

FINAL REPORT EXECUTIVE SUMMARY SR-35 COLUMBIA RIVER CROSSING FEASIBILITY STUDY

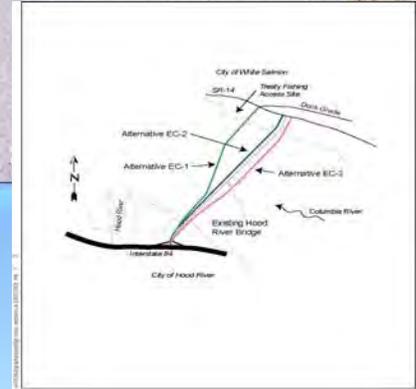
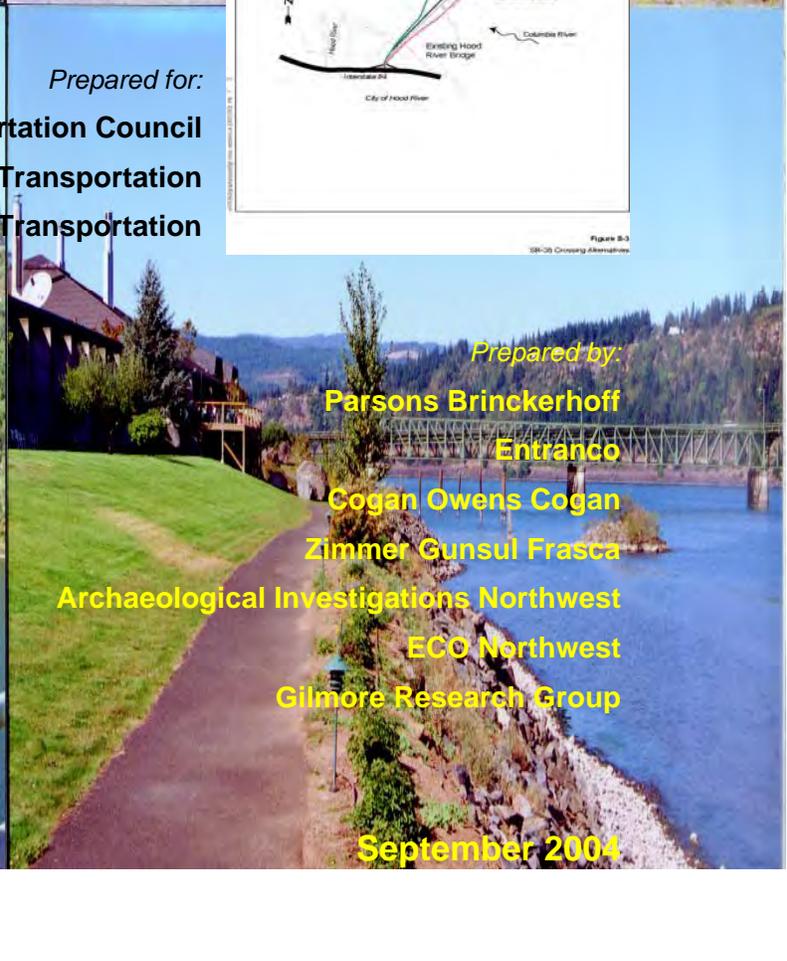


Figure B-3
SR-35 Crossing Alternatives

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EXECUTIVE SUMMARY

The SR-35 Columbia River Crossing Feasibility Study was conducted in response to local business and resident concerns about the safety and service life of the existing Hood River Bridge. The project began in 1999, with the plan for a feasibility study to determine if there was a need to replace the bridge and whether there was community support for a bridge improvement. The community supported a replacement of the bridge, and the feasibility study began in 2000.

The Study was organized into three sequential tiers:

- Tier I of the Study documented baseline conditions and identified the project's issues, purpose and need statement, and a range of crossing corridors and facility alternatives. This tier determined and initiated the environmental review process, and narrowed the corridors and facility alternatives to those that are most promising and practical.
- Tier II was intended to select a crossing corridor, refine the most promising long-term alternatives, select a short-term improvement option, and undertake a financial feasibility study to determine if there would be sufficient financial resources available to fund a long-term improvement project.
- Tier III concluded the Study by selecting a preliminary preferred alternative, developing an implementation plan, and completing the draft environmental impact statement (DEIS) in compliance with the National Environmental Policy Act (NEPA).

The lead agencies for this study are the Southwest Washington Regional Transportation Council (RTC), the Oregon Department of Transportation (ODOT), and the Washington State Department of Transportation (WSDOT). Parsons Brinckerhoff (PB) was retained by the agencies to lead the technical analysis of the project, supported by Entranco, Cogan Owens Cogan, Zimmer Gunsul Frasca, Archaeological Investigations Northwest, ECO Northwest, and Gilmore Research Group.

BACKGROUND

Congressional representatives of Washington communities surrounding the Hood River Bridge obtained funding for the Study through the federal transportation funding act known as the Transportation Equity Act for the 21st Century (TEA-21). In 1999, a project planning phase was undertaken and a public meeting was held. Major concerns regarding the existing bridge include hazards presented by the narrowness of the travel lanes and lack of bicycle and pedestrian facilities, long-term adequacy of the bridge structure, and impacts on the local economy, especially for commercial vehicles using the bridge.

Three committees were formed to advise the project team: a Resource/ Regulatory Committee (RRC) comprised of representatives of state and federal agencies who reviewed environmental analyses, documents, and permit applications pertinent to agency regulations; a Local Advisory Committee (LAC) comprised of area residents and business owners; and a Steering Committee (SC) that includes local elected and appointed officials and agency staff. A project Management Team comprised of lead staff from RTC, ODOT, WSDOT, and consultant staff met regularly to oversee the Study process.

REPORT PURPOSE

This report is a summary of the SR-35 Columbia River Crossing Study, during which several corridors and alternatives were considered and screened to a practical set of alternatives which were studied during the Draft Environmental Impact Statement (DEIS).

PUBLIC AND AGENCY INVOLVEMENT

The SR-35 Columbia River Crossing study had extensive public and agency involvement activities over the duration of the study. There were two advisory committees in Tiers I and II (Local Advisory Committee and Steering Committee) that were combined into one (SR-35 Advisory Committee) for Tier III. There was a committee of state and federal environmental resource agencies (Resource and Regulatory Committee) that reviewed and commented on the environmental analysis component of the study. Additionally, several newsletters and open houses were held, along with presentations to local groups and organizations.

Summaries of public involvement activities by Tier are described below.

PROJECT PURPOSE AND NEED

A Purpose and Need Statement was developed based on the project team's investigation of current and long-term conditions of the Hood River Bridge, the transportation needs for a new or improved crossing, and public and agency comments.

The **Purpose** of the 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.

The **Need** for this project is to rectify current and future transportation inadequacies and deficiencies associated with the current Hood River Bridge. Specifically, these needs are to:

- Alleviate current and future congestion at the bridge termini, on the bridge itself and the access road to and from the bridge (SR-35), and congestion related to diverted traffic due to severe weather conditions or incidents on Mount Hood, I-84, or SR-14;
- Provide a cross-river linkage to the transportation system;
- Accommodating the increase in cross-river demand while also providing for bicycle and pedestrian travel across the Columbia River;
- Comply with funding and legislative requirements regarding the SR-35 Columbia River Crossing;
- Satisfy social demands and economic needs for cross-river flow of goods and people;
- Accommodate river navigation by providing a horizontal clearance which meets current standards while also providing intermodal and multimodal connections across the river; and
- Addressing and improving upon safety and current substandard design of the current bridge.

ALTERNATIVES CONSIDERED

The alternatives analysis considered a wide range of corridors and alternatives (see individual Tier summaries below). Alternatives consisted of a new bridge, retrofitting of the current bridge, a combination of a new bridge along with retrofitting of the current bridge for bicycles and pedestrians, and a tunnel.

The preferred crossing corridor is adjacent to the current bridge. The Preliminary Preferred alternative is a new, fixed-span bridge on the immediate west side of the existing bridge. The existing bridge would be demolished and removed.

TIER I

Overview

Tier I included an inventory of existing conditions, an initial set of meetings to summarize issues and options (called the NEPA “scoping” phase), development of a purpose and need statement, and development of a range of alternatives and corridors for further analysis.

A Baseline Conditions Report was completed in November 2000 and updated in January 2001. This report contained information on existing conditions in several categories, including transportation, economy, recreation, the environment, bridge condition, navigation, and river hydraulics.

Issues Identification and Scoping

The range of comments received during the NEPA scoping period included: consideration of impacts on windsurfing; motorist, bicycle, and pedestrian safety crossing the Hood River Bridge and at the intersections of the approach road to the bridge; traffic congestion at the tollbooth and along the bridge access road; impacts on the local economy; impacts to the environment, including tribal fishing sites within the study area; and impacts of tolls on the local economy and financing of a new crossing. Other concerns included impacts of the alternative crossing corridors on the natural environment, park land, threatened or endangered species, land use (especially the Port of Hood River, downtown Bingen, and the Port of Klickitat), the Columbia River Gorge National Scenic Area, and specific local businesses and recreation areas.

The project Purpose and Need Statement was drafted prior to the scoping period to explain why the project was being undertaken by the Federal Highway Administration (FHWA), the lead federal agency for the study. After the scoping period, the Purpose and Need Statement was refined to reflect comments from the public and resource agencies. The Purpose and Need Statement was based on the project team's investigation of current and long-term conditions of the Hood River Bridge, the transportation needs for a new or improved crossing, and public and agency comments.

Corridor Evaluation and Recommendations

The project team conducted an initial corridor screening in May 2001. Screening criterion was developed in accordance with technical expertise, the Purpose and Need Statement and public and agency comments. Baseline information available on a corridor level was used as the basis for this screening, and corridors were screened for their potential to have high, moderate, or low impacts associated with each criterion. The results are presented in the Recommendations chapter of the Tier I report, which was published in August 2001.

Evaluation criteria were developed based on the project objectives contained in the Purpose and Need statement. They are:

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- 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 economic development;
 - Avoid or minimize impacts to cultural and historical resources; and
 - Maintain the integrity of the Interstate Highway System.

The result of the evaluation and public process is to recommend that the following corridors be carried forward:

- City Center
- Existing with “Low Elevation” Crossing
- East “A”
- No-Action (current bridge retained as an alternative for comparative purposes).

Eliminated corridors were:

- West
- Existing with “High Elevation” Crossing
- East “B”

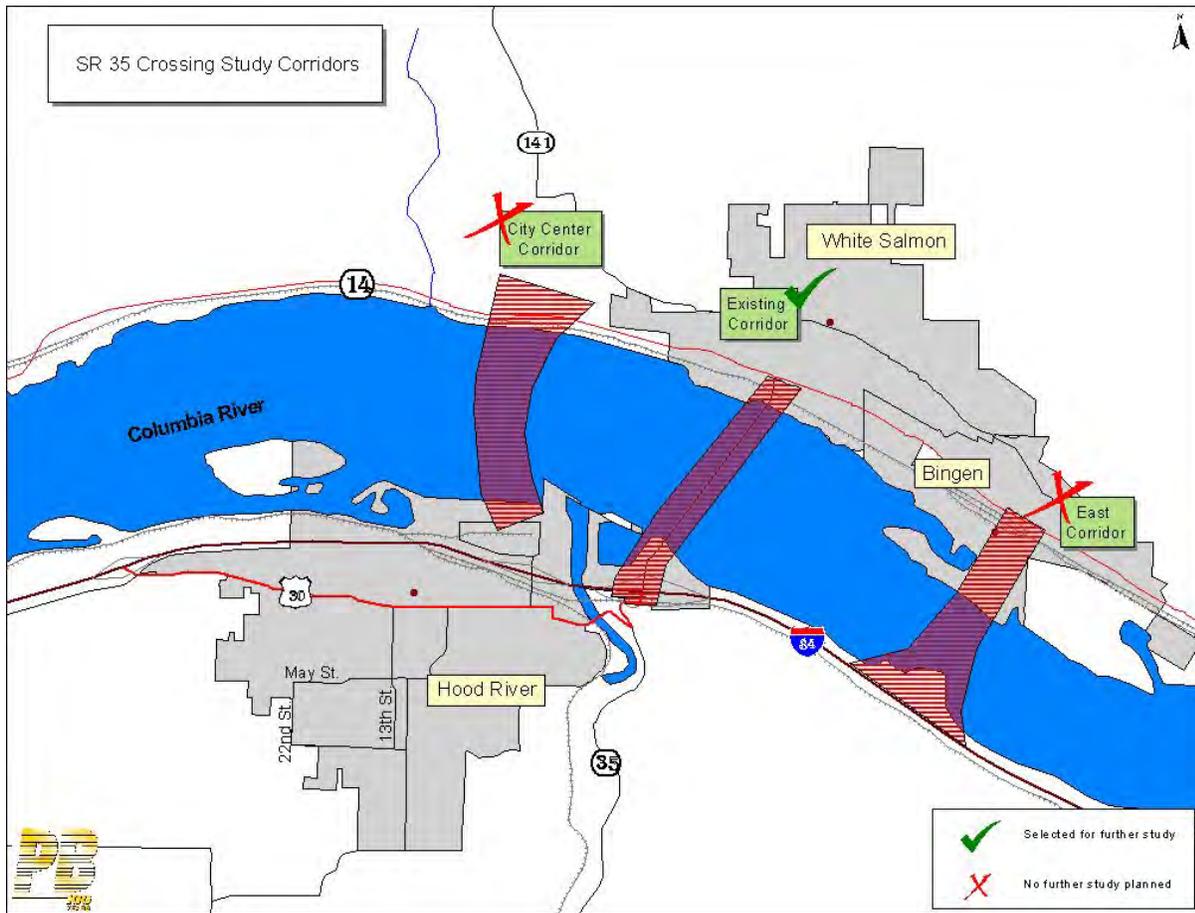
Additionally, the following facility types were carried forward for analysis in Tier II:

- Short Term Improvements to the Existing Bridge
- Tunnel (various types) at the City Center Corridor
- Floating or movable bridge
- Fixed span bridge.

TIER II

Tier II analyzed short- and long-term solutions, refinement and evaluation of crossing alternative, and selection of a corridor for the development of alternatives which were evaluated in the DEIS. A financial feasibility analysis was also conducted during Tier II. The crossing corridors considered during Tier II are illustrated in Figure ES-1.

Figure ES-1. Map of Tier II Corridors



Public Involvement

Tier II public and agency involvement included meetings of the advisory committees, two public open houses, a random sample telephone survey and motorist intercept survey of bridge users, newsletters, a youth bridge design contest, and presentations to Klickitat County Commissioners, White Salmon Rotary, Columbia River Gorge Windsurfing Association, Hood River Rotary, Columbia River Gorge Commission, and Skamania and Klickitat County Transportation Policy committees. A bridge design workshop was also conducted during Tier II.

Bridge Design

A bridge design workshop was held with stakeholders, local agency and citizen representatives, and members of the Gorge Commission during Tier II in January 2002. Several bridge types and design treatments were discussed and developed during the workshop. The participants generally agreed on a low-key bridge design with an arch above the navigation channel. Illumination on the bridge, if provided, would be low-level to minimize glare and provide what was necessary for pedestrian, bicyclist, and motorist safety and security.

Figure ES-2 shows the bridge cross-section type, while Figure ES-3 shows renderings of the bridge design type across the Columbia River.

Cost Estimates

Based on the January 2002 design workshop, conceptual drawings (plan and profile) for various bridge types were developed. Within each of the corridors, variations of possible structure types and configurations were defined. Structures varied by lengths and design features (e.g., different types and location of piers, different superstructure types). Construction costs for each alternative were based on unit costs and quantities for major construction components as well as bridge approaches and ancillary work. Additional costs have been included for engineering, construction management, and contingency to arrive at a total project cost. Table ES-1 summarizes the cost estimates. Costs for right-of-way acquisition and environmental mitigation were not included.

Table ES-1: Summary of Cost Estimates (2002 dollars)

| Corridor | Structure | Estimated Cost Range (millions) |
|-----------------|---|--|
| City Center | New Fixed Span Bridge (various types) | \$106-113 |
| | Twin-Bored Tunnel | \$350-400 |
| Existing | New Fixed Span Bridge (various types) | \$110-121 |
| | Retrofit Existing Bridge | \$137 |
| East | New Fixed Span Bridge (various types) | \$129-142 |
| | New Fixed Span Bridge (various types) for vehicles plus retrofit existing bridge for pedestrians and bicycles | \$179-192 |

Note: Cost estimates for bridges are based on 45-foot wide typical sections.

Financial Feasibility

A financial feasibility study was conducted, which included a discussion of the toll revenue potential, using the public opinion surveys as input as well as an analysis of the level of capital investment that could be supported by tolls. In addition, other potential local non-toll revenue sources were considered and summarized. Results for this study indicated that tolls over time, with periodic increases, could provide as much as \$40-50 million toward the overall cost of the project (approximately 30-40 percent of the total cost). The study also determined that the remainder of the funding needs should come from a variety of local, state, and federal funding sources.

Environmental Review and Coordination

To support the alternatives screening process in Tier II, additional environmental surveys for sensitive plants and cultural resources were performed, tribal coordination was initiated, comprehensive screening criteria were developed, and agency coordination with resource and regulatory agencies was conducted. From these activities, potential critical issues to the environment were identified for each corridor. These critical issues were then assessed in the alternatives screening process. Final recommendations to advance or eliminate alternatives from further study took into account the reasonable and practical efforts that would be needed to mitigate or contend with these critical issues.

Figure ES-2: Bridge Cross Sections

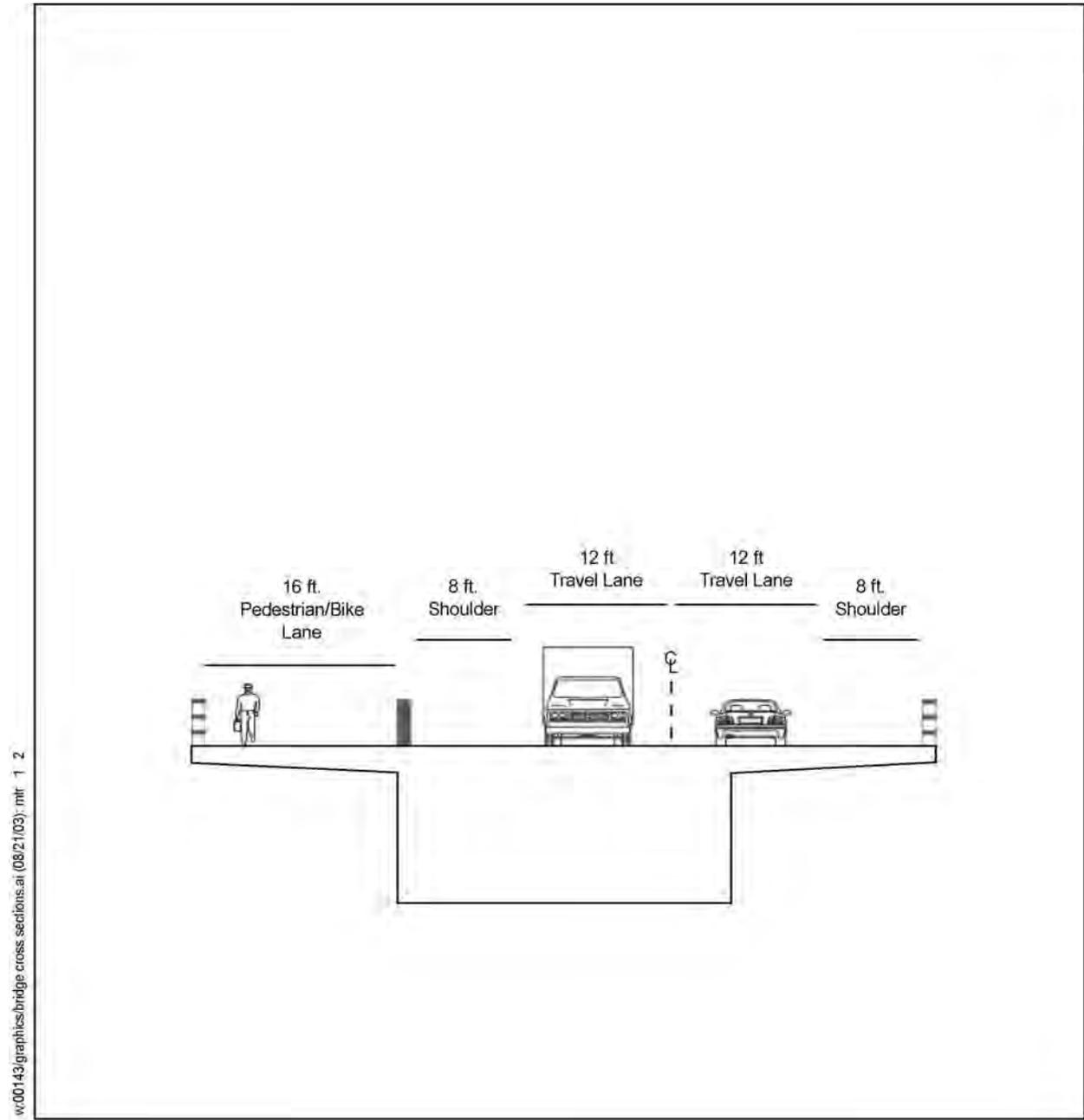
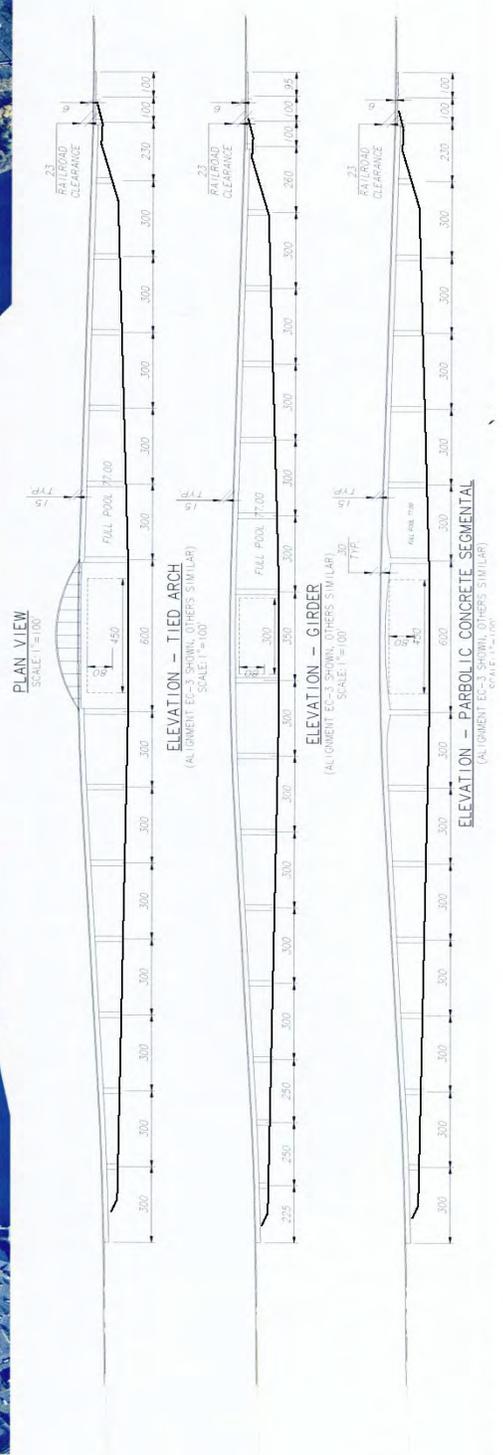
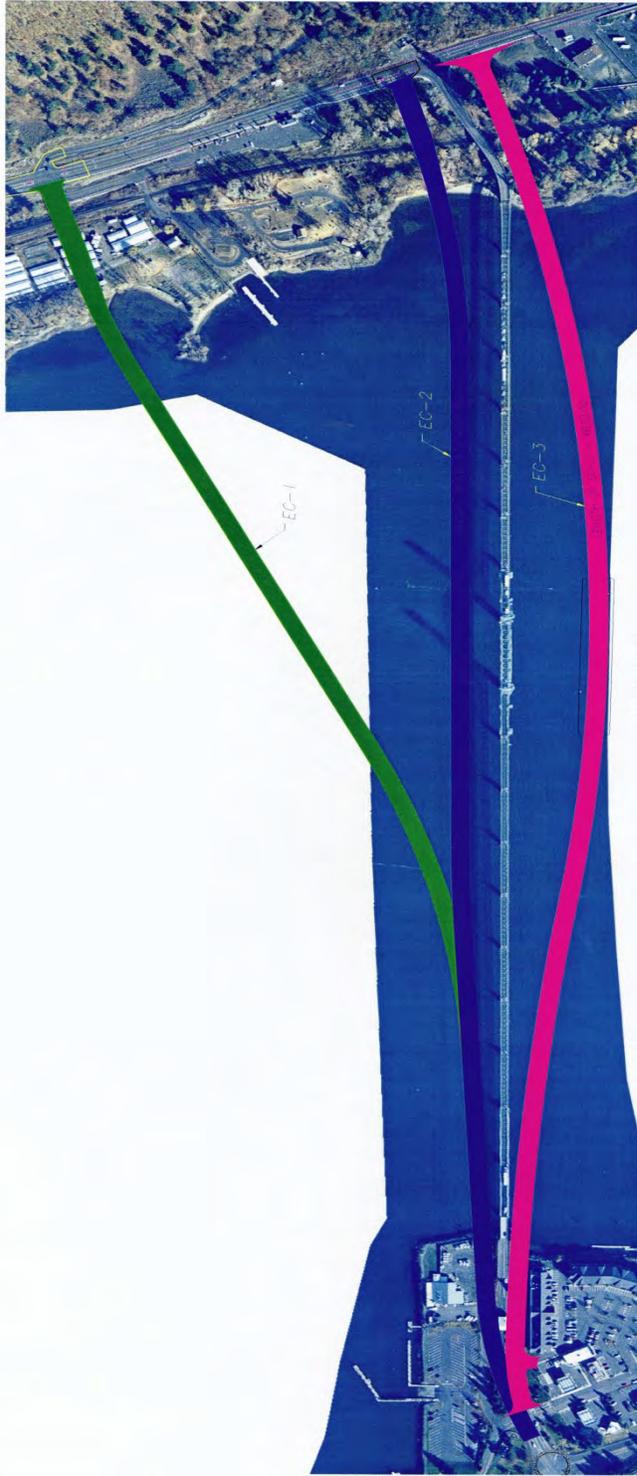


Figure ES-3: Bridge Design Type



Plan and Elevation Views

Short-Term and Mid-Term Improvements

Recommended short-term improvements to the existing bridge include:

- *Roundabout or traffic signal at I-84 eastbound ramps and Oregon 35/Hood River Bridge access road:* This would reduce or eliminate peak traffic episode queuing and spillback onto the I-84 mainline. A roundabout was recommended due to the close proximity of Oregon 35, and due to the eastbound I-84 off- and on-ramps being offset from each other.
- *Convert the toll booth to one-way tolls southbound:* At peak traffic times, northbound traffic passing through the toll booth spills back through the adjacent four-way stop intersection. This was forecasted to be a daily occurrence in the short-term future. In the long-term, these queues could block the I-84 ramp intersections. Converting the toll booth to one-way tolls southbound (\$1.50 toll paid once, rather than \$0.75 paid each way) would eliminate the potential for spillback queues affecting intersection and I-84 traffic operations. In the southbound direction, if queues form, the entire bridge could be used for the queue storage length, which does not impact any adjacent intersection. The one-way tolls should reduce the ongoing operating costs to the Port of Hood River by reducing the number of toll takers needed to operate the toll booth. The short-term conversion would consist of a retrofit of the existing toll booth, minor pavement widening to allow for northbound traffic to flow safely through the toll plaza, and signage changes and removals.
- *Bridge replacement fund:* A dedicated fund would be established through increased tolls to fund a replacement bridge. In the short-term, these would be collected by the Port of Hood River under an interagency agreement with WSDOT and ODOT.

If the replacement of the bridge is not programmed to occur for at least ten years, traffic and congestion growth will result in additional improvements needed to maintain or improve traffic operations on the bridge. The recommended mid-term improvements to the existing bridge include:

- *Signalize the I-84 westbound ramps at the Hood River Bridge access road:* This would alleviate the future failing level-of-service (LOS) at the interchange.
- *Convert to a roundabout or signalize the four-way stop at the port/retail entrance:* The four-way stop, which stops all vehicles, will eventually become a bottleneck and result in traffic spillbacks either into the toll booth area, or into the I-84 interchange area. Additionally, with short-term improvements at the I-84 ramps and at the toll booth to improve traffic flow, having a stop sign in the center of an otherwise flowing corridor may actually increase accidents over time.
- *Restrict or close turns at the private driveway onto the Hood River Bridge access road:* Vehicles turning left into or out of the driveway conflict with bridge traffic. With increased traffic, congestion, and queuing at the toll booth, and the increased potential for accidents, turning movements at the driveway should be restricted at a minimum to right-turns only, and potentially closed if the accident rate increases.
- *Toll booth and automated toll collection system:* This would alleviate southbound queuing near the toll booth by allowing regular bridge users to use automated toll collection. Project includes removal of current toll booth and the construction of new

toll both, canopy, and communication system to support automated toll collection. The new toll booth would be designed and built so that it would not need to be replaced with the construction of a long-term improvement in this corridor.

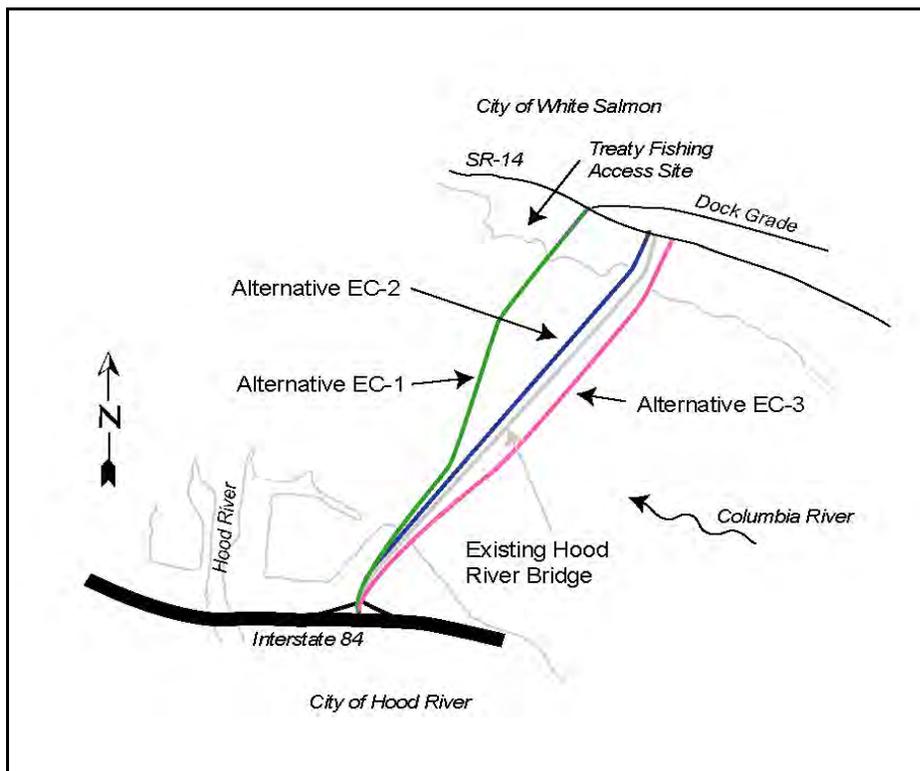
- *Signalize the SR-14/Hood River Bridge access road intersection:* WSDOT is currently installing a signal at this intersection.

Alternatives Screening and Recommendations – Long Term Alternatives

Two screening processes to narrow long-term alternatives were conducted during Tier II. The first screening narrowed the build alternatives from 17 to 6. A second alternatives screening was used to select alternatives for evaluation in the DEIS. Screening criterion was developed in accordance with technical expertise, the Purpose and Need Statement, and public and agency comments. Baseline information available on a corridor level and the results of technical studies conducted in Tier II were used as the basis for this screening. Alternatives were screened for their potential to have high, moderate, or low impacts associated with each criterion.

The second screening narrowed the build alternatives from six to one: the Existing Corridor Fixed Span Bridge for All Modes. The Existing Corridor (EC) Fixed Span Bridge for All Modes alternative was then differentiated into three alternative alignments: EC-1 West Connection to Dock Grade, EC-2 West Alignment, and EC-3 East Alignment. The conceptual alignments of the alternatives are shown in Figure ES-4.

Figure ES-4: Map of DEIS Alignments



All alternatives tie into the existing bridge access road on the south end of the corridor at a point between the toll booth and the four-way stop. Improvements would be made to the I-84 interchange to include signalization or roundabouts at the ramp termini. The four-way stop at East Marina Way (port/retail entrance) would be converted to a roundabout. The private

driveway onto the access road would be closed. In all scenarios, it is assumed that the toll booth would be converted to one-way operations.

The alternatives were narrowed to three “DEIS crossing alternatives” which were considered during Tier III. There were three “build” alternatives. In addition, a no-action alternative was carried forward from Tier II and was one of the DEIS alternatives considered. The following summarizes additional components of each alternative.

- *EC-1 West Connection to Dock Grade:* This alternative would be directly adjacent to the west side of the existing bridge until a point north of the shipping channel, where it would shift west to avoid the in-lieu (Native American treaty access) fishing site on the Washington side of the Columbia River. It would be grade separated from the railroad mainline on the Washington side. The SR-14 intersection at Dock Grade would be signalized and widened to accommodate turn lanes. The grade of SR-14 would need to be raised, and Dock Grade would need to be realigned at the intersection for safety reasons. To accommodate the additional traffic, Dock Grade would need to be widened to provide standard lane widths and shoulders up the bluff into White Salmon.
- *EC-2 West Alignment:* This alternative would be directly adjacent to the west side of the existing bridge until a point north of the shipping channel, where it would shift slightly to the east to avoid the in-lieu fishing site on the Washington side. It would be grade separated from the railroad mainline on the Washington side. The SR-14 intersection would be signalized and widened to accommodate turn lanes.
- *EC-3 East Alignment:* This alternative would be directly adjacent to the east side of the existing bridge. It would be grade separated from the railroad mainline on the Washington side. The SR-14 intersection would be signalized and widened to accommodate turn lanes.

TIER III

Tier III resulted in the selection of a preliminary preferred alternative, publishing of the DEIS, completion of work scopes to conduct preliminary engineering and the final environmental impact statement (FEIS), determination for the Hood River Bridge’s eligibility for listing on the National Register of Historic Places, and roundabout analysis for the I-84 ramp intersections with the bridge access road and Oregon 35. Alternative EC-2 was selected as the preliminary preferred alternative in the DEIS.

Public Involvement

Tier III included continuation of public and agency involvement activities. The two advisory committees were combined into the SR-35 Advisory Committee and met three times. The Resource and Regulatory Committee met once and were escorted on a field visit of the corridor by the SR-35 project team. The DEIS open house and public hearing were held.

Environmental Review and Coordination

To support the alternative evaluation in Tier III (DEIS), additional environmental data collection was performed and technical reports written for the DEIS alternatives, tribal coordination was continued, comprehensive evaluation and selection criteria were developed, and agency coordination with resource and regulatory agencies was conducted. From these activities,

potential impacts and mitigation issues to the environment were identified for each alternative. This evaluation was documented in the DEIS.

Tribal coordination was undertaken in all three Tiers, but a more concerted coordination effort was undertaken in Tier III. Efforts were made to contact the four tribes (Yakama Nation, Confederated Tribes of Warm Springs, Confederated Tribes of the Umatilla Reservation, and Nez Perce Tribe) during Tier III. Representatives from WSDOT met at the project site with the Yakama Nation to discuss the tribes' interests.

As a bi-state transportation project, the SR-35 Study invokes both the Washington NEPA/SEPA/404 Merger (Signatory Agency Committee or SAC) and the Oregon Collaborative Environmental and Transportation Agreement to Streamline (CETAS) environmental streamlining processes. Concurrence on the DEIS alternatives was obtained during Tier III.

Alternatives Analysis and Recommendations

An alternatives evaluation was conducted during Tier III which consisted of using the potential impacts information described in the environmental technical reports, along with public and agency input, to evaluate the DEIS alternatives and select a preliminary preferred alternative. The SR-35 Management Team selected a preliminary preferred alternative in the summer of 2003, and a public hearing and open house was held in January 2004 to receive public comment on the DEIS. Public support for the project was received and there was no significant public opposition.

The preliminary preferred alternative (Alternative EC-2), as described in the DEIS, is the course of action that the lead agencies have preliminarily determined to be most desirable in terms of balancing functional efficiency and environmental, social, and economic effects. This selection of a Preliminary Preferred alternative is preliminary and subject to revision. The final evaluation and selection of a preferred alternative will be based on the outcome of the FEIS and any other pertinent information that may become available. Comments and information that would assist in such an evaluation are encouraged.

Environmental Consequences

The SR-35 project has environmental impacts, but has a number of benefits over the existing bridge. These were detailed in the Draft Environmental Impact Statement. The following is a summary of the environmental consequences of the Preliminary Preferred alternative.

Environmental *impacts* are summarized below. Mitigation for all impacts is summarized in the DEIS.

- Occasional road closures and business disruptions due to construction of the new bridge and approach roads,
- Impacts to river navigation while the bridge structure over the navigation channel is being built,
- A small risk of erosion during construction (that would be mitigated by implementing an erosion control plan during construction),
- Increased snow removal efforts and potential use of de-icing materials on the bridge which would need to be treated in the stormwater facilities,

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- Some right-of-way acquisition and closure of several driveways,
 - Removal of the current bridge (which has been determined as eligible to be listed on the National Register of Historic Places),
 - Potential impacts to archaeological sites during construction,
 - Some vegetation, wetlands and wildlife impacts during construction and operations,
 - Potential impacts on in-river habitat due to bridge piers and illumination, and
 - Visual impacts of having a new bridge.

Environmental *benefits* are based on comparison to the No-Build alternative and include:

- Alleviation of significant traffic congestion and ramp queuing on the bridge and approach roads, and with that improved fuel efficiency and reduced air pollution,
- Providing a wider navigation channel that meets current standards,
- Bicycle and pedestrian facilities would be provided across the Columbia River where none currently exist,
- The weight/load restriction on trucks would be removed, enhancing cross-river transportation of goods,
- Improvement to water quality and removal of direct, untreated stormwater runoff into the Columbia River which is experienced with the current bridge,
- Economic benefits by accommodating cross-river bicycle and pedestrian travel, improved goods flow, and road capacity to accommodate long-term growth,
- Fewer bridge piers in the water may reduce habitat for predatory fish compared to the current bridge.

Funding and Implementation Plan

A funding and implementation plan was prepared which outlined how the bridge project could be funded and completed over time. Using potential toll revenue from the Tier II Financial Feasibility Study, along with a summary of existing and potential future revenue and funding sources, a preliminary recommended funding strategy was developed. The strategy is based on a projected \$200 million total cost (in 2004 dollars). This recommended Plan provides for full funding for construction over three successive federal transportation funding reauthorization periods (three five-year acts: 2004 to 2009, 2009 to 2014, and 2014 to Bridge opening) and successive Oregon and Washington state funding acts. This funding strategy be monitored and updated after each step is achieved to identify changes in funding resources and outlook, timelines, and jurisdiction or project responsibility. The following summarizes the Funding and Implementation Plan, which is divided into three time periods which coincide with federal transportation reauthorization periods:

Short Term

1. Increase the toll by 25 cents immediately and establish a dedicated and restricted Bridge Replacement Fund.
2. Complete the Final Environmental Impact Statement and Preliminary Engineering (PE), assuming efforts to secure the necessary \$800,000 of federal funding with \$200,000 local match are successful.
3. Install a traffic signal at SR-14 and the Bridge Access Road.
4. Program and install the I-84 ramp/bridge access road intersection improvements (preferably roundabouts but signalization is still an option).
5. Convert toll booths to one-way toll southbound and automate toll collections (timeline is 2006 to 2008).

Medium Term

In the 2009 to 2014 federal funding authorization, seek funds for the final design, permitting, and right-of-way acquisition for the bridge replacement through the High Priority or Large Project program. This could be allocated over the five or six years of the next federal Surface Transportation Act. Timelines are expected as follows:

1. Final design: 2009 to 2011
2. Right-of-way plans and acquisition: 2010 to 2012
3. Permitting: 2011 to 2012.
4. Seek federal earmark for \$12 million to \$16 million
5. Local match from Bridge Replacement fund (toll receipts) of \$3 million to \$6 million

At this point in the timeline, the Congressional delegations of each state should coordinate on seeking federal funding for the construction phase of the project. Additionally, local state legislators should begin their work to seek earmarks in updates of the state highway funding packages in both Oregon and Washington for major portions of the local match for the construction phase.

Long Term

The toll revenue is expected to pay upwards of 40 percent of the construction cost, estimated at \$170 million to \$180 million expressed in 2004 dollars. This is approximately \$60 million to \$80 million of the total cost. Approximately \$50 million to \$60 million in Federal funds should be sought from a variety of sources (High Priority or Major Projects programs, Enhancement, Bridge Rehabilitation) in the 2014 to 2018 federal Transportation Act.

The remaining \$40 to \$60 million in funding needs could come from a variety of local and state funding resources, the majority of which could come from future updates of the Oregon and Washington state highway funding packages, of which \$25 million should be sought from each state for a total of \$50 million. The balance of funding could come from a variety of local funding sources, such as the Klickitat County Landfill account, local option taxes in White Salmon, Bingen, and Hood River; contributions from the Port of Hood River, and other funding sources.

Demolition of the existing bridge, estimated to cost approximately \$5 million, could be deferred to a later phase if funding is insufficient to include that effort.

Oregon and Washington federal Enhancement programs could pay for the multi-use path construction on the bridge and on the bridge approaches and access roads, as well as viewpoints identified in the Columbia Gorge Commission's March 2004 design workshop.

Figure ES-5 presents a timeline of activities from today through bridge construction and existing bridge demolition and Figure ES-6 summarizes the approximately funding percentages by source.

Figure ES-5: Implementation Plan Flow

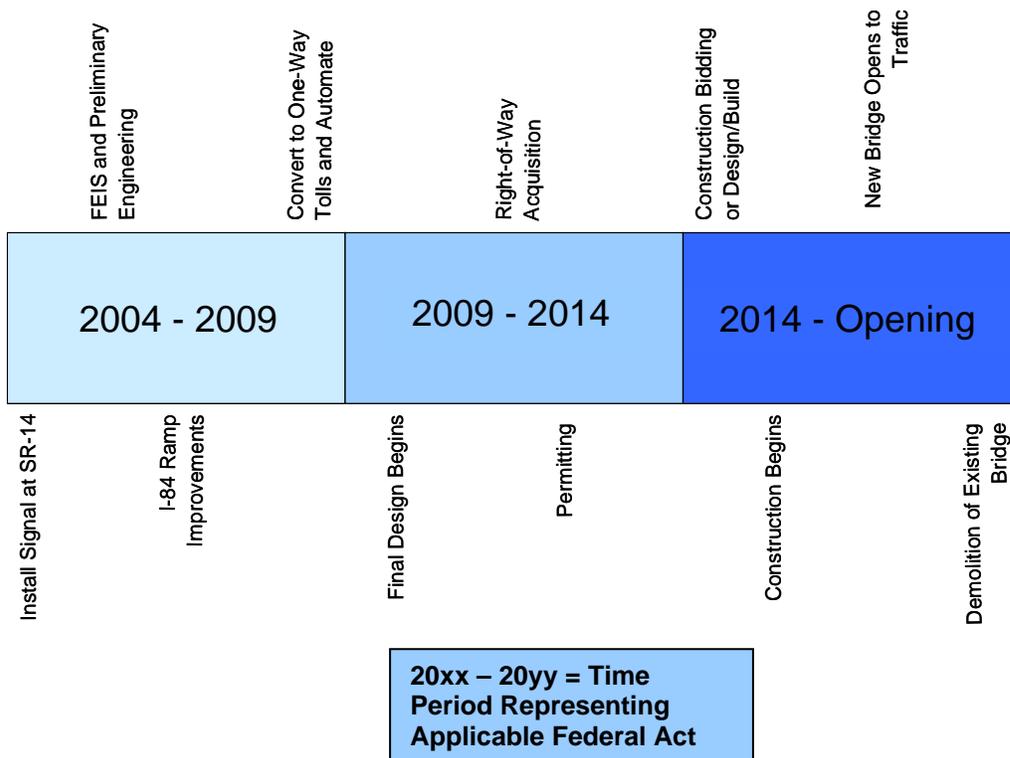
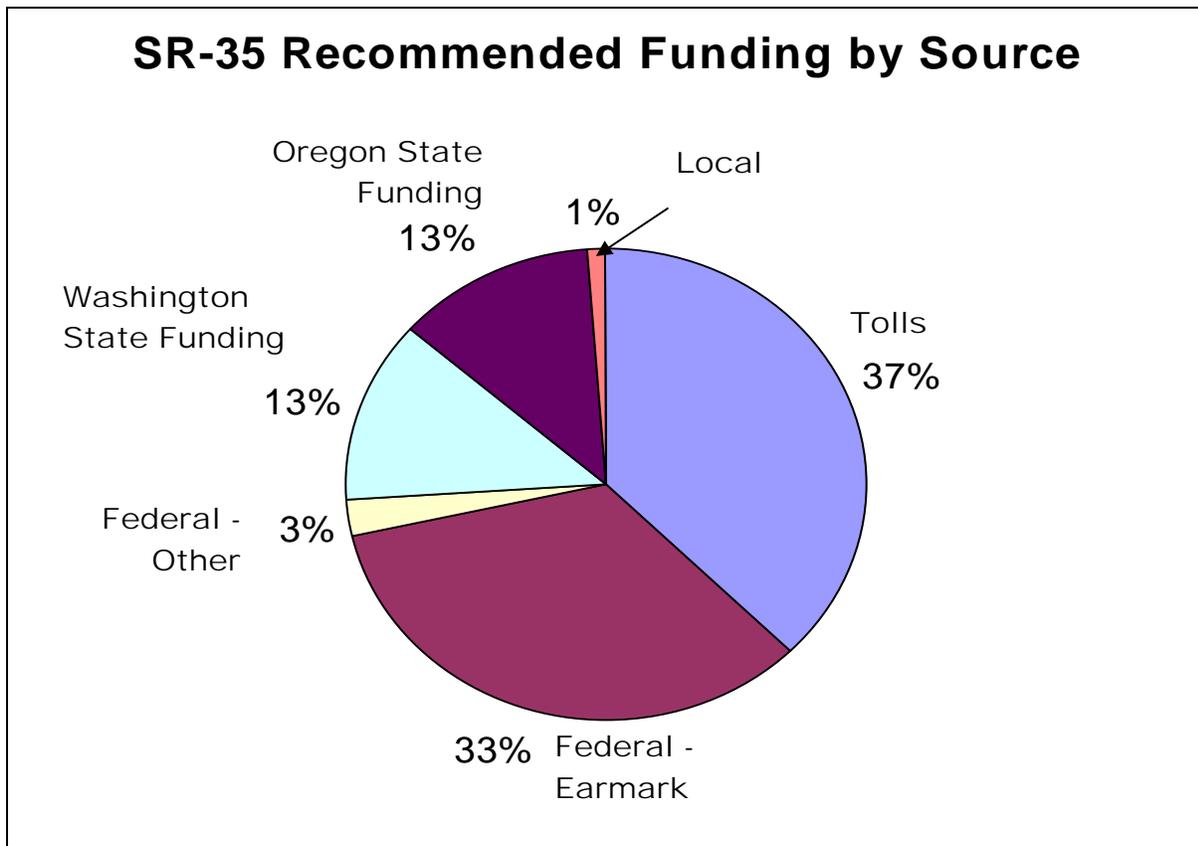


Figure ES-6: Recommended Funding by Source



HISTORICAL SIGNIFICANCE OF THE HOOD RIVER BRIDGE

An assessment was conducted and recommended that the Hood River Bridge is eligible for listing on the National Register of Historic Places. Furthermore, the assessment concluded that the removal of the bridge would have an adverse effect on the historic structure. The DEIS assumed the existing bridge would be historically significant.

Proposed mitigation measures include some level of photographic and structural documentation be prepared in accordance with the Historic American Engineering Record (HAER) specifications. This documentation would be completed prior to demolition.

ROUNDABOUT ANALYSIS

The purpose of the Roundabout study was to prepare an in-depth review and analysis of roundabouts at the I-84 interchange with the bridge access road. Several future alternative scenarios were considered and a comparison drawn to the "No-Build" scenario for this analysis. The options included "No-Build", intersections with signals, and roundabouts at the Interstate Highway 84 and State Route 35 (I-84/SR-35) interchange. Highway capacity analysis was conducted using micro-simulation models and corroborated with Highway Capacity Software-2000 (HCS-2000) analyses.

A micro-simulation roundabout model was developed using VISSIM, a widely used tool for preparing transportation analyses including roundabouts. Two consecutive roundabout operations were studied in detail using both simulation and the FHWA's analytical methodology.

From the analysis of traffic for the SR-35 Hood River Bridge study area in 2025, the recommended concept consists of urban roundabouts at the ramp termini and with the West Marina Drive/retail access road. Figure ES-7 details the design assumptions for the two roundabouts. To alleviate queuing at the eastbound ramp terminus, a potential “flare” or widening could be added at the intersection throat to allow for two vehicles to simultaneously enter the roundabout (one to turn southbound toward Button Junction, the other to travel around the roundabout to go northbound).

The roundabouts show acceptable levels-of-service and queuing at both I-84 intersections for the year 2025 peak periods. “No-build” or signalized intersection approaches will have operations at or near capacity and queues that will extend onto the I-84 mainline in the short-term future. It is recommended that the retail entrance be combined with the westbound off-ramp into a composite roundabout. This is the best option due to the close proximity of this intersection to the westbound I-84 ramps. The geometry of the two intersections will not allow feasible operations if both intersections are signalized.

SCOPE OF WORK FOR NEXT PHASES: PRELIMINARY ENGINEERING AND FINAL ENVIRONMENTAL IMPACT STATEMENT

A scope of work for the next phase of the project has been developed, although it is not funded. It consists of four major tasks:

- Complete environmental technical work including a biological assessment, respond to public comments, and FEIS, and coordinate with the Oregon and Washington environmental streamlining committees (CETAS and SAC processes) to obtain preferred alternative concurrence in the FEIS and the mitigation plan.
- Complete Preliminary Engineering design and cost estimate to approximately a 30 percent level to support permitting and grant applications; develop final design elements including an architectural design to meet visual and Gorge Management Plan requirements; conduct detailed Geotechnical, Hydraulic and wind load analyses; develop right-of-way plans; achieve design acceptance by ODOT, WSDOT, the Gorge Commission, and other key agencies; and develop a statement of work for Final Design.
- FEIS outreach should include efforts to meet in-person with representatives of each tribe. In addition the project team should utilize any formalized or regular meetings that ODOT holds with the Warm Springs to discuss transportation projects as well as continuing to coordinate with WSDOT and ODOT tribal liaisons. Previous attempts, such as letters and telephone calls, to obtain comments from the tribes were not overly successful. So the focus needs to involve the team traveling to each tribe and meeting in-person to establish a dialogue about the project.
- Tribes will also continue to be consulted during the on-going section 106 process. As the area of potential effects (APE) is established, the tribes will have an opportunity to comment. Depending on the results of the archaeological surveys conducted for the FEIS, the tribes will likely be involved in the findings of those surveys, effects to the resources, and any needed mitigative strategies.

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- Update traffic modeling results if the design year (2025) changes; consider different intersection design, such as a roundabout, at the terminus of the bridge at SR-14, and provide traffic forecasts relevant to revenue forecasts to support financing.
 - Determine whether to use an advisory committee (recommended); assuming a committee is used, conduct up to three meetings with the committee to review, comment and advise on bridge design issues, results of additional environmental analysis, and other public outreach activities; prepare and distribute two or three newsletters or fact sheets about the project; conduct two or more public workshops or hearings to review the results of the FEIS and preliminary design recommendations with at least one meeting focusing on design issues; meet or communicate with agency representatives regarding specific issues of concern; and coordinate with tribal organizations.

STUDY PUBLICATIONS

The SR-35 Study produced the following documents that are referenced in this report:

- Baseline Transportation Conditions: January 2001
- Environmental Study Plan: February 2001
- Tier I Final Report: July 2001
- Public Opinion Survey Report: December 2001
- Financial Feasibility Study Report: June 2002
- Tier II Final Report: July 2002
- SR-35 Columbia River Crossing Draft Environmental Impact Statement: December 2003.
- SR-35 Columbia River Crossing Financial and Implementation Plan (July 2004)
- SR-35 Columbia River Crossing Scopes of Work for Preliminary Engineering and Final Environmental Impact Statement (May 2004)
- Assessment of the National Register of Historic Places Eligibility – Hood River to White Salmon Bridge: June 2004.
- SR-35 Traffic and Roundabout Analysis: July 2004.