

VISUAL QUALITY ASSESSMENT TECHNICAL MEMORANDUM

VISUAL IMPACT ASSESSMENT AND MITIGATION RECOMMENDATIONS

SR 14 Marble Rd Vic. to Belle Center Rd Vic. Safety Improvements MP 22.60 to 23.70

Skamania County, WA

Prepared by
WSDOT SW REGION
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Washington State
Department of Transportation

Project Description

The proposed project will address safety issues along State Route (SR) 14 between Milepost (MP) 22.6 and Milepost 23.7 in the Columbia River Gorge National Scenic Area. The Marble Road intersection is located at approximate MP 23. The project corridor has been identified as a High Accident Corridor (HAC) and contains High Accident Locations (HAL).

The proposed project is an I-2 safety project that will improve safety by reducing vehicular accidents along this section of SR 14 from MP 22.6 to MP 23.7. This section of highway is experiencing an elevated rate of vehicular accidents and is listed on the WSDOT Southwest Region's High Accident Corridor (HAC) and High Accident Location (HAL) lists. Vehicular accidents occur due to poor vertical and horizontal alignments in some sections and at the Marble Road intersection. Both major HAC's within the project corridor have seen numerous accidents in recent years, including fatalities.

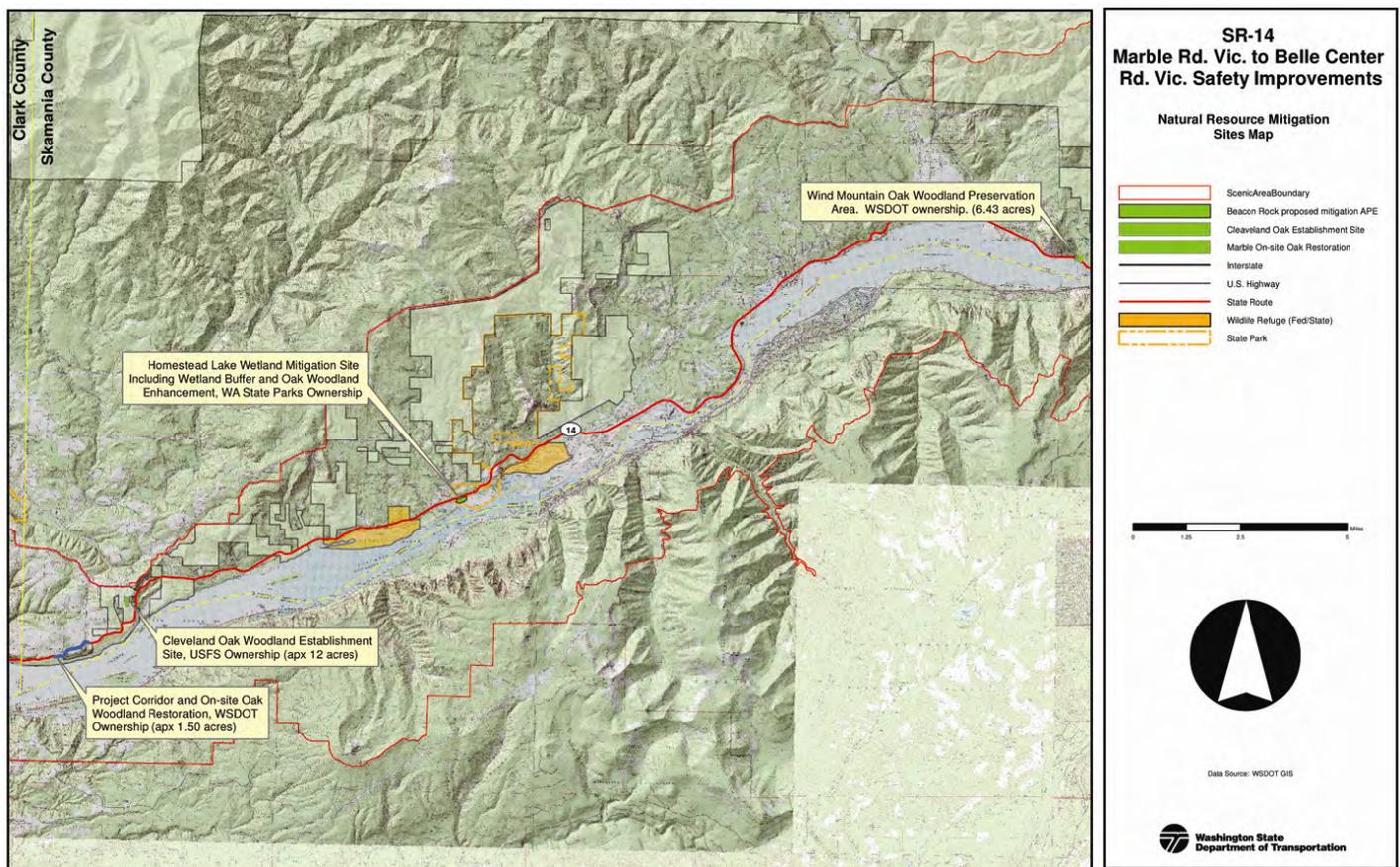


Figure 1. Project Vicinity Map

Major project components as currently proposed include realignment of SR-14 between MP 22.6 and MP 23.0, intersection improvements at the Marble Road intersection, improvement of a climbing shoulder between MP 23.1 and MP 23.2, and the addition of a centerline rumble strip between MP 23.2 and MP 23.7. Three natural resource mitigation sites will be developed as part of the project – wetland and buffer mitigation at the Homestead Lake mitigation site at Beacon Rock State Park and an Oak Woodland mitigation site at the USFS-owned Cleveland parcel on

top of Cape Horn. Both of these sites include earth-disturbing activities to restore, enhance, and expand key natural resource elements including intensive management of blackberry and other exotic invasive species followed by soils enhancement, large wood debris placement (where appropriate), and dense replanting. A third natural resource site will be held for the express purpose of Oregon White Oak preservation and will not be subject to any work activities.

The realignment work will involve moving SR-14 to the north to mitigate a dangerous reverse curve and include a large cut/reslope area and associated vegetation removal. The cut slope is anticipated to be primarily soil although there is a potential that the cut may encounter rock. Shifting SR-14 to the north will leave an existing vegetated slope including some Oregon White Oak woodland between the new alignment and the abandoned section of SR-14. The abandoned section of SR-14 would be reclaimed (removal of asphalt and subgrade) and soil material imported to restore the historic slope, blending the old highway alignment with the surrounding topography. The reclaimed section of SR-14 and as much of the new slopes as possible will be restored as Oak woodland.

The intersection improvement will include alignment improvements to the SR-14/Marble Rd. intersection to improve safety and visibility. Work will include a small amount of fill to facilitate improvements to alignment and turning radii, including permanent fill into riparian buffers and a small amount of temporary fill into wetland areas associated with an unnamed tributary, clearing of mature vegetation, and a culvert extension. The project will also include the installation or replacement of sections of guardrail, a natural dispersion area, and a biofiltration swale.

Equipment to be used may include trucks, cranes, man lifts, excavators, drill rigs, hoe rams, loaders and large haul vehicles. Earthwork for the realigned section of SR-14 is expected to be completed using standard excavation techniques, although targeted blasting may be used if needed. Construction activities are estimated to take a single construction season.

The project begins at MP 22.6 approximately 0.4 mile west of the Marble Rd. intersection, a rural intersection located in the historic agricultural settlement of Mt. Pleasant, and extends east through rolling pasture land to MP 23.7. This rural community in western Skamania County includes the Mt. Pleasant elementary school, a historic pioneer cemetery, the historic Mt. Pleasant Grange, numerous farmsteads and rural residences, Christmas tree farms, and an iris grower. This area and the proposed WSDOT improvements are within the Columbia River Gorge National Scenic Area and all within a designated Special Management Area zone. The western realignment segment of the project is within the *Coniferous Woodland* landscape setting, while the eastern 2/3rd of the project corridor and Cleveland oak woodland mitigation site are located within the *Pastoral* landscape setting. The Homestead Lake mitigation site at Beacon Rock State Park is located within the *River Bottomlands* landscape setting. The current SR-14/Cape Horn Vic. to Cape Horn Rd. Vic. safety improvement project is located approximately 2 miles to the east.

This document provides an analysis of existing visual conditions, visibility from National Scenic Area (NSA) Key Viewing Areas, and projected visual impacts and mitigation alternatives. It is intended to satisfy both NSA and Federal Highway Administration (FHWA) standards for visual quality analysis/visual impact assessment.

Existing Visual Conditions

SR-14 Eastbound. The Eastbound view corridor is divided into two distinct segments. Continuously climbing west-to-east, the western segment is dominated by a steep hillside forested with Oregon White Oak, which is the focus of the viewshed until SR-14 curves to the south providing glimpse views of the southern wall of the Columbia Gorge. A wide pullout in this area provides the opportunity for additional views down to the Columbia River and other points in Oregon. East of the pullout, SR-14 sweeps to the left (northeast) and enters the pastoral landscape setting in the Mt Pleasant (Marble Rd.) area that includes open pasture, rural homesites, and a woodlot/hedgerow landscape pattern developed during the early settlement of the Mt. Pleasant community. The pastoral setting extends to the eastern project limits in the vicinity of Belle Center Road. With the exception of the viewpoint in the central portion of the project area, the corridor lacks any significant views of the Columbia River and surrounding cliffs.

SR-14 Westbound. Westbound views are more expansive as SR-14 descends through a pastoral landscape with distant views of the Columbia River and the haze of the Portland metropolitan area, Crown Point, and other prominent cliffs in Oregon. West of the viewpoint, SR-14 enters a forested corridor framed by a mixed-deciduous forest on either side of SR-14. The Oregon White Oak forest visible in the eastbound direction is not a prominent component of the westbound viewshed.

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. The western portion of the project corridor (realignment area) traverses an area classified as *Coniferous Woodlands* landscape setting by the National Scenic Area. This landscape setting and SMA designation requires that any project meet the “Not Visually Evident” scenic standard. As defined in the National Scenic Area Management Plan, this standard provides for development or uses that are not visually noticeable from KVA’s. Development or uses must only repeat form, line, color, and texture that are frequently found in the natural landscape, while changes in their qualities of size, amount, intensity, direction, pattern, etc., shall not be noticeable.

The eastern portion of the project corridor and the Cleveland Oak Woodland mitigation area are located within the *Pastoral* landscape setting. As defined, the SMA scenic standard applied to these areas is “Visually Subordinate”. Development may be visible, but is not what is dominant or memorable in a landscape. Pastoral areas shall retain the overall appearance of an agricultural landscape.

The Homestead Lake mitigation site at Beacon Rock State Park is located within the *River Bottomlands* landscape setting. The SMA scenic standard applied is also “Visually Subordinate”, with the bottomlands retaining the overall visual character of a floodplain and associated islands. The use of plant species native to the landscape setting is encouraged.

FHWA Visual Analysis

WSDOT utilized a corridor evaluation methodology based on the FHWA publication *Visual Impact Assessment for Highway Projects* (1988) to assess the overall scenic condition of the project corridor. This methodology refined and expanded the Scenic and Recreational Highway Program 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*. Scores for the project corridor range from 31 (highly scenic) at the viewpoint and in within the expanse of the pastoral landscape of Mt. Pleasant and a low of 21 (scenic) entering the Marble Rd. intersection area from the west. These scores are based on existing conditions. Vegetation, landform, intactness, and overall composition contribute the most to the scenic quality of the area, as noted in Figure 2. Intactness drops at the Marble Rd. intersection due to the transportation infrastructure in the area and mixed residential development. Overall, the existing project corridor has an average rating of 24.6 and is considered “scenic”.

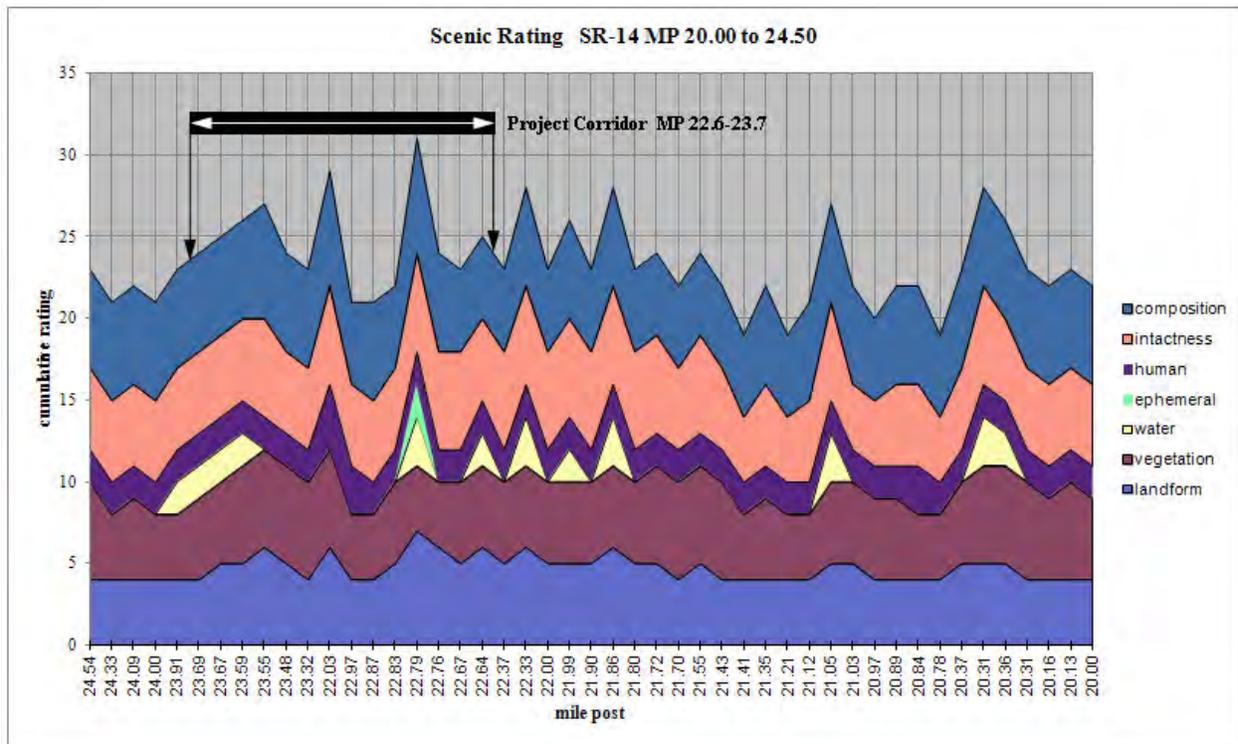


Figure 2. Cumulative Corridor Scenic Resource Rating (Corlett, 2000)

The numerous viewpoints used to analyze potential visual change due to project construction are a combination of National Scenic Area Key Viewing Areas (KVA’s) and points selected using the established FHWA methodology. This analysis describes existing visual conditions and potential change to visual resources at 10 viewpoints. Several of these are continuous view corridors such as SR-14, and others have multiple vantage points while described as a single KVA in the NSA Management Plan. Analysis of certain KVA’s are required by the management plan if a proposed action or impact will be visible from one or more of the points established by the Scenic Area Act. While this report analyzes potential effects from nine KVA’s with established visibility, many other viewpoints were reviewed as well.

Field analysis conducted for this project showed that the project corridor is NOT visible from several key KVA’s in the Western Gorge including SR-14 Cape Horn viewpoint, Sandy River Delta, Multnomah Falls, and Bonneville Dam Visitor Centers. See Figure 3 for the KVA locations reviewed for this analysis.

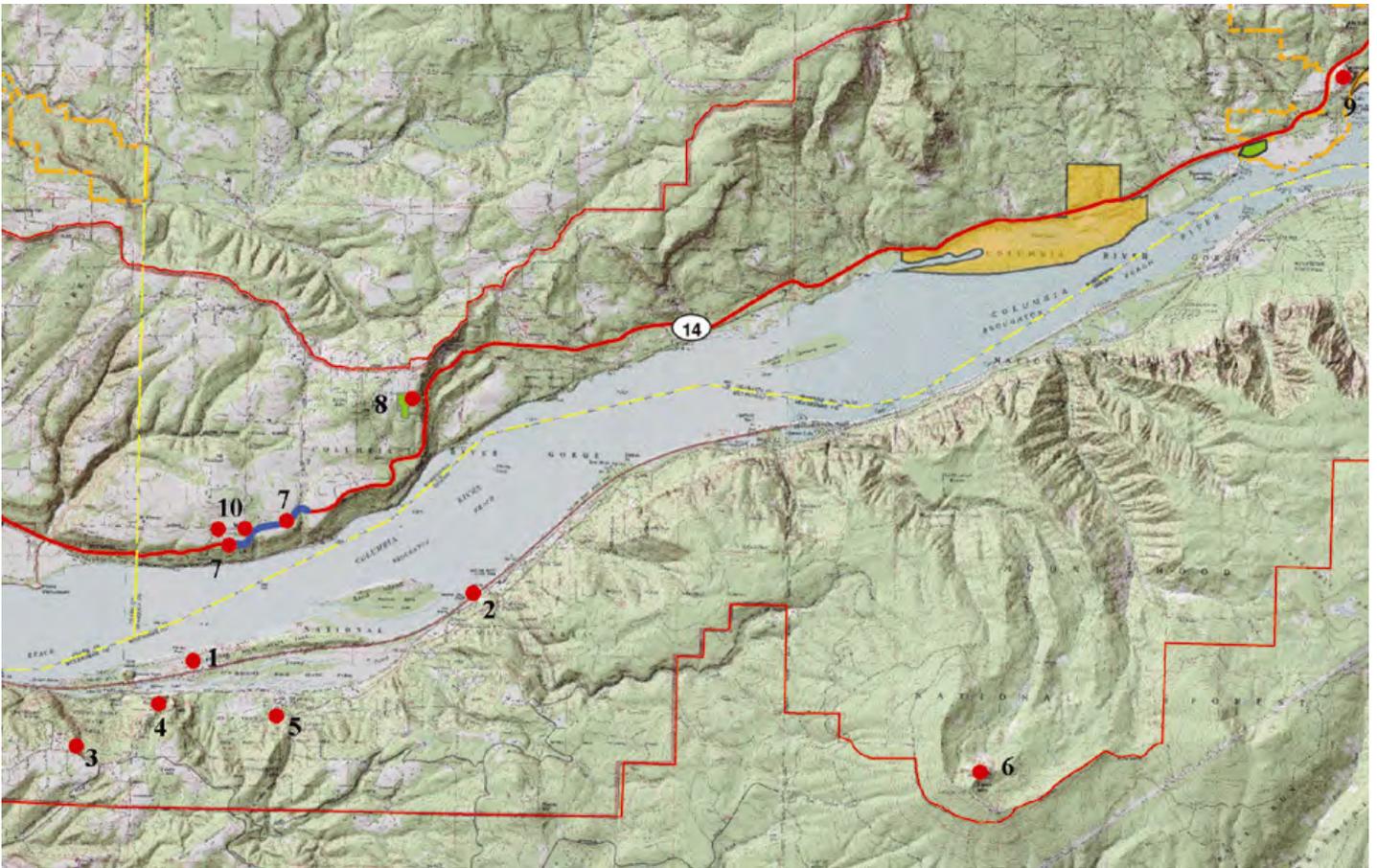


Figure 3. National Scenic Area Key viewing area locations with project visibility. Key viewing areas not mapped do not have project visibility. See text for key viewing area identification.

National Scenic Area Key Viewing Area Analysis

The project corridor is located in the coniferous woodland and pastoral landscape of Mt. Pleasant among historic buildings, hedgerows, woodlots, pastures, and small farms. While the project corridor and the proposed highway improvements will be visible from several KVA’s in Oregon, favorable topography created by realigning SR-14 to the north will improve scenic conditions by providing complete screening of vehicles and associated headlight glare currently seen from Crown Point, Portland Women’s State Park, and Rooster Rock State Park. The most direct views of the project corridor are from SR-14 (the linear transportation facility to which the proposed improvements will take place), Crown Point, Portland Women’s Forum State Park, Rooster Rock State Park, and local roadways including Marble Road.

Oregon visibility: The project area is visible from six KVA’s in Oregon. Visibility from the Columbia River is presumed, although its view description and impact potential are very similar to I-84 and other Oregon KVA’s and additional analysis is not provided in this document.

Please refer to Figure 3 for KVA locations.

1. Rooster Rock State Park

The project area is directly north across the Columbia River from Rooster Rock State Park and several associated overlook areas (see figures 4a and 4b). View type can be considered both glimpse and vista depending on the viewer location and activity in the park, although the middle ground-background landscape position of the project, haze associated with distance and elevation, and screening provided by existing vegetation partially reduce project visibility. View exposure is short to long duration depending on time spent at various vistas or the viewing direction. Evening and nighttime views of the project area include the presence of headlights as vehicles traverse the exposed curve of SR-14.

Project elements expected to be partially visible from the Rooster Rock State Park KVA are limited to the soil cut and associated vegetation necessary for the realignment of SR-14. Vegetation removal will be visible, but most of the actual realignment and construction work will be screened from Rooster Rock by the remaining vegetated slope. Following slope restoration and establishment of vegetation on the abandoned section of SR-14, the view from Rooster Rock State Park – particularly at night – will see an overall improvement.

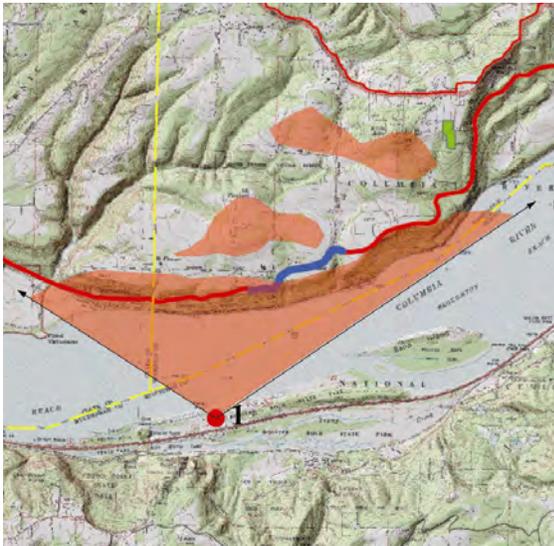


Figure 4a. Rooster Rock KVA Viewshed



Figure 4b. View of Project Area From Rooster Rock

2. I-84

The project area is located directly north across the Columbia River from I-84 and is visible for several miles. View type from I-84 can be considered “glimpse” as most viewers (drivers) are focused on the highway and distant points rather than viewsheds perpendicular to the direction of travel (see figure 5a). The landscape position of viewers both eastbound and westbound on I-84 (inferior to the project area), distance to the project, and screening provided by evergreen trees adjacent to I-84 and those surrounding the project area minimize visibility. View exposure is short to long duration depending on speed, distance/length of view time between blocks of vegetation, and viewing direction (see figure 5b).

Project elements expected to be partially visible from I-84 are limited to the soil cut and associated vegetation necessary for the realignment of SR-14. Vegetation removal will be visible, but most of the actual realignment and construction work will be screened from Rooster Rock by the remaining vegetated slope.

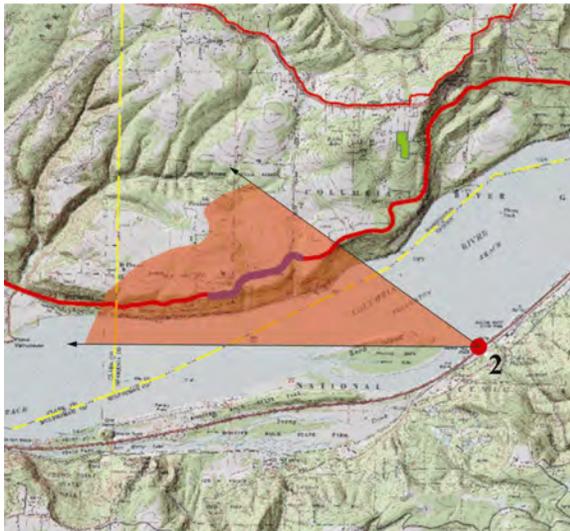


Figure 5a. I-84 KVA Viewshed (selected viewpoint)



Figure 5b. Zoom of Project Area from I-84

3 and 4. Portland Women’s Forum State Park and Crown Point

The project is located directly across from and at eye level with two of the most famous viewpoints in the Gorge, Portland Women’s Forum State Park and Crown Point (Vista House). Both of these viewpoints look northward over the pastoral landscape of the Mt. Pleasant area and eastward along the Columbia River between the framing walls of the Gorge. As these viewpoints are very close together and have similar vantage points, they will be addressed with a single analysis. The view type from both KVA’s are considered “vista”, as the project area occurs in the distant middle ground seen over the expanse of the Columbia River (see figure 6a). The view exposure has a significantly higher duration than other KVA’s given the “destination” nature of the overlooks, with viewers often lingering to enjoy the panoramic view (see figures 6b and 6c). Evening and nighttime views of the project area include the presence of headlights and brake lights as vehicles traverse the exposed curve of SR-14.

Project elements expected to be fully or partially visible during the construction phase from the Portland Women’s Forum state park and Crown Point KVA’s include vegetation clearing and excavation associated with the realignment, restoration of abandoned sections of SR-14, enhancements to the climbing shoulder east of the Marble Rd. intersection, and safety related work such as guardrail installation. The eye-level view and long duration of view exposure of the project area will temporarily increase visibility of equipment throughout project construction to a higher level as compared with other Oregon view points.

Following slope restoration and establishment of dense native vegetation (Oregon White Oak woodland) on the abandoned section of SR-14, the project area will become part of the landscape and not visually evident against the surrounding landscape. It is anticipated that the viewshed conditions from these two important KVA’s will actually improve over time as SR-14 traffic is shifted to the north away from the cliff edge behind the existing cut slope, physically screening passenger and commercial traffic from view. This will be particularly noticeable at night with the elimination of westbound headlight glare that currently points directly south toward Crown Point.

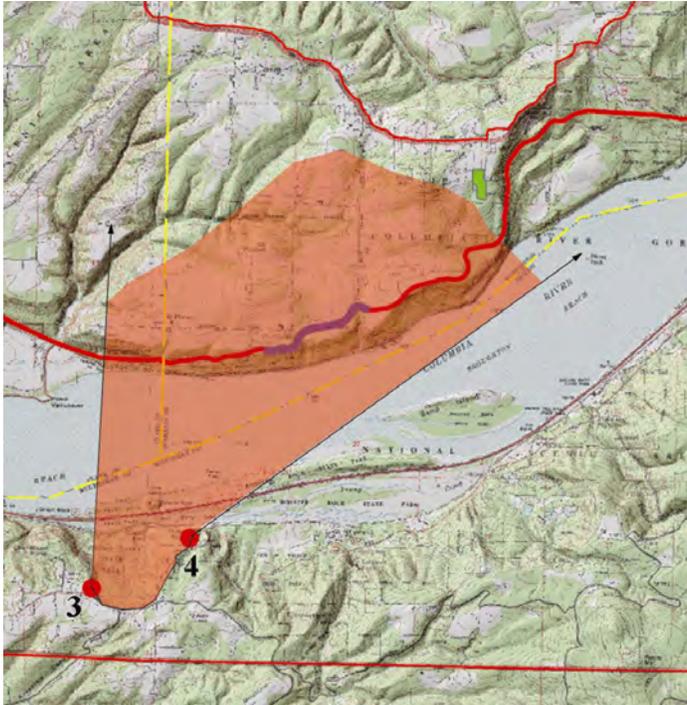


Figure 6a. Portland Women's Forum and Crown Point State Park KVA Viewsheds



Figure 6b. View towards project area from Crown Point State Park



Figure 6c. View towards project area from Portland Women's Forum State Park

5. Historic Columbia River Highway

The project area is located directly north across the Columbia River from the Historic Columbia River Highway. View type from the Historic Highway can be considered “glimpse” as most viewers (drivers) are focused on driving the narrow highway and its immediate surroundings and due to the relatively small openings in the forest in this section of the Gorge (see figure 7a). The landscape position of viewers from most points along the potentially effected segments of the Historic Highway (inferior to the project area), variable topography and direction of the historic highway, distance to the project, and screening provided by evergreen trees adjacent to the highway and those surrounding the project area significantly reduce visibility. View exposure is typically very short to the north bank area of the Columbia River due to highway geometrics and vegetation. Any potential glimpse view of the project area would be specific to only a limited number of forest openings. View duration is likely very short due to speed, short view time between blocks of vegetation, viewing direction, and haze (see figures 7b and 7c).

Project elements expected to be partially visible from minor segments of the Historic Columbia River Highway KVA are limited to vegetation clearing and excavation associated with the western portion of the realignment.

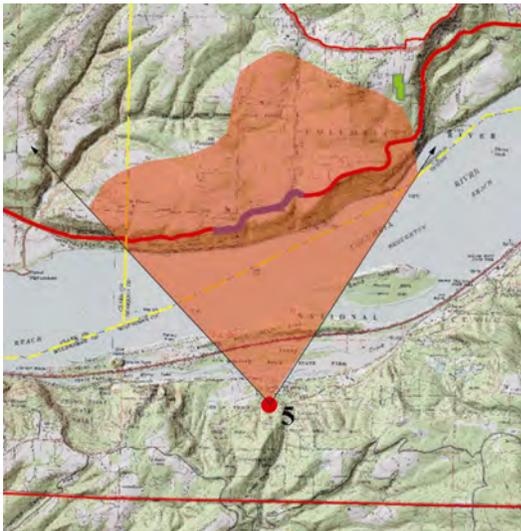


Figure 7a. Historic Columbia River Hwy KVA Viewshed



Figure 7b. View of Project Area from US-30 near Bridal Veil State Park



Figure 7c. View of Project Area from US-30 near Sheppard's Dell State Park

6. Larch Mountain/Sherrard Point

The project area is located northwest of Larch Mountain and Sherrard point. View type would be considered “vista”, as the project area occurs in the distant background of the viewshed seen from the fixed vantage point atop Larch Mountain (see figure 8a). Project visibility from Larch Mountain and the Sherrard Point viewing area is extremely limited as there is a horizontal separation of over 6 miles and a 3,500’ elevation difference. It is expected that distance, elevation, and the haze associated with expansive views such as this will limit visibility of the project. Project elements will blend into the background, although there may be some noticeable change during construction as resloping actions are occurring. View exposure is short to long duration depending on time spent at various vistas or viewing direction (see figure 8b)

Project elements expected to be partially visible from the Larch Mountain/Sherrard Point KVA are limited to vegetation removal and cut associated with realignment of SR-14.

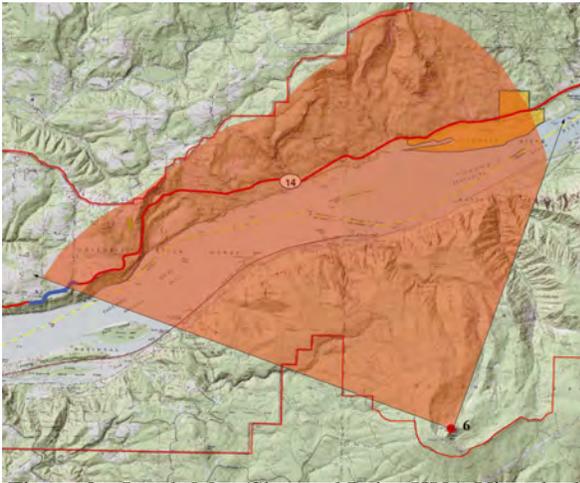


Figure 8a. Larch Mtn./Sherrard Point KVA Viewshed



Figure 8b. View of Project Area from Sherrard Point

Washington Visibility: The project area is visible from three KVA's in Washington, SR-14 Cape Horn (Cleveland viewpoint), and Beacon Rock, as well as Marble Road.

Please refer to Figure 3 on page 6 for KVA locations.

7. SR-14

The SR-14 corridor KVA is proposed for direct change with the planned improvements, and will be affected throughout the project corridor (see figure 9a) View type is considered “continuous” as drivers experience the entirety of the corridor as they travel through the area. Most views and anticipated changes are of foreground and middleground areas, meaning that any temporary or permanent change would be immediately and directly noticed by drivers throughout the length of the corridor. View duration is moderate to long depending on viewer position in the corridor and driving direction. Long duration views occur where areas are visible at the end of a long tangent section of highway between curves. The primary long duration view is the eastbound and westbound view of the proposed realignment area at the west end of the corridor (see figures 9c and 9d). Longer duration views also occur at the informal viewpoint located at the wide pullout and proposed natural reversion area (see figure 9b). Moderate duration views occur throughout the rest of the corridor in both eastbound and westbound directions.

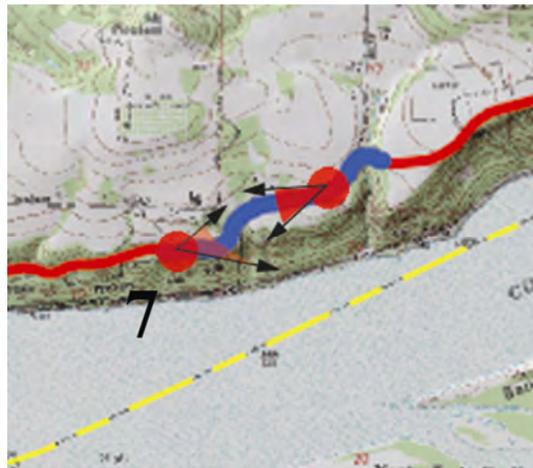


Figure 9a. SR-14 KVA Viewshed

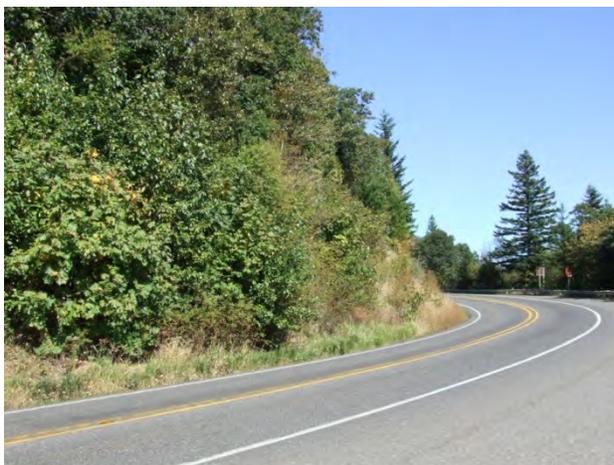


Figure 9b. Natural Reversion Area



Figure 9c. View Eastbound at Beginning of Project



Figure 9d. View Westbound over Climbing Shoulder

8. Cape Horn (Cleveland viewpoint)

The project corridor is west of the geologic feature known as Cape Horn, a large outcrop of basalt with striking vertical cliffs rising from the Columbia River. The primary Cape Horn viewpoint adjacent to SR-14 or views of the outcrop will not be affected by the project. However, the proposed Cleveland Oak Woodland Establishment area adjacent to the new Cape Horn Overlook (Cape Horn trail) will have temporary, short duration visibility to users of the access trail to the viewpoint (see figure 10a). Work conducted in the existing pasture will involve surface preparation, bark mulch placement, and planting. View duration is moderate to long depending on viewer position along the trail, vantage point, length of time spend at the various viewpoints, and direction.



Figure 10a. Cape Horn (Cleveland) KVA Viewshed

The existing pastoral landscape will be converted to Oregon White Oak woodland with a native woody understory. The pasture area is currently owned by the USFS and is mowed 1-2 times per year, and portions of the pasture are dominated by blackberries and other invasive species. While the pastoral landscape is a high value landscape setting in the scenic area, this pasture is not visible from any other KVA's, reducing its visual sensitivity (see figures 10b and 10c). Conversion to priority habitat oak woodland will add forest complexity and wildlife habitat to the area and provide a public opportunity to illustrate environmental restoration. It is not anticipated that the restoration work adjacent to the Cape Horn Overlook will have any long term negative visual effects and will ultimately provide a highly varied backdrop to the area.



Figure 10b. New Cape Horn Viewpoint



Figure 10c. View of Oak Restoration Area From Trail

9. Beacon Rock (Homestead Lake mitigation site)

The Homestead Lake mitigation site at Beacon Rock state park will provide wetland, riparian buffer, and oak woodland enhancement opportunities at a location identified by WA State Parks as suitable for environmental enhancement. The mitigation site is located at the far western end of the park and is close to Skamania Landing Road. As it currently exists, the site is managed for wildlife habitat (western pond turtle) and grazing. The public does not often visit this portion of the park, staying mostly in the new Woodard Creek day use area and other developed locations to the east.

Work will involve grading (wetland creation), clearing and grubbing, soil preparation, habitat structure placement, bark mulch blankets, seeding, and planting. Clearing operations will remove invasive vegetation and pasture grasses only – mature native trees and shrubs will be protected.

The mitigation site is partially visible from SR-14, although it is classified as a “glimpse” view and is of very short duration only in the eastbound direction by drivers. Viewers from this vantage point will likely see only construction equipment for a period of weeks; the site will revert to natural colors and tones and blend as part of the natural landscape once complete (see figure 11a).

Users of the Beacon Rock trail have a panoramic view of the western section of the park including the Homestead Lake area from switchbacks along the middle portion of the trail (see figures 11b and 11c). This background view is partially blocked by trees, and will likely be unnoticed with the exception of construction equipment used during site work.

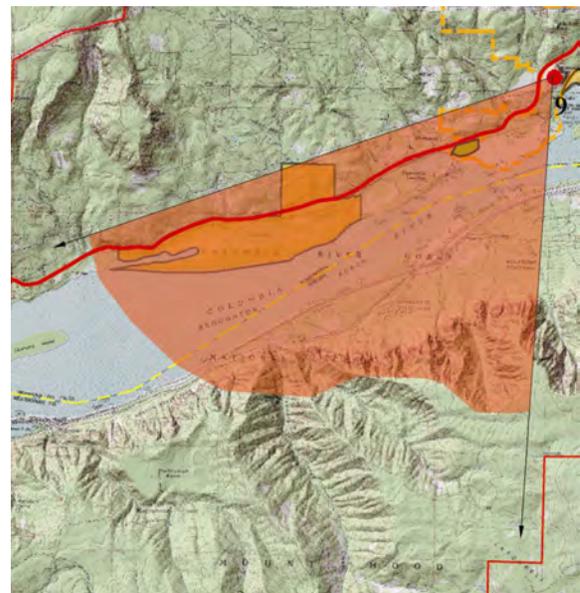


Figure 11a. Beacon Rock KVA Viewshed



Figure 11b. View West Over Homestead Lake Area



Figure 11c. Zoom West Over Homestead Lake Area

10. Marble Road (multiple viewpoints)

The project corridor contains the intersection and lower portion of Marble Road, a local road in western Skamania County. This road serves Mt. Pleasant School, several homes, and farms located in the historic pastoral landscape of the Mt. Pleasant community.

Marble Road intersects SR-14 adjacent to the historic Mt. Pleasant Grange (see figure 12a). View type is considered “targeted” as westbound views in the project vicinity are limited to pavement surface and framing vegetation due to the steep grade of Marble Road and vegetation (see figure 12b). Eastbound drivers focus almost entirely on the intersection and the segment of SR-14 east of the intersection. A superior viewing angle and framing vegetation help to focus the viewshed with distant views of pastures and forested ridges providing a backdrop (see figure 12c). Additional eastbound views west of the school are more panoramic, with wide ranging views of rolling pastures, the forested south wall of the Gorge, and distant hills and mountains (see figure 12d).

Project elements expected to be partially visible from the two selected Marble Road view points include vegetation removal (mature oak, maple, and conifers) and safety improvements at the Marble Road intersection, and clearing for the western realignment from the western viewpoint.

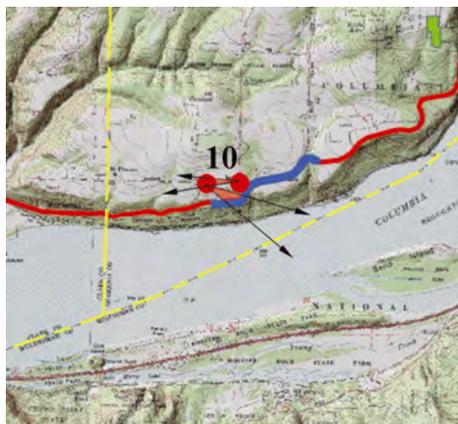


Figure 12a. Marble Rd. Viewshed



Figure 12b. Looking West at Marble Rd. Intersection



Figure 12c. Looking East along Marble Road toward SR-14 intersection



Figure 12d. Looking South over Powell Property

Proposed Impacts, Analysis, and Mitigation

The proposed safety improvement project is designed to improve safety to the travelling public within the context of the Scenic Area Management Plan and its restrictions. For analysis purposes, the project is divided into three sections: Western Realignment, SR-14 Climbing Shoulder, and Natural Resource Mitigation Sites.

Scenic Resource Mitigation Plan Sheets are contained in Appendix A, found at the end of this analysis.

Western Realignment

The primary element of the western realignment section is the relocation of SR-14 between MP 22.6 and MP 23.0 to the north to improve poor curve geometrics in a high accident location. The western portion of this section consists of a steep, forested slope extending up from the Columbia River to the Mt. Pleasant area north SR-14. SR-14 traverses and ascends this slope, reaching the crest in the vicinity of Marble Road (see figure 13). SR-14 is fully exposed to several Oregon KVA's along several segments of this crest, including the current reverse curve west of the Marble Road intersection. The area is heavily forested with a mixed deciduous forest dominated by Oregon White Oak and Bigleaf Maple. The realigned section is offset to the north of existing SR-14 by approximately 200 feet at its widest point (centerline to centerline) and is approximately 1,000 feet in length. At its highest point, the cut is approximately 80 feet high, with an average slope of 1.5H:1V. The realigned section will include a flat-bottomed biofiltration swale along the north edge for water quality treatment, conveying runoff to the west toward an existing cross culvert.

The realignment will avoid a forested portion of the current slope adjacent SR-14, thereby providing physical screening of SR-14 and associated traffic as the highway is shifted north away from the cliff edge. The abandoned sections of SR-14 will be removed and the areas filled with borrow material and graded to match the adjacent natural slope. The slope will undergo soils restoration (salvaged native topsoil placement, compost blankets, and bark mulch blankets) and densely planted as a native Oregon White Oak woodland and associated native woody understory. Figure 14 shows that realignment away from the cliff face and retention/restoration of the historic slope will improve views of the project area from several key Oregon KVA's including Rooster Rock State Park, Portland Women's Forum State Park, and Crown Point State Park (Vista House) by eliminating exposure of SR-14 throughout the central portion of each of the identified views.

Excavation required for the realignment will create a predominately soil cut slope north of the current SR-14. There is a potential that rock will be encountered within the slope, however geotechnical investigations have not indicated that rock will be a major issue. Excavation work is not anticipated to create new surfaces that contrast significantly with the surrounding landscape. Provisions to weather any exposed rock encountered in cut will be contained in the contract and include rock weathering agents such as *Permeon* as well as physical measures for reducing the dominance of any vertical drill holes. Approximately 2.25 acres of mature Oregon white oak woodland will be removed as a result of the realignment (red shading, figure 14).



Figure 13. Existing View from Crown Point (close-up) Showing Marble Road Curve and Exposure of SR-14.



Figure 14. Affected View Area as Seen From Crown Point (close-up). Red Shading Indicates Potential Vegetation Impact Area for Realignment. Note Vegetation Restoration and Topography Masking Visibility of SR-14.

Visibility of the new slopes would be from several of the KVA's noted above. Primary foreground visibility would occur throughout the length of SR-14 in the corridor. Background visibility would occur within the viewsheds of the Columbia River, Rooster Rock State Park, Portland Women's Forum State Park, Crown Point State Park, Larch Mountain/Sherrard Point, and the Historic Columbia River Highway KVA's. Background impacts would occur within the visual context of much larger landscape including the forested north wall of the Gorge, the vertical nature of the Mt. Pleasant area (especially as viewed from inferior viewing positions of I-84 and the Columbia River), and the mixed pasture and woodlots landscape associated with the historic development pattern of the Mt. Pleasant community. The realignment and subsequent slope restoration and revegetation will reduce SR-14 visibility from most Oregon KVA's and improve scenic conditions.

To mitigate potential negative visual effects of the western realignment section in compliance with the not visually evident requirements of the NSA, WSDOT will implement the following techniques:

Realignment Area

The realigned portion of SR-14 has been designed to maintain the current rural and scenic character as outlined in the CRG SR-14 Management Plan through the use of smaller curves based on a 40 mph design speed.

The proposed soil slope will be designed to have the smallest environmental footprint, while meeting slope stability requirements and providing the opportunity for successful revegetation. The slope will be designed to blend with adjacent topography and retain a more irregular, natural appearance, achieved by rounding the top of slope where cuts transition into adjacent topography and natural depressions. Oregon White Oak woodland will be avoided to the greatest extent possible, with the proposed alignment and cut slopes developed after a thorough alternatives analysis process. If rock is encountered, newly exposed rock will be treated with the weathering agent *Permeon* or similar to reduce visibility and reflectivity, and drill holes, if present, will be minimized bush hammering or (potentially) shotcrete formed into the holes.

Rock bolts, shotcrete, rockfall fences, or other means of mechanical stabilization are not proposed for cut slopes associated with this project.

Slope areas will be revegetated using a combination of techniques. Coir logs will be staked onto the slopes during excavation to provide longer-term surface stability, followed by an application of salvaged native topsoil and compost blanket as appropriate. As much area of new slopes will be revegetated as Oregon White Oak woodland as possible. These areas will receive a bark mulch blanket and planted with native woody understory species at a density of 4,000 stems per acre. Oregon White Oak will be installed at a density of 200 trees per acre through the understory mix using larger caliper (3/4-inch caliper, 5-foot height) stock. Slope areas too steep for standard revegetation practices will be seeded with native seed mix (herbaceous and woody species) using a seed-injected compost technique to promote rapid germination and establishment. The top of the north cut line that lies beyond the limits of existing Oak woodland will be cleared of pasture grasses, blackberry, and other invasive species, and prepared and planted as Oak woodland as to restore the tree line as seen from Marble Road and Oregon KVA's, and to provide additional screening. Revegetated slopes will promote stability, reduce visibility and blend the slopes as seen from SR-14, Cape Horn and Oregon KVA's, and improve blending and corridor continuity.

Abandoned Section of SR-14

The abandoned section of SR-14 will be reverted to natural forested conditions. Pavement and subgrade will be removed, and compacted soils ripped and regraded to improve drainage and infiltration. The area will be filled with borrow material generated by the project and graded to match the surrounding slopes. All surfaces will receive salvaged native topsoil, compost blankets, bark mulch blankets, and revegetated as Oregon White Oak woodland as described above.

The combination of realigning SR-14 away from its current exposed location, preservation of the existing slope north of current SR-14, restoration of slope topography, and dense revegetation will have a net positive effect to the view quality of the Rooster Rock State Park, Portland Women's Forum State Park, Crown Point State Park (Vista House), the old Columbia River

Highway, and I-84 Key Viewing Areas. Positive visual changes will be very evident at night by realignment. In its current configuration, SR-14 is aligned in a SW-NE direction just west of the Marble Road intersection, pointing directly toward Crown Point and the Vista House.

Marble Road Intersection

The area in the vicinity of the Marble Road and SR-14 intersection will see improvements to address intersection angle, visibility, and safety issues. Most of this work will occur within the existing disturbed and paved area with the exception of two small culvert extensions associated with the intersection improvement area. Only temporary clearing associated with culvert installation will occur and disturbed areas will be restored to present conditions following construction.

Visibility of the Marble Road intersection improvements is limited to the SR-14 corridor KVA and the eastern leg of Marble Road. Topography and dense evergreen forest completely screens this area from all other Scenic Area KVA's analyzed in this report. No major temporary or permanent visual effects are anticipated. Repaving of the east end of Marble Road will repair the current patched appearance. Eastbound and westbound motorists on SR-14 will notice minimal visual change to the intersection area.

Cut and Fill Slopes

The proposed soil slopes will be designed to have the smallest environmental footprint, while meeting slope stability requirements and the opportunity for successful revegetation. Slopes will be designed to blend with adjacent topography and retain a more irregular, natural appearance, achieved by rounding the top of slope where cuts transition into adjacent topography and natural depressions. Topsoil, compost blankets, and bark mulch blankets will be used as noted above to cover exposed soils to reduce erosion and improve growth of native vegetation.

Cut and fill slopes without bark mulch blankets (major cut slopes will be treated as noted in "Realignment Area") will be seeded with a native seed mix for erosion control, while other slopes will be heavily planted with native trees and shrubs to reduce visibility, screen adjacent land uses, buffer sensitive resource areas, reduce headlight glare, and restore corridor continuity,

Illumination

No illumination will be provided as part of this project.

Guardrail

Guardrail throughout the project limits will be weathering steel in accordance with NSA standards to reduce glare and blend with the surrounding landscape.

Utilities

An existing overhead powerline that parallels Marble Road will be replaced in kind. No new overhead utilities will be placed adjacent to SR-14.

Culvert Extension

A short culvert extension is necessary north and south of SR-14 to accommodate improvements to the Marble Road intersection. The culvert extensions will be located under highway fill and will not be visible to highway users or nearby residences. Short fill slopes above the culverts will be reseeded to replace existing herbaceous vegetation.

Stormwater Management

Stormwater and water quality management is being provided with several low-impact BMP's approved by the Department of Ecology. Traditional ponds or water quality facilities will not be constructed as part of the project as they would have increased environmental and scenic impacts.

Stormwater generated in the eastern portion of the project (climbing shoulder) will be treated using engineered dispersion. The existing grass and blackberry-dominated embankment will be regraded, enhanced with compost blanket, and seeded. Portions will be planted to provide additional woody screening to further reduce headlight glare as viewed from surrounding homes and Oregon KVA's.

A biofiltration swale will be constructed north of the new SR-14 alignment west of Marble Road to provide water quality improvements. This swale will be seeded, and look and function like a normal ditch typically expected adjacent to highways.

The abandoned section of SR-14 will become a natural reversion area, with the area fully restored as an Oregon White Oak woodland as noted above.

Natural Resource Mitigation Areas

Two natural resource mitigation sites are proposed for this project.

Cleveland Oak Woodland mitigation site. The Cleveland Oak Woodland mitigation site is proposed for a 12 acre pasture on Mt. Pleasant immediately west of the new Cape Horn overlook. The USFS-owned parcel is currently dominated by non-native pasture grass, invasive Himalayan Blackberry, and a small amount of young alder and Douglas Fir. Work conducted in the existing pasture will involve surface preparation to remove the competitive sod layer, bark mulch placement, and planting. View duration is moderate to long depending on viewer position along the trail, vantage point, length of time spent at the various viewpoints, and view direction.

The existing pastoral landscape will be converted to Oregon White Oak woodland with a native woody understory. The pasture area is currently owned by the USFS and is mowed 1-2 times per year. Portions of the pasture are dominated by blackberries and other invasive species. While the pastoral landscape is a high value landscape setting in the scenic area, this pasture is not visible from any other KVA's, reducing its visual sensitivity. Conversion to priority habitat oak woodland will add forest complexity and wildlife habitat to the area and provide a public opportunity to illustrate environmental restoration.

The site will have temporary visual effects to the immediate area, however the restoration work planned for the site adjacent to the Cape Horn Overlook will provide a highly varied backdrop to the area.

Homestead Lake mitigation site at Beacon Rock state park. The Homestead Lake mitigation site at Beacon Rock state park will provide wetland, riparian buffer, and oak woodland creation and enhancement opportunities at a location identified by WA State Parks as suitable for environmental enhancement. The mitigation site is located at the far western end of the park and is close to Skamania Landing Road. As it currently exists, the site is managed for wildlife habitat (western pond turtle) and grazing. The public does not often visit this portion of the park, staying mostly in the new Woodard Creek day use area to the east.

Work will involve grading (wetland creation), clearing and grubbing, soil preparation, habitat structure placement, bark mulch blankets, seeding, and planting. Clearing operations will remove invasive vegetation and pasture grasses only – mature trees and shrubs will be protected.

The mitigation site is partially visible from SR-14, although it is classified as a “glimpse” view and is of very short duration only in the eastbound direction by drivers. Viewers from this vantage point will likely see only construction equipment for a period of weeks; the site will revert to natural colors and tones and blend as part of the natural landscape once complete.

Users of the Beacon Rock trail have a panoramic view of the western section of the park including the Homestead Lake area from switchbacks along the middle portion of the trail. This background view is partially blocked by trees, and will likely be unnoticed with the exception of construction equipment present during site work. The site will blend with the natural landscape once construction is complete and it is anticipated that the restoration work will have a positive visual benefit to the area.

General Visual Mitigation Provisions

In addition to those specific visual mitigation options listed for each project section, several other general techniques are applicable to this project. These techniques include:

- Access and staging areas will be restored with a combination of native woody and herbaceous species to match other planted and seeded areas of the project.
- Protect existing vegetation to the maximum extent possible within the context of the project and environmental needs, visual subordination requirements and highway safety. In access and staging areas, desirable deciduous scrub vegetation will be stump cut (there would be no treatment with herbicide or grubbed roots/crown from soil) to facilitate regrowth where feasible. Smaller evergreens (to be identified in the field) may be removed, but larger evergreen and deciduous trees will remain unless considered to be a danger to highway safety.
- All woody vegetation installed within the project limits, the Cleveland Oak Woodland mitigation site and the Homestead Lake mitigation site will be established for 10 years or until all performance standards are met, consistent with the Draft Natural Resources Mitigation Plan. Establishment work will include vegetation management/weed control conducted several times throughout the year, plant replacement, and trash removal/vandalism repair.

All visual mitigation techniques are designed to provide visual subordination as required in the NSA Management Plan within two years following construction.

Cumulative Effects to Scenic Resources

Cumulative effects of the proposed project were analyzed in compliance with the Columbia River Gorge National Scenic Area (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.

Analysis of potential cumulative effects scenic resource utilizes the same study area and methodology outlined in the larger SR-14 Marble Road to Belle Center Road – Safety Improvement Project Cumulative Effects Analysis (October , 2011). This analysis reviewed natural and biological resources, but not scenic resources. The study area for this project’s cumulative effects encompasses the entire SMA management unit that the project is located in, within Skamania County. The study area is approximately 3000 acres in size and includes the project area and adjacent private, state, tribal, and federal lands as shown in figure 15. Cumulative effects analyses generally include an analysis of past, present, and reasonably foreseeable future actions. However, the resource inventories that were used in the development of the Scenic Area land use and resource protections have already accounted for past actions. Additionally, existing conditions include all of the impacts from past actions. Therefore, this cumulative effects analysis relies on impacts to current environmental conditions from the SR 14/Marble Road to Belle Center Road Project, recent, current, and pending projects within the study area, and reasonably foreseeable actions over the next ten years.

A 10 year analysis period was selected as WSDOT will implement the requirements and performance standards of the Natural Resource Mitigation Plan which includes a 10 year monitoring and establishment period. This document contains performance standards for the establishment of native woody vegetation within the project corridor as well as natural resource mitigation sites.

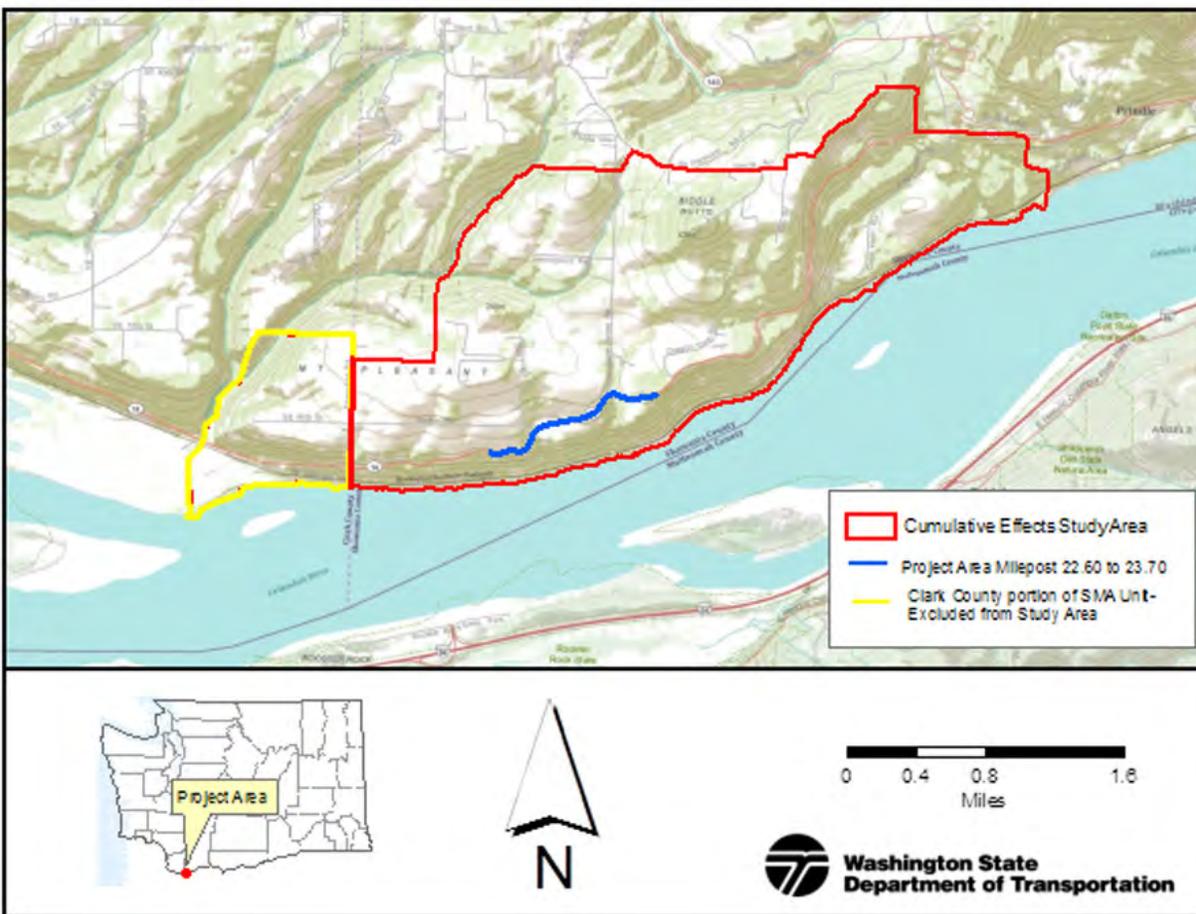


Figure 15. Cumulative Effects Study Area

WSDOT prepared a Natural Resources Cumulative Effects Analysis in October of 2011. Based on available information, Table 1 lists previous projects, as well as known and foreseeable actions within the Study Area based on available information. This list was used to assess combined cumulative effects for scenic resources.

PROJECT NAME/TYPE	ACTIONS	LOCATION/DATE
SR14/ Cape Horn Bridge Vicinity to Cape Horn Road	Highway realignment; Addition of turn lanes; Pedestrian tunnel crossings	SR 14, milepost 25.82 to milepost 26.13; November 2010 to Fall 2011
Invasive Plant Treatment/Thinning	Herbicide or Mechanical Treatment/Mechanical or Hand Removal	Scenic Area Federal Lands; On-going
Utility Maintenance	ROW/Easement Management; Pruning and mowing	Throughout Scenic Area; On-going
County and State Roadway Maintenance	Pavement repair or preservation, guardrail repair	Throughout Scenic Area; On-Going
Land Acquisitions/Land Use Conversions	Purchase and/or conversion of SMA lands	Throughout Scenic Area; Unknown
Historic and Current SMA Forest Practices	Timber Harvest	Throughout Scenic Area; 1860-present (sharply curtailed in recent years)
State/Private SMA Forest Practices	Forest Practices consistent with the MP	Throughout Scenic Area; Unknown
US Forest Service Trail Maintenance/Construction	Maintain and construct recreational resources consistent with the MP	Throughout Scenic Area; On-going
Railroad Maintenance/Construction	Track inspections, repair and replacement	Throughout Scenic Area; On-going/Unknown

Table 1. Past, Present, and Foreseeable Future Actions Within the Study Area

The largest known project within the location and timeframe of the study period is the current WSDOT SR-14 Cape Horn Bridge Vicinity to Cape Horn Road Safety Improvement Project. This project was fully analyzed by Skamania County and the US Forest Service and will meet the “Not Visually Evident Standard” following the requirements of the USFS Consistency Review.

Standard maintenance operations associated with local and state roads, utilities, and the railroad are on-going and established practices. Invasive plant treatment and trail construction are essentially resource enhancements, and their scenic effects would likely be considered positive.

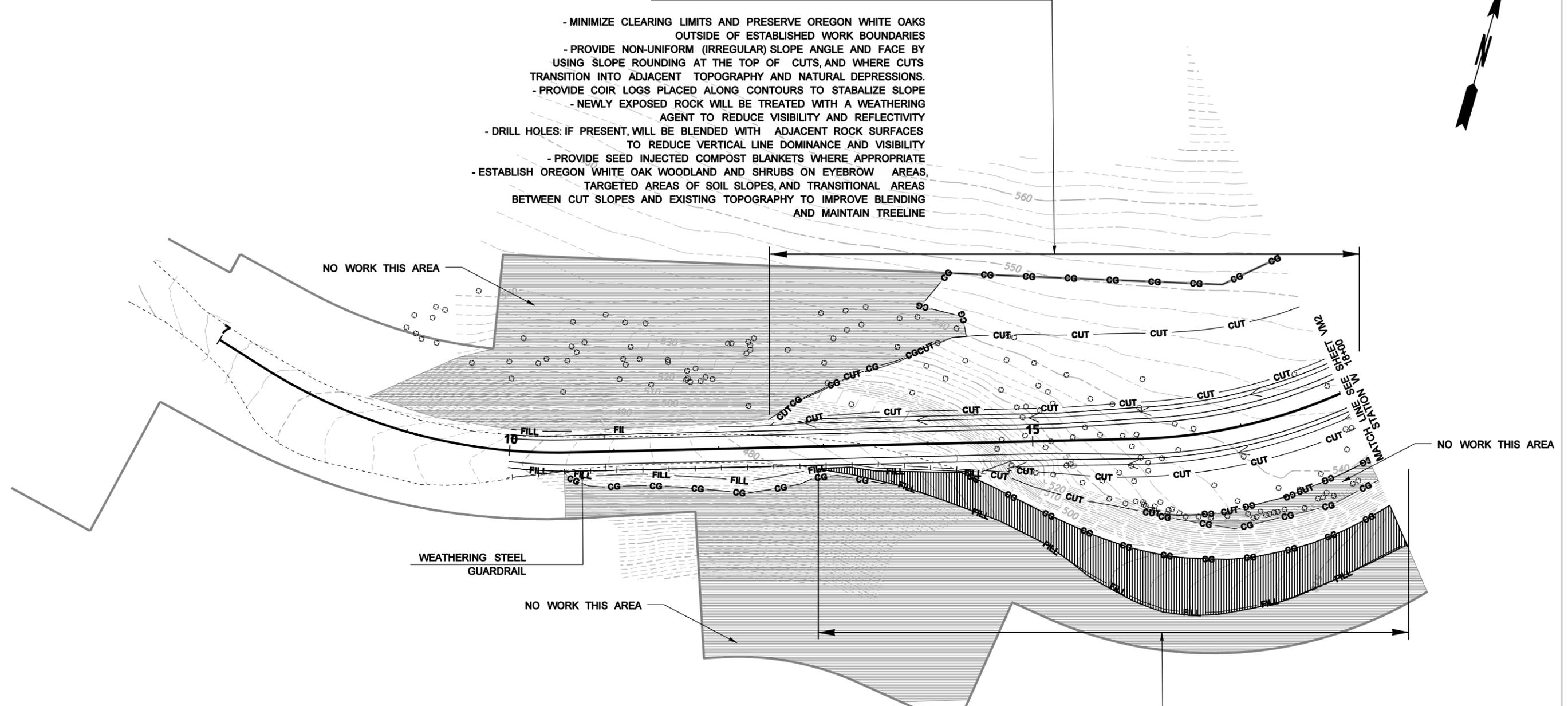
As the current proposed project will be designed and constructed to meet the not visually evident and visually subordinate standards for the three landscape settings, conditions placed on the land use permit issued by Skamania County, and requirements of the USFS consistency review, there will be no adverse cumulative impacts to scenic resources or any of the Key Viewing Areas analyzed in this document.

Appendix A – Scenic Resource Mitigation Plan Sheets

T.1N. R.5E. W.M.

RESLOPE AREA

- MINIMIZE CLEARING LIMITS AND PRESERVE OREGON WHITE OAKS OUTSIDE OF ESTABLISHED WORK BOUNDARIES
- PROVIDE NON-UNIFORM (IRREGULAR) SLOPE ANGLE AND FACE BY USING SLOPE ROUNDING AT THE TOP OF CUTS, AND WHERE CUTS TRANSITION INTO ADJACENT TOPOGRAPHY AND NATURAL DEPRESSIONS.
- PROVIDE COIR LOGS PLACED ALONG CONTOURS TO STABILIZE SLOPE
- NEWLY EXPOSED ROCK WILL BE TREATED WITH A WEATHERING AGENT TO REDUCE VISIBILITY AND REFLECTIVITY
- DRILL HOLES: IF PRESENT, WILL BE BLENDED WITH ADJACENT ROCK SURFACES TO REDUCE VERTICAL LINE DOMINANCE AND VISIBILITY
- PROVIDE SEED INJECTED COMPOST BLANKETS WHERE APPROPRIATE
- ESTABLISH OREGON WHITE OAK WOODLAND AND SHRUBS ON EYEBROW AREAS, TARGETED AREAS OF SOIL SLOPES, AND TRANSITIONAL AREAS BETWEEN CUT SLOPES AND EXISTING TOPOGRAPHY TO IMPROVE BLENDING AND MAINTAIN TREELINE

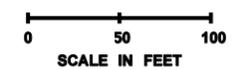


REALIGNMENT / REVERSION AREA

- REMOVAL OF EXISTING PAVEMENT AND SUBGRADE
- UTILIZE NATIVE TOPSOIL SALVAGED FROM OAK WOODLAND AREA
- COMPACTED SOILS DEEP-TILLED FOLLOWED BY COMPOST BLANKET PLACEMENT
- ESTABLISH OREGON WHITE OAK WOODLAND TO IMPROVE INFILTRATION, ENHANCE CORRIDOR CONTINUITY AND PROVIDE VISUAL SCREENING FROM OREGON VIEWPOINTS

LEGEND

- X-X- FENCE NEW
- |---| GUARDRAIL NEW (SELF WEATHERING)
- [Hatched Box] REALIGNMENT / IMPERVIOUS REVERSION AREA
- STREAM
- CUT - PROPOSED CUT LINE (FOR REFERENCE ONLY)
- FILL - PROPOSED FILL LINE (FOR REFERENCE ONLY)
- CG - CLEARING AND GRUBBING LINE (FOR REFERENCE ONLY)
- - - - - WETLAND BOUNDARY



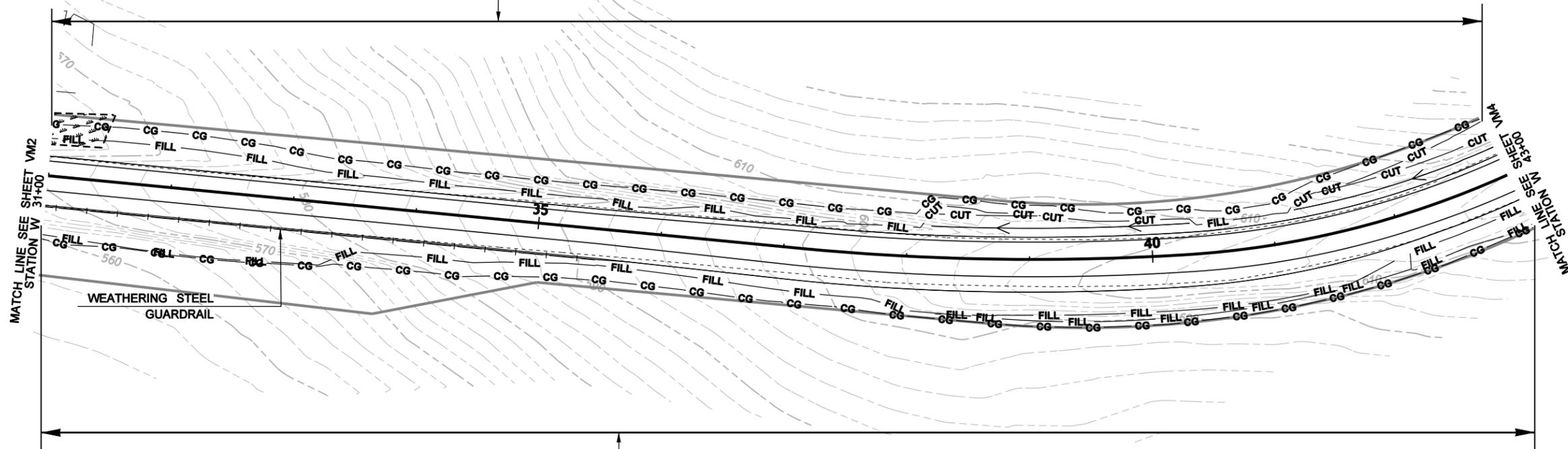
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PLOTTED BY: phlpper	DESIGNED BY: D. CORLETT / R. PHIPPS	JOB NUMBER: 11X308	LOCATION NO. XL3172		DATE: _____		SHEET OF SHEETS		
ENTERED BY: R. PHIPPS	CHECKED BY: D. CORLETT	CONTRACT NO. _____	DATE: _____		DATE: _____		REVISION		
PROJ. ENGR. C. TAMS	REGIONAL ADM. B. GERNHART	DATE: _____	BY: _____	DATE: _____		DATE: _____		REVISION	

T.1N. R.5E. W.M.



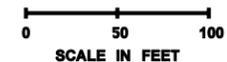
CUT / FILL AREA

- MINIMIZE CLEARING LIMITS
- PROVIDE COMPOST BLANKETS WHERE APPROPRIATE
- SEED DISTURBED SOIL AREAS FOLLOWING CONSTRUCTION
- ESTABLISH NATIVE TREES AND SHRUBS ON TARGETED AREAS OF SOIL SLOPES, AND TRANSITIONAL AREAS BETWEEN FILL SLOPES AND EXISTING TOPOGRAPHY TO IMPROVE BLENDING



FILL AREA

- MINIMIZE CLEARING LIMITS
- PROVIDE COMPOST BLANKETS WHERE APPROPRIATE
- SEED DISTURBED SOIL AREAS FOLLOWING CONSTRUCTION
- ESTABLISH NATIVE TREES AND SHRUBS ON TARGETED AREAS OF SOIL SLOPES, AND TRANSITIONAL AREAS BETWEEN FILL SLOPES AND EXISTING TOPOGRAPHY TO IMPROVE BLENDING AND PROVIDE LIGHT/GLARE SCREENING FROM OREGON VIEWPOINTS



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PROJ. ENGR.	C. TAMS			
REGIONAL ADM.	B. GERNHART			
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P.E. STAMP BOX

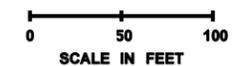
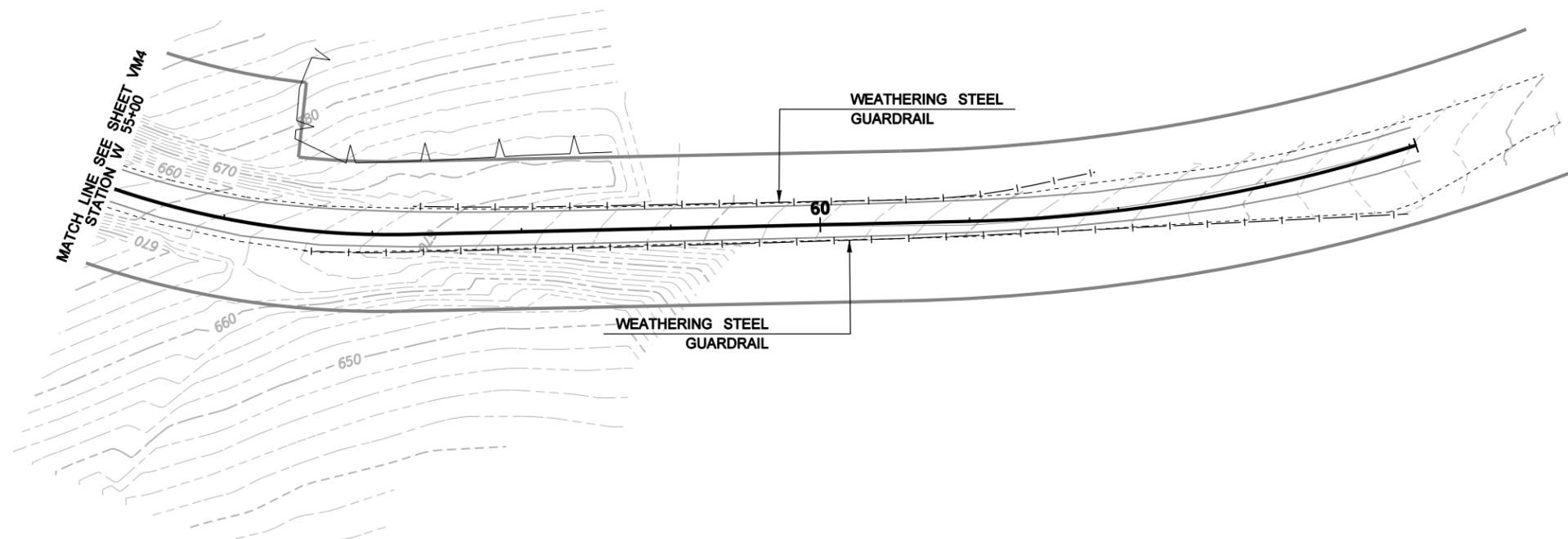


P.E. STAMP BOX

SR 14
MARBLE RD. VIC.
SAFETY IMPROVEMENTS
SCENIC RESOURCE MITIGATION

Plot 3
PLAN REF NO
VM3
SHEET
OF
SHEETS

T.1N. R.5E. W.M.



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			REGION NO.	STATE
			10	WASH
			JOB NUMBER	FED.AID PROJ.NO.
			11X308	
			CONTRACT NO.	LOCATION NO.
				XL3172

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
DANIEL R. CORLETT
CERTIFICATE NO. 725
DATE: _____

P.E. STAMP BOX



SR 14
MARBLE RD. VIC.
SAFETY IMPROVEMENTS

SCENIC RESOURCE MITIGATION

Plot 5
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SHEET OF SHEETS