

SR-35 Columbia River Crossing Feasibility Study



DRAFT PURPOSE AND NEED STATEMENT

Purpose Statement

The purpose of this project is to improve the movement of people and goods across the Columbia River between the Bingen / White Salmon, Washington and Hood River, Oregon communities.

Need for Project

The overall need for the State Route 35 (SR-35) Columbia Crossing project is to rectify current and future transportation inadequacies and deficiencies associated with the existing Hood River Bridge. Specific needs are addressed as follows.

Capacity

Local Hood River Bridge users are dissatisfied with traffic congestion on the bridge as well as congestion on the bridge approaches. Traffic on the existing bridge has increased approximately 350 percent since 1970, a growth rate of approximately 4.5 percent per year. These operational issues have prompted the need to address levels of service (LOS) associated with the existing bridge, approach roads, and major highway connections.

High levels of traffic occur at the East Hood River Interstate 84 (I-84) interchange where Oregon 35 (OR-35) / Hood River Bridge access roadway intersects with two off-ramps from I-84 and at the Button Junction / State Street / OR-35 intersection. Moderate levels of congestion (LOS D/E and LOS C respectively) are associated with these intersections. Seasonal traffic associated with peak windsurfing activities and poor weather conditions that divert traffic from I-84, State Route 14 (SR-14), US Highway 26 (US-26), or OR-35 can deteriorate congestion to an F level-of-service.

The preferred alternative must satisfy capacity needs and meet Washington State and Oregon Departments of Transportation standards regarding traffic operations and queuing and meet at least a Level-of-Service D standard for current and projected traffic, to:

- Alleviate congestion at major highway connections;
- Alleviate congestion associated with the bridge and bridge access intersections; and
- Alleviate seasonal congestion associated with peak windsurfing activities and diverted traffic during poor weather conditions.

System Linkage

The existing crossing is an important system linkage between the Oregon and Washington state highway systems as well as provides a connection to the interstate system. The preferred alternative must maintain a system linkage to:

- Provide a cross-river connection between Bingen / White Salmon, Washington and Hood River, Oregon to I-84 and SR-14 via a new SR-35 corridor or the current bridge.

Transportation Demand

Projected traffic for the Year 2020 indicates a projected increase in cross-river transportation demand of 50 to 70 percent over the existing conditions. In conjunction with providing transportation infrastructure that meets capacity and roadway and bridge deficiencies, the preferred alternative must also:

- Accommodate cross-river transportation demand while not increasing per capita vehicle miles traveled as required by the Oregon Transportation Planning Rules; and
- Accommodate pedestrian and bicycle demand while minimizing out-of-direction travel that would substantially increase the average trip length for these modes.

Legislation

The Washington and Oregon State Congressional delegations, responding to local constituents' concerns about the functionality of the existing bridge, obtained federal funding for this high priority project as part of the Transportation Equity Act for the 21st Century (TEA-21) federal transportation-financing bill. The Washington State legislature has recognized the potential for a new Columbia River crossing and has designated an SR-35 corridor that connects from SR-14 to the Columbia River but does not specify the exact crossing location. The crossing location and facility type(s) are to be determined through alternative development and selection of a preferred alternative.

The preferred alternative must satisfy legislative needs to:

- Comply with TEA-21 programmed high priority project funding for a feasibility study to replace or improve the Columbia River Crossing along the proposed SR-35 corridor; and
- Comply with the SR-35 corridor designation by the Washington State legislature.

Social Demands and Economic Development

Economic growth and development of the local communities is tied to adequate transportation infrastructure between the two Washington cities and Hood River, Oregon and connecting the nearby Oregon and Washington major highways (SR-14 and I-84). The existing bridge restricts the flow of goods within the study area due to narrow lanes and bridge load limitation that do not readily accommodate larger vehicles. Commuters and consumers are dissatisfied with the congestion and perceived safety hazards of the existing bridge.

Local and regional economic growth and development that is dependent on adequate transportation infrastructure would be enhanced by diversifying and expanding the use of this crossing rather than diverting prohibited traffic or dissatisfied users to other crossings approximately 20 miles east and west of the Hood River Bridge.

Many users of the existing bridge are demanding that funding for long-term operation and maintenance of a new or improved crossing be considered.

The preferred alternative must satisfy social demands and economic needs to:

- Provide transportation infrastructure for the current and projected flow of goods, labor and consumers across the Columbia River between White Salmon / Bingen and Hood River; and
- Develop financially acceptable funding strategies for long-term operation and maintenance of a new or improved crossing.

Modal Interrelationships

The substandard width of the current crossing constrains the mobility of cross-river truck traffic and prevents cross-river bicycle and pedestrian traffic. The impact on truck mobility affects movement of goods (most notably perishable goods) from local ports to local and non-local markets. The lack of bicycle and pedestrian facilities severely limits the mobility of those who do not own nor have access to vehicles for cross-river trips. The ability to reduce per capita vehicle miles traveled through encouragement of alternative modes is restricted without appropriate facilities.

The navigation channel under the bridge has a horizontal clearance of 246 feet, which is less than the 300-foot wide navigation channel. Moreover, the current channel is not effectively aligned with westerly winds. Barges utilizing the Columbia River navigation channel typically measure 42 feet with doublewides at 84 feet. While barge lengths vary between 150 feet and 300 feet, lock sizes limit tow configurations to a total length of 650 feet. , During significant winds, barges have to tack through the bridge with the winds pushing the barges sideways. This difficulty is compounded with the bridge opening being narrower than the navigation channel. Although these navigation factors are less than optimal, the existing bridge accommodates river traffic use without recording any accidents that resulted in severe damage or loss of life. Nearby bridges are better suited for navigation with wider clearances. The Bridge of the Gods at Cascade Locks and The Dalles California Highway Bridge at The Dalles are fixed span bridges (i.e., no lift spans) with horizontal clearances of 655 feet and 551 feet, respectively. However, the Hood River Bridge is similar to the Interstate 5 Columbia River crossing, which has a 263-foot horizontal clearance.

The preferred alternative must satisfy modal interrelationship needs to:

- Accommodate river navigation by providing a horizontal clearance that meets current standards if any new facility is constructed; and
- Provide adequate facilities for passenger and commercial vehicles, mass transit services, bicycles, and pedestrians.

Safety

The deficiencies of narrow lanes on the existing Hood River Bridge create driver perception of poor safety although the incidence of accidents is not high. The narrow lanes result in frequent reports of “mirror-to-mirror” collisions between wide vehicles using the bridge at the same time. These safety concerns as well as current bridge geometrics dictate that the speed limit be restricted to 25 mph.

The lack of bicycle and pedestrian facilities provides hazardous conditions for those who bicycle on the bridge and has resulted in a prohibition of pedestrian travel on the bridge. The bridge grating provides a hazardous driving surface for motorcycles.

The substandard horizontal clearance for navigation under the current bridge has contributed to minor collisions of river vessels with the bridge. Over the past seven years, the Port of Hood

River recalled that two or three barges have scraped through the bridge opening but not caused any significant damage. Reports of near misses with the bridge are prevalent among river vessel pilots. However, no major collisions have been reported to the U.S. Coast Guard.

The preferred alternative must satisfy safety needs to:

- Reduce real and perceived safety hazards associated with the narrow travel lanes;
- Provide safe travel for bicycles and pedestrians;
- Provide safe travel surfaces for motorcycles; and
- Reduce hazards associated with a substandard navigation channel clearance if any new facility is constructed.

Roadway and Bridge Deficiencies

The existing bridge and bridge roadway are functionally obsolete or deficient in terms of narrow travel lanes, lack of pedestrian and bicycle facilities, low load carrying capacity, audible noise associated with the bridge deck, and vulnerability to a seismic event.

Each of the two travel lanes is 9.5 feet wide, which hinders large vehicle traffic and creates a perception of hazardous travel conditions for many users. The bridge does not have facilities for bicycle traffic, which discourages bicycle travel. Additionally, the lack of pedestrian facilities has resulted in a prohibition of pedestrians on the bridge. For a two-lane bridge, AASHTO guidelines recommend a preferred minimum width of 28-30 feet to accommodate travel lanes, as well as a shared bicycle / pedestrian facility at a minimum.

Several bridge inspections have been completed for the Port of Hood River on the existing bridge. Current structural conditions, however, are not clearly known due to the timing and specific focus of the previous inspections. Federally funded programs that involve improvements to the existing bridge will likely require an updated bridge inspection. Structural deficiencies identified in a future bridge inspection may need to be addressed in making improvements to the existing bridge.

Noise generated by traffic crossing the existing bridge deck is clearly audible within and outside the immediate vicinity of the bridge. In addition, the existing bridge has not been updated to meet current seismic standards.

The preferred alternative must satisfy roadway and bridge deficiency needs to:

- Increase motorized vehicle travel lane widths to at least 12 feet;
- Provide facilities for pedestrian and bicycle use;
- Reduce noise created by motorized vehicles traveling on the existing bridge deck; and
- Meet current seismic design standards.

Other Objectives

In addition to meeting the purpose of and needs for the project as stated above, the proposed action would attempt to achieve the following objectives:

- Improve cross-river movement of people and goods;

- Meet current standards for river navigation if any new facility is constructed;
- Avoid or minimize impacts to the natural, built, and aesthetic environment;
- Avoid or minimize impacts to recreational users and facilities;
- Be financially acceptable and support local economic development;
- Avoid or minimize impacts on cultural and historical resources; and
- Maintain the integrity of the interstate highway system.

Project History

The Columbia River bridge crossing, which connects White Salmon and Bingen, Washington and Hood River, Oregon (referred to locally as the Hood River Bridge) was built in 1924. A lift span was added to the bridge in 1938 to respond to raised water elevations in the pool behind Bonneville Dam. The bridge is a steel structure with a narrow roadway deck width of approximately 18 feet 9 inches and has no separated pedestrian or bicycle facilities.

The Washington and Oregon State Congressional delegations, responding to local constituents' concerns about the functionality of the existing bridge, obtained federal funding as part of the Transportation Equity Act for the 21st Century (TEA-21) federal transportation-financing bill. The Washington State legislature has recognized the potential for a new Columbia River crossing and has designated an SR-35 corridor that connects from SR-14 to the Columbia River but did not specify the exact crossing location. The crossing location and facility type(s) are to be determined through alternative development and selection of a preferred alternative.

The project area comprises the Columbia River and areas landward that connect White Salmon and Bingen, Washington to Hood River, Oregon. The northern end of the Hood River Bridge touches down on the southwestern edge of White Salmon. Bingen is located approximately one mile east of White Salmon. Both cities are in Klickitat County. Skamania County, Washington lies nearby to the west and is also included in the project area due to a range of alternatives being considered. The major east / west highway on the Washington side of the Columbia River is SR-14, a National Highway System route, which traverses both Washington cities.

The southern end of the Hood River Bridge touches down in Hood River, Oregon (Hood River County). I-84 is the major east / west highway on the Oregon side of the Columbia River; it connects Portland, Oregon to points east, such as Pendleton, Oregon and Boise, Idaho. Another major highway in the Hood River vicinity is OR-35, which connects to US 26 (Mount Hood Highway) approximately 40 miles to the south.