Hood River – White Salmon BRIDGE REPLACEMENT PROJECT

Final Visual Impact Assessment Report

November 2020

Prepared for:

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TABLE OF CONTENTS

LIST OF EXHIBITS

ATTACHMENTS

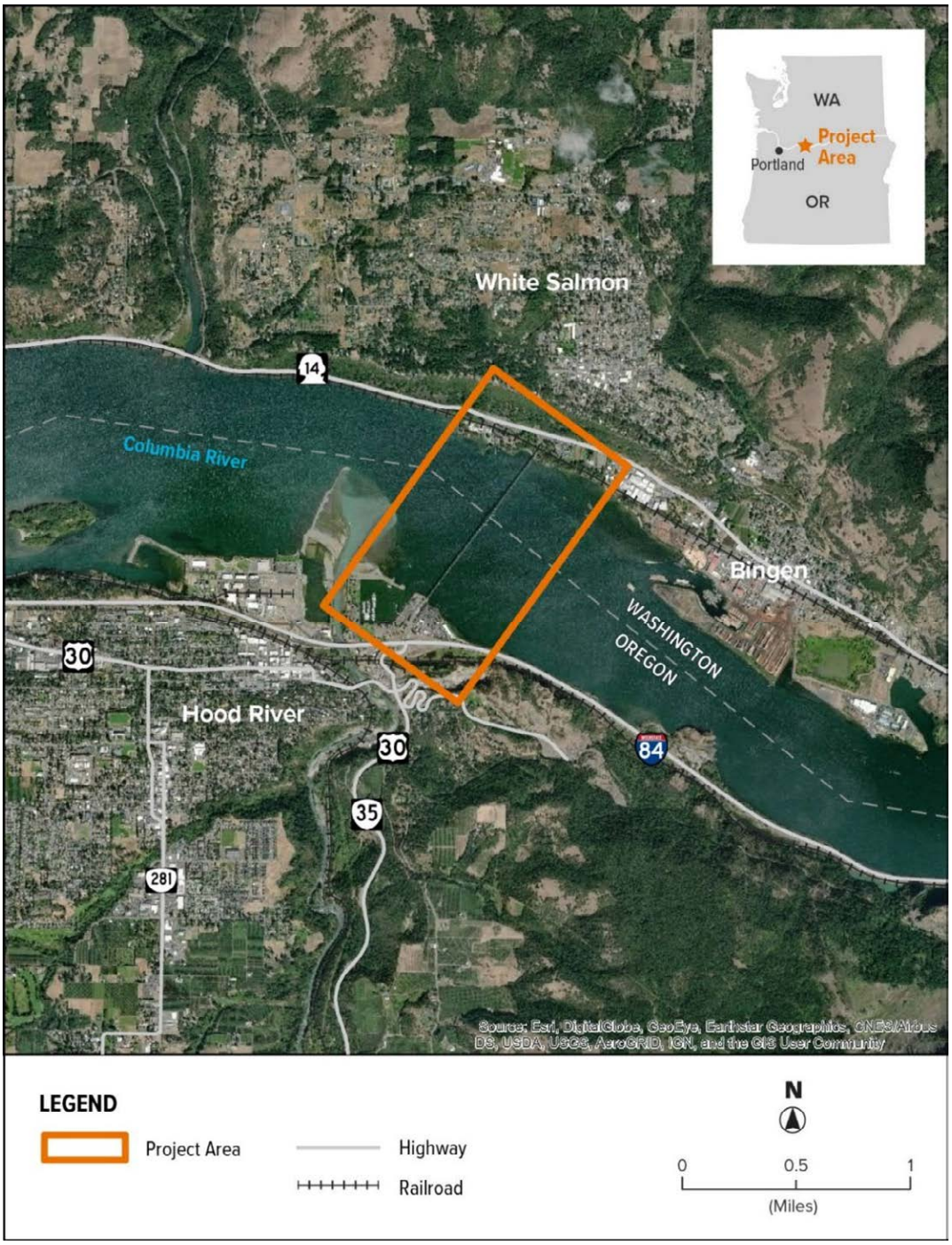
ACRONYMS AND ABBREVIATIONS

AVE	area of visual effect
BMPs	best management practices
CRGNSA	Columbia River Gorge National Scenic Area
DEM	digital elevation model
EIS	environmental impact statement
FHWA	Federal Highway Administration
GMA	general management area
I-	Interstate
KVA	key viewing area
lbs.	pounds
MATS	Mt. Adams Transportation Service
mph	miles per hour
NEPA	National Environmental Policy Act
ODFW	Oregon Department of Fish and Wildlife
OHWM	ordinary high water mark
SR	State Route
the Port	Port of Hood River
the Project	Hood River-White Salmon Bridge Replacement Project
SMA	special management area
TS&L	type, size, and location
US	United States
USACE	US Army Corps of Engineers
USC	United States Code
VIA	visual impact assessment
WDFW	Washington Department of Fish and Wildlife

1. INTRODUCTION

The Hood River-White Salmon Bridge Replacement Project (the "Project," formerly named the SR-35 Columbia River Crossing Project) would construct a replacement bridge and then remove the existing Hood River Bridge between White Salmon, Washington, and Hood River, Oregon (Exhibit 1).The bridge is owned by the Port of Hood River (the Port), serving an average of over 4 million trips annually.

Exhibit 1. Project Area



The purpose of this Project is to improve multi-modal transportation of people and goods across the Columbia River between the communities of White Salmon and Bingen, Washington and Hood River, Oregon. The Project is intended to: a) improve traffic operations for current and future cross-river traffic and at connections to I-84 and SR 14; b) provide a cross-river connection for bicyclists and pedestrians; c) improve vehicle and freight travel safety by reducing real and perceived hazards; d) maintain and improve a transportation linkage between the White Salmon, Bingen, and Hood River communities, businesses, and services; e) fulfill the legislative directives tied to the Project funding; f) improve river navigation for vessels passing under the bridge; and g) improve the river crossing's seismic resiliency.

The overall need for the Project is to rectify current and future transportation inadequacies and deficiencies associated with the existing bridge. Specifically, these needs are to:

- Present Capacity: substandard width and operational issues are causing traffic congestion on the bridge and at both approaches
- Future Transportation Demand: the existing bridge is not designed to meet future travel demand for vehicles
- Bicycle and Pedestrian Facilities: lack of bicycle and pedestrian facilities limits multi-modal mobility
- Safety: narrow lanes and lack of shoulder create real and perceived safety hazards
- Social Demands/Economic Development: the existing bridge restricts the current and projected flow of goods, labor and consumers across the river
- Legislation: comply with federal funding obligation Transportation Equity Act for the 21st Century (TEA-21), the Washington State Legislature designation of the SR-35 corridor, and Oregon HB 2017
- River Navigation: the substandard horizontal clearance creates difficulties for safe vessel navigation
- Seismic Deficiencies: the existing bridge does not meet current seismic standards and is vulnerable to a seismic event

The Project began in 1999 with a feasibility study that ultimately resulted in the publication of the State Route (SR) 35 Columbia River Crossing Draft Environmental Impact Statement (EIS) in 2003, which identified the "EC-2 West Alignment" as the preliminary preferred alternative. In 2011, the Type, Size, and Location (TS&L) Study recommended a fixed-span concrete segmental box girder bridge as the recommended bridge type. In 2017, the Project was relaunched to complete the National Environmental Policy Act (NEPA) process. This report provides an update to the 2003 Visual Technical Report describing the existing conditions and anticipated construction, direct, and indirect impacts on visual resources. Measures to avoid, minimize, and/or mitigate these impacts are also identified in this report.

2. PROJECT ALTERNATIVES

Four alternatives are being evaluated to address the Project's purpose and need:

- No Action Alternative
- Preferred Alternative EC-2
- Alternative EC-1
- Alternative EC-3

Exhibit 2 shows the alignment of the existing bridge, which represents the No Action Alternative, and the three build alternatives. The build alternatives connect to SR 14 in White Salmon, Washington, and Button Bridge Road in Hood River, Oregon, just north of the Interstate 84 (I-84)/United States Highway 30 (US 30) interchange (Exit 64).

Each alternative is summarized in Exhibit 3 and described in more detail in the following sections. Exhibit 4 illustrates the navigational clearance for the existing bridge and the replacement bridge (same for each build alternative).

Exhibit 2. Location of the Preferred Alternative EC-2, Alternative EC-1, and Alternative EC-3

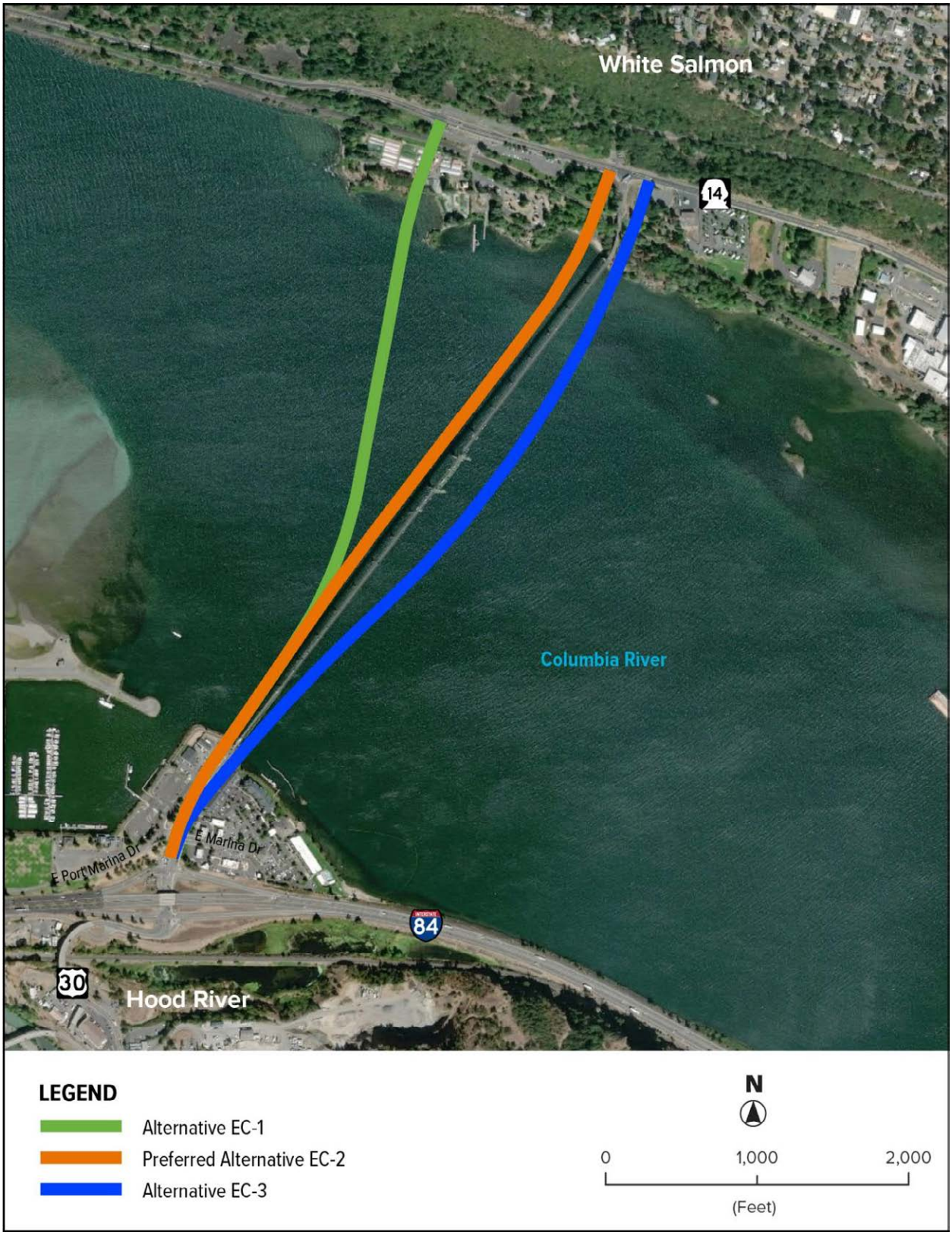
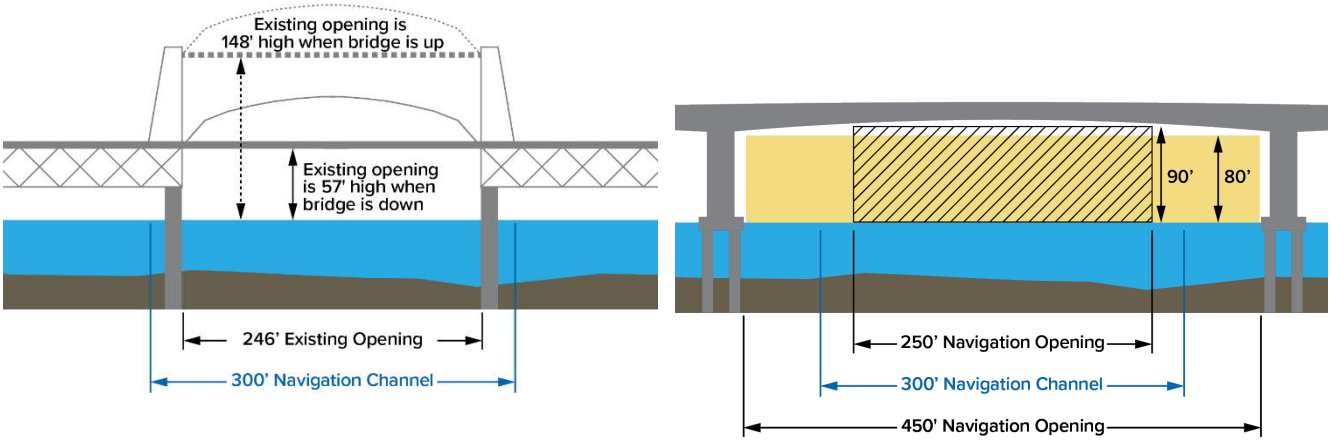


Exhibit 3. Summary Comparison of Key Elements of Alternatives

	No Action Alternative	Preferred Alternative EC-2	Alternative EC-1	Alternative EC-3
Bridge alignment	No change	Slightly west of existing	WA: West of existing OR: Slightly west of existing	Slightly east of existing
Bridge structure				
Bridge type	Steel deck truss bridge with vertical lift span	Segmental concrete box girder bridge (fixed span)		
Total number of piers (in water / on land)	28 (20 / 8)	13 (12 / 1)	13 (11 / 2)	13 (12 / 1)
Structure length	4,418 feet	4,412 feet	4,375 feet	4,553 feet
Travel lanes	9-foot 4.75-inch lanes	12-foot lanes		
Roadway shoulders	No shoulders	8-foot shoulders		
Vehicle height limit	14 feet-7 inches	None		
Shared Use Path	None	12-foot wide, only on west side with overlooks		
Bridge deck	Steel-grated	Concrete		
Vehicle Gross Weight Limit	80,000 pounds (lbs.); no trip permit allowance for overweight vehicles	> 80,000 lbs., with approved trip permit		
Design speed	Unknown	50 miles per hour (mph)		
Posted speed	25 mph	35 mph		
Toll collection	Toll booth on Oregon side	Electronic tolling/No toll booth		
Stormwater treatment	None	Detention and water quality treatment		
Navigation clearance	246 feet horizontal by 57 feet vertical when bridge is down and up to 148 feet vertical when lifted	450 feet horizontal x 80 feet vertical (maximum horizontal opening) 250 feet horizontal x 90 feet vertical (centered within maximum vertical opening)		
SR 14/Hood River Bridge intersection	Signalized intersection	Roundabout slightly west of existing intersection; SR 14 raised approximately 2 feet above existing road level	Roundabout with connection to N. Dock Grade Road west of existing intersection; SR 14 raised approximately 17 feet above existing road level	Roundabout slightly east of existing intersection; SR 14 remains at existing road level
Button Bridge Road/E. Marina Way intersection	Signalized intersection	Signalized intersection		
Anticipated construction duration	None	6 years (3 years to construct the replacement bridge and 3 years to remove the existing bridge)		

Exhibit 4. Navigation Clearance of Existing Bridge and Proposed Replacement Bridge



Existing Bridge

Proposed Replacement Bridge

2.1. No Action Alternative

The No Action Alternative would retain the existing bridge in its existing condition and configuration. Routine operations would continue and maintenance would be implemented to continue operations. Under the No Action Alternative, elements of the existing bridge include:

- Alignment: The bridge would continue to span the Columbia River between its northern terminus at the SR 14/Hood River Bridge intersection in White Salmon, Washington, and its southern terminus at the Button Bridge Road/E. Marina Way intersection in Hood River, Oregon, as shown in the aerial photograph in Exhibit 2.
- Type: The bridge would continue to be a 4,418-foot steel deck truss bridge with a vertical lift span. The bridge would continue to have 20 piers in the Columbia River.
- Ownership: The bridge will continue to be owned and operated by the Port.
- Vehicle lanes: The bridge will continue to have one narrow (9 feet, 4.75 inches) travel lane in each direction and no shoulders.
- Bicycle and pedestrian facilities: The bridge would continue to have no pedestrian or bicycle facilities, and signage would continue to prohibit pedestrians and bicycles on the bridge.
- Speed: The posted speed limit on the bridge would continue to be 25 mph.
- Vehicle restrictions: Vehicles would continue to be weight-restricted to 80,000 lbs.; vehicles with approved trip permits would still not be allowed to use the bridge. Wide loads would continue to be prohibited without special arrangements, and large vehicles would be encouraged to turn their mirrors in. The height limit for vehicles would continue to be 14 feet, 7 inches where the lift span occurs.
- Tolling: The bridge would continue to be tolled for all vehicles with a toll booth on the south end of the bridge and electronic tolls collected through the Port's Breezeby system. Plans to shift to all ETC are being considered, but there is no certainty they will be implemented.

- Navigational clearance: The horizontal clearance for marine vessels would continue to be 246 feet, narrower than the navigation channel width of 300 feet, as shown Exhibit 4. The vertical clearance would continue to be 57 feet when the lift span is down and 148 feet when it is raised; vessels would continue to be required to request bridge lifts in advance. The lift span section would continue to use gate and signals to stop traffic for bridge lifts.
- Seismic resilience: The bridge would continue to be seismically vulnerable and would not be cost effective to be seismically retrofitted.
- Stormwater: No stormwater detention or water quality treatment would be provided for the bridge. Stormwater on the bridge would continue to drain directly into the Columbia River through the steel-grated deck.
- Roadway connections: The bridge would continue to connect to SR 14 on the Washington side at the existing signalized SR 14/Hood River Bridge intersection. On the Oregon side, the southern end of the bridge would continue to transition to Button Bridge Road, connecting to the local road network at the existing signalized Button Bridge Road/E. Marina Way intersection north of I-84. The bridge would continue to cross over the BNSF Railway tracks on the Washington side and over the Waterfront Trail along the Oregon shoreline.
- Bicycle and pedestrian connections: The bridge would continue not to provide bicycle or pedestrian connections across the Columbia River. Bicyclists and pedestrians wanting to cross the river would continue to need to use an alternate means of transportation, such as the Mt. Adams Transportation Service (MATS) White Salmon/Bingen to Hood River bus (buses provide bicycle racks), or a private vehicle.

The Supplemental Draft EIS considers two scenarios for the No Action Alternative:

- End of bridge lifespan: assumes that the existing Hood River Bridge would remain in operation through 2045[1] and would be closed sometime after 2045 when maintenance costs would become unaffordable. At such a time, the bridge would be closed to vehicles and cross-river travel would have to use a detour route approximately 21 miles east on SR 14 or 23 miles east on I-84 to cross the Columbia River using The Dalles Bridge (US 197). Alternatively, vehicles could travel 25 miles west on SR 14 or 21 miles west on I-84 to cross the Columbia River via the Bridge of the Gods. When the bridge would be closed, the lift span would be kept in a raised position to support large vessel passage that previously required a bridge lift or the existing bridge would be removed.
- Catastrophic event: addresses the possibility that an extreme event that damages or otherwise renders the bridge inoperable would occur prior to 2045. Such events could include an earthquake, landslide, vessel strike, or other unbearable loads that the bridge structure cannot support.

[1] The year 2045 is the design horizon for the Project. The design horizon is the year for which the Project was designed to meet anticipated needs.

2.2. Preferred Alternative EC-2

Alternative EC-2 would construct a replacement bridge west of the existing bridge. The existing bridge would be removed following construction of the replacement bridge. Under Alternative EC-2, elements of the replacement bridge would include:

- Alignment: The main span of the bridge would be approximately 200 feet west of the existing lift span. The bridge terminus in White Salmon, Washington, would be located approximately 123 feet west of the existing SR 14/Hood River Bridge intersection, while the southern terminus would be in roughly the same location at the Button Bridge Road/E. Marina Way intersection in Hood River, Oregon, as shown in Exhibit 5 and Exhibit 6.
- Type: The bridge would be a 4,412-foot fixed-span segmental concrete box girder bridge with a concrete deck and no lift span. The bridge would have 12 piers in the Columbia River and one land-based pier on the Washington side of the river.
- Ownership: While the Port may own and operate the replacement bridge, other options for the ownership and operation of the replacement bridge that may be considered include other governmental entities, a new bi-state bridge authority, and a public-private partnership, depending on the funding sources used to construct the replacement bridge.
- Vehicle lanes: The bridge would include one 12-foot travel lane in each direction, an 8-foot shoulder on each side, as shown in Exhibit 7.
- Bicycle and pedestrian facilities: The bridge would include a 12-foot wide shared use path separated from traffic with a barrier on the west side, as shown in Exhibit 7. In the middle of the bridge the shared use path would widen an additional 10 feet in two locations to provide two 40-foot long overlooks over the Columbia River and west into the CRGNSA with benches; the overlook locations are shown in Exhibit 5 and Exhibit 6. The cross-section of the overlooks is shown in Exhibit 7.
- Speed: The design speed for the bridge would be 50 mph with a posted speed limit of 35 mph.
- Vehicle restrictions: Vehicles would no longer be limited by height, width, or weight. Vehicles exceeding 80,000 lbs. that have approved trip permits could use the bridge.
- Tolling: Tolls for vehicles would be collected electronically so there would be no toll booth on either side of the bridge. No tolls would be collected from non-motorized users (e.g., pedestrians, bicyclists) who travel on the shared use path.
- Navigational clearance: Vertical clearance for marine vessels would be a minimum of 80 feet. The horizontal bridge opening for the navigation channel would be 450 feet, greater than the existing 300-foot wide federally recognized navigation channel, as shown in Exhibit 4. Centered within this 450-foot opening, there would be a 250-foot wide opening with a vertical clearance of 90 feet. Similar to the existing bridge, the replacement bridge would cross the navigation channel at roughly a perpendicular angle as shown in Exhibit 5 and Exhibit 6.
- Seismic resilience: The bridge would be designed to be seismically sound under a 1,000-year event and operational under a Cascadia Subduction Zone earthquake.

- Stormwater: Stormwater from the entire Project area (bridge and improved roadways) would be collected and piped to detention and treatment facilities on both sides of the bridge as shown in Exhibit 6. On the Washington side, separate stormwater facilities would be used for the roadways and the bridge.
- Roadway connections: The bridge would connect to SR 14 on the Washington side at a new two-lane roundabout slightly west of the existing SR 14/Hood River Bridge intersection, as shown in Exhibit 6. On the Oregon side, the southern end of the bridge would transition to Button Bridge Road, connecting to the local road network at the existing signalized Button Bridge Road/E. Marina Way intersection north of I-84. The private driveway on Button Bridge Road north of E. Marina Way may be closed under this alternative. Like the existing bridge, the replacement bridge would cross over the BNSF Railway tracks on the Washington side and over the Waterfront Trail along the Oregon shoreline.
- Bicycle and pedestrian connections: The new shared use path would connect to existing sidewalks along the south side of SR 14 in Washington and to roadway shoulders (for bicyclists) on both sides of SR 14 at the new roundabout with marked crosswalks, as shown in Exhibit 6. On the Oregon side, the shared use path would connect to existing sidewalks, bicycle lanes, and local roadways at the signalized Button Bridge Road/E. Marina Way intersection.
- Cost: Total Project construction cost is estimated to be $300 million in 2019 dollars.

Exhibit 5. Preferred Alternative EC-2 Alignment

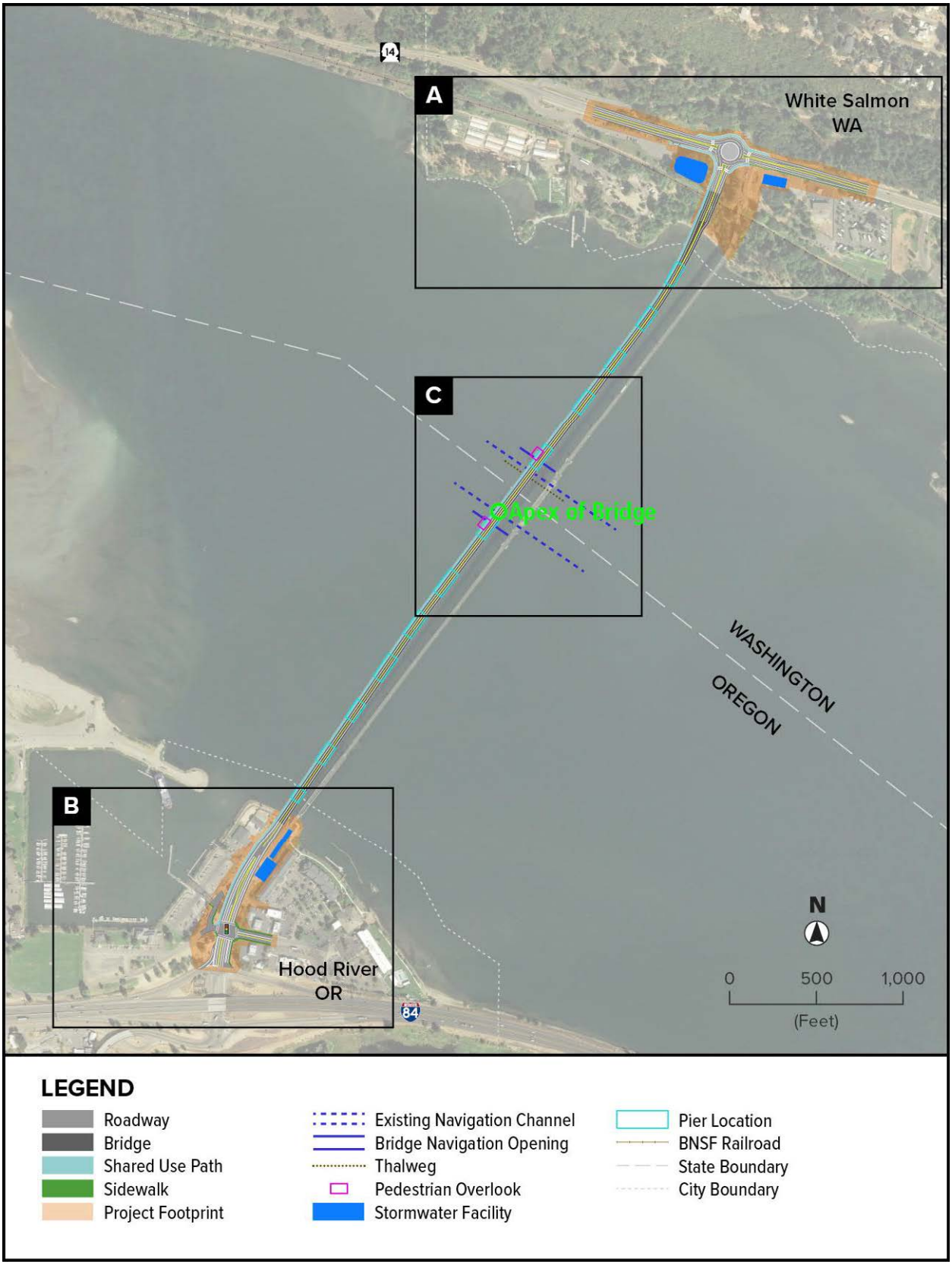


Exhibit 6. Preferred Alternative EC-2 Enlargements

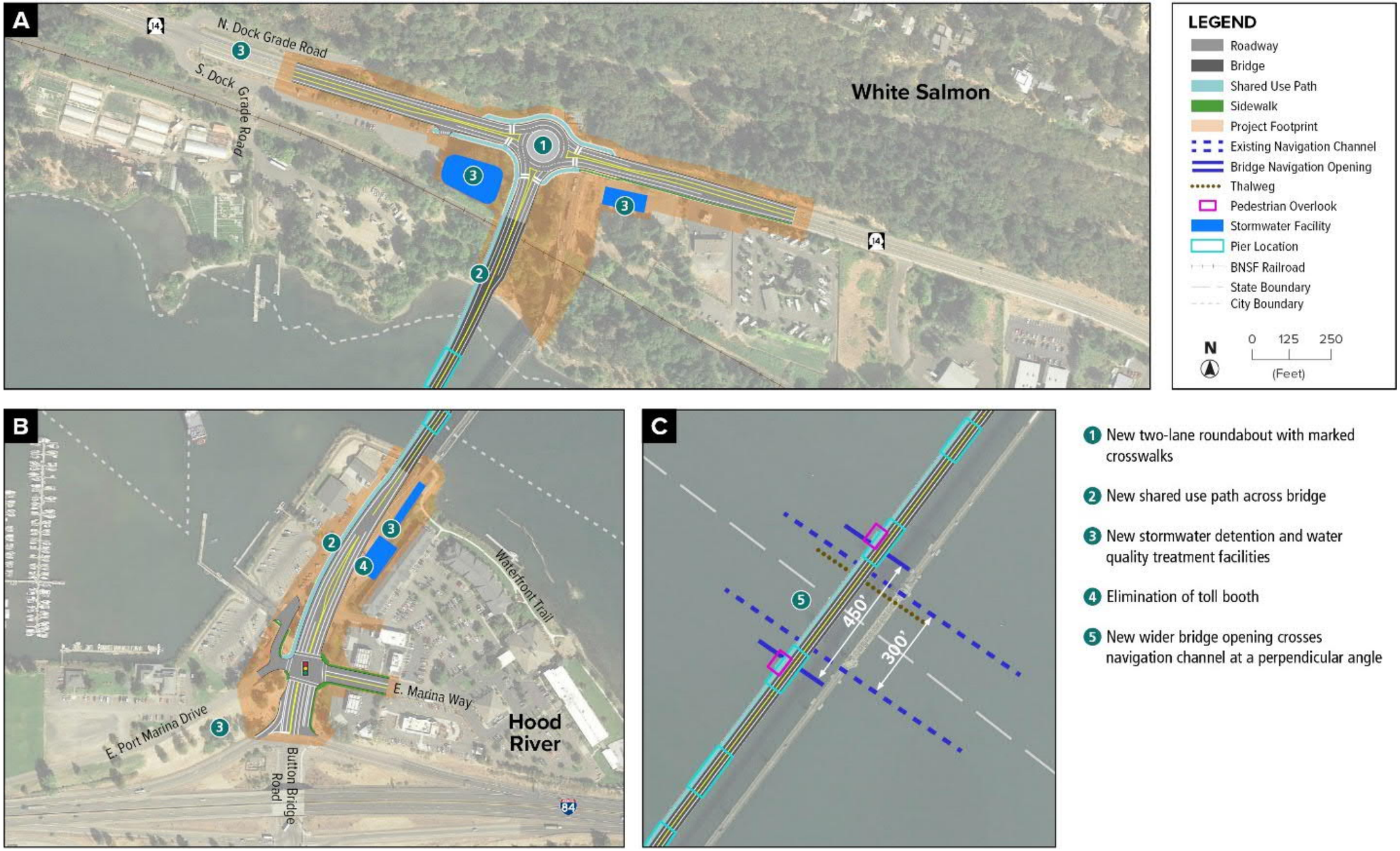


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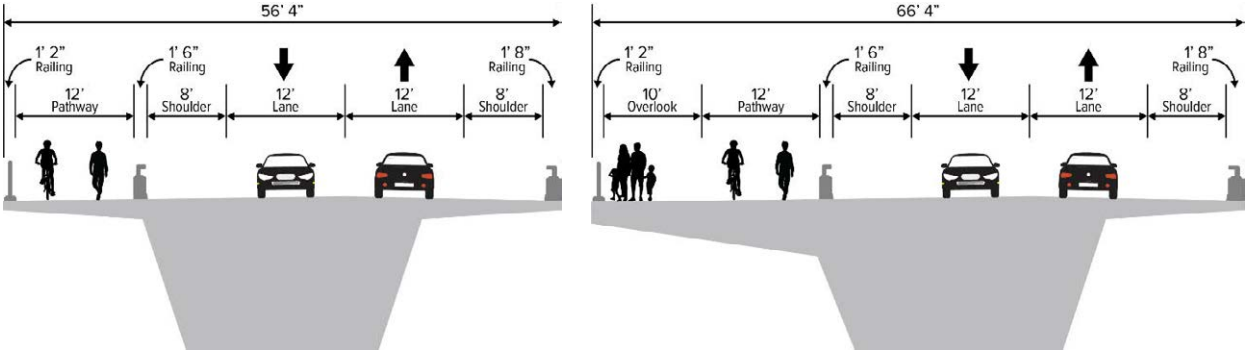
Exhibit 7. Replacement Bridge Typical Cross-Section



Typical

With Pedestrian Overlook

2.3. Alternative EC-1

Alternative EC-1 would construct a replacement bridge west of the existing bridge. Like Alternative EC-2, the existing bridge would be removed following construction of the replacement bridge. Exhibit 8 shows alignment of Alternative EC-1 and Exhibit 9 provides enlargements of the improvements that would be constructed under Alternative EC-1.

Like Preferred Alternative EC-2, the total Project construction cost for Alternative EC-3 is estimated to be $300 million in 2019 dollars. Under Alternative EC-3, elements of the replacement bridge would be the same as the elements described for Alternative EC-2 except:

- Alignment: The main span of the bridge would be approximately 700 feet west of the existing lift span. The bridge terminus in White Salmon, Washington, would be located approximately 2,309 feet west of the existing SR 14/Hood River Bridge intersection, while the southern terminus would be in roughly the same location as the existing terminus at the Button Bridge Road/E. Marina Way intersection in Hood River, Oregon.
- Type: The bridge would be a 4,553-foot fixed-span segmental concrete box girder bridge with a concrete deck and no lift span. Like Preferred Alternative EC-2, the bridge would have 12 piers in the Columbia River and one land-based pier on the Washington shore.
- Navigational clearance: The navigational opening would be the same as Alternative EC-2, but the bridge would cross the navigation channel at a more skewed angle than under Alternative EC-2.
- Roadway connections: Connections to roadways would generally be the same as Alternative EC-2, but the bridge would connect to SR 14 on the Washington side at a new two-lane roundabout at the SR 14/Hood River Bridge/N. Dock Grade Road intersection west of the existing bridge. Access to S. Dock Grade Road would be provided via the driveway east of the Mt. Adams Chamber of Commerce and Heritage Plaza Park and Ride.
- Bicycle and pedestrian connections: Connections to bicycle and pedestrian facilities would generally be the same as Alternative EC-2, but the roundabout intersection with SR 14 on the Washington side would be located further west at N. Dock Grade Road.

Exhibit 8. Alternative EC-1 Alignment

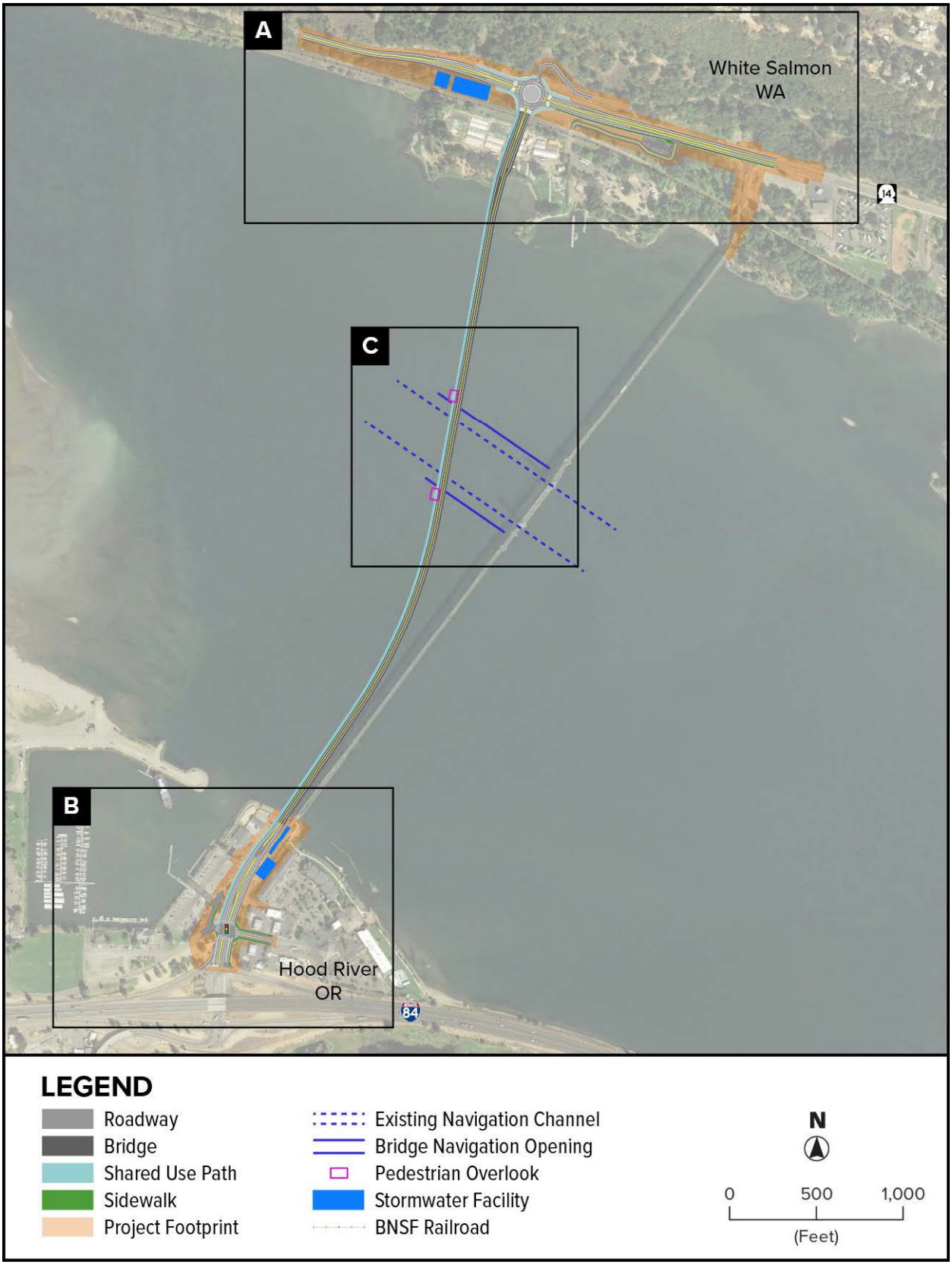
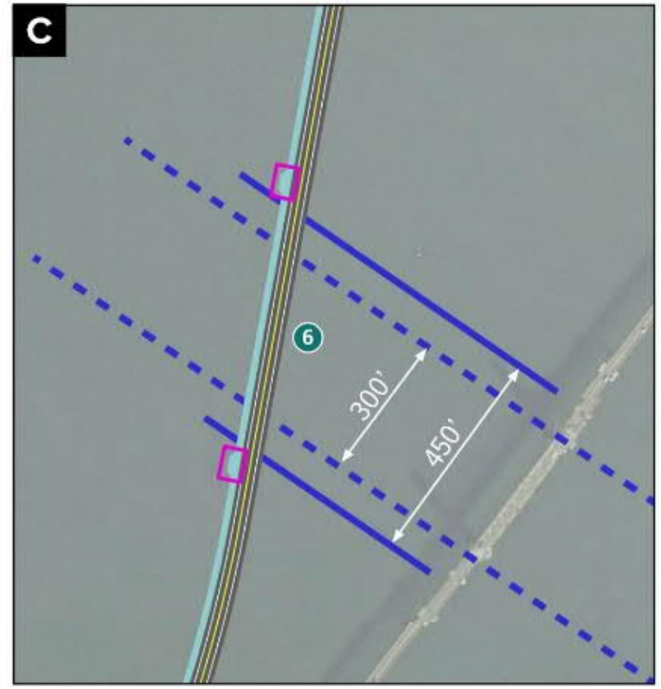


Exhibit 9. Alternative EC-1 Enlargements



1. New two-lane roundabout with marked crosswalks
2. New shared use path across bridge
3. New stormwater detention and water quality treatment facilities
4. Access to S. Dock Grade Road provided from eastern end of Heritage Plaza Park and Ride
5. Elimination of toll booth
6. New wider bridge navigation opening crosses navigation channel at a skewed angle

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2.4. Alternative EC-3

Alternative EC-3 would construct a replacement bridge east of the existing bridge. Like Alternative EC-2, the existing bridge would be removed following construction of the replacement bridge. Exhibit 10 shows alignment of Alternative EC-3 and Exhibit 11 provides enlargements of the improvements that would be constructed under Alternative EC-3.

Like Preferred Alternative EC-2, the total Project construction cost for Alternative EC-3 is estimated to be $300 million in 2019 dollars. Under Alternative EC-3, elements of the replacement bridge would be the same as the elements described for Alternative EC-2 except:

- Alignment: The main span of the bridge would be approximately 400 feet east of the existing lift span. The bridge terminus in White Salmon, Washington, would be located approximately 140 feet east of the existing SR 14/Hood River Bridge intersection, while the southern terminus would be roughly the same as the existing terminus at the Button Bridge Road/E. Marina Way intersection in Hood River, Oregon.
- Type: The bridge would be a 4,553-foot fixed-span segmental concrete box girder bridge with a concrete deck and no lift span. Like Alternative EC-2, the bridge would have 12 piers in the Columbia River and one land-based pier on the Washington side of the river.
- Roadway connections: Connections to roadways would generally be the same as Alternative EC-2, but the bridge would connect to SR 14 on the Washington side at a new two-lane roundabout slightly east of the existing SR 14/Hood River Bridge intersection. On the Oregon side, improvements extend slightly further south to the Button Bridge Road/I-84 on and off ramps. The private driveway on Button Bridge Road north of E. Marina Way would be closed under this alternative.
- Bicycle and pedestrian connections: Connections to bicycle and pedestrian facilities would generally be the same as Alternative EC-2, but the roundabout intersection with SR 14 on the Washington side would be located approximately 264 feet further east than under Alternative EC-2.

Exhibit 10. Alternative EC-3 Alignment

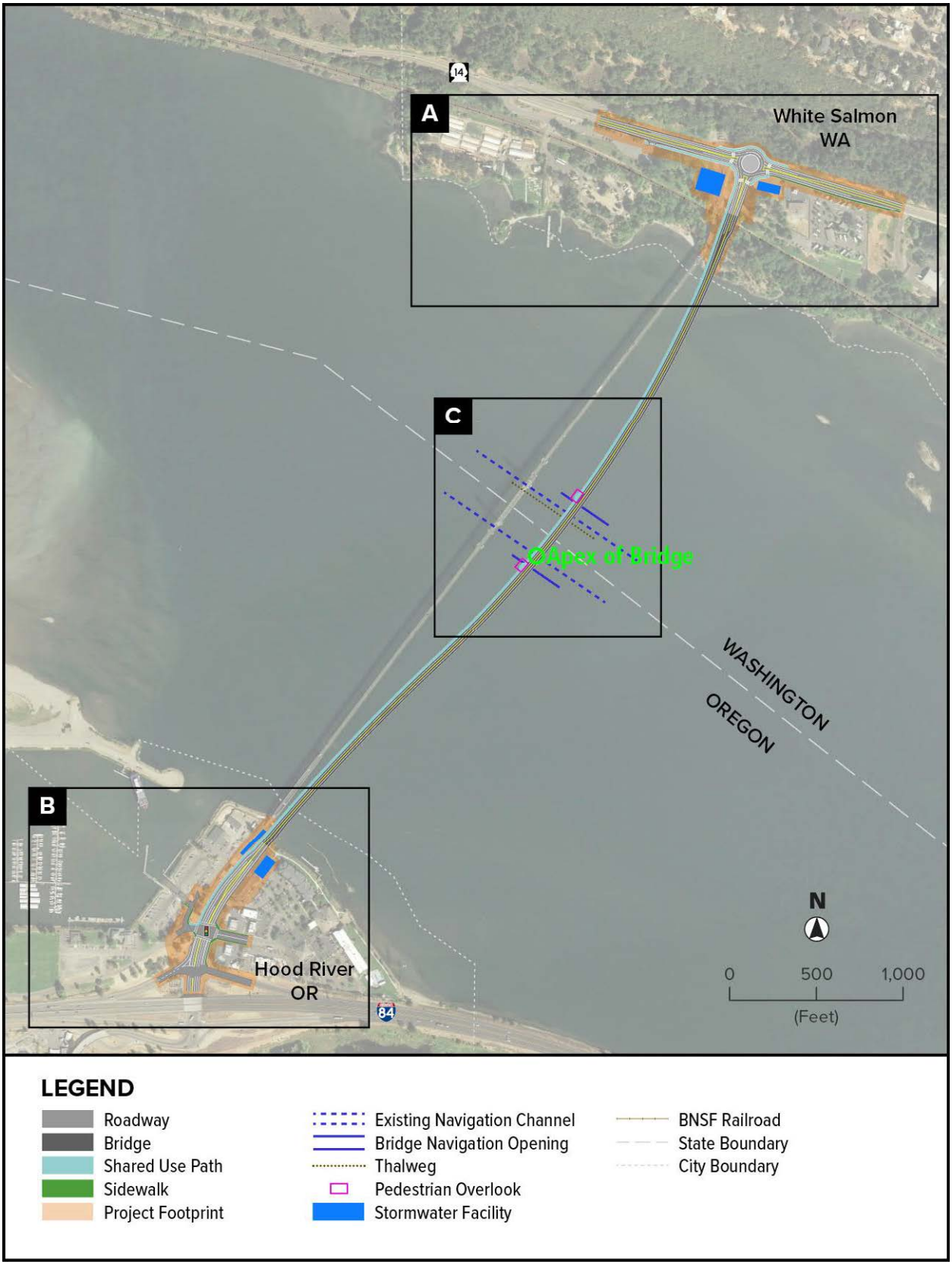
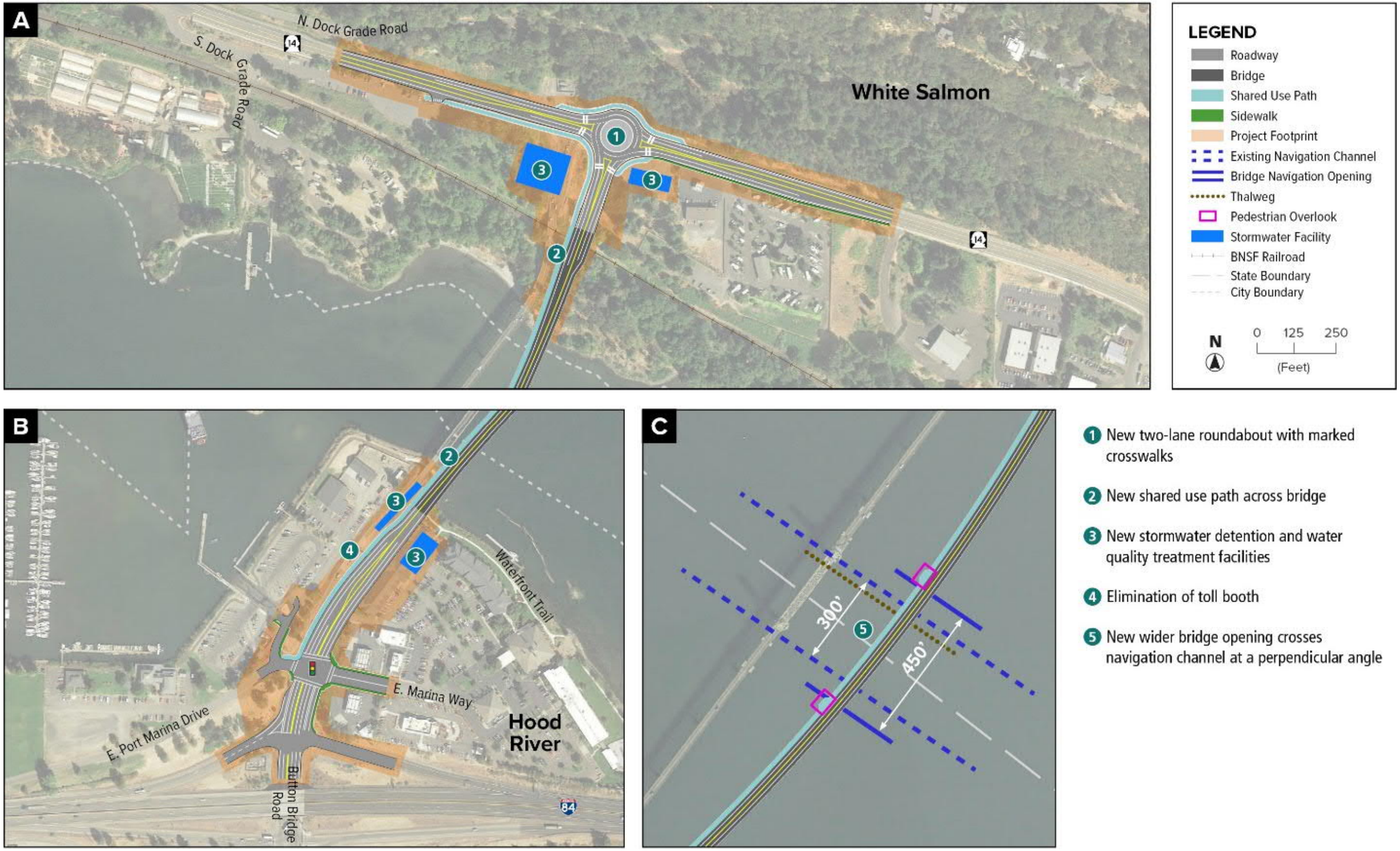


Exhibit 11. Alternative EC-3 Enlargements



1. New two-lane roundabout with marked crosswalks
2. New shared use path across bridge
3. New stormwater detention and water quality treatment facilities
4. Elimination of toll booth
5. New wider bridge opening crosses navigation channel at a perpendicular angle

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2.5. Construction of the Build Alternatives

Construction of the build alternatives would be similar in duration and approach.

- Timeline and sequencing: The NEPA process is anticipated to be complete in 2021; subsequent phases of the Project would be dependent on funding availability. Construction would take approximately 6 years and would require work during approximately six in-water work windows (IWWWs). Approximately three IWWWs would be necessary to construct the replacement bridge, and approximately three additional IWWWs would be necessary to complete the removal of the existing bridge.
- In-water work window: Certain construction and removal activities conducted below the OHWM of the Columbia River would be restricted to an IWWW established for the Project. The IWWW would be established in permits for the Project through inter-agency coordination including Washington Department of Fish and Wildlife (WDFW), Oregon Department of Fish and Wildlife (ODFW), NOAA Fisheries, and USFWS. Preliminary discussions with these agencies indicate that the authorized IWWW would likely be October 1-March 15 of each year. In-water work activities that would be restricted to this IWWW would include vibratory and impact pile installation, installation of drilled shaft casings, installation of cofferdams, and unconfined wiresaw removal of the existing pier foundations. Vibratory pile removal would not be restricted to the IWWW.
- Mobilization and site preparation: The contractor would likely mobilize equipment to the construction site via barges and trucks. Erosion control measures (e.g., silt fences, etc.) and debris containment devices (i.e., floating debris booms) would be installed and clearing and grubbing limits would be established prior to vegetation removal. Barges would require anchoring, tethering, and spudding.
- Construction staging: At least two staging areas would be necessary for staging and storage of materials and equipment; the location of these areas would be determined later in the design process, including obtaining all relevant environmental permits and land use approvals. It is estimated that a minimum of 2 acres would be necessary for staging and storage of materials and equipment. Materials arriving by barge may be offloaded to upland staging areas or may be temporarily stored on barges. All staging areas and equipment fueling areas would be located above the OHWM and outside of environmentally sensitive areas. Staging and temporary access areas will occur in upland locations, on areas that are either already disturbed or that will be restored post-Project.
- Temporary work structures: The Project would likely require the installation of several temporary in-water structures during construction and removal of the existing bridge. These structures would include temporary work bridges, cofferdams, drilled shaft casings, and temporary piles. These temporary features would be designed by the contractor after a contract is awarded, but prior to construction.

  Three temporary work bridges would likely be installed to support construction activities. One temporary work bridge would be installed at each end of the replacement bridge alignment. A third temporary work bridge would be constructed on the Washington side of the river to support the removal of the existing bridge. These temporary structures would likely be supported by 24-inch steel pipe piles.

Additional temporary piles would be necessary throughout construction and removal of the existing bridge for a variety of purposes, including supporting falsework and formwork, pile templates, reaction piles, and for barge mooring. These temporary piles would also likely be 24-inch steel pipe piles.

Barges would be used as platforms to conduct work activities and to haul materials and equipment to and from the work site. Three barges would typically be needed at each pier during drilled shaft construction, and at least one barge would remain at each pier after shaft construction to support column and superstructure construction.

Temporary cofferdams would likely be installed to create isolated in-water work areas for certain activities. A temporary cofferdam would likely be installed to create an isolated in-water work area for construction of a spread footing foundation on the Washington shoreline. Sheet pile cofferdams may also be installed at one or more piers on the existing bridge to create an isolated work area for removal of the existing bridge foundations.

Drilled shaft shoring casings would also be installed as temporary work structures to create isolated work areas for drilled shaft construction. An outer steel casing, with a diameter approximately 12-inches larger than that of the finished drilled shaft, would be installed to act as an isolation structure. The outer cases will be 84 inches in diameter for the 72-inch shafts, and 108 inches in diameter for the 96-inch shafts.

- Work area isolation and fish salvage: To minimize impacts to fish, fish salvage measures would be employed to remove fish from temporarily isolated in-water work areas during and after the installation of drilled shaft shoring casings and cofferdams. Fish salvage would follow the best management practices (BMPs) established in the biological opinion for FHWA and ODOT's Federal Aid Highway Program programmatic consultation and would be supervised by a fish biologist. A fish biologist with the experience and competence to ensure the safe capture, handling, and release of all fish will supervise all fish capture and release. To minimize take, efforts will be made to capture ESA-listed fish known or likely to be present in an in-water isolated work area using methods that are effective, minimize fish handling, and minimize the potential for injury. Attempts to seine and/or net fish, or the use of minnow traps shall precede the use of electrofishing equipment. Isolation structures will be installed such that they will not be overtopped by high water. A reasonable effort would be made to re-locate threatened or endangered fish using methods that minimize the risk of injury.
- Bridge foundation installation: The foundations for the replacement bridge would consist of three different foundation types: 1) pile-supported foundations; 2) drilled-shaft-supported foundations; and 3) spread footings. In general, pile-supported foundations would be used at locations where the depths to bedrock are relatively deep (greater than 50 feet below ground surface) while drilled shaft-supported foundations would be more economical in locations where depths to bedrock are nearer to the surface (less than 50 feet below ground surface). Spread footings would be used where bedrock is located at or near the surface and deep foundations are not required.

  Pile-supported foundations would be supported by 48-inch diameter steel pipe piles. The typical in-water foundation would require 25 piles, where-as smaller terrestrial pile-supported foundations would require fewer piles. Piles would be installed with a vibratory hammer to the extent practicable, as a means of minimizing impacts associated with underwater noise. An impact hammer would be used to drive the piles to the final tip elevation, and/or to proof the piles to verify load-bearing capacity.

Drilled shaft-supported foundations would be supported by either 72-inch-diameter drilled shafts or 96-inch-diameter drilled shafts. The larger-diameter drilled shafts would be used on the bents that flank the navigation channel. Installation of drilled shafts would be conducted by first oscillating an outer steel casing to a specified design depth. As the casing is being advanced to the design depth, soil would be removed from inside the casing using an auger and clamshell. Excavated soils would be temporarily placed onto a barge with appropriate containment and ultimately placed at an approved upland site. Once the interior of the casing has been excavated to the design depth, an interior steel casing of the finished diameter of the shaft would be installed. This casing would be installed either with an oscillator or vibratory hammer. Once the interior casing has been installed to final depth, a steel reinforcement cage would be installed within the casing, and the shaft would be filled with concrete.

Construction of spread footing foundations below the OHWM of the river would be conducted within a temporarily dewatered work area within a cofferdam. Once the cofferdam is installed and the work area established, formwork would be installed for the spread footing, steel reinforcing would be installed within the forms, and the concrete for the footing would be poured. The cofferdam would remain in place until the concrete is fully cured to allow the concrete to cure in a dewatered environment. Once the concrete for the footing is fully cured, the formwork would be removed followed by the temporary cofferdam.

- Bridge superstructure construction: Once the foundation piles and drilled shafts are installed, a concrete pile cap would be installed atop the shafts at the waterline, and the concrete pier and superstructure would be installed atop the pile cap. Pile caps may be either precast or cast-in-place.

  The superstructure would consist of both precast and cast-in-place concrete segments. Additional finish work would also be conducted, including surfacing, paving, and installation of other finish features, such as striping and signage.

  Work on the superstructure would be conducted either from the bridge deck, from the deck of temporary work bridges, or from barges. It is anticipated that the superstructure would be constructed using a balanced cantilever method that uses paired sets of form travelers to build outwards from each pier. It is assumed that a contractor may operate up to four pairs of form travelers at a given time to expedite the construction of the superstructure.

  Many of the bridge superstructure components would be composed of precast concrete. Precast elements would likely include bridge columns, beams, girders, and deck panels. Precast bridge elements would be constructed in upland controlled environments and would be transported to the Project site by either barge or truck.

- Dismantling and removal of the existing bridge: The existing bridge would remain open until the replacement bridge is constructed and operational, at which point it would be dismantled and removed. This work would be conducted via barges and/or temporary work platforms and may require in-water isolation.

  Removal of the superstructure would most likely be conducted by barge-mounted cranes. Removal of the superstructure would likely begin with removal of the counterweights, followed by the lift towers and the individual truss sections. The lift towers and truss sections would be cut into manageable pieces and loaded onto barges or trucks by a crane. Each section would then be either transported to an upland site for further dismantling or disposed of directly at an appropriately permitted upland facility.

Removal of the existing foundations would be conducted by one of the following two methods:

- Wiresaw removal to mudline, without a cofferdam. A diamond wire/wire saw would be used to cut the foundation into manageable pieces that would be transported to a barge and disposed of in a permitted off site upland location. The foundations would be removed to the mudline and the substrate would be naturally restored with surrounding sediments.
- Wiresaw or conventional pier removal techniques within a cofferdam. Conventional removal techniques consist of using a hydraulic ram to break the piers into rubble, and torches or other cutting methods to cut reinforcement. Materials would then be transported to a barge and disposed of in a permitted off site upland location. The foundations would be removed to the mudline and the substrate would be naturally restored with surrounding sediments.

It is assumed that the cofferdam removal option would be used at both piers that flank the navigation channel, but may also be used in other pier locations. At the two navigation channel piers, once cofferdams are installed and fish salvage has occurred, approximately 7,800 cubic yards of existing riprap would be removed. Riprap would be removed via a barge mounted clamshell, and loaded onto barges, and disposed of at an off-site permitted upland location. Once riprap has been removed, the existing piers would either be removed using one of the methods described above.

- Post-Project site restoration: Construction of the Project would result in temporary impacts to native and non-native vegetation on both the Oregon and Washington sides of the river. Areas temporarily disturbed during construction would be restored upon completion of the Project consistent with state and local regulations.

  On the Oregon side of the river, most temporary disturbance would occur within areas that are either impervious or already developed. Temporary disturbance would occur within areas that consist of landscaping, lawns, or similar heavily managed vegetation. Post-Project site restoration in these areas would likely consist of replacement landscaping with similar ornamental species. No native plant communities would be disturbed on the Oregon side of the river.

  On the Washington side of the river, vegetation would be cleared within temporary work zones to allow construction equipment to access the site, to construct the replacement bridge abutments and stormwater treatment facilities, and to remove the existing bridge. A portion of the area to be cleared would be within a forested riparian area that is within the 200-foot shoreline jurisdiction of the Columbia River, and is regulated by the City of White Salmon under its Shoreline Master Program (City of White Salmon 2016). A large oak tree that is present east of the existing bridge would be preserved and would not be affected.

  Temporarily disturbed areas within ODOT and WSDOT rights-of-way would be replanted consistent with applicable ODOT and WSDOT requirements and design standards. Temporarily disturbed vegetation within the riparian shoreline buffer on the Washington side of the river would be conducted consistent with requirements in the City of White Salmon Critical Areas Ordinance (White Salmon Municipal Code Chapter 18.10) (and Shoreline Master Program (City of White Salmon 2016).

- Compensatory Mitigation: The Project would result in permanent impacts to wetland and aquatic habitats, and a compensatory mitigation plan would likely be required by federal, state and local regulations to offset these permanent impacts. The compensatory mitigation plan would be developed during the permitting phase of the project. The mitigation plan would identify the amount, type, and specific locations of any proposed compensatory mitigation actions, specific impact avoidance and minimization measures to be implemented, as well as the goals, objectives, and performance standards for measuring success. Full implementation of the compensatory mitigation plan would be a condition of the applicable permits of the agencies with jurisdiction (i.e., USACE Section 404 permit, the Oregon Department of Environmental Quality [DEQ] and the Washington State Department of Ecology [Ecology] Section 401 permits, the Oregon Department of State Lands [DSL] Removal-Fill permit, WDFW Hydraulic Project Approval, and City of White Salmon Shorelines and Critical Areas permits), and the mitigation would comply fully with all applicable permit terms and conditions.

The method of delivery for Project final design and construction has not been determined at this time. Traditional delivery methods, such as design-bid-build, and alternative delivery methods, such as design-build and public-private-partnerships to name a few, will continue to be considered by the Port. As part of Oregon's HB 2017, the Port was provided legal authority by the state to enter into a public-private-partnership.

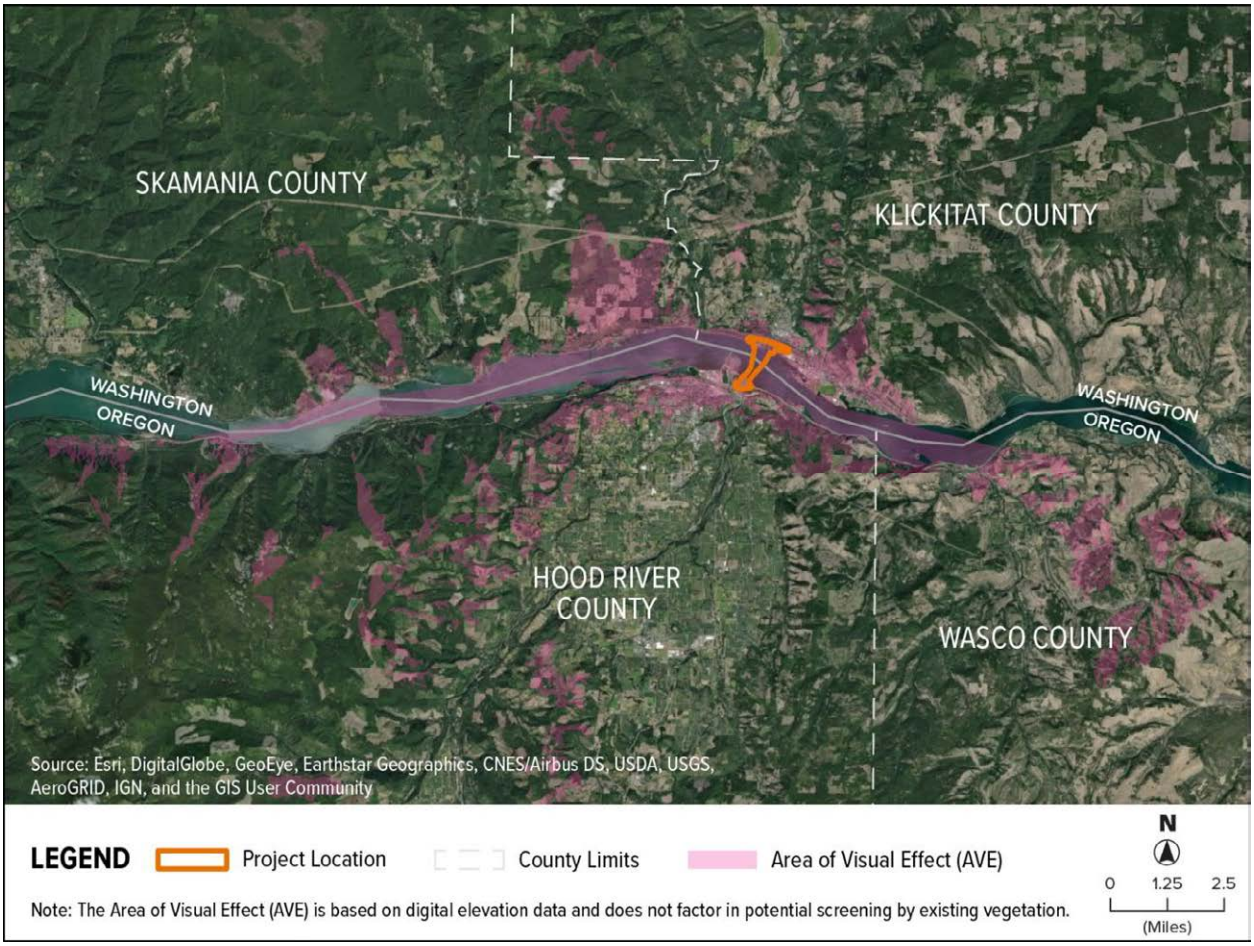
3. METHODOLOGY

Visual quality was previously analyzed in the Project's Draft EIS and Visual Technical Report (Parsons Brinckerhoff 2003). A new visual impact assessment (VIA) guidelines document was released by the Federal Highway Administration (FHWA) in 2015, so the VIA was revised using the new guidelines. A Standard VIA level was used to evaluate Project impacts.

3.1. Area of Potential Impact / Area of Visual Effect

The area of potential impact for the visual analysis, referred to as the potential Area of Visual Effect (AVE), is shown in Exhibit 12. Per the FHWA Guidelines for the VIA of Highway Projects (FHWA 2015), the AVE was determined using a standard digital elevation model (DEM) from the USGS 3D Elevation Program to determine the largest area that would be visible from or toward the Project location, and, thus, could experience the anticipated direct and indirect impacts to visual quality (USGS 2019). This AVE represents the topographical limitations of views toward and from the Project location. The AVE developed using the 2015 FHWA guidelines is larger than the study area identified in the Draft EIS. The VIA described below in Section 3.5 considers how vegetation and land use could further limit views toward and from the Project location. The potential AVE has been refined through coordination with FHWA and the Port, and a site visit, to confirm the final AVE that reflects the physiological limits of human sight, viewsheds, and vegetative screening effects included in this VIA.

Exhibit 12. Area of Visual Effect



3.2. Regulations, Standards, and Guidelines

Since publication of the Draft EIS, the FHWA has developed new guidelines that substantially change the procedure for performing VIAs. The federal, state, and local regulations, standards, and guidelines that apply to the Project are listed below.

- NEPA 42 USC 4331[b][2]; 23 USC 109[h]
- Section 106 of the National Historic Preservation Act of 1966
- Section 4(f) of the Department of Transportation Act of 1966
- CRGNSA Act, 16 USC §§ 544–544p
- Columbia River Gorge Commission Land Use Ordinance, Commission Rule 350-81-110
- FHWA Guidelines for the VIA of Highway Projects (January 2015) (FHWA VIA Guidelines)
- Oregon Department of Transportation Roadside Development Manual
- Washington State Department of Transportation Roadside Policy Manual, M 3110.03

- Washington State Department of Transportation Roadside Policy Manual, M 25-30.04
- Hood River County Zoning Ordinance, Article 75 CRGNSA, Columbia River Bridge Replacement
- City of White Salmon Shoreline Master Plan, 2017
- Klickitat County's Scenic Area Land Use Ordinance, Rule 350-81-110 Columbia River Bridge Replacement

The Project is within the CRGNSA. The CRGNSA Management Plan (CRGC 2016) includes three different types of management areas: urban areas, general management area (GMA; includes the Columbia River) and special management area (SMA). The build alternatives would touch down in the Hood River Urban Area to the south of the river and the White Salmon Urban Area to the north of the river. Any portion of the bridge in these urban areas would be exempt from the Management Plan because Congress exempted urban areas from the Management Plan. The portion of the bridge over the Columbia River, outside of the urban area boundaries, would fall within the GMA designation. However, there are currently no design guidelines for the Columbia River in the Management Plan (CRGC 2016).

As noted in the CRGNSA Management Plan (page I-1-29), "GMA policies to protect key viewing area viewsheds require that all new development on lands seen from key viewing areas be visually subordinate to its landscape setting, except for 'specified developed settings that are not visually sensitive.' Three landscape settings are considered developed settings within this context: Rural Residential, Residential, and Village' (CRGC 2016)." The over-water portion of the bridge would not be required to meet the visually subordinate policy because it is not "development on land." Moreover, the Management Plan was amended to include specific guidance for the Project. The Project would be an allowable use if it is developed to be consistent with the following guidelines for visual quality:

> COLUMBIA RIVER BRIDGE REPLACEMENT
>
> <u>GMA Goal</u>
> 1. Ensure that a replacement Columbia River Bridge between the Hood River and Bingen/White Salmon Urban Areas provides for regional transportation and public safety needs while being consistent with both purposes of the Scenic Area Act.
>
> <u>GMA Guidelines - Visual Quality</u>
> 1. A replacement Columbia River Bridge between the Hood River and Bingen/White Salmon Urban Areas shall be visually unobtrusive and harmonious with the surrounding Gorge landscape and the Columbia River. A replacement bridge shall:
>
> A. Utilize recessive dark natural or earth-tone colors for steel components of the bridge, a thin and open structural design that allows views through it to the extent practicable, and consistent design character and ornamental elements;
> B. Employ lighting that provides a safe and pleasant atmosphere for bicycles and pedestrians while not casting glare directly into the sky or onto the river.

The Project is identified in the Hood River County Zoning Ordinance, Article 75, as an allowable use, provided the GMA guidelines outlined above and specific to this Project are satisfied. Klickitat County's Scenic Area Land Use Ordinance, Rule 350-81-110 Columbia River Bridge Replacement and the Columbia River Gorge Commission Rule 350-81 (350-81-110) both designate the replacement bridge as an allowable land use and specifies these GMA guidelines above are followed. Since the Project is identified

as an allowable use, the Project is anticipated to be approved during the CRGNSA Land Use Permit review process if the above GMA guidelines for visual quality are followed.

The following laws identified for consideration in FHWA's VIA Guidelines (FHWA 2015) do not apply to this Project:

- Antiquities Act of 1906, 16 USC 431
- National Scenic Byways Program, 23 USC 162
- National Trails System Act of 1968, 16 USC § 1242
- Wild and Scenic Rivers Act of 1968

3.3. Sources of Existing Data

The 2003 technical report was completed using an FHWA VIA methodology that has since been replaced by a new FHWA VIA methodology (FHWA 2015); therefore, the VIA was updated following the 2015 methodology. Google Earth street view mapping was used as a preliminary desktop review prior to a site visit. Federal, state, and local planning documents were also reviewed to identify visual resources, visual preferences, and any scenic standards. Relevant high-resolution photos from US Forest Service monitoring cameras were used if available.

3.4. Data Collection or Development

The following data and information was collected:

- Current Oregon and Washington DEM data was used to determine the AVE.
- Input gleaned from public engagement activities to date was reviewed to identify any visual concerns about the Project.
- A site visit was conducted to capture key views (photographs) from CRGNSA Management Plan-designated key viewing areas (KVAs), from other locations of potential sensitive viewers, and from the existing bridge. Key views represent neighbors' views and travelers' views, per the FHWA VIA guidance.
- Photo simulations were generated to show how the bridge would appear to viewers looking toward it and from it.
- State, local, and regional plans, policies pertaining to visual resources were reviewed to determine applicability to the Project.
- Other applicable data needed to satisfy the FHWA VIA Guidelines.

3.5. Impact Analysis Techniques

A Standard VIA was conducted in accordance with the 2015 FHWA VIA Guidelines.

3.5.1. Establishment Phase

This phase starts with defining the AVE, which has been established in Exhibit 12. The establishment phase also includes describing the conceptual character of the Project, including a rough understanding of the Project's visual character, and determining through public engagement activities and review of

planning documents if the community has any defined visual preferences. A site visit, review of federal, state and local planning documents and engineering plans, and specific questions asking during public engagement activities and online surveys about visual preference, were used to describe the Project's visual character, the community's visual preferences, if any, and the surrounding visual landscape within which the Project would be built.

3.5.2. Inventory Phase

"The purpose of the inventory phase is to examine visual quality, or what people like or dislike seeing. Visual quality is a relationship between viewers and their environment" (FHWA 2015). To carry out this phase, the components of the affected environment and the composition of the affected population were identified, and then the relationship between them was considered. The tasks described in Chapter 5 of FHWA's VIA Guidance, summarized below, were completed to support a Standard VIA.

- Inventory the natural, cultural and project environments and visual character of the AVE through desktop review of Google Streetview photos, review of planning documents and a site visit
- Describe and document the neighbors' and travelers' views in the AVE that the Project would affect
- Define what people like and dislike about the visual character of the AVE by reviewing visual preferences and scenic goals and objectives in planning documents or through querying visual preferences during public engagement activities and online surveys
- Establish key views[2] through collaboration with FHWA and the Port
- Document baseline visual quality in the VIA through text discussion and photo documentation.

3.5.3. Analysis Phase

The analysis documented the direct and indirect impacts of the final Project buildout to visual quality and considered the compatibility of the impact, the sensitivity of neighbors and travelers to the impacts, and the degree of the impacts, per FHWA's VIA Guidelines. The impacts to visual quality were assessed for viewers who may be affected by the Project and were described as beneficial, adverse, or neutral. Project designs were reviewed, and photo simulations were created, to illustrate the effects of the Project to stakeholders and the public.

The analysis also documents the anticipated temporary construction impacts of the Project. The VIA considered any landform changes that would occur to build the replacement bridge, remove the existing bridge, or create staging areas or detour routes; visibility of temporary in-water or land-based structures; fugitive light from portable sources used for construction; and any vegetation removal required for construction.

[2] At least one key view from the following CRGNSA Management Plan KVAs, for which the Project would be visible, was included in the analysis: the Columbia River, Historic Columbia River Highway, SR 14, Cook-Underwood Road, I-84 and Oregon Highway 35. At least one key view from the following CRGNSA KVAs was included in the analysis if a site visit confirms the Project would be visible from these KVAs: Panorama Point Park, Dog Mountain Trail and SR 141.

3.5.4. Mitigation Phase

This final phase of the VIA process, the mitigation phase, is typically completed after a preferred alternative has been selected, per the FHWA VIA Guidelines. Mitigation for the preferred alternative will be identified in the Project's Mitigation Plan. However, provided the Project follows the GMA guidelines for visual quality for the Project described in Section 3.2, mitigation measures for long-term, permanent impacts are not anticipated because the Project would be designed following these guidelines. The VIA proposes mitigation measures that could be considered to avoid or minimize potential adverse impacts to visual quality during construction.

3.6. Agency Coordination

Interagency coordination is a key element of FHWA's VIA Guidelines, and local, state, and federal agencies with permitting approval or jurisdiction have been invited to participate in this Project. Agency coordination is being implemented following the Project's Agency Coordination Plan, which identifies coordination points at which the lead agencies will seek input from the Project's cooperating and participating agencies. Tribal consultation is also being implemented. Data or information needed to support the inventory phase, the analysis phase, or the mitigation phase of the VIA was requested by the Project team to the corresponding local, state, or federal agencies or tribes. The potential AVE was refined through coordination with FHWA, the Port, and other agencies as appropriate.

4. AFFECTED ENVIRONMENT

4.1. Regulatory Setting

Please refer to Section 3.2 for a discussion on the regulatory setting including a discussion of the applicable federal, state, and local regulations, standards, and guidelines.

4.2. Existing Visual Conditions

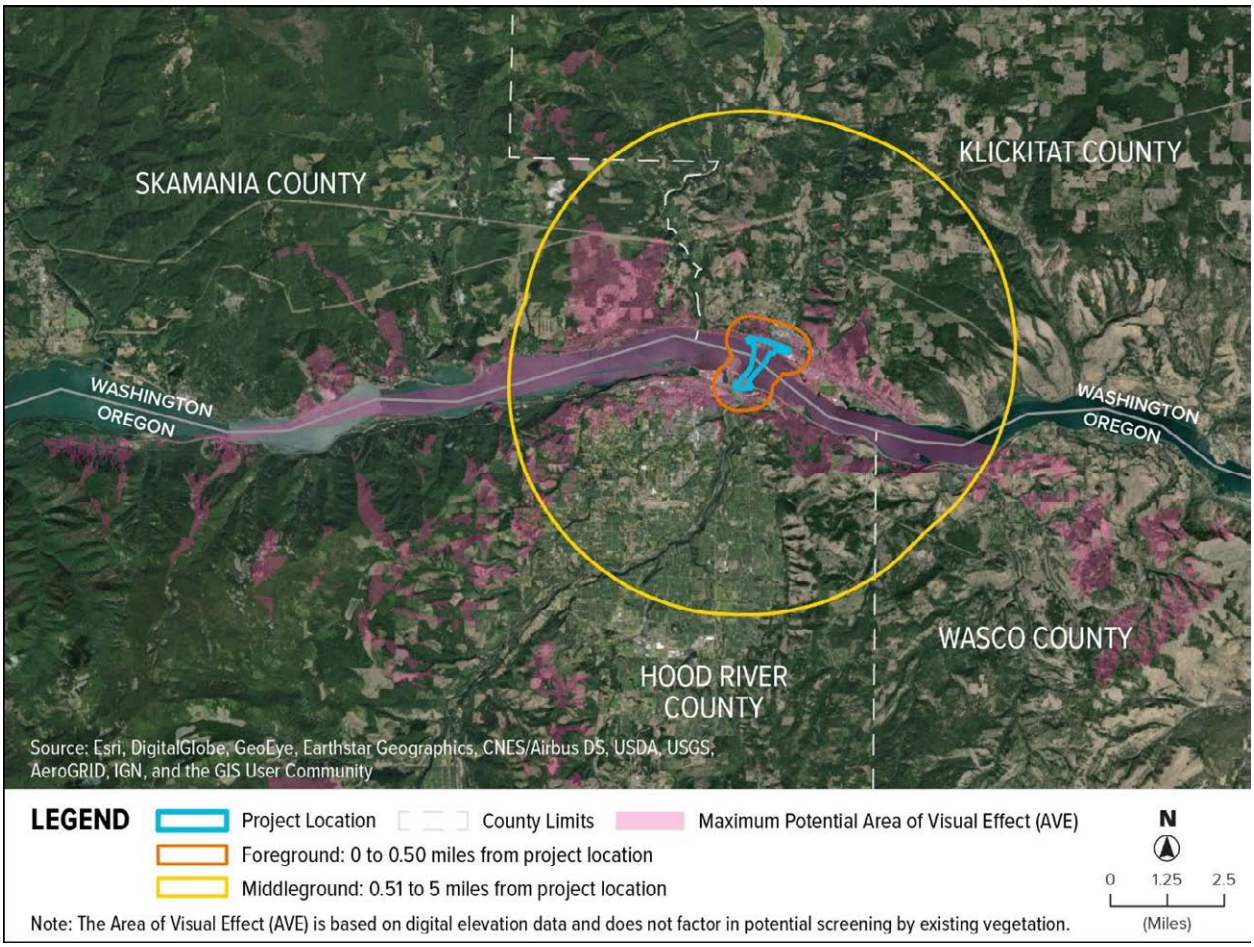
Formed by ancient floods and countless years of water sculpting its way through the Cascade Mountain Range, the stunningly beautiful Columbia River Gorge is a land of contrasts. The western Columbia River Gorge is characterized by verdant mountains, rich forestlands, and more waterfalls than any area in the country. The eastern Columbia River Gorge, where the Project lies, has rim-rock bluffs, sloping-forested hills, open farmland, and semi-arid grasslands. The existing steel truss bridge with a vertical lift is nearly a mile long but it is surrounded by 4,000-foot-high mountains on either side that are punctuated by the snow-capped 11,250 foot Mt. Hood, 8,366 foot Mt. St Helens and 12,280 foot Mt. Adams, which make the size and scale of the existing bridge unobtrusive.

The diverse open space resources in the Columbia River Gorge typifies the visual character of the area and is primarily responsible for its reputation for unparalleled scenery, unique and varied ecosystems and habitats, rich heritage, and quality recreation opportunities; however, the existing bridge connects two urban areas. The Hood River and White Salmon/Bingen urban areas are typical of other urban areas with human-made structures, lights (street lights, signals, site lighting, exterior building lights, electrical advertising, and other electrical outdoor illumination), and transportation networks which include I-84, Highway 30 and Highway 35 in Oregon and Washington SR 14. The existing bridge has spanned the Columbia River since 1924 and is visually compatible with the urban areas and transportation networks.

4.3. Area of Visual Effect

Exhibit 13 shows the maximum potential AVE based on topography alone, per FHWA's guidelines, within 5 miles of the Project area as well as the limits of the foreground and middleground. The sheer size of the Cascade Mountains on either side of the Columbia River define the Columbia River Gorge and offer the expansive views but they also define the limits from which the Project at river level can be seen as development follows the gentle bends of the river east and west of the Project site. Views of the Project are also limited by distance, or proximity, from which viewers can see the Project with any discernable detail. Proximity can be defined using three distinct zones; foreground, middleground, and background. The foreground zone comprises views from 0.0 miles to 0.5 miles. Project changes are mostly discernable in this zone and are not generally affected by atmospheric conditions. Viewers tend to be the most affected by changes in visual quality. The middleground zone comprises views from 0.5 miles to 5.0 miles. In this zone, Project changes are somewhat visible, but details are generally not discernable and may be obscured by atmospheric conditions. As in the Draft EIS, the AVE for this Project is defined as up to 5 miles of the Project area (approximated by yellow circle on Exhibit 13) where potential visual change would be mostly visible (foreground; within orange circle on Exhibit 13) or somewhat visible (middleground; between orange circle and yellow circle on Exhibit 13 to travelers and neighbors.

Exhibit 13. Foreground and Middleground Limits Relative to the AVE



Views from the background zone are from more than 5 miles from the Project area. Project details and changes to visual quality are generally not discernable from this distance and atmospheric conditions can easily affect or obscure views. While views from the background zone have been considered, this report will primarily focus on impacts to viewers in the foreground and middleground proximity zones.

Some views of the Project site are static and refer to views from a single stationary location; other views are dynamic and refer to a series of views available as a viewer travels through a landscape. The Project may be visible or obscured as the traveler moves through landforms, vegetation, and human-made features. Dynamic views are directional and can be quite different for viewers traveling in different directions. Dynamic views are also affected by whether a viewer is a driver with their attention primarily focused on driving or a passenger who has more discretion to look away from roadways.

4.4. Landscape Units and Affected Environment

The AVE is divided into 10 geographic areas with similar visual features and homogeneous visual character. When grouped in this manner, they can be referred to as an "outdoor room," sharing a variety of common characteristics. These outdoor rooms, or landscape units, have been used to assess the affected environment and visual character impacts. Visual resources are defined as "components of the natural, cultural or project environment which are capable of being seen (FHWA 2015)." The 10 landscape units and their visual resources are described in Exhibit 14.

Exhibit 14. Landscape Unit Descriptions and Affected Environment

Landscape Unit Name	Affected Environment	
Hood River Urban Area	Natural	Urban areas are generally situated on mountain foothills sloped toward the Columbia River. Landscapes are generally ornamental in the urban areas but the natural semi-arid vegetation is a definitive characteristic. Views of the Columbia River are desirable and are an important part of the visual characteristic. Most areas are on slopes that face north toward the Columbia River and offer views of the Project site, the Columbia River Gorge, and Cascade mountains beyond, including dramatic views of Mt. Adams when atmospheric conditions allow.
	Cultural	The Hood River Urban Area is characterized by the built environment including human-made residential, commercial, civic, institutional, and industrial structures. Structures are generally between one story and four stories.
	Project	I-84, Highway 30, Highway 35, and rail lines are located in the Hood River Urban Area and are visually prominent. Visual movement is common with cars, trucks, and trains. Human-made materials, lights, bright colors, and reflective surfaces are abundant. Overpasses and bridges are key elements along I-84.

Landscape Unit Name	Affected Environment	
White Salmon/Bingen Urban Area	Natural	Urban areas in the City of Bingen are located on gently sloping terrain and land use and vegetation obscure most views of the Project. Urban areas in the City of White Salmon are located on a bluff above steep cliffs but most views of the Project are similarly obscured by land use and vegetation, but structures on the southern edge can have dramatic views of the Columbia River, including the Project site. Most areas face the Columbia River and offer views of the Columbia River Gorge and Cascade mountains to the south including views of Mt. Hood when atmospheric conditions allow.
	Cultural	The White Salmon/Binge Urban Area is characterized by the build environment including human-made residential, commercial, and industrial structures. Structures are between one story and three stories. Large forest product and produce storage facilities are common.
	Project	SR 14 and rail lines are located in the White Salmon/Bingen Urban Area and are visually prominent. Grading along the highway is common and exposes steep side slopes. Natural rock outcrops, imported rock retaining and erosion control features are also visible in some locations. Visual movement is common with cars, trucks, and trains. Human-made materials, lights, bright colors, and reflective surfaces are abundant.
Oregon Transportation – I-84	Natural	The I-84 corridor is located on a human-made bench along the south side of the Columbia River. Views of the Project are generally obscured by landform, land use, and vegetation for eastbound travelers. Views are open to the Project for westbound travelers west of Koberg Beach State Recreation Site. Views of the Columbia River Gorge and Cascade mountains beyond are available above structures and vegetation, including dramatic views of Mt. Adams when atmospheric conditions allow.
	Cultural	Views of the Hood River Urban Area and human-made structures are prevalent. Overpasses, bridges, and rail lines and traffic are central to the visual environment.
	Project	Vehicles travel at 60 mph on the separated freeway with between two and three lanes in each direction. Vehicle movement, lights, signage, traffic control devices, and human-made materials dominate visual conditions through the corridor.

Landscape Unit Name	Affected Environment	
Oregon Transportation – Highway 30 (Old Columbia River Highway)	Natural	Highway 30 begins at the west City of Hood River interchange with I-84. Land use and vegetation obscure views of the Project site for travelers through the City of Hood River. Filtered views of the Columbia River and Project site are available through existing vegetation as the highway gains elevation up the "loops" east of Highway 35. Views of the Columbia River and most of the Columbia River Gorge are again blocked east of the loops by existing vegetation.
	Cultural	Views of the Hood River Urban Area and human-made structures are prevalent throughout the corridor including residential, commercial, retail and industrial buildings.
	Project	Vehicles travel at between 20 mph and 35 mph on the two-lane highway with one lane in each direction through the Hood River Urban Area. Vehicle movement, lights, signage, traffic control devices, and human-made materials dominate visual conditions through the corridor.
Oregon Transportation – Highway 35	Natural	Highway 35 forms the northern portion of the Mount Hood Scenic Byway. It offers spectacular views of Mt. Hood and Mt. Adams; however, landform, land use, and native vegetation block all views of the Project site within the Project area.
	Cultural	The highway winds through the iconic orchards of Hood River Valley and are characterized by cultivated farmlands and human-made structures.
	Project	Vehicles travel at 55 mph on the two-lane highway. Vehicle movement, lights, signage, and human-made materials are common along the corridor but natural/cultivated elements and views dominate the visual setting. Traffic from existing bridge lifts can back up and affect traffic on Highway 35.

Landscape Unit Name	Affected Environment	
Washington Transportation – SR 14	Natural	The SR 14 corridor is located on a human-made bench along the north side of the Columbia River. Much of the road is adjacent to the Columbia River within the Project area and long and sustained views of the Project are available for eastbound travelers. Views of the Columbia River Gorge and Cascade mountains beyond are available throughout the Project area above structures and vegetation, including views of Mt. Hood when atmospheric conditions allow.
	Cultural	Human-made materials are abundant along the corridor. Commercial and retail buildings are located primarily in the City of Bingen area, but large industrial buildings and storage facilities are prevalent in both the City of Bingen and City of White Salmon.
	Project	Vehicles travel at 55 mph on the two-lane highway with BNSF Railway tracks paralleling the road. Speeds are reduced to 30 mph through the Bingen Urban area. Grading along the highway is common and exposes steep side slopes. Natural rock outcrops and imported rock retaining and erosion control features are also visible in some locations. Visual movement is common with cars, trucks, and trains. Human-made materials, lights, bright colors, and reflective surfaces are abundant. Traffic from existing bridge lifts can back up and affect traffic on SR 14.
Washington Transportation – Cook-Underwood Road	Natural	The Cook-Underwood Road corridor is located on a natural bench that rises between approximately 1,000 feet and 1,200 feet above the Columbia River. Most views of the Columbia River and Project site are obscured by landform and vegetation; however, several extended areas offer long clear south and eastern views.
	Cultural	Cook-Underwood Road winds through the farms, vineyards, and ranches. While some natural forested areas occur, the road is characterized by cultivated farmlands and human-made structures.
	Project	Several roadway pullouts highlight outstanding views. Vehicles travel at 40 mph on the two-lane highway. Road cuts and exposed steep slopes are common. Vehicle movement, lights, signage, and human-made materials are common along the corridor, but natural elements and views dominate the visual setting.
Oregon Rural	Natural	Rural areas are generally situated on mountain foothills sloped toward the Columbia River. The natural semi-arid vegetation is a definitive characteristic. Views of the Columbia River are desirable and are an important part of the visual characteristic where available, but views of the Project site are not common. Most views of the Columbia River are obscured by landform, land use, and vegetation; however, most have some views of the Columbia River Gorge where native vegetation does not block views.
	Cultural	Areas outside of the urban areas and transportation corridors are characterized by dispersed residential structures, agricultural land, and native landscapes.
	Project	Vehicle movement, lights, signage, and human-made materials are common but natural elements and views dominate the visual setting.

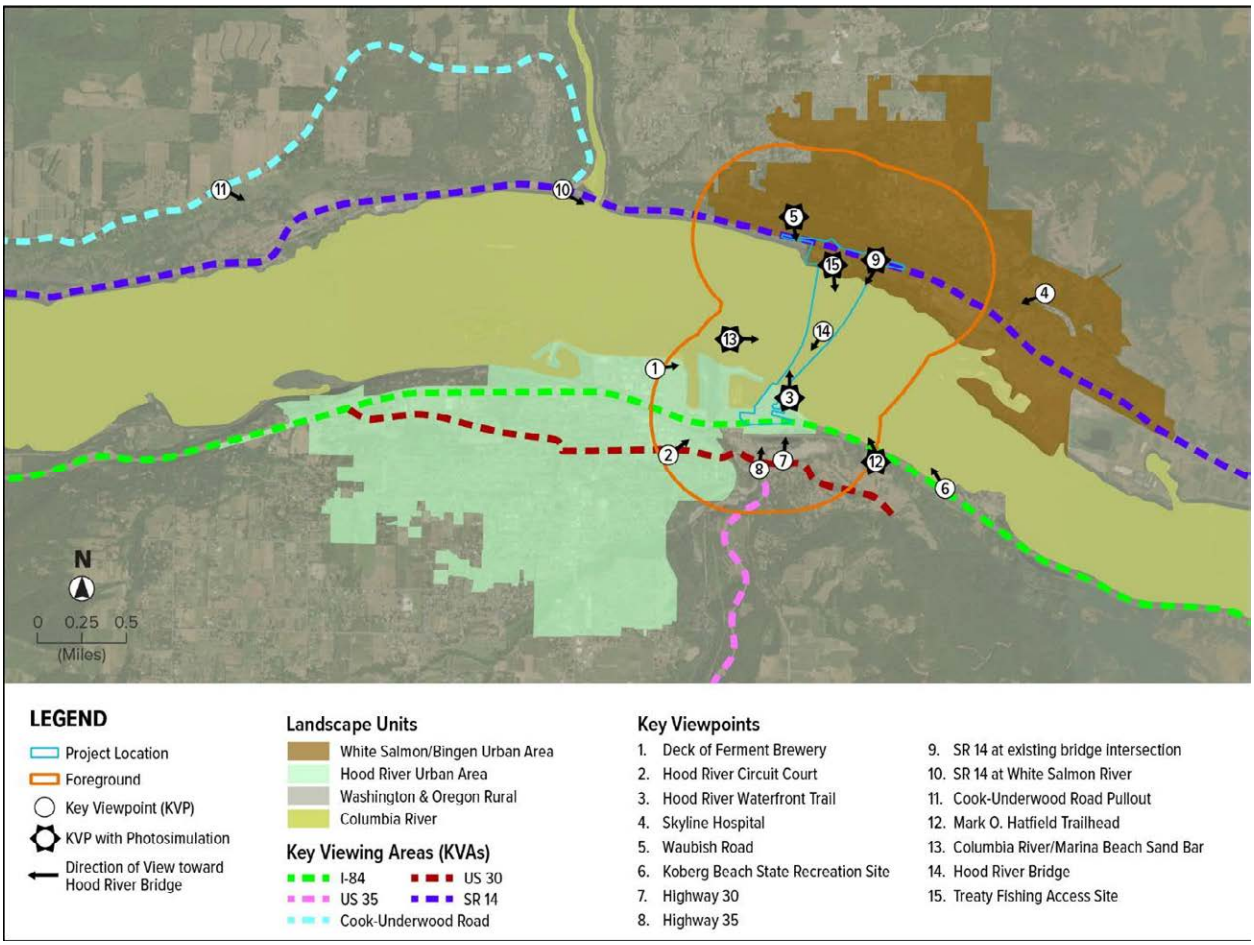
Landscape Unit Name	Affected Environment	
Washington Rural	Natural	Rural areas are generally situated on mountain foothills sloped toward the Columbia River. The natural semi-arid vegetation is a definitive characteristic. Most views of the Columbia River are obscured by landform, land use, and vegetation; however, some areas have spectacular views of the Columbia River, Columbia River Gorge, and Mt. Hood and include direct sustained views of the Project site.
	Cultural	Areas outside of the urban areas and transportation corridors are characterized by dispersed residential structures, agricultural land, and native landscapes.
	Project	Vehicle movement, lights, signage, and human-made materials are common but natural elements and views dominate the visual setting.
Columbia River	Natural	The surrounding Columbia River Gorge, including Mt. Hood and Mt Adams, and the semi-arid landscapes form the backdrop and the flowing river in the foreground form the visual setting for viewers along the Columbia River. Views from the Columbia River are generally at or near water level and are dominated by water, landforms, rock outcrops, and natural vegetation. Columbia River water level is controlled by upstream and downstream hydroelectric dams. Fluctuations in water level are minor.
	Cultural	The Hood River area is a popular recreation area known worldwide for wind surfing, kiteboarding, and boating. The Columbia River is also a popular fishing destination. Frequent views of the Columbia River include views of recreational activities on the water, urban areas, commercial recreational vendors, human-made structures and boat traffic. Recreational activities are most common during summer months when these activities occur daily. Activities during winter months are primarily river transportation traffic (ships, barges, etc.).
	Project	Views of the Project site are characterized by the existing steel bridge, signage, and vehicular movement. Views of the Project site from the Columbia River recreation area range from close up to distant as viewers locate or travel up or down the Columbia River. This landscape unit also includes travelers on the existing Hood River Bridge. Travelers may also have views of the surrounding Columbia River and Columbia River Gorge. There are no pedestrian facilities located on the existing bridge.

These landscape units are intersected by CRGNSA Management Plan KVAs, which are those portions of important public roads, parks, or other vantage points within the Scenic Area from which the public views Scenic Area landscapes. There are 8CRGNSA KVAs with views toward the Project area. These include:

- Historic Columbia River Highway
- Historic Columbia River State Trail
- Columbia River
- Washington SR 14
- I-84, including rest stops
- Cook-Underwood Road
- Washington SR 141
- Oregon Highway 35

The landscape units and CRGNSA KVAs are shown in Exhibit 15.

Exhibit 15. Landscape Units, CRGNSA KVAs, and Key Views



4.5. Affected Population

Visual quality is an interaction between the viewer and the environment and depends on what a viewer perceives and their personal preferences and sensitivities. The purpose of the visual impact analysis process is to objectively discern what viewers perceive in the visual environment and how they could be affected by visual changes a project would bring on a short-term and long-term basis. Each viewer has an available range of responses to visual quality inherent to all human beings. The FHWA VIA guidelines recognize three types of visual quality, corresponding to each of the three types of visual resources.

- When viewing the components of a scene's natural environment, viewers inherently evaluate the natural harmony of the existing scene, determining if the composition is harmonious or inharmonious.
- When viewing the components of the cultural environment, viewers evaluate the scene's cultural order, determining if the composition is orderly or disorderly.
- When viewing the project's environment, viewers evaluate the coherence of the project components, determining if the project's composition is coherent or incoherent.

The visual quality a viewer prefers, and their sensitivity to changes in visual quality, depends on the type of viewer. Although each viewer will have individual preferences and sensitivities, viewers can generally be categorized into two distinct groups: Travelers and Neighbors. Both Travelers and Neighbors may be further subdivided to establish viewer preference and their sensitivity to changes in visual resources. (FHWA 2015)

Types of Neighbors. Visual perception and sensitivity vary with the type of user. Residential or recreational sightseers may desire a harmonious scene, while those in a work setting, such as industrial, manufacturing, or warehouse workers, tend to desire cultural order. A working viewer's activity, awareness, and sensitivity are typically limited to the visual setting immediately outside the workplace and do not extend to surrounding views. FHWA guidelines for the VIA of highway projects list the following Types of Neighbors. (FHWA 2015)

- Residential: Residential neighbors live within view of the Project and include single family, multi-family, and others. Their visual preference tends toward maintaining existing landscape and they are not generally interested in change. Depending on location, residential viewers prefer natural harmony and cultural harmony.
- Recreational: Recreational neighbors participate in recreation within view of the Project but tend to be transitory. Their visual preference tends to be status quo and are leery of changes that may cause adverse impacts to their activity, although they may be willing to entertain improvements if they improve or enhance recreational experience. Recreational viewers prefer natural harmony with some project coherence.
- Institutional: Institutional neighbors provide and receive services from a variety of institutions such as schools and hospitals within view of the Project. Workers and employees can be considered permanent, while visitors and those who receive services are transitory. Views to and from the institution may be critical to the impression they desire and they often prefer to maintain or improve visual conditions. Institutional viewers strongly prefer cultural order but may also be interested in project coherence.

- Civic: Civic neighbors provide or receive services from a governmental organization, such as local, state, or federal agency or military. Workers and employees can be considered permanent, while visitors and those who receive services are transitory. Depending on the agency mission, views to and from the institution may or may not be desirable. If agencies have substantial public interactions, views may be important and their visual preferences tend to be similar to Institutional neighbors. Civic viewers strongly prefer cultural order but may also be interested in project coherence and natural harmony depending on civic agency and Project location.
- Retail: Retail neighbors are merchants or shoppers within view of the Project that sell goods or services to the public. Merchants tend to be permanent while shoppers are transitory, although shoppers may frequent the same location. Shoppers tend to focus on the shopping experience with few distractions. Retail viewers depend on good project coherence and natural harmony.
- Commercial: Commercial neighbors occupy commercial property within view of the Project and use office buildings, warehouses, and other commercial structures. Visual preference varies depending on business but those with many visitors mimic retail customers. Commercial viewers depend on cultural order and good project coherence.
- Industrial: Industrial neighbors mine or harvest raw materials, manufacture and/or transport goods and services. Workers tend to be permanent but primarily focus on their activities. Industrial areas generally have few visitors. They tend to require large tracts of land but limit space and activities exposed to public view. Visual preference is to be left alone except for the exposed public views. Industrial viewers prefer cultural order, project coherence, and natural harmony but do not depend on these attributes.
- Agricultural: Agricultural neighbors are farmers of crop or herd animals. They often work in fields and pastures. They may be permanent but workers may also be transitory. They tend to be less interested in public visual attributes. Agricultural viewer depends on natural harmony and cultural order.
- Tribal: Tribal neighbors are primarily located in the Columbia River Inter-Tribal Fish Commission's White Salmon Treaty Fishing Access Site (TFAS). Viewers include short term to semi-permanent residents, and commercial and subsistent fishers. Viewers may also include those who use the site for ceremonial purposes. Their visual preference is anticipated to prefer maintaining natural harmony and cultural order.

Types of Travelers: Travelers have views of the Project from public roadways with dynamic views as they pass through a given area. Visual perception varies depending on speed of travel and locations. Travelers are usually focused on driving with limited perception of surrounding views; however, passengers are freer to view visual conditions away from the road. They may be pedestrians, bicyclists, or motoring travelers.

- Pedestrian: Pedestrians use self-propelled means (walking, wheelchair or other mobility aid) to move through a site on roadways, sidewalks, or trails. Pedestrians have a slight preference for cultural order over natural harmony and project coherence.
- Bicycling: Bicycles or other similar self-propelled devices to travel through a site at a higher speed than pedestrians but much slower than vehicular travel. Bicyclists also have a slight preference for project coherence.

- Motoring: Motorists travel in vehicles propelled by engines such as cars, trucks, buses, motorcycles, or boats. A variety of engine types, sizes, and fuel sources help propel travelers at higher speeds in comparison to other modes. Drivers primarily focus on activities associated with driving and prefer project coherence. Passengers are typically less engaged with driving tasks and prefer natural harmony and cultural harmony.

4.6. Key Views

To help evaluate the impacts to viewers, and the visual quality they experience, a baseline was established. A set of 15 key views were utilized to define the existing general visual character of the Project. Key views are shown in Exhibit 15. These key views and changes to visual quality with the proposed Project will form the basis of evaluating visual impacts. At least one key view was selected for each landscape unit that represents typical existing visual conditions and viewers (neighbor or traveler) as described below in Exhibit 16.

Exhibit 16. Viewer Type and Viewer Preference

Key View	Description	Landscape Unit	Viewer Type	Visual Preference*
1	Ferment Brewery Deck (2nd floor)	Hood River Urban	Retail and Residential	Project Coherence, Natural Harmony
2	Hood River Circuit Court	Hood River Urban	Civic	Cultural Order
3	Hood River Waterfront Trail	Hood River Urban	Recreational	Natural Harmony
4	Skyline Hospital	White Salmon/Bingen Urban	Institutional	Cultural Order
5	Waubish Road	White Salmon/Bingen Urban	Residential	Natural Harmony
6	I-84 at Koberg Beach State Recreation Site	Oregon Transportation – I-84	Motorist	Project Coherence
7	Highway 30	Oregon Transportation – Highway 30	Motorist, Bicyclist, Pedestrian	Project Coherence, Cultural Order
8	Highway 35	Oregon Transportation – Highway 35	Motorist, Bicyclist, Pedestrian	Project Coherence, Culture Order
9	SR 14 at existing bridge intersection	Washington Transportation – SR 14	Motorist, Bicyclist, Pedestrian	Project Coherence, Cultural Order
10	SR 14 at White Salmon River	Washington Transportation – SR 14	Motorist, Bicyclist, Pedestrian	Project Coherence, Cultural Order
11	Cook-Underwood Road Pullout	Washington Transportation – Cook-Underwood Road and Washington Rural	Agricultural, Motorist	Project Coherence, Natural Harmony
12	Mark O. Hatfield Trailhead	Oregon Rural	Recreational, Bicyclist, Pedestrian	Natural Harmony, Cultural Order

Key View	Description	Landscape Unit	Viewer Type	Visual Preference*
13	Columbia River/ Marina Beach Sand Bar	Columbia River	Recreational,	Natural Harmony, Cultural Order
14	Hood River Bridge	Columbia River	Motorist, Bicyclist Pedestrian	Project Coherence
15	Treaty Fishing Access Site	Columbia River	Recreational, Industrial	Natural Harmony, Cultural Order

* Visual preference based on Neighbor and Traveler type preferences in FHWA Guidelines (FHWA 2015)

Key views within each of the landscape units are described below and photographs of the existing conditions are provided.

Landscape Unit: Hood River Urban

Key View #1: Ferment Brewery Deck

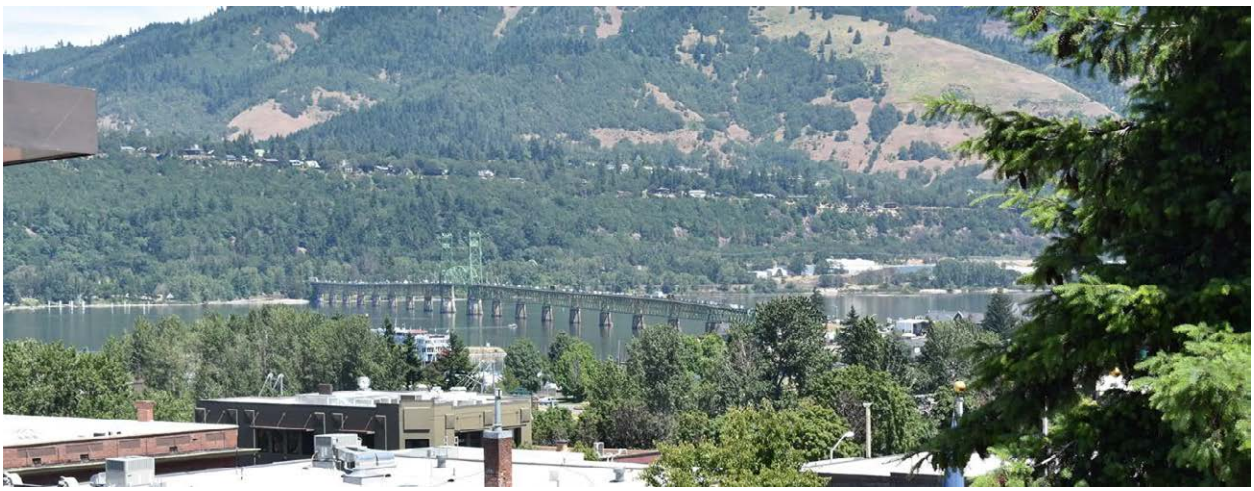
Key view #1 is located on the Ferment Brewery's second floor public deck looking northeast toward the Project area and existing bridge (Exhibit 17). The center of the existing bridge is approximately 0.5 miles from this key view. Key view #1 is in a mixed-use, urban area representing both retail and residential viewers. Most of the southern half of the existing bridge is obscured by the building but the northern half is visible above existing vegetation. Human-made forms and materials such as concrete, asphalt, metal, and glass are common in the foreground. The existing bridge and White Salmon Urban areas are in the middleground with mountains to the north forming a backdrop. The light green color of the existing bridge steel components, gray concrete piers, and overall design help the bridge blend in visually with the vegetated mountain backdrop. Typical viewers are transitory retail customers or residential viewers with long-term, stationary views. Workers have potentially long-term views, but are likely focused on work-related activities rather than viewing scenery.

Exhibit 17. Photograph of Key View #1

Key View #2: Hood River Circuit Court

Key view #2 is from the Hood River Circuit Court (Exhibit 18). The center of the existing bridge is approximately 1.1 miles from this key view. Direct views of the existing bridge are available over buildings and trees from elevated floors and the parking lot. Human-made forms and materials such as building facades and roofs are common in the foreground. The existing bride and White Salmon Urban areas are in the middleground with mountains to the north forming the background. The light green color of the existing bridge steel components help the bridge blend in visually with the vegetation along the northern shore of the river. The gray concrete piers, structure, and straight lines are consistent with the structures and land uses in both the Hood River Urban area in the foreground and the White Salmon/Bingen Urban area in the middleground. Typical viewers would be transitory civic viewers but workers may have prolonged views. Project coherence would be high as the materials and forms of the exiting bridge are visually similar to visual elements in the urban areas within the view.

Exhibit 18. Photograph of Key View #2



Key View #3: Hood River Waterfront Trail

Key view #3 is located on the Hood River Waterfront trail directly north of the Best Western Hotel (Exhibit 19). The center of the existing bridge is approximately 0.4 miles from this key view. The river and existing bridge and clearly visible in the foreground view. Human-made forms, materials such as concrete walkways and a floating dock are common in the foreground. Straight lines and human-made structures are visible in the White Salmon/Bingen Urban area in the middleground and natural colors, forms and textures dominate the background views. The green color of the existing bridge steel components help the bridge blend in visually with the vegetation along the northern shore of the river. The gray concrete piers, structure, and straight lines are consistent with the structures and land uses in the White Salmon/Bingen Urban area. The light green color of the steel and the concrete piers are also in the same color value ranges as the reflections of the sky in the water. Typical viewers would be transitory recreational. Most viewers would be focused on their associated recreation activities but may be sensitive to noticeable changes.

Exhibit 19. Photograph of Key View #3

Landscape Unit: White Salmon/Bingen Urban

Key View #4: Skyline Hospital

Key view #4 is from the Skyline Physical Therapy parking lot directly adjacent to the Skyline Hospital (Exhibit 20). The center of the existing bridge is approximately 1.2 miles from this key view. Direct views of the existing bridge are available over urban buildings and vegetation; however, views of the City of White Salmon shoreline are totally obscured for most viewers. Human-made forms and materials such as roof tops of existing buildings are common in the White Salmon/Bingen Urban area foreground and light colors and straight lines in the Hood River Urban area in the middleground. The mountains, including views to Mt. Hood south form the background. The light green color of the existing bridge steel components help the bridge blend in visually with the vegetation along the northern shore of the river. The gray concrete piers, structure, and straight lines are consistent with the structures and land uses in the Hood River Urban area in the same middleground proximity zone. Viewers would be institutional workers with prolonged views. Viewers may also be transitory to semi-permanent viewers, such as patients or visitors. Project coherence would be high for both permanent workers and transitory to semi-permanent viewers as the materials and forms of the existing bridge are visually similar to visual elements in the urban areas within the view.

Exhibit 20. Photograph of Key View #4

Key View #5: Waubish Road

Key view #5 is from a residential deck on Waubish Road (Exhibit 21). The center of the existing bridge is approximately 0.7 miles from this key view. Direct views of the existing bridge are available over urban buildings and vegetation. Vegetation along the Columbia River obscures the existing shoreline for most viewers. Human-made forms and materials such as asphalt parking areas, roadways, and roof tops are common in the White Salmon/Bingen Urban area foreground. The existing bridge, the White Salmon/Bingen Urban, and the Hood River Urban areas are in the middleground with mountains to the south and east forming a backdrop. The light green color of the existing bridge steel components help the bridge blend in visually with the vegetated mountains in the background. The gray concrete piers, structure, and straight lines are consistent with the structures and land uses in the urban areas in the middleground proximity zone. The light green color of the steel and the concrete piers are also in the same value ranges as the reflections of the sky in the water. Typical viewers are residential with prolonged views. Viewers desiring natural views would be sensitive to changes in visual conditions; however, project coherence would be high with the precedent of the human-made elements located in the urban areas within the view and the existing bridge.

Exhibit 21. Photograph of Key View #5

Landscape Unit: Oregon Transportation – I-84

Key View #6: I-84 at Koberg Beach State Recreation Site

Key view #6 is from the I-84 shoulder adjacent to Koberg Beach State Recreation Site (Exhibit 22). The center of the existing bridge is approximately 1.1 miles from this key view. Vehicle movement, lights, signage, and human-made materials dominate foreground visual conditions for travelers. Views are open to the Project for westbound travelers. Views of the Columbia River Gorge and Cascade mountains beyond are available in the middleground and background. The light green color of the existing bridge steel components helps the bridge blend in visually with the vegetation along the northern shore of the river. The light green color of the steel and the concrete piers are also in the same value ranges as the reflections in the water. Viewers are considered motorists in vehicles traveling at 60 mph on the four-lane separated freeway. Viewers would be primarily focused on driving but may also be sensitive to the natural setting as many are tourists in the CRGNSA. Project coherence is high as the existing bridge connects major transportation routes and human-made materials are similar to the urban areas that it connects.

Exhibit 22. Photograph of Key View #6

Landscape Unit: Oregon Transportation - Highway 30

Key View #7: Highway 30

Key view #7 is from a human-made bench adjacent to Highway 30/Old Columbia River Drive (Exhibit 23). The center of the existing bridge is approximately 0.8 miles from this key view. Human-made materials such as asphalt and concrete, structures, vehicle movement, and lights dominate visual conditions in the foreground, which include City of Hood River industrial areas and the existing bridge. Views of the Columbia River Gorge and Cascade mountains beyond are available in the middleground but also include human-made structures. The light green color of the existing bridge steel components help the bridge blend in visually with the vegetated mountains in the background. The gray concrete piers, structure, and straight lines are consistent with the structures and land uses in the Hood River Urban area in the foreground. Viewers are considered motorists in vehicles traveling at 20 mph, bicyclist, or pedestrian on the two-lane road. Viewers would be primarily focused on driving as the road in this location is steep

and winding. Project coherence is high as the existing bridge connects major transportation routes and human-made materials are similar to the urban areas that it connects.

Exhibit 23. Photograph of Key View #7

Landscape Unit: Oregon Transportation - Highway 35

Key View #8: Highway 35

Key view #8 is from the Highway 35 shoulder south of the Highway 30 intersection (Exhibit 24). Human-made materials such as asphalt and concrete, structures, vehicle movement, and lights dominate visual conditions in the foreground. Views of the Columbia River Gorge and Cascade mountains beyond are available in the middleground but due to landform, land use, and vegetation, views of the existing bridge are completely obscured. The center of the existing bridge is approximately 0.9 miles from this key view.

Exhibit 24. Photograph of Key View #8

Landscape Unit: Washington Transportation – SR 14

Key View #9: SR 14 at Existing Bridge Intersection

Key view #9 is from the pedestrian sidewalk adjacent to SR 14 (Exhibit 25). The center of the existing bridge is approximately 0.5 miles from this key view. Human-made materials such as asphalt and concrete, metal signage, and lights dominate visual conditions in the foreground. Views of the existing bridge and the City of White Salmon shoreline are primarily obscured by land use and vegetation; however, views of the bridge landing and highway intersection are prominent in the foreground. Views of the Columbia River Gorge and Cascade mountains beyond are available in the middleground and background. Viewers are considered motorists in vehicles traveling at 55 mph on the two-lane highway, bicyclists, or pedestrians walking along the adjacent sidewalk. Viewers would be primarily focused on driving but may also be sensitive to the natural setting as many are tourists in the CRGNSA. Project coherence is high as the existing bridge connects major transportation routes and human-made materials are similar to the urban areas that it connects.

Exhibit 25. Photograph of Key View #9

Key View #10: SR 14 at White Salmon River

Key view #10 is from the shoulder adjacent to SR 14 (Exhibit 26). The center of the existing bridge is approximately 1.7 miles from this key view. Vehicle movement, lights, signage, and human-made materials such as asphalt, chain-link fence, and BNSF Railway tracks are common in foreground views. Views of the existing bridge are slightly obscured by chain link fence between the road and the BNSF Railway tracks. Open and prolonged views of the river and existing bridge are available in the middleground; however, distance makes all details but general shape and form undiscernible. Views of the Columbia River Gorge and Cascade mountains beyond are available in the background. Viewers are considered motorists in vehicles traveling at 40 mph on the two-lane highway or bicyclists. There are no pedestrian facilities along the highway but pedestrians may be present on the shoulder. Viewers would be primarily focused on driving but may also be sensitive to the natural setting as many are tourists in the CRGNSA. Project coherence would be high as the existing bridge connects major transportation routes.

Exhibit 26. Photograph of Key View #10

Landscape Unit: Washington Transportation - Cook-Underwood Road and Washington Rural

Key View #11: Cook-Underwood Road Pullout

Key view #11 is from the shoulder viewing area adjacent to Cook-Underwood Road (Exhibit 27). The center of the existing bridge is approximately 3.5 miles from this key view. The Cook-Underwood Road corridor is located on a natural bench that rises between approximately 1,000 feet and 1,200 feet above the river, which allows open and prolonged views of the river and existing bridge in the middleground. Views of the Columbia River Gorge and Cascade mountains beyond are available in the background. Human-made structures and pavement structures are common in foreground views and both the White Salmon/Bingen Urban and Hood River Urban areas in the middleground. Distance makes all details of the existing bridge undiscernible except general shape and form. Viewers are considered motorists in vehicles traveling at 40 mph on the two-lane highway or bicyclists. There are no pedestrian facilities along Cook-Underwood road; however, pedestrians may be present on the shoulder, particularly at pull-out locations along the road. Viewers would be primarily focused on driving but may also be sensitive to the natural setting. Project coherence would be high as the existing bridge connects major transportation routes.

Key view #11 also represents views in Washington Rural. Human-made structures, materials, lights, and movement are common but landform, vegetation, and agricultural elements are the primary features in this visual setting. Where available, views of the Columbia River Gorge and Cascade mountains in the background beyond are considered prolonged and permanent for residential viewers. Viewers desiring natural views would be sensitive to changes in visual conditions; however, project coherence would be high with the precedent of the human-made elements located in the urban areas within the view and the existing bridge. Agricultural workers have transitory views and would primarily be focused on work related activities.

Exhibit 27. Photograph of Key View #11

Landscape Unit: Oregon Rural

Key View #12: Mark O. Hatfield Trailhead

Key view #12 is from trails associated with the Mark O. Hatfield visitor center and trailhead (Exhibit 28). The center of the existing bridge is approximately 0.8 miles from this key view. Human-made structures, materials, and lights are common at the Visitor's Center and parking lot but foreground and background views are primarily natural in character. The existing bridge and the White Salmon/Bingen Urban area are in the middleground viewing setting. The green color of the existing bridge steel components help the bridge blend in visually with the vegetation along the northern shore of the river. The gray concrete piers, structure, and straight lines are consistent with the structures and land uses in the Washington Rural area visible beyond the existing bridge. The light green color of the steel and the concrete piers are also in the same color value ranges as the reflections of the sky in the water. Viewers are considered recreational and transitory. Viewers desiring natural views would be sensitive to changes in visual conditions; however, project coherence would be high with the precedent of the human-made elements located in the urban areas within the view and the existing bridge.

Exhibit 28. Photograph of Key View #12

Landscape Unit: Columbia River

Key view #13: Columbia River/Marina Beach Sand Bar

Key view #13 is from the Marina Beach sand bar (Exhibit 29). The center of the existing bridge is approximately 0.5 miles from this key view. The river and natural elements of the Columbia River Gorge, such as landform and vegetation, are the dominant visual features for this view; however, the existing bridge and both the Hood River Urban and White Salmon/Bingen Urban areas are in the foreground and middleground view setting. The green color of the existing bridge steel components help the bridge blend in visually with the vegetation along the northern shore of the river. The gray concrete piers, structure, and straight lines are consistent with the structures and land uses in the urban areas. The light green color of the steel and the concrete piers are also in the same color value ranges as the reflections of the sky in the water. Viewers may be kiteboarders, windsurfers, beachgoers, boaters or other recreational viewers and are considered transitory. Most viewers would be focused on their associated recreation activities but may be sensitive to adverse impacts. Viewers desiring natural views would be sensitive to changes in visual conditions; however, project coherence would be high with the precedent of the human-made elements located in the urban areas within the view and the existing bridge.

Exhibit 29. Photograph of Key View #13

Key view #14: Hood River Bridge

Key view #14 is from the existing Hood River Bridge (Exhibit 30). The bridge forms the foreground view with the Hood River Urban or White Salmon/Bingen Urban area in the middleground viewing setting. Viewers are considered motorists in vehicles traveling at 25 mph on the narrow two-lane steel deck truss bridge. Viewers would be primarily focused on driving but passengers may be sensitive to the natural setting as many are tourists in the CRGNSA. Project coherence would be high as the existing bridge connects major transportation routes and human-made materials are similar to the urban areas that it connects. There are no existing bicycle or pedestrian facilities on the bridge.

Exhibit 30. Photograph of Key View #14

Key view #15: TFAS

Key view #15 is from the existing TFAS. The center of the existing bridge is approximately 780 feet southeast of this key view. Viewers from the dock (Exhibit 31) would primarily be commercial, ceremonial, or subsistence fishers, or other boaters. Viewers from the upland area TFAS site are temporary residents of the site (Exhibit 32) and are considered transitory. Most viewers would be focused on their associated activities but may be sensitive to adverse impacts. The river and natural elements of the Columbia River Gorge, such as landform and vegetation, are the dominant visual features for this view. Existing vegetation would partially or completely obscure the bridge from most upland areas; however, the existing bridge would be in the foreground view zone where available. The green color of the steel bridge components would help the bridge blend in visually with the surrounding Gorge landscape. Both the Hood River Urban and White Salmon/Bingen Urban areas are in the middle ground distance zone. The proposed natural or earth-toned colors and open structural design would help the bridge be as visually unobtrusive as practicable and harmonious with the structures and land uses in the urban areas. The light green color of the steel and the concrete piers are also in the same color value ranges as the reflections of the sky in the water. The existing bridge can cast shadows that are visually prominent in bright sunlight conditions. Viewers desiring natural views would be sensitive to changes in visual conditions; however, project coherence would be high with the precedent of the human-made elements located in the urban areas within the view and the existing bridge.

Exhibit 31. Photograph of Key View #15a

Exhibit 32. Photograph of Key View #15b

5. VISUAL ANALYSIS

The purpose of the VIA is to identify and illustrate the visual analysis, or impacts, of the Project and to inform the public, regulators, designers, and decision-makers. Consequences are the changes to the visual character and can be temporary construction impacts, direct impacts, or indirect impacts. Each alternative would have impacts to viewers based on the compatibility of the impact and sensitivity to the impact.

5.1. No Action Alternative

5.1.1. Construction Impacts

There would be no construction activities that would temporarily disrupt views, no vegetation removal, and no landform changes.

5.1.2. Direct Impacts

There would be no change to the visual resources or visual quality as the existing bridge would remain in place. Bridge travelers would retain views from the bridge toward the CRGNSA, including views of the hills, mountains, forests, and Columbia River. Pedestrians and bicyclists would not have views from the bridge because there are no pedestrian and bicycle facilities on the existing bridge.

If a catastrophic event such as an earthquake, landslide, or barge or vessel strike occurs, the bridge could be damaged or collapse into the river. Direct impacts to visual resources from a catastrophe could include that the damaged bridge remains in place for months or years and is unsightly, which would negatively impact visual compatibility, viewer sensitivity, and visual quality.

5.1.3. Indirect Impacts

At such a point that the existing bridge exceeds its operational life and the bridge is closed to all cross-river traffic, moving vehicles and trucks, and any associated light and glare from headlights, taillights or reflective material, would no longer be visible on the bridge. At night, the bridge would be less visible to residents and others looking toward the bridge because there would be no lights on the bridge. Additionally, views from the bridge would be eliminated.

5.2. Preferred Alternative EC-2

5.2.1. Construction Impacts

The replacement bridge approaches would be constructed in designated urban areas where viewers are accustomed to building construction and road maintenance activities. Construction signs and equipment would be brightly colored and use reflective materials to promote safety for the traveling public. Construction staging areas would be located in urban areas to store equipment, vehicles, and materials, and would be designed and implemented to consolidate equipment and materials to minimize visibility. In some cases, lighting would be used to illuminate work areas.

Photo source: https://www.wsp.com/en-US/services/bridge-construction-methods

Note: Segmental construction is one of the most important developments in construction in the last century and is a proven method for delivering durable structures that are both cost-effective and visually appealing. Segmental construction can reduce construction time, limit environmental impacts, minimize traffic disruption, improve seismic performance and reduce maintenance costs. (WSP 2019)

Vegetation would be removed from the construction zone to allow equipment and materials to be safely transported to and from the Project area. Vegetation removal would mainly be concentrated in the construction zone near the north approach. Terrain grading would occur near both approaches to level the ground surface for the Project. However, the overall grade of the landscape in these areas would remain the same. Large construction vehicles would be visible. Signs detouring traffic around the Project construction site would be visible.

The segmental concrete box girder design of the Alternative EC-2 would involve balanced cantilever construction, while the existing bridge remains in place.

Barges and cranes would be visible in the Columbia River while piers are constructed and would be present when the replacement bridge deck is segmentally assembled. Boats would bring workers to and from the over-water construction area. Similar equipment would be used to deconstruct the existing bridge after it has been replaced. These impacts would be temporary but would last approximately 2.5 years while the replacement bridge is built, and the existing bridge is deconstructed. Stationary viewers such as residents or recreationists who regularly visit the AVE and have long-term views of the area would have moderate sensitivity to visual impacts due to the length of the construction period.

Tribal fishers, residents, and campers at the White Salmon TFAS, could be expected to have higher sensitivity to changes in the visual environment due to the site's close proximity to bridge construction activities including lights illuminating construction areas on land or over the water, construction equipment and materials, and the partially-completed bridge. Construction barges, coffer dams, silt fencing or other temporary construction equipment or facilities may also impact on-water viewers (fishers and boaters) during construction.

5.2.2. Direct Impacts

This section describes the compatibility of the Project's visual character with the AVE, discusses viewer sensitivity, and documents the impacts to visual quality that would result from changes to natural harmony, cultural order, and project coherence.

Project Compatibility

The compatibility of the Project's visual character with the visual character that currently exists in the AVE is summarized in Exhibit 33.

Exhibit 33. Project Compatibility Matrix

	AVE Visual Character	
Project Visual Character	Project Scale	Alternative EC-2 would include two lanes for vehicles, one north and one south, plus a shared use path. Thus, the overall width of the replacement bridge would be slightly wider than the existing bridge. The north approach would consist of a round-about instead of a signalized intersection and would be located on SR 14 similar to the existing bridge. The length of the replacement bridge would be 4,412 feet compared to the length of the existing bridge (4,418 feet). In terms of scale, Alternative EC-2 would be slightly wider to accommodate the shared use path, which would create new views for recreationalists. The increased bridge height would be more visible to many viewers; however, in the visual context of the Columbia River Gorge, the scale of the surrounding mountains and the expansive river would reduce the overall impact of the taller bridge. Because many viewers would see the bridge from higher elevations, the increased height of the bridge would have a negligible impact on their view. Fewer piers and the higher deck height would allow for greater visual access between piers and under the bridge for viewers at lower elevations or for on-water viewers; therefore, the scale and magnitude of the project would be similar to the existing bridge and would be compatible with the visual character of the existing environment.
	Project Form	The linear horizontal alignment of Alternative EC-2 would be similar to the linear alignment of the existing bridge. The horizontal alignment would utilize the existing corridor as analyzed in the Draft EIS; the existing corridor was identified as the corridor with the least overall impacts to visual quality overall. The replacement bridge would have a curved arch appearance over the river, mimicking the adjacent natural ridgelines promoting visual harmony with the environment. The vertical profile of the bridge would be higher (80-90 feet) than the existing bridge (57 feet when the lift span is down) to meet navigational clearance requirements. The replacement bridge would have fewer piers in the water (13 piers) than the existing bridge (20 piers). The increased vertical clearance between the water and bridge deck would create larger viewing windows between the piers. Each new pier would be slightly wider than existing piers; however, with fewer piers, there would be wider openings and views of the river would be less obstructed. No substantial, structural elements would protrude above the bridge deck, such as the green steel lattice structure or lift span on the existing bridge, which would maximize views above the bridge deck to the surrounding Columbia River Gorge landscape. Although the new bridge would be taller, the overall visual impact of the taller bridge deck would be similar to the existing bridge for most viewers. The Project form would be compatible with the existing visual character.
	Project Materials	Alternative EC-2 would utilize recessive dark natural or earth-tone colors for steel components of the bridge, and a consistent design character and ornamental elements, per the Columbia River Bridge Replacement guidelines for visual quality in the CRGNSA Management Plan. Material and color selection would be finalized during the final design phase of the Project (see Section 6); however, a shore-to-shore design character would be applied that reflects consistent aesthetic treatments for elements such as railings, retaining walls/barriers, light posts, benches, and signs. The final design would integrate lighting that promotes safety for bicyclists and pedestrians on the shared use path, while also minimizing ambient light spillover that would obtrude into views from the bridge toward the surrounding Columbia River Gorge landscape. The Project materials are expected to be consistent with the existing visual character of the natural and cultural setting.

	AVE Visual Character	
	Project Visual Character	In summary, the Project, to replace an existing two-lane bridge over the Columbia River, with a new, seismically sound two-lane bridge including a bicycle and pedestrian shared use path would be compatible with the existing natural, cultural, and project environment. New views of the landscape would be created for pedestrians and bicyclists on the replacement bridge, enhancing recreational activities. Moreover, the replacement of an existing bridge with a new bridge of relative comparable scale, form, and harmonious materials would not alter the memorability or vividness of the surrounding landscape or negatively alter views of the landscape.

Viewer sensitivity

Viewer sensitivity to the Project in the long-term would be expected to be low to moderate for four main reasons:

1. The Project is proposing to replace an existing two-lane bridge with a new two-lane bridge, plus shared use path in approximately the same corridor. Additionally, the bridge approaches would be located in approximately the same locations as exist today, within designated urban areas on both sides of the bridge.
2. The public planning processes for the CRGNSA, Klickitat County, and Hood River County reflect the public's support for the Project since the replacement bridge has been incorporated into these agencies approved planning documents as an allowable use.
3. The Project would create new views for pedestrians and bicyclists from the shared use path, allowing expansive views of the visually distinct Columbia River Gorge for non-motorized users of the bridge.
4. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting).
5. The bridge is not expected to alter the existing pattern of work, society, or community at the White Salmon TFAS. Horizontal bridge elements would be somewhat higher with a slimmer profile than the existing bridge and there would be fewer vertical piers, which would allow for more open views of the surrounding landscape from the White Salmon TFAS, which are an important component of the cultural order at this site. Views of Mount Hood, valued by White Salmon TFAS users, would be preserved under the build alternatives (Exhibit 32).

Overall Impacts to Visual Quality

The overall impacts to visual quality would be neutral for the Project, which would utilize approximately the same corridor to replace an existing two-lane bridge with a new, two-lane bridge with bicycle and pedestrian shared use path. A brief description of how each key view would change under Alternative EC-2 is included below, focusing on any changes to natural harmony, cultural order, and project coherence. Photo simulations showing the conceptual design of Alternative EC-2 are included in in the discussion below.[3]

[3] Photo simulations depict the conceptual and preliminary design of Alternative EC-2 analyzed for the Project's Supplemental Draft EIS. Final design would occur during a subsequent phase of the Project. Photo simulations are

Landscape Unit: Hood River Urban

Key View #1: Ferment Brewery Deck

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral.

Natural Harmony: The Project would cause minimal change to visual resources of the natural environment. Project features associated with the long-term changes from vegetation removal and terrain grading at the north approach in the designated urban area, and with in-water piers in the Columbia River. The proposed design would include fewer in-water piers than are currently in place with the existing bridge From key view #1, viewers would likely have broader viewing windows between piers to experience views of the river; however, these changes would largely be obscured by existing vegetation and land uses between the viewer and the south riverbank, particularly for motorists, bicyclists, and pedestrians at ground level (see existing conditions photograph Exhibit 17). Since viewers already are accustomed to a bridge in their views when experiencing the natural environment and views of forested slopes, and distant mountains above and beyond the replacement bridge would remain the same, the Project would not negatively affect their experience of the natural environment and, thus, Alternative EC-2 would exhibit natural harmony.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #1. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor, drivers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6). This committee would develop a shore-to-shore concept of aesthetic treatments for the replacement bridge (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected.

Project Coherence: The shore-to-shore concept would also promote visual neatness, which tells a traveler how neighbors value their community and the people who pass through it. Moreover, as described in Exhibit 33, the Project scale and form (including geometrics) would be compatible with the character of the AVE, and the Project would be consistent with the visual quality goals for Columbia River Bridge Replacement in the CRGNSA Management Plan. The gray concrete piers would be consistent with other bridges and roads in both the Hood River Urban area and the White Salmon/Bingen Urban area. Retail viewers would be less sensitive to project coherence because their views would be short-term, while residential viewers would likely be more sensitive to project coherence. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #1 are retail and residential. The proposed Project would be within viewers foreground proximity zone. Higher numbers of retail viewers would be transitory, and attention would be focused on the shopping experience, while a smaller

provided to show the preliminary design in terms of location, form, and scale of the Project, and are not meant to depict the Project's final design.

number of residential viewers would be permanent with long-duration views. Residential viewers would be more aware of Project details but pay less attention over time as the visual changes become routine.

Key View #2: Hood River Circuit Court

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral.

Natural Harmony: Natural harmony for key view #2 would be the same as described for key view #1. From key view #2, viewers would not be able to visually discern changes to visual resources such as vegetation removal or terrain grading for the north approach because those changes would be in the middleground of their views.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #2. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor, drivers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6). This committee would develop a shore-to-shore concept of aesthetic treatments for the replacement bridge (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected.

Project Coherence: Project coherence for key view #2 would be the same as described for key view #1. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #2 are civic viewers. The proposed Project would be within viewers foreground proximity zone. Civic viewers can be either transitory visitors or permanent workers. Higher numbers of transitory visitors would be focused on activities associated with the Hood River Circuit Court and would have shorter duration views. Permanent workers would be more aware of Project details as their view duration is much longer but would pay less attention over time as the visual changes become routine.

Key View #3: Hood River Waterfront Trail

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral. The existing view and proposed view from key view #3 are included in Exhibit 34.

Natural Harmony: Natural harmony for key view #3 would be the same as described for key view #1. From key view #3, viewers would not be able to visually discern changes to visual resources such as vegetation removal or terrain grading for the north approach because those changes would be in the middleground of their views. Views of the South approach would be visible and in the foreground views; however, existing vegetation removed during construction is primarily rough grass and small shrubs. Additionally, this vegetation is located on steep slopes and is not in a natural setting. Proposed slopes that include stormwater facilities would be revegetated with native grasses and shrubs and visual impacts would be neutral to beneficial.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #3. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor and approximately the same alignment, viewers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6). This committee would develop a shore-to-shore concept of aesthetic treatments for the replacement bridge (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected. Project components would be visible in the foreground of viewers at key view #3.

Project Coherence: Project coherence for key view #3 would be the same as described for key view #1. Transitory recreational viewers would be focused on their associated recreation activities but may be sensitive to the aesthetic treatments of Project components which would be visible in the foreground of views. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #3 are recreation viewers. Recreational viewers tend to be focused on short-duration outdoor leisure activities but would be more sensitive because the Project is in their foreground distance zone.

Exhibit 34. Hood River Waterfront Trail (Key View #3) Photo Simulation

Existing View

Proposed View

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Landscape Unit: White Salmon/Bingen Urban

Key View #4: Skyline Hospital

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral.

Natural Harmony: Natural harmony for key view #4 would be the same as described for key view #1. From key view #4, viewers would not be able to visually discern changes to visual resources, such as vegetation removal or terrain grading for the north approach, because existing landform, land use, and vegetation between key view #4 and the north bridge approach obscure most views of the Project. Additionally, those changes would be in the middleground of their views and details would be difficult to discern.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #4. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor and approximately the same alignment, viewers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected. Project components would be visible in the middleground of viewers at key view #4.

Project Coherence: Project coherence for key view #4 would be the same as described for key view #1. Institutional viewers such as patients, visitors, or workers would have prolonged views. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #4 are institutional viewers. The proposed Project would be within viewers foreground proximity zone. Institutional viewers can be either transitory visitors (patients) or permanent workers. Higher numbers of transitory visitors would be focused on activities associated with the hospital and would have shorter duration views. Permanent workers would be more aware of Project details as their view duration is much longer but would pay less attention over time as the visual changes become routine.

Key View #5: Waubish Road

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral. The existing view and proposed view from key view #5 are included in Exhibit 35.

Natural Harmony: Natural harmony for key view #5 would be the same as described for key view #1. From key view #5, viewers would be able to visually discern changes to visual resources such as vegetation removal, proposed stormwater facilities, or terrain grading for the north approach. However, in the context of the overall broad and visually memorable natural views from this location, the Project would not negatively affect natural harmony.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #5. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor and approximately the same alignment, viewers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected. Project components would be visible in the middleground of viewers at key view #5.

Project Coherence: Project coherence for key view #5 would be the same as described for key view #1. Residential viewers would have prolonged views but would likely be more sensitive to project coherence. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #5 are residential viewers. The proposed Project would be within viewers foreground proximity zone. The overall number of residential viewers would be low but they would easily see the entire Project. The duration of their views is long but would pay less attention over time as the visual changes become routine.

Landscape Unit: Oregon Transportation – I-84

<u>Key View #6: I-84 at Koberg Beach State Recreation Site</u>

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral.

Natural Harmony: Natural harmony for key view #6 would be the same as described for key view #1. From key view #6, viewers would not be able to visually discern changes to visual resources because those changes would be in the middleground of their views.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #6. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor and approximately the same alignment, viewers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected. Project components would be visible in the middleground of viewers at key view #4.

Exhibit 35. Waubish Road (Key View #5) Photo Simulation

Existing View

Proposed View

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Project Coherence: Project coherence for key view #6 would be the same as described for key view #1. Motorists would be focused on driving while passengers may be focused on viewing scenery. Project elements such as piers and bridge deck would be visible from key view #6; however, these elements would replace existing bridge elements and Project details such as railing and light poles are not discernable at this distance. Visual impacts would be similar for both drivers and passengers. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #6 are motoring travelers. Large numbers of travelers may view the Project from this key view; however, a driver's attention would be primarily focused on driving activities. Passengers would be more able to focus on Project details. The proposed Project would be within the viewer's middleground proximity zone.

Landscape Unit: Oregon Transportation - Highway 30

Key View #7: Highway 30

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral.

Natural Harmony: Natural harmony for key view #7 would be the same as described for key view #1. From key view #7, viewers would not be able to visually discern changes to visual resources such as vegetation removal or terrain grading for the north approach because those changes would be in the middleground of their views.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #7. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor, drivers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected.

Project Coherence: Project coherence for key view #7 would be the same as described for key view #1. Viewers are considered travelers in vehicles traveling at 20 mph or pedestrians on the two-lane road. Viewers would be primarily focused on driving as the road in this location is steep and winding. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #7 are motorists but can also be bicyclists or pedestrians. The proposed Project would be within viewers foreground proximity zone, but low numbers of viewers would have open views of the Project as land use and vegetation block most views. Most views would be of short duration and most viewers would be focused on traveling.

Landscape Unit: Oregon Transportation - Highway 35

Key View #8: Highway 35

The Project would not alter the overall visual character of the AVE because landform, vegetation, and development obscure views of the Project area. Thus, viewers would not be sensitive to the visual change over the long-term because they would not see the Project. The overall long-term impacts to visual quality would be neutral.

Landscape Unit: Washington Transportation – SR 14

Key View #9: SR 14 at Existing Bridge Intersection

The Project would alter the overall visual character of the AVE and; however, viewers would have low sensitivity to the visual change over the long-term. Existing landform and vegetation between key view #9 and the Columbia River currently obscures most views of the shoreline. Upland grading and proposed stormwater facilities would be visible and discernable; however, disturbed areas would be revegetated with native grasses, shrubs and trees, and the removal of under-utilized gravel paving east of the existing intersection would offset impacts associated with vegetation removal. Additionally, vegetation removal would be limited to retain as many existing mature trees as possible and would primarily occur in areas between the existing and proposed bridge approaches. The overall long-term impacts to visual quality would be neutral. The area of direct impacts for the north approach of Alternative EC-2 is shown in Exhibit 36 and the existing view and proposed view from key view #9 are included in Exhibit 37.

Exhibit 36. Area of Direct Impacts for Preferred Alternative EC-2 North Approach

Exhibit 37. SR 14 at Existing Bridge Intersection (Key View #9) Photo Simulation

Existing View

Proposed View

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Natural Harmony: The footprint of the roundabout would be slightly larger than the existing signaled intersection; however, viewers are accustomed to seeing the highway in their views when experiencing the natural environment. Some areas surrounding the existing intersection may be cleared to accommodate the larger footprint and terrain grading. Southeast of the proposed approach and roundabout is the existing road and an underutilized gravel parking area. Visual and vegetation restoration of these areas following WSDOT requirements with native plantings would restore a natural character to both areas.

Some removal of existing vegetation is anticipated for the proposed roundabout footprint and stormwater facilities on both the southeast and southwest sides. Through the Project's biological assessment, sensitive areas, including mature trees, are being identified. Mitigation plantings for the stormwater facilities, tree plantings, and vegetation of disturbed slopes would meet WSDOT vegetation restoration and mitigation requirements. The proposed roundabout center island and the small beds between the roadway and sidewalks would also be planted with low-level landscaping. These plantings would bring natural elements into the highway corridor and would screen views east and west through the roundabout (Exhibit 37). Additionally, the primary views of adjacent, forested slopes, and distant mountains would be maintained.

Currently, only filtered views of the Columbia River through existing tree canopies are available in this location. Vegetation removal would open views to the river east of the proposed approach; however, a more open view of the Columbia River would not negatively impact the natural harmony, and proposed mitigation and aesthetic plantings are likely to obscure views of the shoreline within 2 years to 3 years. These visual impacts would be considered temporary. The replacement of a signalized intersection with a roundabout would also eliminate above-ground, human-made utilities and no proposed roundabout, roadway, or bridge structures would block or obscure existing views of the river or gorge that define the natural character of the area.

The Project would cause moderate changes to visual resources of the natural environment; however, mitigation plantings, natural elements in the highway corridor, more open views to the Columbia River, and removal of human-made utilities would help to balance noticeable changes. Thus, Alternative EC-2 would not negatively affect the viewer's experience of the natural environment and would exhibit natural harmony.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #9. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor, drivers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected.

Project Coherence: Project coherence for key view #9 would be the same as described for key view #1. The roundabout would be consistent with other roundabouts that are increasingly used in Washington. Vehicular traffic would likely flow better through the roundabout and existing traffic lights would be removed; however, drivers would still be focused on driving while passengers may be focused on viewing scenery. The aesthetics advisory committee would confirm the shore-to-shore concept reflects

the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #9 are motoring travelers. Large numbers of travelers may view the Project from this key view; however, the driver's attention would be primarily focused on driving activities. Passengers would be more able to focus on Project details. View duration would be short but the proposed Project would be within viewer's foreground proximity zone.

Key View #10: SR 14 at White Salmon River

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral.

Natural Harmony: Natural harmony for key view #10 would be the same as described for key view #1. From key view #10, viewers would not be able to visually discern changes to visual resources because those changes would be in the middleground of their views. Moreover, the thin, horizontal bridge deck without vertical components, such as the steel lattice lift span on the existing bridge, would visually blend-in against the backdrop of the forested slopes.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #10. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor and approximately the same alignment, viewers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected.

Project Coherence: Project coherence for key view #10 would be the same as described for key view #1. Travelers would be focused on driving while passengers may be focused on viewing scenery. At approximately 1.7 miles from Alternative EC-2, the replacement bridge would appear as a horizontal linear feature with fewer piers in the water than the existing bridge. Proposed Project components above the deck, such as railings and light poles would not be discernable from key view #10. Existing vertical components (e.g., existing bridge lift vertical steel lattice structure) that are visible from this key view would be removed. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #10 are motoring travelers. Large numbers of travelers may view the Project from this key view; however, driver's attention would be primarily focused on driving activities. Passengers would be more able to focus on Project details. The proposed Project would be within viewer's middleground proximity zone.

Landscape Unit: Washington Transportation - Cook-Underwood Road and Washington Rural

Key View #11: Cook-Underwood Road Pullout

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral.

Natural Harmony: Natural harmony for key view #11 would be the same as described for key view #10, as these views are similar, although key view #10 is farther from the Project area (about 3.5 miles) than key view #10 (about 1.7 miles). From key view #11, viewers would not be able to visually discern changes to visual resources because those changes would be in the middleground of their views. Moreover, the thin, horizontal replacement bridge deck without vertical components, such as the steel lattice lift span on the existing bridge, would visually blend-in against the backdrop of the forested slopes.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #11. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor and approximately the same alignment, viewers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected.

Project Coherence: Project coherence for key view #11 would be the same as described for key view #10. Distance makes all details of the existing bridge undiscernible except general shape and form. Project components such as railings and would not be visible at key view #11. Viewers are considered travelers in vehicles traveling at 40 mph on the two-lane highway or pedestrians on the shoulder. Viewers would be primarily focused on driving but may also be sensitive to the natural setting. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #11 are motoring travelers. Driver's attention would be primarily focused on driving activities. Passengers would be more able to focus on Project details. There are no bicycle or pedestrian facilities at the key view; however, there are several areas where motorists can pull off and view the scenic Columbia River Gorge. While these views would be protected because of the scenic nature, views would be of short duration and the Project would not be the primary focus of viewers.

Landscape Unit: Oregon Rural

Key View #12: Mark O. Hatfield Trailhead

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral.

Overall, key view #12 would have nearly the same as visual impacts as key view #5. Both views contain the bridge in the middleground proximity zone with views to the surrounding Columbia River Gorge forming the backdrop. Both also contain views of urban areas at the bridge approach across the river from the viewer. The difference is that viewers from key view #12 are looking northwest from a recreation area toward the Project which is approximately 0.8 miles from the viewer, while viewers from key view #5 are looking southeast from residential areas toward the Project which is approximately 0.7 miles from the viewers. The impacts to visual quality as related to natural harmony, cultural order, and project coherence would be the same as those described above for key view #5. The existing view and proposed view from key view #12 are included in Exhibit 38.

Viewer Exposure and Awareness: The typical viewers from key view #12 are recreational viewers. Overall numbers of viewers would not be high and recreational viewers tend to focus on recreational activities. Additionally, views would be scenic, and focus would be on the Columbia River and Columbia River Gorge. The proposed Project would be within viewer's middleground proximity zone.

Landscape Unit: Columbia River

Key view #13: Columbia River/Marine Beach Sand Bar

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be neutral. The existing view and proposed view from key view #13 are included in Exhibit 39.

Natural Harmony: Natural harmony for key view #13 would be similar to key view #3. Viewers may be able to visually discern changes to visual resources such as vegetation removal or terrain grading; however, the majority of those changes would in the middleground of their views and would be less noticeable. The majority of the vegetation removal would also occur on the east side of the bridge (opposite the viewer) and, therefore, would be obscured by the bridge itself and would not constitute a negative impact. However, viewers would have improved views of natural visual resources surrounding the Project area, such as vegetated slopes and the river and mountains in the background because there would be larger viewing windows between piers. Moreover, Alternative EC-2 would be higher in vertical profile and have a thinner overall profile than the existing bridge, which has vertical steel lattice lift span that slightly obscures views to natural resources in the middleground. This higher vertical profile would also contribute to larger viewing windows between the piers.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #13. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor and approximately the same alignment, viewers' expectations would be unchanged. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected. Project components would be visible in the foreground of viewers at key view #13.

Exhibit 38. Mark O. Hatfield Trailhead (Key View #12) Photo Simulation

Existing View

Proposed View

Exhibit 39. Columbia River/Marine Beach Sand Bar (Key View #13) Photo Simulation

Existing View

Proposed View

Project Coherence: Project coherence for key view #13 would be the same as described for key view #3. Transitory recreational viewers would be focused on their associated recreation activities but may be sensitive to the aesthetic treatments of Project components which would be visible in the foreground of views. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Project coherence overall would be high.

Viewer Exposure and Awareness: The typical viewers from key view #13 are recreational viewers on or near the water or bicyclists and pedestrians on the replacement bridge. Recreational viewers tend to be focused on short-duration outdoor leisure activities but would be more sensitive because the Project is in their foreground distance zone.

Key View #14: Hood River Bridge

The Project would not alter the overall visual character of the AVE and, thus, viewers would have low sensitivity to the visual change over the long-term. The overall long-term impacts to visual quality would be beneficial because this key view is not available for pedestrians and bicyclists on the existing bridge; the Project would be creating new opportunities for views from the replacement bridge for these users.

Natural Harmony: The Project would cause minimal change to visual resources of the natural environment and would be associated with the long-term changes from vegetation removal and terrain grading at the north approach in the designated urban area. Travelers including bicyclists, pedestrians, and motorists may notice these minimal changes to vegetation and terrain as they travel from the bridge to the north approach and roundabout. However, the overall experience of natural visual resources would be enhanced for bicyclists and pedestrians as the Project would create a new, highly memorable recreational experience. Thus, Alternative EC-2 would exhibit natural harmony.

Cultural Order: Alternative EC-2 would not disrupt the existing pattern of society or the community at key view #13. Although the existing bridge has been a visual component of the AVE for generations, its replacement is supported by the community. Other cultural landmarks seen from this key view would not be adversely affected. Given that the Project would utilize the existing corridor, drivers' expectations would be accustomed to views from a bridge. However, their views would no longer include the light green steel lattice structure that is a well-recognized aesthetic component of the existing bridge. The Project proponents would convene a broadly representative aesthetics advisory committee during the next design phase of the Project (see Section 6) to develop a shore-to-shore concept for aesthetic treatments (e.g., concrete color, railing shape and color, amenities such as benches, and lighting), confirming that the community's preferences for cultural order are reflected. Three potential shore-to-shore preliminary aesthetic concepts for Project components such as railing, lighting, and amenities (e.g., benches) to be considered by the aesthetics advisory committee are included in Attachment A.

Project Coherence: The shore-to-shore concept would also promote visual neatness and promote a consistent visual theme that would illustrate to travelers how neighbors value their community and the people who pass through it. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. With this input, project coherence overall would be expected to be high.

Viewer Exposure and Awareness: The typical viewers from key view #14 are motorists, bicycle and pedestrian viewers on the replacement bridge. Large numbers of travelers may view the Project from

this key view; however, driver's attention would be primarily focused on driving activities. Passengers would be more able to focus on scenery outside of the bridge. View duration would be short but the proposed Project would be within viewer's foreground proximity zone. Bicyclist and pedestrians may also view the project from the replacement bridge. These viewers would have an enhanced view since there are no bicycle or pedestrian facilities on the existing bridge.

Key View #15: TFAS

Bridge improvements for the EC-2 alignment would be 123 feet closer to TFAS viewers (west) of the existing bridge alignment and within the foreground distance zone. Typically, viewers would have a moderate to high sensitivity over the long-term due to a large visual element moving closer to the site, horizontal bridge elements would be somewhat higher with a slimmer profile than the existing bridge and there would be fewer vertical piers, which would allow more open views for recreational viewers. Because of the more open structure of the proposed bridge, the overall long-term impacts to visual quality would be low to moderate. The existing view and proposed view from key view #15 are included in Exhibit 40 and Exhibit 41.

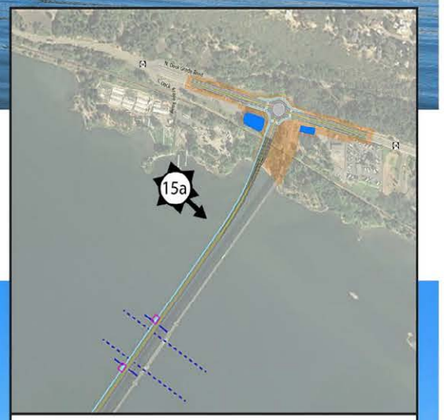
Natural Harmony: Natural harmony for key view #15 would be similar to key view #14, existing vegetation would obscure most changes to visual resources such as vegetation removal or terrain grading for the north approach. Changes on the south approach would be primarily rough grass and small shrubs and may be in the middleground of their views. Additionally, this vegetation on the south approach is located on steep slopes and is not in a natural setting. Proposed slopes that include stormwater facilities would be revegetated with native grasses and shrubs and visual impacts would be neutral to beneficial.

Cultural Order: Alternative EC-2 is not expected to disrupt the existing pattern of recreation, work, society, or the community from key view #15. Overall cultural order impacts would be similar to viewpoint #14 noted above.

Project Coherence: Project coherence for key view #15 would be similar to key view #14 described above. Transitory fishers and recreational viewers would be focused on their associated recreation activities but may be more sensitive to the aesthetic treatments of Project components which would be visible in the foreground of views, particularly the bridge piers. The aesthetics advisory committee would confirm the shore-to-shore concept reflects the community's preferences for project coherence and considers the diversity of viewers in the AVE. Access to the site may be improved, particularly for those who may be commuting from south of the bridge; therefore, overall project coherence would be high.

Viewer Exposure and Awareness: The typical viewers from key view #15 are fishers and recreational viewers. Recreational viewers tend to be focused on short-duration outdoor leisure activities but would be more sensitive because the Project is in their foreground distance zone. Temporary residential sites are available for viewers at the TFAS site. Residential viewers typically prefer natural and cultural harmony. Existing vegetation on the TFAS site would obscure most views of the bridge which would help to maintain natural and cultural harmony for temporary residential viewers.

Exhibit 40. TFAS Boat Launch (Key View #15a) Photo Simulation

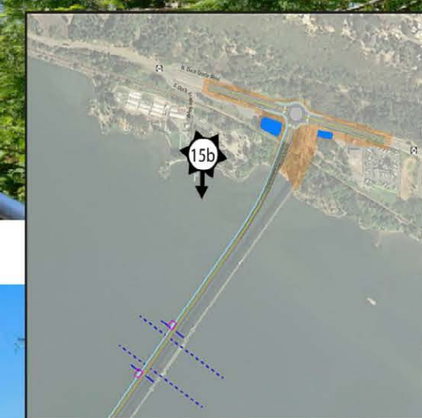


Viewpoint 15a Key

Existing View

Proposed View

Exhibit 41. TFAS Boat Launch (Key View #15b) Photo Simulation



Viewpoint 15b Key

Existing View

Proposed View

5.2.3. Indirect Impacts

The only potential indirect impacts on visual quality would be increased vehicle traffic and pedestrian and bicycle use of the replacement bridge over time. An improved bridge with lanes meeting current standards would ease restricted traffic conditions and would likely increase the overall volume of traffic. Vehicle movement may be more noticeable; however, speeds would increase which would decrease the duration of vehicles on the replacement bridge, particularly when conditions where the existing bridge is lifted for river traffic exist. Because vehicle movement would both increase in volume and decrease in duration, the indirect impacts would be neutral.

Bicycle and pedestrian use on the replacement bridge would be a new use and would allow more recreational users, and those who commute by these modes. These users would have views from the bridge toward the Columbia River and the Columbia River Gorge. Because a replacement bridge is an allowable use in the CRGNSA Management Plan, Klickitat County Zoning Ordinance, and Hood River County Zoning Ordinance, the Project would be consistent with the public's support of the long-term benefits of the Project.

5.3. Alternative EC-1

5.3.1. Construction Impacts

Construction impacts of Alternative EC-1 on visual quality and on viewer experience and sensitivity would mostly be the same as those identified for Alternative EC-2 in section 5.2.1. Construction of the south approach in the Hood River Urban area and the over-water portion of the replacement bridge would utilize similar methods as Alternative EC-2. This work would also occur in a similar alignment to Alternative EC-2, so this alternative would not be visually different than Alternative EC-2. Construction of the bridge in the White Salmon/Bingen Urban area would extend north of existing BNSF Railway lines and over the existing nursery site. Earthwork, grading, and leveling and would change terrain to construct the roundabout and to construct N. Dock Grade Road and S. Dock Grade Road. Fill material would be imported to build the roundabout which would be approximately 17 feet higher in this location than the existing SR 14; however, existing vegetation west of the Project site would obscure views of the replacement bridge for travelers looking east, even with the increased elevation. Views looking west would have a more open view of the Project, but fewer mature trees would be removed, and the existing roadway and approach would be removed and revegetated. Overall, adverse visual impacts from the proposed approach in the Alternative EC-1 location would be offset with removal and mitigation measures of the existing bridge approach.

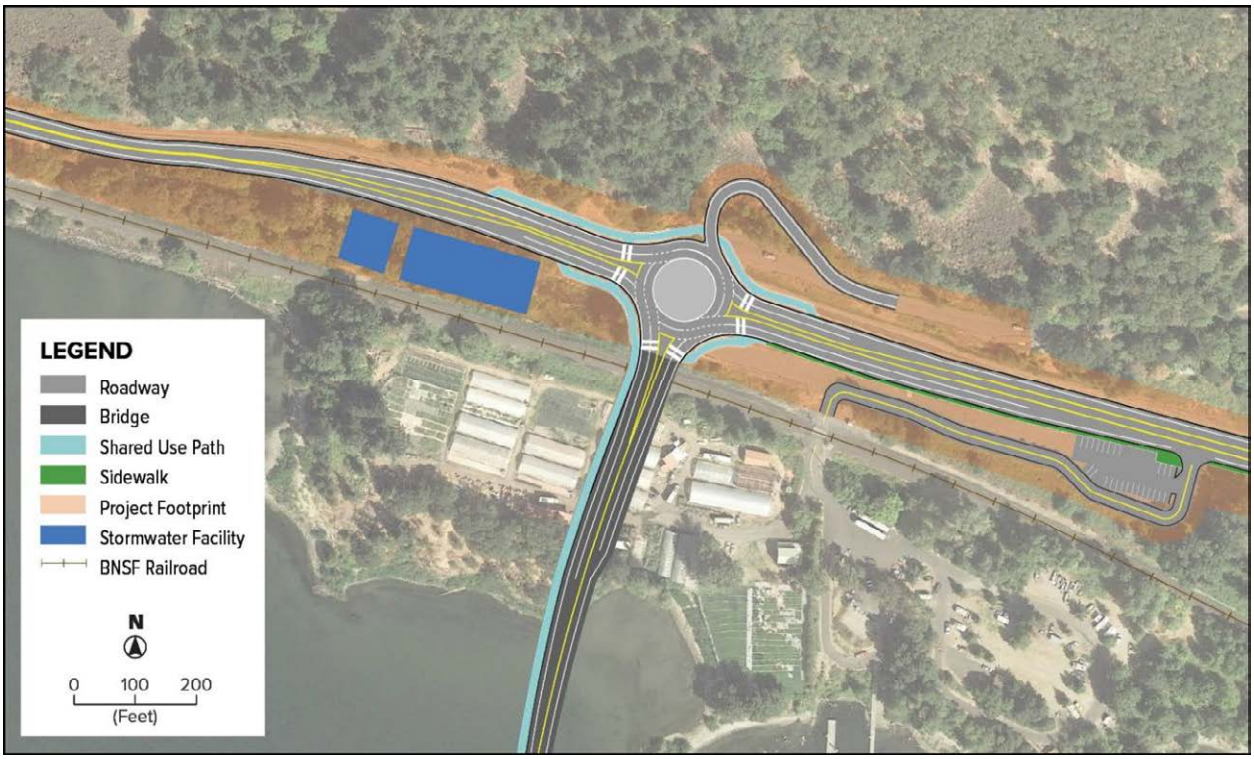
The White Salmon Shoreline Master Plan requires development to consider visual impacts. Most viewers in the City of White Salmon would be on bluffs above SR 14 and views would be primarily blocked by landform, land use, and existing vegetation. Viewers along the highway are considered travelers and discussed below. Other viewers would be primarily industrial or commercial workers who would be focused on work activities; however, viewers at key view #15 may have visual impacts associated with Alternative EC-1. The height of the bridge required for the Alternative EC-1 would be significant along the shoreline; however, the existing bridge sets a historic precedence and the removal of the existing bridge would balance adverse impacts to the east. Additionally, these viewers would likely be focused on work or recreation activities and both existing and proposed vegetation would limit available views east and west. Overall, White Salmon Shoreline Master Plan visual impacts would be neutral.

5.3.2. Direct Impacts

Overall, Alternative EC-1 would have nearly the same impact to visual quality for the over-water portion of the replacement bridge and the south approach in the Hood River Urban area as Alternative EC-2 and described in section 5.2.2. The alignment of the replacement bridge would be west of the Alternative EC-2 alignment but would have the same overall appearance.

The north approach in the White Salmon/Bingen Urban area would change the appearance of SR 14 in this area (key view #9), as the roundabout would be on approximately 17 feet of fill material. The existing intersection would be replaced by a roundabout, which would occupy a larger footprint. Existing vegetation, including trees, would be removed and earthwork would be required to accommodate the larger size and proposed elevation (Exhibit 42). However, this Project would be consistent with viewer expectations because a transportation facility (SR 14) and human-made development already exist in this designated urban area. Motorists traveling along SR 14 would benefit from improved vehicular circulation and freer flowing traffic. Viewers associated with the nursery would have moderate to high visual impacts associated with the replacement bridge structure being placed in and over their facilities; however, viewer numbers would be small, and most would be focused on activities associated with the nursery. Overall viewer sensitivity would be low. Viewers from the TFAS would have higher visual impacts to the west; however, with the removal of the existing bridge to the east, these changes would be neutral overall.

Exhibit 42. Area of Direct Impacts for Alternative EC-1 North Approach



Like the Alternative EC-2, the impact to visual quality from Alternative EC-1 would be neutral, and the Project scale, form, materials, and visual character would be compatible with and not contrast with the existing environment. Additionally, Alternative EC-1 would be consistent with the CRGNSA Management Plan, which identifies the Project as an allowable use, by following the guidelines for Columbia River Bridge Replacement described in the plan. The vividness of the landscape and Project area would not be altered. Like the Alternative EC-2, Alternative EC-2 would create new opportunities for views for bicyclists and pedestrians on the bridge.

5.3.3. Indirect Impacts

The same indirect impacts identified for construction of Alternative EC-1 in Section 5.2.3 would occur under Alternative EC-2.

5.4. Alternative EC-3

5.4.1. Construction Impacts

Construction impacts of Alternative EC-3 on visual quality and on viewer experience and sensitivity would be the nearly same as those described in Section 5.2.1 for Alternative EC-2. As with the Alternative EC-2, construction of the Alternative EC-3 north approach would require vegetation removal including the removal of a mature leaf-bearing tree located just east of the existing bridge approach. These trees are visible from the existing bridge as well as SR 14 and contribute to the screening of existing buildings, shading the area, and provides native and natural visual character to the area; however, vegetation removal would be less extensive than the Alternative EC-2 layout and stormwater facilities would largely be located on the existing road location and the underutilized gravel parking area. The roundabout would remain at roughly the same elevation as the existing SR 14.

5.4.2. Direct Impacts

The alignment of Alternative EC-3 is almost the same as Alternative EC-2, with the main span of Alternative EC-3 located approximately 400 feet east of the existing bridge lift span. The alignment is so similar that the direct impacts to visual quality would be the same as those described in Section 5.2.2 for the Alternative EC-2. For viewers at key view #15, Alternative EC-3 layout would increase the distance to the bridge by approximately 400 feet. Along with the more open views beneath and between the bridge structures, this distance would constitute a beneficial impact for these viewers.

Like Alternative EC-2, the impact to visual quality from Alternative EC-3 would be neutral, and the Project scale, form, materials, and visual character would be compatible with and not contrast with the existing environment. Additionally, Alternative EC-3 would be consistent with the CRGNSA Management Plan, which identifies the Project as an allowable use, by following the guidelines for Columbia River Bridge Replacement described in the plan. The vividness of the landscape and Project area would not be altered. Like Alternative EC-2, Alternative EC-3 would create new views for bicyclists and pedestrians on the replacement bridge.

5.4.3. Indirect Impacts

Indirect impacts resulting from construction of Alternative EC-3 would be the same as those described in Section 5.2.3 for the Alternative EC-2.

5.5. Summary of Impacts by Alternative

Exhibit 43 provides a comparison of anticipated visual quality impacts by alternative. Potential changes and features that would be visible under each alternative are noted within this table.

Exhibit 43. Summary of Visual Quality Impacts by Alternative

Impacts	No Action Alternative	Preferred Alternative EC-2	Alternative EC-1	Alternative EC-3
Construction Impacts	• None	• Construction signs, brightly colored and reflective safety equipment, fencing and barricades • Terrain grading at north and south approach areas • Construction vehicles and heavy equipment • Boats, barges and cranes for in/over water activities • Dual bridge structures until existing bridge is removed • Vegetation removal in construction, staging, and transportation areas, mainly at north approach • Flashing lights and illumination of work areas	• Similar to Alternative EC-2 • Construction of north approach roundabout would require removing buildings and fill material	• Similar to Alternative EC-2 • Construction of north approach roundabout would require removal of a large mature tree
Direct Impacts	• No change to the visual resources or visual quality • Continued lack of viewing opportunities from existing bridge for pedestrians and bicyclists	• Project scale, form, materials, and character would be compatible with visual character of AVE • Visual quality impacts would be neutral • New views would be created from the replacement bridge for pedestrians and bicyclists • Overall, viewer sensitivity to change would be low because an existing two-lane bridge would be replaced by a new two-lane bridge with a shared use path • Aesthetics advisory committee would recommend a shore-to-shore concept for aesthetic treatments during subsequent design phase		
Indirect Impacts	• Removal of vehicle light and reflective glare once existing bridge is removed	• Allowable use in the CRGNSA Management Plan • Increased vehicular traffic • Increased pedestrian and bicycle use of replacement bridge, allowing growth in recreational sight-seeing opportunities		

6. AVOIDANCE, MINIMIZATION, AND/OR MITIGATION COMMITMENTS

6.1. Construction Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate construction impacts to visual quality:

- Minimize Project-related light and glare to the maximum extent feasible, given safety considerations, by operating lights at the lowest wattage practicable.
- Focus lights on the work area only and direct lights away from night skies and nearby sensitive locations such as residences, the White Salmon TFAS, medical facilities, and parks.
- Use shields on lights to prevent ambient spill-over light, when practicable.
- Restore staging areas to preconstruction conditions once construction is complete to minimize the impact on visual quality and character at these sites. Restoration of the staging areas would meet the following performance standards:
    - All disturbed terrain would be restored.
    - Replacement plantings would be installed in areas where vegetation was removed. All replacement plantings would be native and indigenous to the area. No invasive plant species would be used under any conditions.
- Minimize the removal of trees and shrubs and pruning needed to accommodate construction activities. For vegetation removed in Washington, follow WSDOT's Roadside Manual guidance for vegetation replanting (WSDOT 2017).
- Contour grading so that it looks consistent with natural terrain to the degree possible.

6.2. Long-Term Impacts

The following measures would be implemented by the bridge owner to avoid, minimize, or mitigate long-term impacts to visual quality:

- Convene a broadly representative aesthetics committee to support the subsequent phase of land-use permitting. The aesthetics committee would recommend a cohesive aesthetic theme for the non-structural components of the bridge, including but not limited to such things as railings, light poles, site furniture, and signage. The committee could also make a recommendation on concrete colors, textures, shapes, and treatments that would be consistent with the visual quality goals for Columbia River Bridge Replacement described in the CRGNSA Management Plan.
- Use low-sheen and non-reflective surface materials to reduce potential for glare.

- Use lighting that has minimum impact to the surrounding environment.
    - Downcast, cut-off type fixtures would be used to shield and direct light only towards objects requiring illumination.
    - Install lights at the lowest appropriate height and cast low-angle illumination while minimizing incidental light spill onto adjacent properties, open spaces, or backscatter into the nighttime sky.
    - Light fixtures would have non-glare finishes that would not cause reflective daytime glare.

7. PREPARERS

Individuals involved in preparing this technical report are identified in Exhibit 44.

Exhibit 44. List of Preparers

Name	Role	Education	Years of Experience
Stephanie Sprague	Technical Lead; Co-author	MS, Natural Resource Policy BS, Environmental Microbiology	18
Ryan Weston	Co-author	MLA, Landscape Architecture and Environmental Planning BA, Horticulture	18
Earl Christian	Photo Simulations	BLA, Landscape Architecture	18
Angela Findley	Project Manager; QC	MS, Forest Resources BA, Mathematics	25
Scott Polzin	Environmental Task Lead; QC	MCRP, Planning BS, Finance	24

8. REFERENCES

Columbia River Gorge Commission (CRGC). 2016. Management Plan for the Columbia River Gorge National Scenic Area. As amended through August 2016.

Federal Highway Administration (FHWA). 2015. Guidelines for the Visual Impact Assessment of Highway Projects. January 2015.

Oregon Department of Transportation (ODOT). Roadside Development Manual. April 1, 2018.

Washington State Department of Transportation (WSDOT). 2015. Roadside Policy Manual, M 3110.03. August 2015.

Washington State Department of Transportation (WSDOT). 2017. Roadside Manual, M 25-30.04. October 2017.

Attachment A

Shore-to-Shore Preliminary Aesthetic Concepts

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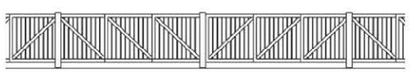
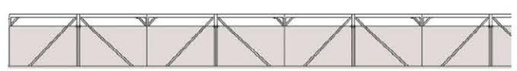
RAILING





VEHICLE LANE LIGHTING

Valmont 'Deco'

WALKWAY LIGHTING

Rail light

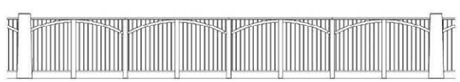
BENCHES

rkVue - backless / Landscape Forms

HOOD RIVER BRIDGE – HISTORIC CONCEPT

11.11.2019

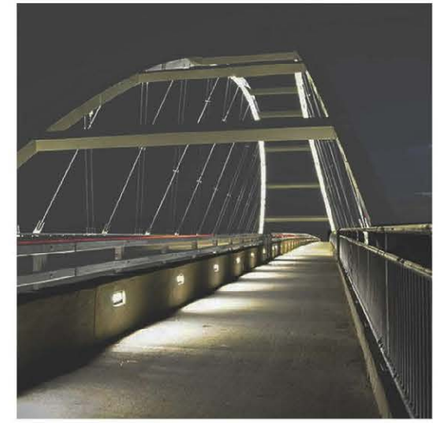
RAILING



VEHICLE LANE LIGHTING

Valmont - standard

WALKWAY LIGHTING



Recessed light

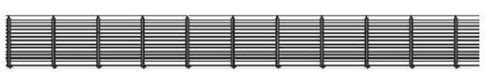
BENCHES

Carnival II Bench / Thomas Steele

HOOD RIVER BRIDGE – COLUMBIA RIVER GORGE CONCEPT

11.11.2019

RAILING



VEHICLE LANE LIGHTING

Valmont - curved

WALKWAY LIGHTING

Ground light

BENCHES

Custom two-level bench

Ground light

HOOD RIVER BRIDGE – CONTEMPORARY CONCEPT

11.11.2019

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