic Area; Ongoing</td>
</tr>
<tr>
<td><strong>State and County Roadway Maintenance Activities</strong></td>
<td>Pavement repair or preservation, guardrail repair, emergency rockfall removal.</td>
<td>Throughout Scenic Area; On-Going</td>
</tr>
<tr>
<td><strong>Land Acquisitions/Land Use Conversions</strong></td>
<td>Purchase and/or conversion of GMA lands.</td>
<td>Throughout Scenic Area; Unknown</td>
</tr>
<tr>
<td><strong>State/Private GMA/SMA Forest Practices/Timber Harvest</strong></td>
<td>Forest Practices consistent with the Management Plan.</td>
<td>Throughout Scenic Area; Unknown</td>
</tr>
<tr>
<td><strong>US Forest Service Trail Maintenance/Construction</strong></td>
<td>Maintain and construct recreational resources consistent with the Management Plan.</td>
<td>Throughout Scenic Area; On-going</td>
</tr>
<tr>
<td><strong>Railroad Maintenance/Construction</strong></td>
<td>Track inspections, repair and replacement</td>
<td>Throughout Scenic Area; On-going/Unknown</td>
</tr>
</tbody>
</table>

Table 2. Past, Present, and Foreseeable Future Actions within the Study Area.

The largest known future actions within the vicinity of the rockfall safety project is the planned WSDOT Slope Stabilization Project located 1.7 miles east of the Bingen Urban Area boundary, and the WSDOT Bingen Port Access Project located within the Bingen Urban Area. The Port Access project occurs within the Bingen Urban Area and is not subject to Scenic Area review.

Standard maintenance operations associated with local and state roads, utilities, and the railroad are on-going and established practices. Invasive plant treatments along SR-14 and USFS trail maintenance can be considered resource enhancements, and their visual effects considered positive.

As the current proposed project will be designed and constructed to meet visually subordinate standards for the appropriate landscape setting, conditions placed on the land use permit issued by Columbia River Gorge Commission there will be no adverse cumulative impacts to scenic resources to any of the Key Viewing Areas as a result of project.
Appendix A – Tree Removal Documentation
Anthony,

Per our phone conversation yesterday, I have attached several pictures with the trees the Geotechnical Office will recommend be removed as part of the SR 14 Chamberlain Lake Rest Area – Slope Stabilization project (XL6002, XL6016, & XL6017). We will be recommending that any trees or brush that are growing on the slope, or within approximately 5 feet of the slope crest, be removed. I believe I have captured all the trees that we will be recommending be removed in the attached images, but there may be additional trees/brush that need to be removed by the contractor to access portions of the slope. For example, some of the trees/brush growing in the chutes on Slope 3337 (see Slope 3337 Tree Removal 1 image) may need to be removed so the contractor can access the slope in that area to install rock dowels. We can recommend the contractor not remove any additional trees unless absolutely necessary to conduct their work.

Please feel free to call or email if you have any additional questions or concerns.

Thanks,

Sam Johnston
WSDOT Geotechnical Specialist
Unstable Slope Management Unit

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State Materials Laboratory - Geotechnical Office

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Slope 3337 Central Area, Photo 1

Trees on talus slopes to be retained
Trees and shrubs on talus slopes to be retained

Slope 3337 Central Area, Photo 2