MEMORANDUM: CONTEXT FOR REVIEW OF SOLUTIONS THAT DO NOT MEET THE PURPOSE AND NEED FOR AN INTERSTATE-5 REPLACMENT BRIDGE

Date: *August 31, 2021*

When restarting the Interstate Bridge replacement work in 2019, there was clear direction from the governors of Oregon and Washington as well as the bi-state legislative committee that the program should utilize past work from the previous project that remains valid to maximize past investment and ensure efficient decision-making, while also taking into consideration changes since the previous planning effort.

Previous planning efforts spent decades identifying a number of environmental constraints within the corridor and negotiating how best to meet the program's transportation needs. Solutions were identified, analyzed and the impacts associated with these solutions were thoroughly documented. In the end, a replacement bridge was selected as the best solution that met the purpose and need and addressed the six previously identified problems associated with the Interstate Bridge area: growing travel demand and congestion, seismic vulnerability, safety and vulnerability to incidents, impaired freight movement, limited high capacity, transit options for the public, and substandard bicycle and pedestrian facilities.

In recent months, the program has heard from individuals and stakeholders urging the program to review previously studied solutions such as a tunnel, a third crossing, supplemental bridges or high-speed rail as potential alternatives to a replacement bridge. While many of these ideas have merit as solutions for some projects or other transportation considerations, they do not provide solutions to all the transportation problems specific to the current Interstate Bridge and the surrounding corridor. As the program works to identify the IBR solution, we know that alternatives that were previously eliminated as being unable to address these problems are not viable options to consider going forward.

The below information summarizes why the solutions noted above were screened out from further consideration during the previous planning efforts. These same challenges would exist with any of these solutions today. More in-depth information is provided within the memos linked below each summary.

While the program is utilizing past work as a starting point, that does not mean we are locked into the former solution. The program is continuing to work with partners to identify design options that address both the changes that have occurred since the previous planning effort, as well as new priorities around climate and equity considerations in the IBR solution that is identified with program partners in the community.

Design options, bridge footprint, interchange options and transit options and others, are being reviewed to determine how best to meet the needs and concerns of the community today and for the future. These design options will be analyzed using current data and new screening criteria based on community values and priorities, climate and equity frameworks, and input from partners and stakeholders. The goal is to identify the IBR solution that best meets the needs of the region by spring 2022 to move forward for further analysis and design.

Tunnel

Both replacement and supplemental tunnel options were evaluated as part of the alternatives screening process during the Columbia River Crossing Environmental Impact Statement (EIS) phase and were ruled out due to their inability to address the six identified transportation problems and other considerations including significant cost, and archeological and environmental impacts. The minimum tunnel depth needed to accommodate shipping needs in the Columbia River combined with grade and safety considerations would create a situation where the "entrances/exits" of a tunnel would have to bypass much of downtown Vancouver and parts of North Portland – resulting in real transportation and equity challenges for the residents and businesses in the project area.

These challenges include significant out-of-direction travel for drivers, freight, transit users, bicyclists and pedestrians; the inability to tie into existing connections such as SR 14, Vancouver City Center, and Hayden Island; safety concerns for bicyclists and pedestrians; and significant archeological, cultural, and environmental impacts. Additionally, cost estimates for a tunnel are estimated to be approximately two times higher than cost estimates for a replacement bridge and approaches. This estimate does not include other highway, interchange, or high capacity transit improvements that would be necessary.

You can read the full memo here: Memorandum: Dismissed Alternatives - Tunnel (interstatebridge.org)

Third Bridge/Supplemental Bridge

Adding a third bridge to the Portland-Vancouver region will continue to be a valuable discussion within the region but, by itself, a third or supplemental bridge would not solve the specific problems associated with the current Interstate Bridge and would therefore not alleviate the need for replacing it – and would risk continuing the current impacts on residents and businesses in the program area.

Multiple concepts of a supplemental bridge as well as five alternative corridors were evaluated during the previous project as part of the alternatives screening process. Previous analysis found that only two of the alternative corridors would have any potential for providing some congestion relief to the I-5 bridge corridor and only one had the potential to be able to improve freight mobility. However, none were found to be able to improve transit performance, bicycle and pedestrian travel, or address the safety deficiencies and high crash rates on I-5 in the project area.

Alternatives that replace the existing bridge performed better on nearly all the project values than alternatives that supplement and reuse the existing bridge, including transit, traffic, navigation, community resources, natural resources, transportation equity, and seismic safety. Seismic retrofits to the existing Interstate Bridge would be prohibitively expensive, would have additional environmental impacts, and may not be sufficient to reliably ensure that the bridge could handle a 500-year earthquake (with little to no damage) or a 2,500-year earthquake (with no collapse).

You can read the full memo here: Memorandum: Dismissed Alternatives - Third Bridge (interstatebridge.org)

Common Sense Alternative II

The "Common Sense Alternative II" (CSA II) is a specific proposal that consists of several improvements and river crossing options that were previously evaluated as part of the screening process for the CRC Environmental Impact Statement (EIS). These improvements include: installing a lift span on the BNSF rail bridge, repurposing the existing Interstate Bridge, constructing a new multimodal bridge from Hayden Island to Vancouver, and constructing a new multimodal bridge from Portland to Hayden Island.

While adding a bridge lift to the BNSF bridge would likely reduce some of the frequency of bridge lifts at the Interstate Bridge, many Interstate Bridge lifts would still be required for bridge maintenance or when marine vessel heights exceed the vertical clearance provided by the bridge (without raising the lift span). The BNSF bridge is also over 100 years old and likely seismically vulnerable, which would need to be taken into consideration in determining the viability of investing in a new movable span.

Repurposing the existing Interstate Bridge would require retrofits to address the roadway safety issues and to bring it up to modern seismic safety standards. These retrofits would not be practically feasible. Additionally, the lifecycle cost of using one or both of the existing bridge spans for bicycles and pedestrians would be substantially higher than the cost of accommodating bikes and pedestrians on a new highway and transit bridge.

In addition to the downsides to the general concept of a supplemental bridge in any location, a new multimodal bridge with a lift span to accommodate long-distance traffic as the CSA II calls for carries additional challenges. Previous analysis concluded that low-level moveable spans carry significant costs to mobility, safety, freight economy, and financial resources with no benefits over a fixed span. A higher mid-level fixed span can perform the same function as a low-level moveable span at lower cost and with no significant differences in impacts to the surrounding communities.

Under the CSA II, the existing North Portland Harbor Bridge (NPH) would be used to carry long-distance traffic between the Hayden Island-Vancouver bridge and Portland. It is not clear whether the CSA II involves

retrofitting the existing NPH Bridge; however, the known seismic deficiencies of the NPH Bridge would need to be addressed in order to meet the program's Purpose and Need statement. The program team is currently evaluating whether the NPH Bridge should be retrofitted or replaced as part of the IBR program.

You can read the full memo here: Memorandum: Dismissed Alternatives - Common Sense Alternative (interstatebridge.org)

High-Speed Rail

An advocacy group is promoting a high-speed rail alignment in the Pacific Northwest with stops in both Portland and Vancouver, referred to as Cascadia High Speed Rail. The alignment would extend from Vancouver B.C. to Eugene, OR where it could potentially merge with a California high speed rail line. Community members have proposed that the IBR program look at the advocacy group's proposal, which would construct a new bridge one mile west of I-5 and parallel to the BNSF Railway swing bridge, as well as seismically upgrading the existing Interstate Bridge. The proposed bridge would include two lines for high-speed rail, two lines for freight, and four lanes for vehicles.

In the future, high speed rail has the potential to be a climate friendly way to connect the major cities on the West Coast to each other. However, high speed rail as a transit component to the Interstate Bridge was dismissed during the screening process because it neither increased vehicular capacity nor decreased vehicular demand, and it did not improve transit performance in the I-5 bridge corridor. With an operating speed of more than 175 miles per hour, a high-speed rail line would be most compatible with long distance inter-city and inter-state travel, with at most one stop in each metropolitan area. This high speed could not be reached between Vancouver and Portland. Only having one transit station in the metro area would serve transit trips arriving from or destined to locations outside the region, and thus would not attract the ridership necessary to notably reduce vehicular demand in the immediate project area or the larger Portland-Vancouver metropolitan area. It is not feasible to integrate high speed rail with the existing regional transit system while both maintaining the benefits of a high-speed system, and providing service to the transit markets, such as downtown Vancouver and Hayden Island, near the Interstate Bridge.

The limitations of supplemental bridge options apply to this high-speed rail proposal as well given that the proposal identifies keeping the existing Interstate Bridge instead of replacing it. Please see the supplemental bridge section for more detail.

You can read the full memo here: Memorandum: Dismissed Alternatives - High Speed Rail (interstatebridge.org)