

Earthquake Ready Burnside Bridge:
Combined Final Environmental Impact Statement/Record of Decision

Chapter 7

Record of Decision

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7 Record of Decision

Burnside Bridge

West 2nd Avenue to East Martin Luther King Junior Boulevard, Portland, Oregon
FHWA-OR-EIS-22-01-F

Record of Decision

Submitted Pursuant to 42 U.S.C. 4332 (2) (c), 49 U.S.C. 303, and 23 U.S.C. 138 by the
U.S. Department of Transportation Federal Highway Administration (FHWA)
Oregon Department of Transportation (ODOT)
Multnomah County

Cooperating Agencies:
National Marine Fisheries Service
U.S. Coast Guard
U.S. Army Corps of Engineers

Date of Approval

Keith Lynch for FHWA

7.1 Decision

The Federal Highway Administration (FHWA) approves the selection of the Refined Long-span Alternative (described in the Supplemental Draft Environmental Impact Statement [SDEIS]) as the Selected Alternative to provide a seismically resilient bridge replacement for the Earthquake Ready Burnside Bridge (EQRB) Project. This Record of Decision (ROD) documents the FHWA decision regarding the EQRB Project. In making its decision, FHWA considered the information and analysis included in the Draft Environmental Impact Statement (Draft EIS), SDEIS, all supporting technical reports and public and agency comments, and the supplemental information and analysis provided in the Final Environmental Impact Statement (Final EIS).

The Long-span Alternative was identified as the Preferred Alternative in the Draft EIS that was made available for public review and comment through the project [website](#).¹ The public was able to view and comment on the Draft EIS for a period of 45 days from February 5 to March 22, 2021. The Draft EIS Notice of Availability (NOA) was published in the Federal Register on February 5, 2021. Multnomah County (County) held a live Draft EIS Public Hearing testimony on March 3, 2021.

The EQRB Draft EIS included a No-Build Alternative and four build alternatives. It identified one build alternative (the Long-span Alternative) as the Preferred Alternative. Following the issuance of the Draft EIS, additional cost and funding analysis identified a substantial risk that the construction costs of any of the build alternatives would exceed \$1 billion. The Selected Alternative is anticipated to cost between \$830 to \$915 million. This risk led the County to direct the project team to identify and evaluate ways to reduce the Project's construction costs while still meeting the Project's purpose and need and striving to achieve the other advantages of the Draft EIS Preferred Alternative.

The Refined Long-span Alternative, which addressed that directive and was evaluated in the SDEIS, was identified as the Preferred Alternative in the SDEIS that was made available for public review and comment through the project website.¹ The public was able to view and comment on the SDEIS for a period of 45 days from April 29 to June 13, 2022. The SDEIS NOA was published in the Federal Register on April 29, 2022. Multnomah County held live SDEIS Public Hearing testimony on June 8, 2022.

Section 7.2 of this ROD discusses the basis of decision for the Selected Alternative, including the identification of the draft alternatives, informal scoping and screening, and a more in-depth discussion of the Draft EIS and SDEIS alternatives. It also includes a summary of the advantages of the Selected Alternative, a discussion of the Environmentally Preferred Alternative, and all practicable means to avoid or minimize environmental harm including the Project's mitigation commitments.

Section 7.3 of this ROD contains a summary of agency coordination and public outreach for the Project. More details can be found in Chapter 5 of the Final EIS, which includes a summary of public involvement and agency coordination. Attachments A and B contain summaries of agency and public comments on the Draft EIS and SDEIS, respectively, and responses to those comments. Attachment C contains all agency correspondence received after publication of the SDEIS.

A combined Final EIS and ROD document (per 23 USC §139(n), 23 CFR 771.124) does not have a comment period or a 30-day waiting period because these documents are published as a single document. The US Environmental Protection Agency publishes an NOA in the Federal Register for combined Final EIS/ROD documents.

¹ <https://www.multco.us/earthquake-ready-burnside-bridge/supplemental-draft-environmental-impact-statement>

With approval of this ROD, FHWA has certified that all of the alternatives, information, analysis, and objections submitted by federal, state, tribal, and local governments and public commenters have been considered by the lead agency and cooperating agencies in developing the EIS.

7.2 Basis of Decision

This section describes the decision process to select the Selected Alternative.

7.2.1 Identification of Draft EIS Alternatives

The process to identify and screen alternatives began in 2016 with the *EQRB Feasibility Study Report*.² The EQRB project team worked with community and agency stakeholders to develop project objectives and a problem statement, build project awareness through early engagement, and analyze more than 100 options for creating an earthquake ready Willamette River crossing. The options covered a wide range of potential solutions including:

- Preservation alternatives (update the bridge but not to full seismic resiliency, and supplement with a lower-investment seismic solution such as trams, ferries, and other technologies)
- Seismic retrofit alternatives (retrofit the existing bridge to full seismic resiliency)
- Replacement alternatives (replace the existing bridge with a new bridge or tunnel)
- Enhanced seismic retrofit alternatives (partial retrofit and partial replacement of existing bridge)
- Enhance/replace a different bridge (make a different crossing earthquake ready)

Screening criteria were developed and applied (see the EQRB Alternatives Screening Technical Memorandum) with input from the Project's Stakeholder Representative Group, and the results were shared with other project committees (the Senior Agency Staff Group and the Policy Group) as well as with the public through online events and in-person open houses. Following public input, the feasibility study was completed in November 2018, and the Multnomah County Board of Commissioners adopted the draft project purpose and need and the range of alternatives for further study.

7.2.2 Informal Scoping and Screening

Following the Feasibility Study, the project team conducted additional analysis and gathered stakeholder input to further evaluate, test, and refine the recommended alternatives prior to initiating an EIS. This analysis and input led to further revisions to the range of alternatives:

- The High Fixed Bridge was dropped from further consideration because of added impacts and costs, and because it could not reasonably meet the US Coast Guard (USCG) vertical clearance requirements.
- Further geotechnical analysis clarified a heightened risk of seismic damage to bridge piers³ located within deep, liquefiable soils located near both the east and west banks of the river. This

² All EQRB Project-related documents are available in the project library at <https://www.multco.us/earthquake-ready-burnside-bridge/project-library>.

³ Pier (aka, bent) – An intermediate vertical support under a bridge, made up of one or more columns connected at their top-most ends by a cap, strut, or other member. A pier is sometimes differentiated from a bent by the number of columns (one vs. more than one, respectively).

led to the development of a “long-span” alternative that would minimize the number of piers within those zones and reduce overall construction costs.

- Agency and stakeholder input influenced the development and location of pedestrian, bicycle, and Americans with Disabilities Act (ADA)-accessible connections at both the east and west ends of the bridge.
- Input from social services providers influenced revisions to the west bridge abutment so that the replacement alternatives could avoid blocking essential access doors to the Portland Rescue Mission during construction.
- Users of the Burnside Skatepark requested that the Project preserve the skatepark. In addition, historic preservation specialists determined that the skatepark is eligible for listing in the National Register of Historic Places. Through refined design and construction approaches, three of the four build alternatives studied in the Draft EIS would preserve the skatepark.

As a result of this additional analysis and input, the alternatives were refined and four were advanced to the Draft EIS.

7.2.3 Alternatives Carried Forward to the Draft EIS

The following summarizes the four build alternatives and options, as well as the No-Build Alternative, that were studied in detail in the Draft EIS. More detail can be found in Chapter 2 of the Draft EIS and in the *EQRB Bridge Replacement Technical Report*.

Because the Project is intended to serve two reasonably foreseeable future conditions, both before and after the next Cascadia Subduction Zone (CSZ) earthquake, the EIS analysis considered how each alternative would perform in both of those scenarios.

No-Build Alternative

As required by NEPA, the EIS evaluated a No-Build Alternative and compared its impacts to the proposed build alternatives. The No-Build analysis describes the impacts and outcomes if the proposed action is not implemented. The No-Build Alternative assumes that all other programmed and planned projects would move forward, but that the Burnside Bridge would not be made earthquake ready.

Build Alternatives – Common Elements of Operations and Design

The four Draft EIS build alternatives are:

- The Enhanced Seismic Retrofit Alternative that would partially retrofit the existing bridge, as well as replace major components required to meet seismic design criteria.
- Three different replacement alternatives that would remove the existing bridge structure and build a new bridge at the same location. These include the Replacement Alternative with Short-span Approach, the Replacement Alternative with Long-span Approach, and the Replacement Alternative with Couch Extension.

Under normal operations, all build alternatives would provide access across the bridge for the same transportation modes that presently use the bridge, and they would accommodate potential future streetcar service. All build alternatives would also accommodate all river navigation and surface transportation modes (Union Pacific Railroad [UPRR] tracks, Interstate-5, local streets, the MAX light rail transit line, and bicycle and pedestrian paths) that presently pass under the bridge.

All build alternatives would remain fully operational and accessible for all modes of transportation following a CSZ earthquake of up to a 9.0 magnitude on the Richter scale, thus providing a reliable crossing for emergency response, evacuation, and economic recovery. The replacement alternatives would be designed and constructed to provide at least 2 feet of clearance between the bridge and adjacent buildings to allow independent movement during a seismic event. Presently, buildings and elevated highway infrastructure are very close to (in some cases are connected to) the bridge, making it likely that they would knock into each other during a major seismic event and increase the damage to both.

See Table 7-1 for a comparison of the major bridge elements for all of the build alternatives.

Table 7-1. Major Bridge Elements by Alternative

| Element | Retrofit Alternative | Short-Span Alternative | Draft EIS Long-Span Alternative | Refined Long-Span Alternative | Couch Extension |
|---------------------|--|--|--|--|---|
| Piers and Bents | Encase existing Piers 2 and 3 in concrete; Add multiple deep, reinforced concrete foundation columns to Piers 1-4. Seismic upgrade of all 34 existing on-land support bents and E and W bridge abutments. 7 bents located in GHZ. | Replace all piers on deep foundations; Bent on both approaches supported by columns on drilled shafts. Stabilize soils surrounding 5 bents located in the GHZ on both approaches to protect against lateral spreading during a seismic event. | Same as Short-span. Stabilize soils surrounding 1 bent located in GHZ in east approach. | Same as Draft EIS Long-span. Same stabilization as Draft EIS Long-span. | Same as Short-span. Stabilize soils surrounding 8 bents located in GHZ in both approaches. |
| West Approach | 13 bents west of Naito Pkwy and 5 in Waterfront Park. | 4 bents west of Naito Pkwy and 2 in Waterfront Park. | 4 bents west of Naito Pkwy and 1 in Waterfront Park. | Same as Short-span. | Same as Short-span. |
| East Approach | 15 bents on land and 1 in river. | 4 bents on land and 1 in river. | 3 bents on land and 0 in river. | Same as Draft EIS Long-span | 10 bents on land and 2 in river. |
| Movable Bridge Span | Retrofit or replace existing bascule span leaf. | Could be a bascule span or vertical lift bridge. | Same as Short-span. | Replace with bascule span leaf. | Same as Short-span. |

E = east; GHZ = geologic hazard zone; W = west.

7.2.4 Project Refinements Studied in the Supplemental Draft EIS

Refined Long-Span Alternative

Following the issuance of the Draft EIS, additional cost and funding analysis identified a substantial risk that the construction costs of any of the build alternatives would be too high to reasonably be able to fund. This risk led the County to direct the project team to identify and evaluate ways to reduce the Project’s construction costs while still meeting the Project’s purpose and need and striving to achieve the other advantages of the Draft EIS Preferred Alternative. The Refined Long-span Alternative was evaluated in detail for the SDEIS because it is a lower-cost version of the Draft EIS Preferred Alternative that would provide many of the Draft EIS Preferred Alternative’s advantages over the other build alternatives evaluated in the Draft EIS.

Horizontal and vertical bridge alignment, span lengths, and connections would be very similar to the Draft EIS Long-span Alternative. The primary differences would be that the Refined Long-span Alternative would be narrower. It would have four rather than five motor vehicle lanes, and it would have narrower bicycle lanes and sidewalks. The width of the sidewalk plus bicycle lane would range from 14 to 17 feet in each direction compared with 20 feet with the Draft EIS Long-span and 12.8 feet for the existing bridge. Narrowing the bridge is the primary source of cost savings.

The Refined Long-span Alternative also identifies one bridge type option (a girder bridge) for the west approach (whereas the Draft EIS Long-span has four types including girder, through-truss, cable-stayed, and tied-arch) and one bridge type option (a bascule style) for the center movable span (whereas the Draft EIS evaluated bascule and vertical lift bridge options). The girder bridge and the bascule bridge are the lowest-cost options for those segments and provide environmental advantages over the other bridge types evaluated for the Draft EIS Long-span Alternative. For the East Approach, the Refined Long-span evaluated refined tied-arch options and a refined cable-stayed option. More detail can be found in Chapter 2 of the Supplemental Draft EIS or in the *EQRB Bridge Replacement Revised Technical Report*. See Table 7-1 for a comparison of the major bridge elements for the Refined Long-span Alternative.

Temporary Bridge Options

The EQRB Draft EIS analyzed three temporary bridge options that could be constructed to allow some level of vehicular, pedestrian, and bicycle traffic to cross the Willamette River at Burnside Street while the main bridge is closed during construction. A temporary detour bridge would help reduce the impacts to cross-river travel, but it would not accommodate all of the bridge's current vehicle travel demands.

Because the temporary bridge would have a high cost, higher impacts, longer duration of construction, and a limited ability to accommodate Burnside Street travel demand, the Draft EIS Preferred Alternative selected a No Temporary Bridge option and the Supplemental Draft EIS Refined Long-span did not include a temporary bridge during construction. With this option, the Burnside crossing would be fully closed to all modes for about 4 years with the replacement alternatives. Traffic management would include rerouting buses, autos, bicyclists, and pedestrians to adjacent river crossings, as well as potentially implementing travel-demand and transportation system management to reduce trips and encourage more transit, pedestrian, and bicycle use. Buses would likely be detoured across the adjacent Steel Bridge. Vehicle, bicycle, and pedestrian traffic would be detoured over the Steel Bridge, the Morrison Bridge, and the Hawthorne Bridge.

7.2.5 Selected Alternative

The Selected Alternative is described in detail in Chapter 6 of the Final EIS. Table 7-2 contains a summary of the major bridge structural elements.

The proposed replacement bridge would be placed at approximately the same location as the existing bridge. The total bridge length is approximately 2,290 feet, which is comparable to the existing bridge. The West Approach abutment is located approximately 80 feet east of the current abutment, and the East Approach abutment is located approximately 30 feet east of the existing abutment.

The height of the bridge deck is at approximately the same elevation as the existing bridge, and the proposed vertical profile grade is set to approximately 4.6 percent, which is slightly steeper than the existing bridge vertical profile grade of 3.86 percent.

The Selected Alternative would accommodate approximately 78 feet for vehicle lanes, bicycle lanes, and pedestrians. The Selected Alternative would accommodate four vehicle lanes. As the road authority, the City of Portland (on July 20, 2022) declared its preferred lane configuration as the SDEIS Lane Option 1 (Balanced), which includes two westbound lanes (general-purpose) and two eastbound lanes (one general-purpose and one bus-only lane). Actual lane widths will be determined during the Final Design phase. Physical barriers between vehicle lanes and the bicycle lanes are included and are in addition to the lane dimensions provided above. For the East Approach span, additional width would be required for the above-deck superstructure members.

The Selected Alternative would accommodate bus dwell space on the west end of the bridge for westbound buses on the West Approach between Bent 1 and Bent 3. While this dwell space would fit within the footprint of the existing bridge, this portion of the West Approach is wider than what was included in the SDEIS Refined Long-span Alternative. Similarly, additional vehicle-lane queue length in the eastbound direction has been added to enable smoother merging.

As described above for the SDEIS Refined Long-span Alternative, the bridge would include a girder on the West Approach, a movable bascule span in the center, and a long span on the East Approach. The bascule piers would be protected by in-water structures on the upstream side, which may be either formed starlings or dolphins. The East Approach would be supported by either a cable-stayed or tied-arch structure, which will be determined during the Final Design phase. On the west side, potential access from the bridge to W 1st Avenue consists of a wide range of ADA-accessible options but also includes the option for no access to 1st Avenue given the uncertainty of the future of the existing Skidmore Fountain MAX light rail station. This would be determined during the Final Design phase. All of these options would meet the purpose and need for the Project and provide similar benefits and impacts, as discussed in the Final EIS. On the east side, the County would protect in place the City’s existing stairs to the Vera Katz Eastbank Esplanade and reconnect them to the bridge upon construction completion. At a minimum, the County would continue to coordinate with the City so the new bridge would be designed and built to meet ADA requirements and would not preclude future connections to the Esplanade.

Table 7-2. Selected Alternative Major Bridge Structural Elements

| Structural Element | Selected Alternative |
|--------------------|---|
| West Approach | <ul style="list-style-type: none"> • One abutment and two supports west of Naito Parkway; two supports, each with two columns, in Waterfront Park. • Slab/girder bridge type between Abutment 1 and Bent 5, consisting of a slab span over 1st Avenue, and girder spans over a City-owned parking lot, Naito Parkway, and Waterfront Park. • Bents to be supported by columns founded on drilled shafts. |
| Main River Spans | <ul style="list-style-type: none"> • Two in-river pier supports. • Girder bridge type for Span 5, starting over Waterfront Park and landing on Pier 6 (the west in-river pier). • Bascule bridge type for Span 6. • Replace all in-river piers with deep foundations, which would likely consist of large-diameter drilled shafts. |
| East Approach | <ul style="list-style-type: none"> • One, two-column support east of the UPRR tracks; one four-column support on the west side of SE 3rd Ave; and one abutment east of SE 3rd Ave. • Long-span bridge type, consisting of either a cable-stayed or tied-arch type, starting at the east in-river pier and extending as follows: <ul style="list-style-type: none"> ○ One-span tied-arch bridge option – Support located to the west of SE 2nd Ave, with girder spans continuing eastward to the abutment. |

| Structural Element | Selected Alternative |
|-------------------------------------|--|
| | <ul style="list-style-type: none"> ○ Two-span cable-stayed bridge option – Support tower located between the UPRR tracks and SE 2nd Ave, and the end of the second cable-stayed span located on the west side of SE 3rd Ave; a girder/slab span continuing eastward to the abutment. • Bents to be supported by columns founded on drilled shafts. • Likely need to stabilize soils below the cable-stayed option tower support located in the geologic hazard zone (between the UPRR tracks and SE 2nd Ave). |
| Westside Access to 1st Avenue | Range of options including multiple possible configurations of stairs and ramps, ADA-accessible elevators, and sidewalk improvements on both sides (north and south) of bridge. Conversely, options may include no additional connection (i.e., using improved sidewalks to access bridge). Decision on the need for and type of access at this location to be made during the Final Design phase. |
| Vera Katz Eastbank Esplanade Access | Maintain existing City of Portland–owned staircase connecting south side of the bridge to Eastbank Esplanade. Staircase to be protected in place during demolition of existing bridge and reconstruction of new bridge. Access to existing stairs would be provided after bridge construction phase completed. New, independent connection could be pursued as separate project with its own purpose, funding, and permitting. |

7.2.6 Summary of Primary Advantages of Selected Alternative

The following summarizes the primary advantages of the Selected Alternative relative to the Draft EIS Preferred Alternative and all other Draft EIS build alternatives as described in the Draft EIS. It also summarizes why the SDEIS Refined Long-span Alternative was selected as the Preferred Alternative in the Final EIS. Overall, the Selected Alternative would perform very similarly to the Draft EIS Long-span, including for the core purpose of the Project (seismic resiliency) and for impacts and benefits to parks and equity. Because it would have one less motor vehicle lane, it would not perform as well for peak period traffic or transit. However, the differences are not significant, and the Selected Alternative would substantially reduce project costs and reduce impacts to historic, natural, and visual resources. The following also summarizes how the refined versions (narrower bridge with four lanes) of the Short-span and Couch Extension Alternatives presented in the SDEIS compare with the Selected Alternative and other alternatives.

- **Seismic Resiliency** – All the build alternatives would be seismically resilient, but the Preferred Alternative (and Draft EIS Long-span Alternative) would have the lowest seismic risk and lowest construction cost. The Selected Alternative (and Draft EIS Long-span Alternative) would place the fewest piers in the East Approach geologic hazard zone (one pier, compared with four to five with the Short-span and eight with the Couch Extension Alternative). A large earthquake is expected to liquefy the soil beneath the East Approach from the Willamette River to SE 2nd Avenue and a small portion of the West Approach within Waterfront Park. This liquefaction would cause lateral spread (essentially a localized landslide or mudslide directed towards the Willamette River) that would exert massive lateral forces on any piers in those zones (the closer to the Willamette River, the greater the force). The other alternatives would require significant broad, deep jet grouting at multiple locations to stabilize the slope, but the Selected Alternative (and Draft EIS Long-span Alternative) largely avoid this risk by installing a long approach span on the east side that would require only one pier near the upper portion of the zone. With the Selected Alternative tied-arch option, that pier would be farther east than with the Draft EIS Long-span. On the west side, the Draft EIS Long-span would possibly have no piers in the geologic hazard zone, and the Selected Alternative would have up to one.

- Parks and Recreation – With only one set of columns (the fewest of any alternative) in Gov. Tom McCall Waterfront Park, the Draft EIS Long-span Alternative would have opened the most new space in the park, create views to the river from the park space under the bridge, and improve personal security in the public spaces under the bridge. The Selected Alternative (girder bridge) would need two sets of columns in the park (the same as the Short-span and Couch Extension Alternatives, and three fewer than existing). All the replacement alternatives, including the Selected Alternative, would avoid permanent impacts to the Burnside Skatepark, which would be removed with the Retrofit Alternative. The Selected Alternative (and Draft EIS Long-span Alternative) would have the shortest-duration closure (intermittent, multi-month closures that sum to a total of up to 18 months) of the Vera Katz Eastbank Esplanade during construction, whereas the Short-span and Couch Extension Alternatives would close the facility for 30 months. Protecting the existing stairs to the Eastbank Esplanade would not extend the 18-month closure of the Eastbank Esplanade. The ramp options evaluated in the Draft EIS were estimated to close the Esplanade for 3.5 to 4.5 years total with any of the bridge alternatives.
- Historic Resources – The Selected Alternative, as well as the Short-span and Couch Extension Alternatives, with a girder bridge for the West Approach, would avoid causing an adverse effect on the Skidmore/Old Town Historic District (a National Historic Landmark). Analysis and agency input received after publication of the Draft EIS indicated that the other bridge types (cable-stayed, tied-arch, or through-truss) that were considered for the Draft EIS Long-span in the West Approach would be anticipated to have an adverse effect on the historic district. All build alternatives would have an adverse effect on the bridge as a historic property. Only the Retrofit Alternative would avoid removing the historic Burnside Bridge, but the extent of work needed for the Retrofit Alternative would compromise the bridge’s historic integrity and make it no longer eligible for listing in the National Register of Historic Places. The Retrofit Alternative is also the only alternative that would remove the Burnside Skatepark, which has been determined to be eligible for listing in the National Register. None of the alternatives would impact any previously recorded archaeological sites. The Selected Alternative (and Draft EIS Long-span Alternative) would have the least soil disturbance in archaeologically sensitive areas.
- Social Services and Equity – As with the other replacement alternatives, the Selected Alternative (and Draft EIS Long-span Alternative) would maintain the operations of the Portland Rescue Mission during construction (which would be temporarily displaced by the Retrofit Alternative). Like all build alternatives, after the next major CSZ earthquake the Selected Alternative would provide the only seismically resilient crossing in downtown Portland – a significant resource for post-disaster emergency aid and services. The Draft EIS Long-span would provide wider bicycle and pedestrian facilities on the bridge than the Selected Alternative, but both the Draft EIS Long-span and the Selected Alternative, as well as the Short-span and Couch Extension Alternatives, would improve comfort and safety for bicyclists, pedestrians, and ADA users compared with the existing bridge.
- Natural Resources – The Selected Alternative has the smallest permanent footprint in the river and would avoid placing piers in shallow water habitat; the Draft EIS Long-span Alternative has the second smallest. The Short-span and the Couch Extension Alternatives (four- and five-lane versions) would require an additional pier in the river and would place more total fill in the river compared with the Long-span Alternative.
- Visual – Because the Selected Alternative is proposed to have a girder bridge on the West Approach and a bascule bridge for the center movable span, it would avoid the Draft EIS Long-span adverse visual impacts associated with the tall above-deck structures (tied-arch, cable-stayed, or through-truss) on the West Approach. Similarly, a bascule movable span would

avoid the visual impacts associated with the lift towers required for the vertical lift option of the movable span. The girder and bascule bridge type options for these segments would maintain many of the existing, important views of the west side for travelers and park users, including the iconic view of the historic White Stag sign. Also, by avoiding any large above-deck structures for the main river span and West Approach, a bascule bridge would better maintain the open character of the existing bridge that has been identified as an important visual as well as social amenity.

- Cost – The Draft EIS Long-span Alternative was the lowest-cost of the build alternatives in the Draft EIS, and the cost of the Selected Alternative will be substantially lower still, thus reducing the risk that the Project could not be adequately funded. The Couch Extension Alternative would be the highest cost, followed by the Short-span Alternative.

Chapter 3 of both the Draft EIS and SDEIS provide more detailed impact analysis of all the alternatives considered. Supplementary analysis conducted for the Selected Alternative can be found in Chapter 4 of the Final EIS.

7.2.7 Environmentally Preferable Alternative

Council on Environmental Quality regulations (40 CFR 1505.2 (a)(2)) require that FHWA state the following in a ROD:

Identify alternatives considered by the agency in reaching its decision, specifying the alternative or alternatives considered environmentally preferable. An agency may discuss preferences among alternatives based on relevant factors including economic and technical considerations and agency statutory missions. An agency shall identify and discuss all such factors, including any essential considerations of national policy, that the agency balanced in making its decision and state how those considerations entered into its decision.

Multnomah County has evaluated a range of alternatives as outlined in Section 7.2.3. FHWA has determined that the Selected Alternative is the environmentally preferable alternative based on the information included in the Draft EIS, SDEIS, and Final EIS, and it is summarized below.

- Seismic Resiliency – The Selected Alternative would carry the least risk and cost for providing a seismically resilient bridge. The Selected Alternative would place the fewest piers (one) in the East Approach geologic hazard zone. On the west side, the Selected Alternative would place one pier in the geologic hazard zone. While the Draft EIS Preferred Alternative would have potentially placed no piers in the geologic hazard zone on the west side, it would have required a tied-arch or cable-stayed span which would have resulted in an adverse effect on the Skidmore/Old Town Historic District (see Historic Resources below).
- Parks and Recreation – The Selected Alternative (girder bridge) would need two sets of columns in the Waterfront Park. While the Draft EIS Long-span would have required only one set of columns, the Selected Alternative would create more new space in the park, create more new views to the river from the park space under the bridge, and improve personal security in the public space under the bridge when compared with existing conditions. Additionally, the Selected Alternative would have the shortest-duration closure (intermittent, multi-month closures that sum to a total of up to 18 months) of the Vera Katz Eastbank Esplanade during construction. Protecting the existing stairs to the Eastbank Esplanade would not extend the 18-month closure of the Eastbank Esplanade.
- Historic Resources – The Selected Alternative would avoid causing an adverse effect on the Skidmore/Old Town Historic District (a National Historic Landmark). The Selected Alternative,

like all the build alternatives, would have an adverse effect on the existing bridge as a historic property. The Selected Alternative would not impact any previously recorded archaeological sites and would have the least soil disturbance in archaeologically sensitive areas.

- Social Services and Equity – The Selected Alternative would maintain the operations of the Portland Rescue Mission during construction. The Selected Alternative would improve comfort and safety for bicyclists, pedestrians, and ADA users by providing physical barriers between vehicle lanes, bicycle lanes, and sidewalks. It would also potentially provide wider bicycle lanes and sidewalks compared to the existing bridge, with the exact widths to be determined during the Final Design phase.
- Natural Resources – The Selected Alternative has the smallest permanent footprint in the river and would avoid placing piers in shallow water habitat.
- Visual – Because the Selected Alternative is proposed to have a girder bridge on the West Approach and a bascule bridge for the center movable span, it would avoid the adverse visual impacts associated with the tall above-deck structures (tied-arch, cable-stayed, or through-truss) on the West Approach. Similarly, the bascule movable span would avoid the visual impacts associated with the lift towers required for the vertical lift option of the movable span. The girder and bascule bridge type options for these segments would maintain many of the existing, important views of the west side for travelers and park users, including the iconic view of the historic White Stag sign. Also, by avoiding any large above-deck structures for the main river span and West Approach, a bascule bridge would better maintain the open character of the existing bridge that has been identified as an important visual as well as social amenity.

7.2.8 All Practicable Means to Avoid or Minimize Environmental Harm

Council on Environmental Quality regulations (40 CFR 1505.2 (a)(3)) require that FHWA include the following in a ROD:

State whether the agency has adopted all practicable means to avoid or minimize environmental harm from the alternative selected, and if not, why the agency did not. The agency shall adopt and summarize, where applicable, a monitoring and enforcement program for any enforceable mitigation requirements or commitments.

With the Selected Alternative, FHWA has considered the broad-scale potential for environmental impacts from the replacement of the Burnside Bridge with a seismically resilient bridge. Chapter 3 of both the Draft EIS and SDEIS provide discussion of the presence and distribution of environmental resources within the Areas of Potential Impact for each resource, as well as discussions of the potential for avoidance and minimization of impacts of those resources.

FHWA has adopted all practicable means to avoid or minimize harm. Measures to avoid, minimize, and mitigate adverse impacts of the Selected Alternative are presented in Table 7-3 and Table 7-4. Implementation of the mitigation measures is a condition of this ROD.

The Project is subject to the monitoring and enforcement requirements in 40 CFR 1505.2(a)(3). To ensure compliance with the Project's mitigation commitments and to assist with FHWA oversight, the County will establish a mitigation monitoring program for the Project prior to inception of the project construction phase. The program will be approved by FHWA, which will track, monitor, and report the status of the environmental mitigation actions identified in this ROD in Table 7-3 and Table 7-4. Mitigation commitments will also include the stipulations from the Section 106 Programmatic Agreement (Attachment E) and the requirements identified in the Project's Biological Opinion from National Marine Fisheries Service (NMFS) (Attachment F). On a quarterly basis, the County will

submit a report describing the status of the monitoring program to FHWA. The monitoring program may, upon FHWA approval, be revised during the final design, permitting, and construction process as warranted to implement similar effective mitigation monitoring.

Table 7-3. Short-Term Mitigation Measures^{4,5}

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|--------|---|--|--|
| AQ | Reduction in air quality due to construction vehicle and equipment emissions. | <ul style="list-style-type: none"> • Based on ODOT Standard Specification, Section 290, construction contractors must follow certain control measures, which include vehicle and equipment idling limitations, designed to minimize fugitive dust. • Mitigation measures for potential temporary construction impacts normally include best management practices for dust suppression. Construction contractors are required to comply with Division 208 of Oregon Administrative Rules (OAR) 340, which addresses visible emissions and nuisance requirements. Subsection of OAR 340-208 places limits on fugitive dust that causes a nuisance or violates other regulations. Violations of the regulations can result in enforcement action and fines • Construction emissions of PM2.5 and NOx will be monitored during construction periods within the autumn and winter months (September - February) to capture worst-case events associated with stronger inversion (nighttime periods especially). If the contribution to air pollutant concentrations from diesel equipment during this time period are found to be well below the National Ambient Air Quality Standards (NAAQS) monitoring will be discontinued. If monitoring demonstrates that emissions are close to the NAAQS or exceed them, then monitoring will continue. • Adhere to clean diesel contracting rules and use electric equipment or other pollution controls when possible. | OAR 340-208, Subsection 210; ODOT Standard Specification, Section 290; City of Portland Clean Air Construction Requirements; Clean Air Act |
| CC, AQ | Increases in vehicular emissions during construction. | To reduce the impact of construction delays on traffic flow and resultant emissions, road or lane closures should be restricted to non-peak traffic periods, when possible. | N/A |

⁴ Short-term mitigation measures will be applied throughout the construction phase and will be tracked via the Project’s mitigation monitoring program.

⁵ The following are used in the Topic column: AQ = Air Quality; CC = Climate Change; CCC = Central City Concern; CR = Cultural Resources. ; DI = Displacements; EC= Economics; EQ= Equity and Environmental Justice; FL = Flooding and Hydraulics; HI = Health Impact Assessment; HZ = Hazardous Materials; LU = Land Use; NAAQS = National Ambient Air Quality Standards; NO = Noise; ODOT = Oregon Department of Transportation; PR= Parks and Recreational resources; PRM = Portland Rescue Mission; PS = Public Services; SG = Soils and Geology; SN = Social/Neighborhoods; SU = Sustainability; ST = Stormwater; TR = Transportation; UO = University of Oregon; UT = Utilities; VR = Visual Resources; VF = Vegetation, Wildlife and Fish; WW = Wetlands and Waters; 4f = Section 4(f)

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|--------------------|--|---|---|
| CR | Disturbing and/or damaging historical resources, including unreinforced masonry historic buildings, due to demolition and construction-related equipment and activities. | Refer to the Project Programmatic Agreement for mitigation measures. | Section 106 NHPA |
| CR | Disturbing and/or damaging archaeological resources due to removal/placement of bents and proposed grouting. | Refer to the Project Programmatic Agreement for mitigation measures. | Section 106 NHPA |
| CR | Disturbing and/or damaging archaeological resources due to separation of bridge from adjacent buildings. | Refer to the Project Programmatic Agreement for mitigation measures. | Section 106 NHPA |
| CR | Burnside Bridge full removal. | Refer to the Project Programmatic Agreement for mitigation measures. | Section 106 NHPA |
| DI | Temporary impacts to Pacific Fruit Company. | Prepare a schedule and plan for communicating temporary access closures. | 49 CFR Part 24 |
| DI, EC, EQ, PS, SN | Displacement of University of Oregon classroom, displacement of AMR, displacement of Portland Saturday Market Administration Offices. | <ul style="list-style-type: none"> • Prepare a schedule and plan for communicating permanent closure and information to users on new locations, as available. • Provide relocation assistance, in accordance to Uniform Relocation and Real Property Acquisition Policy Act of 1970. | 49 CFR Part 24 |
| EC, LU, PS, SN | Multiple impacts to parking and vehicular ingress/egress (City/UO; Pacific Fruit Company; Mercy Corps; etc.) | <ul style="list-style-type: none"> • As design and construction assumptions advance, identify potential opportunities to reduce property impacts and provide assistance in establishing alternate access points to buildings where access will be made more difficult (if feasible) (in accordance to Uniform Relocation and Real Property Acquisition Policy Act of 1970). • Compensate for loss of parking (where applicable and in accordance to Uniform Relocation and Real Property Acquisition Policy Act of 1970). | 49 CFR Part 24 |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|----------------------|---|---|--|
| | | <ul style="list-style-type: none"> • Provide parking in alternative locations (if eligible under the Uniform Relocation and Real Property Acquisition Policy Act of 1970). • Prepare a schedule and plan for communicating temporary access closures. • Create a construction webpage for people and businesses to access with questions and concerns regarding any temporary access impacts to businesses and measures to maintain access. | |
| EC, EQ | Disruption of Skidmore MAX station operations. | Skidmore MAX Station will be closed during construction but MAX will still operate through most of construction. Coordinate with TriMet to provide “bus bridging” or other supplemental transit services to transport passengers around the Skidmore MAX station during track closure. | N/A |
| EC, EQ | Partial pedestrian access impacts to businesses that are not displaced. | Establish alternative access points to buildings where access will be made more difficult (if feasible, in accordance to Uniform Relocation and Real Property Acquisition Policy Act of 1970). | 49 CFR Part 24 |
| EC | Temporary impacts from traffic diversion, congestion, and delay during construction. | Schedule work requiring temporary closures of various transportation facilities for periods of low traffic levels (such as at night and during weekends). | N/A |
| EQ, LU, SN, TR | Full bridge closure could create more difficult access to Central City Concern (CCC), Salvation Army and PRM by emergency responders. | <ul style="list-style-type: none"> • Explore possibilities for ambulances to access PRM from the corner of Burnside Street and NW 2nd Avenue while the bridge is closed to traffic. • Identify opportunities to avoid or reduce access impacts through design and construction refinements. Conduct ongoing coordination with service providers during project duration. Provide signage and advanced information about access and transit modifications. Prepare a schedule and plan for communicating temporary access issues. • Establish a contact office and number for CCC, Salvation Army, and PRM to contact as part of the coordination effort to identify opportunities to avoid or reduce access impacts through design and construction refinements. | 49 CFR Part 24 |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|----------------|--|---|--|
| EQ, HI | Full bridge closure lengthens bus trip and walking trip for some social services clients and will likely prevent some social services clients from being able to obtain services. | Provide free TriMet passes to social service agency clients during bridge closure. Multnomah County will coordinate with TriMet and social service agencies to provide these passes. | N/A |
| EQ, SN | PRM 1st Ave freight access restrictions. | Prepare a schedule and plan for communicating and working around temporary access closures. | N/A |
| EQ, SN, TR, HI | Full bridge closure could create more difficult client access to CCC, Salvation Army, and PRM. | <ul style="list-style-type: none"> • Identify opportunities to avoid or reduce access impacts through design and construction refinements. • Establish a working group with CCC, Salvation Army and PRM that periodically meets to discuss efforts to avoid or reduce access impacts through design and construction refinements. • Continue coordination with existing social service agencies regarding construction impacts to provide to social service agencies who provide counseling to the vulnerable populations affected by construction. Prioritize in-person outreach to potentially affected individuals to the extent practicable throughout the construction period. In-person outreach could be implemented jointly by TriMet, other agency partners, community-based organizations, and consultants. In-person communication will be supplemented by the formation of an advocacy group, webpage, or hotline to answer questions. • Provide signage and advanced information about access and transit modifications. It may be possible for ambulances to access PRM from the corner of Burnside Street and NW 2nd Avenue while the bridge is closed to traffic. • Prepare a schedule and plan for communicating temporary access issues. | 49 CFR Part 24 |
| EQ, SN | Increases distance and decreases convenience for social service clients, especially mobility-impaired, to access services (including PRM, CCC, Homeless Veterans Center, Mercy Corps). | Provide signage and advanced information about detours and closures would allow travelers to plan their trips in advance, avoid confusion, and additional delays. A safe, high-quality walking and biking detour will be supplemented with free transit passes, especially for mobility impaired persons. | N/A |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|-----------|---|--|---|
| EQ, SN | Will displace people who sleep under bridge on sidewalk and in the park. Will displace people who shelter or use park area during daytime hours. Relocating Portland Saturday Market will also remove the temporary bathrooms and trash cans that Saturday Market provides. | Continue coordination with organizations (CCC, JOIN, etc.) by providing advance notice of construction impacts to the vulnerable population they serve. | N/A |
| EQ, SN | Displacement of Night Strike. | Communicate with Night Strike in advance of construction regarding construction schedule, locations, and closures. | 49 CFR Part 24 |
| FL | Temporary base flood elevation rise. | <ul style="list-style-type: none"> • Model the potential temporary changes to the floodplain for the base flood (100-year flood) and map insurable structures affected by the temporary floodplain increase. • Conduct advanced project planning to minimize the time the temporary work bridge(s) will be in the water. Restrict placement of equipment in the floodway to only that equipment which is absolutely necessary for the purposes of the project. • Establish a project flood warning system to allow equipment to be evacuated from the site and placed outside the floodplain. | Guidance Memorandum: Temporary Encroachments into the Floodway (FEMA Region 10, Oct 2009) |
| HI, AQ | Increases in dust during construction. | <ul style="list-style-type: none"> • Install and use hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. • Provide adequate containment during sandblasting or other similar operations. • Apply approved dust abatement measures on unpaved roads, materials stockpiles, and other surfaces that can create airborne dusts. • Fully or partially enclose materials stockpiled in cases where application of water, approved chemical tackifiers, or soil stabilizers are not sufficient to prevent particulate matter from becoming airborne. • Give particular consideration to reducing potential impacts from construction dust and emissions on the residents and occupants of older buildings (such as PRM and CCC) located immediately adjacent to the construction zone on the west end. | Construction contractors are required to comply with Division 208 of Oregon Administrative Rules (OAR) 340, which addresses visible emissions and nuisance requirements. Subsection of OAR 340-208 places limits on fugitive dust that causes a nuisance or violates other regulations. Violations of the regulations can result in enforcement action and fines. The regulation provides that the following reasonable precautions be taken to avoid dust emissions (OAR 340-208, Subsection 210). |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|------------------------|--|---|---|
| | | <ul style="list-style-type: none"> Promptly remove from paved streets earth or other material that does or may become airborne. These control measures, which include vehicle and equipment idling limitations, are designed to minimize vehicle track-out and fugitive dust. Document these measures in the erosion and sediment control plan the contractor is required to submit prior to the preconstruction conference. Use water, approved chemical tackifiers, or soil stabilizers, where possible, for the control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land. When in motion, always cover open-bodied trucks transporting materials likely to become airborne. | |
| HI | Disproportionate impacts to houseless communities. | <ul style="list-style-type: none"> Engage with neighboring building owners and social service providers during the Final Design phase to determine practicable mitigation measures for anticipated noise and air quality impacts, particularly to EJ populations. Provide assistance such as transit passes to people accessing social services near the western bridgehead. | Executive Order 12898 |
| HI | Construction noise can adversely impact health. | Communicate with residents about the nature and duration of noise impacts. Comply with City of Portland noise variance process. | City of Portland Construction Noise Regulations (Code section 18.10.060) |
| HI, AQ, EQ, LU, NO, SN | Adverse health effects caused by noise, vibration, and dust. Air pollution can be a trigger for people with mental disabilities. Dust mitigation measures are especially important for people with respiratory issues. Dust, noise, and vibration may force tenants/occupants to keep windows closed and face high temps during summer, or open windows and increase exposure. | <ul style="list-style-type: none"> Engage with neighboring building owners and social service providers during the Final Design phase to determine practicable mitigation measures for anticipated noise and air quality impacts, particularly to EJ populations. Continue coordination with organizations and residents (CCC, JOIN, etc.) to understand potential impacts and identify viable impact mitigation pathways. Agency partners to also consider creating air conditioned, respite community spaces in residential buildings, especially during the warmer months. Ensure social service providers are aware of any City and/or state programs to subsidize cooling/air conditioning for low-income residences. Adopt dust control measures for demolition of buildings and the bridge. Conduct noise monitoring during construction. Comply with federal, state and local noise level rules | Executive Order 12898, City of Portland Clean Air Construction Requirements; Clean Air Act; Federal Noise Control Act; City of Portland Construction Noise Regulations (Code section 18.10.060). Ensure that all equipment complies with pertinent equipment noise standards of the US Environmental Protection Agency (EPA). |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|-----------|--|--|---|
| HI | Closure of Eastbank Esplanade and Waterfront Trail disrupts physical activity. | Minimize closure of the Eastbank Esplanade. Refer to the Final Section 4(f) Evaluation. | N/A |
| HI | Construction can disrupt social cohesion. | Mitigate impacts to special events and Portland Saturday Market by coordinating with PP&R to find a suitable location during bridge closure/construction. | N/A |
| HZ, SG | Exposure to hazardous materials during construction including asbestos. | <ul style="list-style-type: none"> • Create a site-specific contaminated media management plan that would ensure proper characterization, management, storage, disposal, and reporting of contaminated materials encountered during construction activities. • Conduct hazardous building materials survey prior to demolition. • Manage drilling activities in a manner that contaminants are not introduced into the ground and potentially to groundwater or surface water. Potential contaminants can be sourced from equipment used for excavating (drilling) or from other sources such as stormwater that is allowed to discharge into an excavation. • Establish site-control measures ensure open excavations are secure and do not pose a risk to human health or ecological health. | ODOT Oregon Standard Specifications for Construction; (WAC 296-155) & (WAC 296-62 Part I-1); Clean Water Act 33 USC 1251–1387; City of Portland BES Best Management Practices; City of Portland National Pollutant Discharge Elimination System Stormwater Discharge Permit No. 101314 |
| HZ | Potential impacts of encountering and being exposed to hazardous materials during construction including asbestos. | Create a Health and Safety Plan (HASP) to minimize exposure to hazardous materials. | OSHA |
| HZ | Impacts on resources from construction activities, including the Portland Harbor area. | Limit potential impact to natural resources including both pre-construction planning documents and implementation of construction-related BMPs. Pre-construction planning documents include the preparation of a site-specific spill prevention plan (SPCC) for hazardous materials, a site-wide contaminated media management plan (CMMP), Construction Stormwater and Erosion Control Plan, and implementing the Sediment Evaluation Framework for in-water activities. Construction BMPs will be implemented for the project as prescribed in the documents, including requirements and guidelines for spill prevention from ODOT Standard Specifications. | Spill Prevention Control and Countermeasure (SPCC) guidance (Federal and State), ODOT Oregon Standard Specifications for Construction, Sediment Evaluation Framework; Compensation and Liability Act (CERCLA); Resource Conservation and Recovery Act (RCRA); Federal Insecticide, Fungicide and Rodenticide Act; Toxic Substances Control Act (TSCA); Clean Water Act (33 USC 1251–1387) |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|------------|---|---|---|
| HZ | Potential to encounter contaminated soils, groundwater or building materials during construction. | <ul style="list-style-type: none"> Perform due diligence through Phase I Environmental Site Assessments (ESAs), and where warranted, Phase II ESAs. Conduct Hazardous Building Materials Abatement. | ASTM E 1527-21; Compensation and Liability Act (CERCLA); Resource Conservation and Recovery Act (RCRA); Federal Insecticide, Fungicide and Rodenticide Act; Toxic Substances Control Act (TSCA) |
| HZ | Pollution to the Willamette River during construction. | Employ BMPs through: Spill Plan, Construction Stormwater and Erosion Control Plan, and Sediment Evaluation Framework. | ODOT Oregon Standard Specifications for Construction, Section 280 – Erosion and Sediment Control, and Section 290 – Environmental Protection |
| LU | Removal and damage to landscaping and trees. | <ul style="list-style-type: none"> Protect and maintain street and park trees, where feasible. Prepare and adopt a mitigation planting plan and schedule, in coordination with City of Portland. Coordinate with City of Portland to provide a finished condition that matches the pre-construction condition while meeting City design and maintenance standards. | Portland City Code Chapter 11.5 |
| LU | Multiple impacts to land use and their current functions. | <ul style="list-style-type: none"> Comply with local and state land use plans and design guidelines. Comply with local land use permitting and Greenway Overlay Zone design guidelines for river resource protection. | OAR 660-015, Planning Goal 12, 5, 15. Metro Regional Transportation Plan; City of Portland 2035 Comprehensive Plan; PCC 33.440 |
| LU, PR, HI | Disruptions to public spaces commonly used for physical activity. | <ul style="list-style-type: none"> Establish and publicize safe alternate and detour routes for recreation. Maintain bike and pedestrian connections where feasible Provide permanent enhancements to bike and pedestrian routes impacted by construction. Make reasonable efforts to select a construction approach that maximizes physical activity during the construction phase. | Section 4(f) / May be a condition of a Non Park Use Permit Section 4(f) (shortest construction having least impact) |
| NO | Construction equipment noise and vibration. | <ul style="list-style-type: none"> Ensure that all equipment has sound control devices no less effective than those provided on the original equipment. No equipment shall have unmuffled exhaust. Multnomah County will obtain construction noise variances as needed. Vibration producing construction equipment shall be operated in such a manner to avoid damaging nearby sensitive structures and causing annoyance to people living or utilizing institutional lands nearby. Specifically, the construction contractor will need to identify alternative construction methods in some areas to avoid damage and annoyance threshold limits | Federal Noise Control Act; City of Portland Construction Noise Regulations (Code section 18.10.060); ORS 467 & OAR 340-035 |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|-------|----------------------------|---|--|
| | | <p>identified. Potential mitigation strategies may include implementing caisson drilling rather than pile driving and using hand tools where it is not possible to construct with heavy machinery outside of the distances identified.</p> <ul style="list-style-type: none"> • No construction shall be performed within 1,000 feet of an occupied dwelling unit on weekends, legal holidays, and between the hours of 10:00 PM and 7:00 AM on other days without the approval of Multnomah County’s Project Manager. • No pile driving, hoe ramming, or blasting operations shall be performed within 3,000 feet of any occupied dwelling unit on weekends, legal holidays, and between the hours of 10:00 PM and 7:00 AM on other days without the approval of Multnomah County’s Project Manager. • Noise from rock crushing or screening operations within 3,000 feet of any occupied dwelling shall be mitigated by strategic placement of material stockpiles between the operation and the affected dwelling or by other means approved by Multnomah County’s Project Manager. • Should specific noise complaints occur during the construction of the Project, one or more of the following noise abatement measures may be required at the contractor’s expense, as directed by the County’s Project Manager: <ul style="list-style-type: none"> ○ Shut off idling equipment. ○ Locate stationary construction equipment as far from the nearby noise-sensitive properties as possible. ○ Install temporary or portable acoustic barriers around stationary construction noise sources. ○ Notify nearby residences whenever extremely noisy work will be occurring. ○ Operate electric-powered equipment using line voltage power instead of on-site generators. ○ Reschedule construction operations to avoid periods of noise annoyance identified in the complaint. ○ Use alternative methods or equipment which produces less noise. ○ Use manually adjustable or new broadband backup alarms which can be localized and focused to the danger zone and set to the low noise setting on all construction vehicles used during nighttime hours. | |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|-------|---|---|---|
| | | <ul style="list-style-type: none"> Specifically, the contractor for the Project will be required to obtain construction noise variances from the City of Portland via their variance process. This effort will require the contractor to implement specific mitigation measures to reduce and minimize construction noise to the extent practicable. The contractor must provide a detailed construction noise control plan, which would list all the proposed construction equipment and types of construction activity. Vibration-producing construction equipment shall be operated in such a manner to avoid damaging nearby sensitive structures and causing. Follow all noise control measures in in Section 290.32 of ODOT standard specifications. | |
| NV | Navigation during construction. | <ul style="list-style-type: none"> Following issuance of the US Coast Guard Bridge Permit, and prior to the start of any work over the Willamette River, the chosen contractor will submit for review and approval of US Coast Guard District 13 a Work Plan Concurrence report to ensure the safety of mariners and the reasonable needs of navigation are maintained. | 40 CFR 1505.2(a)(3) |
| PR | Removal and damage to landscaping and hardscape from construction activities. | <ul style="list-style-type: none"> Collaborate with PP&R for hardscape design features under the bridge in Waterfront Park, potentially including decorative pavers, utility access infrastructure, etc. Coordination with City of Portland representatives would be necessary to provide a finished design of the space after construction matches existing conditions while meeting City design and maintenance standards. The Project will follow PP&R landscape design guidelines and Bureau of Development Services mitigation requirements for work within the Greenway Overlay Zones or River Overlay Zones. County will coordinate with City of Portland to provide a finished condition that matches the pre-construction condition while meeting City design and maintenance standards. | PP&R landscape design guidelines and Bureau of Development Services mitigation requirements Section 4(f) |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|------------|---|--|--|
| PR, HI, SN | The southern portion of the Japanese American Historical Plaza is within the Boundary of Potential Construction Impacts. Some elements would be demolished and reconstructed as part of the project to allow access for construction. | <ul style="list-style-type: none"> • Provide for a temporary exhibit of the Plaza to highlight the information currently provided at the memorial. This may include providing a visual tour of the Plaza in an off-site location or an online virtual tour of the Plaza. • Continue to coordinate closely with the Japanese American Museum of Oregon regarding deconstruction and reconstruction of the Plaza. Involve memorial designers and stone mason during deconstruction and reconstruction. • Carefully plan deconstruction to facilitate reassembly post (or, where necessary, provide in-kind replacement for impacted elements and features, following the bridge) construction. • Avoid and protect ornamental flowering cherry trees to the extent practicable. Involve the Japanese Consul for in-kind replacement of removed ornamental flowering and cherry trees. • Involve memorial designers and stone mason during deconstruction and in-kind reconstruction. • Establish visual barriers to screen on-ground construction zone from views within the Plaza. • Coordinate closely with the Japanese American Museum of Oregon on the formation of these and other mitigation solutions. Ensure ongoing coordination with the Japanese American Museum, in accordance to Uniform Relocation and Real Property Acquisition Policy Act of 1970. | Section 4(f), 49 CFR Part 24 |
| PR, HI, NO | Loud construction activity could impact park events such as concerts, etc. | Coordinate particularly noisy construction activity to avoid impacting park programming. | City of Portland Construction Noise Regulations (Code section 18.10.060) |
| PR, CR, HI | Burnside Skatepark closure for 4 to 8 months as a result of construction. | <ul style="list-style-type: none"> • Explore design and/or construction approaches that substantially reduce the duration of skatepark closure. • Coordinate with skatepark board on posting signs that direct visitors to alternate venues for skating and related cultural events during the closure, consulting with users on preferences prior to finalizing a plan. | Section 4(f), Section 106 |
| PR | PP&R revenue loss due to construction. | Consider and address as needed in the PP&R Non-Parks Use Permit (NPUP) development process based on actual damages and costs. | May be a condition of a Non Park Use Permit |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|------------|--|---|---|
| PR, HI, SN | Portions of Waterfront Park, Waterfront Trail and Eastbank Esplanade will be unavailable for public access and recreation use for various durations. | <ul style="list-style-type: none"> • Provide mitigation for restricted use in the form of detour routes for the Waterfront Trail and Eastbank Esplanade to ensure these north-south bike and pedestrian connections remain usable. • Provide, functional and safe bike/ped routes to those directly impacted by construction activities (i.e., those locations that are physically impacted by the contractor). • Where deemed feasible by Multnomah County, make efforts to provide permanent enhancements to bike/ped routes adjacent to areas directly impacted by construction detours (i.e., those locations that are not physically impacted by the contractor, but could reasonably be used as a method to avoid the construction direct area). • Select alternatives and options that minimize closure durations. | Section 4(f), May be a condition of a Non Park Use Permit |
| PR | Impact on maintenance access to area of Waterfront Park north of the Bridge. | Upon request, provide flagger to allow access for maintenance. | May be a condition of a Non-Park Use Permit |
| PR, LU, SN | Temporary displacement of Portland Saturday Market (PSM). | <ul style="list-style-type: none"> • Provide relocation assistance, in accordance to Uniform Relocation and Real Property Acquisition Policy Act of 1970. • Ensure ongoing coordination with PSM, in accordance to Uniform Relocation and Real Property Acquisition Policy Act of 1970. | 49 CFR Part 24, the Uniform Relocation Assistance and Real Property Acquisition Regulations for Federal and Federally Assisted Programs |
| PS | Construction impediments, detour, and/or congestion effects to emergency response vehicles and emergency response time. | Develop a pre-construction communication plan with all affected emergency response groups and other public service agencies detailing how detour and road closure information would be provided to the services. Provide detour signs. | 49 CFR Part 24, PBOT Traffic Design Manual |
| PS | Adverse effects on access to public services. | <ul style="list-style-type: none"> • Conduct detailed coordination on construction locations with fire departments, emergency responder services, school transportation services, and law enforcement. Include any temporary access restrictions to highway on-ramps and exits and to critical emergency access routes. • Provide detour signs where construction activity requires detours on routes typically used by the public to access public service locations. | PBOT Traffic Design Manual |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|------------|---|--|--|
| SG | Contamination of groundwater and Willamette River. | Implement a City of Portland Erosion, Sediment, and Pollutant Control Plan to prevent runoff with sediment or other pollutants from reaching drainage systems or the Willamette River. | Portland City Code [PCC] 10.30.020 |
| SG | Removal of existing revetment at each of the in-water piers. enable the foundation enlargement. | Existing revetment around the in-water piers will be removed and generally not replaced. Where scour holes are predicted to develop as a result of the new in-water piers, revetment (assumed to be relocated rip rap from around the piers), would be placed to minimize this impact. | National Bridge Inspection Standards |
| ST, VF | Increased sediment loading of runoff adds pollutants to stormwater runoff, Increase in turbidity/sedimentation. | <ul style="list-style-type: none"> • Prepare and implement erosion and sediment control plans that implement BMP's to prevent sediment laden water from reaching surface waters during construction until final soil stabilization and vegetation is established. • Enact erosion control measures. | City of Portland National Pollutant Discharge Elimination System Stormwater Discharge Permit No. 101314; Clean Water Act (33 USC 1251–1387); City of Portland BES Best Management Practices; Clean Water Act (33 USC 1251–1387); NMFS Biological Opinion |
| TR, EC, EQ | <p>Impacts to transit due to construction closures and detours, including impacts to the following routes:</p> <ul style="list-style-type: none"> • Burnside Street Buses 12, 19, and 20 • TriMet Max on SW 1st Ave • Streetcar on MLK and Grand | <ul style="list-style-type: none"> • Coordinate with City of Portland to make efforts to provide bus prioritization at Burnside bridgeheads and along bus detour routes. For bus detour routes over the Steel Bridge, make efforts to provide temporary bus prioritization and bus-only lanes to improve bus operations approaching and departing the Steel Bridge. • Conduct outreach and communications for service disruptions. • Coordinate with TriMet to establish a plan for TriMet to provide temporary bus stops near the construction zones due to bus stop closures on the bridge. • Coordinate with TriMet on potential for supplemental transit services for routes affected by temporary closures. • Work with the City of Portland, Metro, and TriMet during the Final Design phase to develop a Traffic Management Plan and a temporary Travel Demand Management plan and program to address resulting in Direct API diversions and congestion within the construction zone. • Schedule work requiring temporary closures of various transportation facilities for periods of low traffic levels (such as at night and during weekends). | N/A |
| TR | Impacts to transportation from traffic diversion and delay during construction. | Provide signage and advanced information about detours and closures to allow pedestrians, bicyclists, and drivers to plan their trips in advance and avoid confusion and minimize delays. | N/A |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|---------------|---|---|--|
| TR, EC, LU | Impacts from traffic diversion and delay during construction. | <ul style="list-style-type: none"> • Develop a construction approach / measures to reduce the overall extent and duration of construction noise, street closures, park closures, transit detours and crossing closure. • Increase public awareness about the project, construction schedule, and various impacts that may affect various members of the public. Provide signage and advanced information about detours and closures to allow travelers to plan their trips in advance and avoid any confusion and additional delays. Coordinate with TriMet on affected bus routes. | N/A |
| TR, HI | Construction traffic and activity can increase safety risks. | <ul style="list-style-type: none"> • Develop an action plan to address safety concerns that arise during construction. The County will coordinate with the City to determine locations that require low-cost safety countermeasures at intersections within the Direct API, along designated traffic and active transportation detour routes, on the major city street network where traffic diversion is expected, or on select neighborhood greenways adjacent to streets where a traffic detour or diversion is expected. • Safety related countermeasures at intersections could include traffic signal backplates, right-turn or left-turn traffic calming, protected left-turn phases where a left-turn lane already exists, and traffic signal phasing changes to separate pedestrians and bicyclists from turning motor vehicles. • Safety related countermeasures along active transportation detour routes could include restriping bicycle facilities, minor signal timing upgrades, left- and right-turn traffic calming, ADA compliant curb ramps, appropriate crosswalks, crossing enhancements, curb extensions, and any upgrades to ensure sidewalks are of sufficient width and in good condition and there is safe access to transit stops. • Safety related countermeasures on the major street network, major city bikeways or city bikeways where traffic diversion is expected could include signal equipment retrofits, restriping of crosswalks, minor signal timing upgrades, left- and right-turn traffic calming, and upgrades to bicycle facilities including physically protected bike lanes. • Examples of countermeasures on neighborhood greenways could include traffic diversion, traffic circles, curb extensions, and speed humps. | N/A |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|-------|---|---|---|
| TR | Impacts to vehicle traffic and freight, congestion. | <ul style="list-style-type: none"> • Provide a signed southern detour route over the Morrison Bridge and a signed northern detour route using either the Steel Bridge or the Broadway Bridge. Provide separation between traffic detour routes and bus detour routes. Designation of the northern detour route to be finalized pending coordination with construction elements of the I-5 Rose Quarter project. • Work with the City of Portland and Metro during the Final Design phase to develop a Traffic Management Plan and a temporary Travel Demand Management plan and program to address resulting in Direct API diversions and congestion within the construction zone. | N/A |
| UT | Relocation of utilities. | <ul style="list-style-type: none"> • Early in the final design phase, identify potential conflicts with utilities and provide the conflict list and notification to the utility owners, including public agencies. • Provide updated design plans and conflict lists as the Project design progresses and coordinate with the utility owners to determine the resolution of the identified conflicts. • Coordinate with utility owners to develop contingency plans for management of potential utility service disruptions during construction are accommodated. • During construction, the Project contractor should work with utilities to locate their infrastructure and coordinate construction improvements with the utility relocations that occur during construction. • During the final design phase, map the relocation sites for affected utilities and the effects of the relocation actions confirmed. • Obtain vertical and horizontal limits of key underground utilities early in the final design phase, and implement conflict avoidance actions early during construction. • Prepare relocation plans and service disruptions that are approved by affected utility providers before construction begins. • Multnomah County is required to certify that all arrangements have been made to resolve the identified utility conflicts and allow the Project improvements to proceed as identified in the construction contract. This certification is required prior to the Project bidding for construction. | <p>ODOT Oregon Utility Relocation Manual; Public Law 91-646, Title III 23 CFR 645; Oregon Revised Statute (ORS) 758.010</p> |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|-------|---|---|--|
| | | <ul style="list-style-type: none"> The utility owners will need to address conflicts identified by the County, review the plans for additional conflicts not identified by the County, and address those conflicts. For addressing the conflicts, the utility owners may need to pothole locations, provide relocation design, and construct the relocation. This responsibility also would include obtaining permits and approvals from every applicable jurisdiction and review authority. The utility owners, including public agencies, might contract through a Utility Agreement to have Multnomah County perform some or all of these responsibilities. A Utility Agreement is required to be able to reimburse a utility owner with prior rights for its reimbursable expenses. | |
| UT | Potential disturbance to system users or facilities that do not require relocation or upgrades during construction. | Perform early coordination and the use of standard construction procedures and techniques to minimize disturbance. | OAR 952 - Oregon Utility Notification Center |
| UT | Potential damage to existing TriMet utilities. | Consider protection measures that would include: <ul style="list-style-type: none"> 10-foot clearance of overhead wires 10 feet from track centerline for excavation 6-inch clearance to conduits Protect rails with rubber mats/timbers | ODOT Oregon Utility Relocation Manual |
| UT | Potential damage to CenturyLink Local and PGE access to vaults and hatches for bridge. | Consider protection measures that would include: <ul style="list-style-type: none"> 12-inch separation for CenturyLink 9-foot excavation clearance from poles for PGE | ODOT Oregon Utility Relocation Manual |
| UT | Potential damage to NW Natural large diameter lines. | Consider protection measures that would include: <ul style="list-style-type: none"> 30 inches of cover 1-foot separation Watchperson needed for excavations within 10 feet of high pressure | ODOT Oregon Utility Relocation Manual |
| VF | Hydroacoustic impacts to fish from pile driving. | Use bubble curtains; work within in-water work window; work within cofferdams. | NMFS Biological Opinion |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|-----------|--|---|--|
| VF | Construction impacts to aquatic species. | NOAA Fisheries requires fish salvage to avoid and minimize take by physically removing fish from construction areas and releasing them downstream. Fish salvage would occur to remove fish from within cofferdams. | NMFS Biological Opinion |
| VF | Removal of vegetation and wildlife habitat due to construction activities. | Complete mitigation to restore vegetated areas after construction is complete. | City of Portland Zoning Code Title 33 Planning and Zoning; NMFS Biological Opinion |
| VF | Noise disturbance may cause birds and wildlife to relocate. | Use County contract with Animal and Plant Health Inspection Service (APHIS) to exclude bird-nesting from affected locations prior to construction. | City of Portland BES Best Management Practices; Migratory Bird Treaty Act; Bald and Golden Eagle Protection Act |
| VF | Construction impacts to natural resources such as vegetation, wildlife, and aquatic species. | <p>Implement the following construction BMPs:</p> <ul style="list-style-type: none"> • ODOT Oregon Standard Specifications for Construction (2021) • ODOT 2021 Boilerplate Special Provisions • Factor the construction management plan needs into the mitigation plan. • Implement on-site riparian restoration which would include removal of invasive vegetation and revegetation with native trees and shrubs. Other on-site restoration includes revegetation in the API to replace the vegetation that was removed during construction. Implement on-site restoration as first priority to the extent possible (rather than offsite). Planting native tree species along the east bank riparian area around the bridge. | <ul style="list-style-type: none"> • ODOT Hydraulics Design Manual (2014) • City of Portland Stormwater Management Manual (2016) • Federal Aid Highway Program Programmatic User's Guide (2016) • City of Portland Protecting Nesting Birds (2018) • ODOT Erosion Control Manual (2019) • NMFS Biological Opinion City of Portland Zoning Code Title 33 Planning and Zoning • Migratory Bird Treaty Act • Marine Mammal Protection Act |
| WW, VF | Unavoidable impacts to aquatic functions. | Provide compensatory mitigation in the form of mitigation bank credits to meet the requirements and guidance provided by USACE, Oregon DSL and the City of Portland. Follow federal Final Mitigation Rule and Oregon's Aquatic Resource Mitigation Framework policy. | Clean Water Act (33 USC 1251–1387); City of Portland Zoning Code Title 33 Planning and Zoning; Oregon's Removal-Fill Law; NMFS Biological Opinion |

| Topic | How Resources are Impacted | Proposed Mitigation Measure(s) | Regulatory Requirement (as applicable) |
|------------|---|--|--|
| WW, ST, VF | Impact on waters from installation of temporary pilings, excavation of portions of the riverbed, installation of temporary cofferdams, partial demolition of the bridge substructure, and installation of permanent structure. Temporary impacts. | Prior to construction starting, complete the required approved erosion and sediment control plan. During construction implement BMPs listed in the current version of the City of Portland Erosion, Sediment, and Pollutant Control Plan to prevent runoff with sediment or other pollutants from reaching drainage systems or the Willamette River. Follow ODOT Standards Specifications for Construction and Special Provisions. | Clean Water Act (33 USC 1251–1387); City of Portland BES Best Management Practices; City of Portland National Pollutant Discharge Elimination System Stormwater Discharge Permit No. 101314; NMFS Biological Opinion |

AQ = Air Quality; CC = Climate Change; CCC = Central City Concern; CR = Cultural Resources. ; DI = Displacements; EC= Economics; EQ= Equity and Environmental Justice; FL = Flooding and Hydraulics; HI = Health Impact Assessment; HZ = Hazardous Materials; LU = Land Use; NAAQS = National Ambient Air Quality Standards; NO = Noise; NV = Navigation; ODOT = Oregon Department of Transportation; PR= Parks and Recreational resources; PRM = Portland Rescue Mission; PS = Public Services; SG = Soils and Geology; SN = Social/Neighborhoods; SU = Sustainability; ST = Stormwater; TR = Transportation; UO = University of Oregon; UT = Utilities; VR = Visual Resources; VF = Vegetation, Wildlife and Fish; WW = Wetlands and Waters; 4f = Section 4(f)

Table 7-4. Long-Term Mitigation Measures

| Topic | How Resources are Impacted | Proposed Mitigation Measure | Regulatory requirement (as applicable) |
|--------------------------------|---|---|---|
| 4f | Loss of the historic bridge. | Refer to the Final Section 4(f) document and Project Programmatic Agreement for mitigation measures. | Section 4(f) |
| CC | Demolishing the Burnside Bridge. | Make reasonable efforts to repurpose approach spans leading up to the lift to be used in another construction project or recycled. | N/A |
| CR | Loss of the historic bridge. | Refer to the Project Programmatic Agreement for mitigation measures. | Section 106 NHPA |
| CR | Disturbing and/or damaging historical resources due to separation of bridge from adjacent buildings. | Refer to the project Programmatic Agreement for mitigation measures generally for disturbing and/or damaging historical resources due to separation of the bridge from adjacent buildings. Mitigation specific to the Frigidaire Building includes: <ul style="list-style-type: none"> • Design new railing to be sensitive to Frigidaire building and as transparent as possible without compromising safety. • If cable-stayed bridge type is used, locate cables as far away from the building façade as possible, such as between the north side of the new sidewalk and the new travel lanes. | Section 106 NHPA |
| CR | Burnside Bridge full removal. | Refer to the Project Programmatic Agreement for mitigation measures. | Section 106 NHPA |
| DI, EC, EQ, PS, SN | Displacement of AMR, Saturday Market Administration Offices and others. | <ul style="list-style-type: none"> • As design and construction assumptions advance, acquire temporary easements, conduct relocations and identify potential opportunities to reduce property impacts, in accordance to Uniform Relocation and Real Property Acquisition Policy Act of 1970. • Coordinate with Multnomah County and the City of Portland to provide relocation advisory services to displacees and assist in identifying potential relocations sites for displaced businesses, in accordance to Uniform Relocation and Real Property Acquisition Policy Act of 1970. | 49 CFR Part 24 |
| EQ | Make efforts to have benefits of project construction reach low-income and minority workers, disadvantaged, small, woman, or minority-owned business enterprises. | County will coordinate with union representatives, minority contractors, pre-apprenticeship training programs, and non-profit workforce development organizations to include project labor agreement and equity focused specifications in the CM/GC contract. | Executive Order 12898 |

| Topic | How Resources are Impacted | Proposed Mitigation Measure | Regulatory requirement (as applicable) |
|--------|--|--|---|
| EQ | Potential impacts to EJ communities. | Multnomah County shall continue to engage community stakeholders, social service providers, non-profit organizations, and agency partners to identify additional environmental justice considerations and potential mitigation measures that can be achieved during final design and construction. The County will create a process for meetings to ensure that this community engagement will occur during final design and construction. The meetings will have the purpose of 1) identifying additional environmental justice considerations and 2) identifying potential mitigation measures. The meeting purpose will be communicated to the community stakeholders, social service providers, non-profit organizations, and agency partners and are anticipated to occur monthly to quarterly, as decided in coordination with community stakeholders. | 40 CFR 1506.6. Executive Order 12898 |
| FL | Increase in base flood elevation. | <ul style="list-style-type: none"> • Backfill areas of channel where existing structures have been removed to minimize flow profile impacts, energy loss, and scour. • Balance all fill placed at or below the base flood elevation with at least an equal amount of soil material removal. • Design the pier shaping to minimize energy losses. • Size the bridge pier structures to minimize increase in water surface elevation for the 100-year peak flood discharge. | Executive Order 11988; 23 CFR 650.111(c); PCC 24.50.060.D; PCC 24.50.060.F; 23 CFR 650.115; 44 CFR 60.3 |
| HI | Urban heat island effects due to increased pavement. | <ul style="list-style-type: none"> • Coordinate with City of Portland to add trees or other shade structures where feasible. Consider installing shading or designs that are conducive to future installation of shading over walkways. • Minimize large expanses of pavement, coordinate with the City of Portland to add trees or other shade structures where feasible. • Minimize removal of existing trees and vegetation. | N/A |
| HI | Long-term risks from air pollution during operation. | Make efforts to select design features that maximize distance between vehicle pollution and people walking and cycling. | N/A |
| PR, VR | Loss of street trees and trees in Waterfront Park. | Protect and maintain street and park trees where feasible. Post-construction, replace any trees removed during project construction. | PP&R landscape design guidelines and Bureau of Development Services mitigation requirements; Section 4(f), Title 11 |

| Topic | How Resources are Impacted | Proposed Mitigation Measure | Regulatory requirement (as applicable) |
|--------|--|---|--|
| ST | Increased demand to the City of Portland's Combined Sewer Overflow System. | Mitigate any increases in storm water quantity through detention using underground pipes or vaults to meet the design criteria in the current version of the City of Portland BES Sewer and Drainage Facilities Design Manual. | City of Portland BES Sewer and Drainage Facilities Design Manual |
| ST | The Project will reconstruct and create new impervious areas that will require stormwater management. | Treat runoff from any new or reconstructed impervious areas to meet the highest level of treatment required of between the City of Portland, ODOT, or NMFS requirements. | City of Portland BES Sewer and Drainage Facilities Design Manual, NMFS water quality removal requirements |
| TR | Increase in bicycle/pedestrian conflicts due to combined multi-use lane. | Provide mode-specific pavement markings on both the sidewalk and separated bike lanes to reinforce which space is for each mode and mitigate the adjacent spaces for active transportation. | N/A |
| VF, WW | Unavoidable impacts of bridge construction to the Willamette River including loss of in-stream, shallow water, and riparian habitat. | <ul style="list-style-type: none"> Make reasonable efforts to provide compensatory mitigation via on-site or off-site at mitigation bank. Make reasonable efforts to limit the increase in fill that displaces habitat via continued design refinement, and offset unavoidable impacts through the support and implementation of one of two habitat restoration projects (Linnton Mill Restoration Project; Eastbank Crescent Riverfront Project) within and along the lower Willamette River if credits at these locations are available and in coordination with permitting agencies. | ESA Section 7, City of Portland zoning title 33; Clean Water Act (33 USC 1251–1387); Rivers and Harbors Act of 1899 (33 USC 403); Oregon's Removal-Fill Law (ORS 196.795-990); Magnuson-Stevens Act; NMFS Biological Opinion |
| VR | Change in the visual character of the crossing and approaches. | <ul style="list-style-type: none"> During the final design phase, consider visual impacts when selecting the East Approach bridge type. During the final design phase, consider visual impacts when selecting materials and colors. Develop the final design details to be compatible with the existing visual character of the project environments as practicable. | Land use review |

AQ = Air Quality; CC = Climate Change; CR = Cultural Resources ; DI = Displacements; EC= Economics; EQ= Equity and Environmental Justice; FL = Flooding and Hydraulics; HI = Health Impact Assessment; HZ = Hazardous Materials; LU = Land Use; NO = Noise; PR= Parks and Recreational resources; PS = Public Services; SG = Soils and Geology; SN = Social/Neighborhoods; SU = Sustainability; ST = Stormwater; TR = Transportation; UT = Utilities; VR = Visual Resources; VF = Vegetation, Wildlife and Fish; WW = Wetlands and Waters; 4f = Section 4(f)

7.2.9 Approvals and Anticipated Permits

Concurrent with the NEPA process, the EQRB Project has performed consultation and coordination to receive pertinent required federal approvals. These include a Final Section 4(f) Analysis (Final EIS Attachment D), a Section 106 Programmatic Agreement (Final EIS Attachment E), and a Biological Opinion for Section 7 of the Endangered Species Act (Final EIS Attachment F). Additionally, the Project obtained a Section 401 Water Quality Certification from the Oregon Department of Environmental Quality in December 2021. During the Final Design phase, additional federal, state, and local permits will be required. Multnomah County and its contractors will be responsible for complying with all related commitments and regulatory permit conditions made or obtained for the Selected Alternative. Table 7-5 lists federal, state, and local permits that are anticipated to be required for the construction of the Selected Alternative.

Table 7-5. Anticipated Post-ROD Permits

| Agency | Regulation, Approval, or Permit | Date Anticipated |
|--|---|--------------------------|
| US Army Corps of Engineers | Section 404 Clean Water Act Individual Permit | Spring 2023 |
| US Army Corps of Engineers | Section 408 Permit | Spring 2023 |
| US Coast Guard | Section 9 Bridge Permit | Summer 2023 |
| Oregon Department of Environmental Quality | Section 401 Water Quality Certification | Complete (December 2021) |
| Oregon Department of Environmental Quality | Section 402 Clean Water Act National Pollutant Discharge Elimination System Program | In Final Design Phase |
| Oregon Department of State Lands | Oregon Removal-Fill Permit | Spring 2023 |
| City of Portland | Floodplain Development Permit | In Final Design Phase |
| City of Portland | Type III Greenway Goal Exception | In Final Design Phase |
| City of Portland | Type IIx River Review | In Final Design Phase |
| City of Portland | Non-Park Use Permit | In Final Design Phase |
| City of Portland | Noise Ordinance Variance | In Final Design Phase |
| City of Portland | Type II or III Conditional Use Review | In Final Design Phase |
| City of Portland | Type IV Demolition Review/Demolition Permit | In Final Design Phase |
| City of Portland | Type III Historic Resource Review | In Final Design Phase |
| City of Portland | Type II Adjustment or Type II Design Modification | In Final Design Phase |

7.3 Public and Agency Outreach

Multnomah County has conducted an extensive public outreach campaign throughout the EQRB NEPA study to ensure that public and agency input has been considered throughout the process. Below is a summary of public and agency outreach that has been conducted. More detailed information can be found in the Final EIS in Chapter 5, Summary of Public Involvement, Agency Coordination, and Comments, and in Attachments A, B, and C.

7.3.1 Agency Review and Coordination

Much of the agency coordination has occurred through the project committees and working groups described in Chapter 5, as well as through topic-specific meetings and communication with the relevant agencies. The EQRB Agency Coordination Plan outlines the fundamentals of the approach as well as the agencies and milestones.

The NEPA co-lead agencies for the EIS are FHWA, Multnomah County, and ODOT. In addition, three other federal agencies—USCG, the US Army Corps of Engineers, and National Oceanic and Atmospheric Administration National Marine Fisheries Service—accepted cooperating agency status under NEPA because of their permitting or approval roles on the Project.

Additionally, many Participating Agencies were included throughout the review process:

- City of Beaverton
- City of Gresham
- City of Portland
 - Bureau of Development Services
 - Bureau of Environmental Services
 - Bureau of Planning and Sustainability
 - Bureau of Transportation
 - Parks and Recreation
 - Water Bureau
- Clackamas County
- Metro
- TriMet
- State of Oregon
 - Department of Environmental Quality
 - Department of State Lands
 - Office of Emergency Management
 - State Marine Board
 - State Historic Preservation Office
- Portland Streetcar
- Prosper Portland
- US Fish and Wildlife Service
- US Environmental Protection Agency
- Federal Emergency Management Agency

7.3.2 Tribal Review and Coordination

ODOT and FHWA met with the Confederated Tribes of the Grand Ronde Community of Oregon, Confederated Tribes of Siletz Indians, Confederated Tribes of the Warm Springs Reservation of Oregon, Confederated Tribes of the Umatilla Indian Reservation, and Nez Perce Tribe in 2019. These meetings provided an opportunity for the tribes and agencies to discuss the alternatives proposed for the Project, progress of the cultural resource surveys, and the proposed potential effects. Additionally, the tribes were recognized as Participating Agencies for the NEPA process. Presently, no specific feedback has been received, although one tribe expressed concern that there be early archaeological investigations. The Nez Perce Tribe requested to end its consultations for the EQRB Project. The Cowlitz Tribe and the Confederated Tribes and Bands of the Yakama Nation did not respond to invitations for in-person consultation meetings in 2019.

Because of COVID-19 travel restrictions and precautions, as well as limited availability, no in-person meetings occurred with the tribes in 2020. However, in July 2020, ODOT and FHWA had telephone conference calls with the Confederated Tribes of the Warm Springs Reservation of Oregon and the Confederated Tribes of the Umatilla Indian Reservation. They also had a video conference meeting with the Confederated Tribes of the Grand Ronde Community of Oregon who expressed concerns that the project area has a high probability for archaeological resources, particularly historic archaeology. They requested that both a detailed treatment plan and an approach for identifying intact archaeological resources prior to impacts by construction be developed. They also requested an opportunity to review and comment on both the methodology and treatment plan.

The tribes were invited to the Section 106 Consulting Parties Meeting in late November 2020. The Confederated Tribes of Siletz Indians and the Confederated Tribes and Bands of the Yakama Nation attended the video conference meeting.

Five Section 106 Consulting Party meetings were held from November 2020 to August 2022. The purpose of these meetings was to discuss the project purpose and need, present the range of alternatives, explain the preferred alternative criteria, review visual simulations, and discuss mitigation measures to resolve the adverse effect on the Burnside Bridge.

Input continued to be solicited from the tribes through 2022, partly through the regular government-to-government coordination with FHWA and ODOT as well as through the Section 106 Consulting Party process.

7.3.3 Public Engagement Summary

Broad input was received encompassing a large range of perspectives during five key rounds of public engagement. Please refer to the Engagement Summary Reports for more details on the engagement activities performed and feedback received for each round of outreach. The reports are on the project [website](#).⁶

Table 7-6 categorizes the most frequent topics included in the comments received throughout the public engagement processes for the Draft EIS and SDEIS.

⁶ <https://multco.us/earthquake-ready-burnside-bridge/project-library>

Table 7-6. Public Comment Topics

| Comment Topic | Draft EIS Comments | SDEIS Comments | Total Comments |
|----------------------|---------------------------|-----------------------|-----------------------|
| Transportation | 212 | 84 | 296 |
| Built Environment | 113 | 51 | 164 |
| Natural Environment | 105 | 42 | 147 |
| EIS Process | 97 | 49 | 146 |
| Social and Economics | 43 | 20 | 63 |
| Construction | 20 | 7 | 27 |

The five rounds of public engagement are summarized below.

Round 1 Engagement – January through September 2019. Informed the public of the status of the Project and sought input on the draft evaluation criteria. Feedback received helped inform the selection of a preferred alternative and preferred traffic management options during construction. The initial round also sought to connect with and understand the perspectives of the stakeholders including organizations and neighbors located near the project area and the community members identified in the Project’s Diversity, Equity, and Inclusion (DEI) Plan. Key activities included an online open house and survey, over 50 virtual project briefings with community groups and agencies, and focus group meetings with diverse community groups including Black and African American, Native American, Vietnamese, Latinx, Chinese, Japanese, Arabic, Russian, and Ukrainian.

Round 2 Engagement – January through September 2020. The objectives of the second round were to inform the public of the status of the Project and seek feedback regarding the Recommended Preferred Bridge Alternative, the Replacement Long-span Alternative, and the recommended traffic management option of fully closing the bridge during construction without constructing a temporary bridge. It also sought to establish contact with and understand the needs and perspectives of the stakeholders including organizations and neighbors located near the project area, as well as members of communities who are historically underserved and underrepresented (as identified in the Project’s DEI Plan). Key activities included an online open house and survey provided in seven different languages, over 70 virtual project briefings with community groups and agencies, and DEI engagement activities conducted through the Project’s Community Engagement Liaisons Program.

Round 3 Engagement – December 2020 through February 2021. The round focused on gathering feedback on a range of bridge types. It also provided an opportunity to keep stakeholders and interested parties up to date and engaged with the Project, continued to build meaningful relationships, and gathered community input to inform the Project and process. Key activities included an online open house and survey (provided in seven different languages), over 60 virtual project briefings with community groups and agencies, and DEI engagement activities conducted through the Project’s Community Engagement Liaisons Program.

Round 4 Engagement – Summer through winter 2021. This round sought to share information and seek community feedback on recommended cost-saving refinements to the Preferred Alternative identified in the Draft EIS. Principal topics for community discussion focused on reducing the overall bridge width of the Draft EIS Preferred Alternative, using a refined girder structure for the west span, and using a bascule structure for the center movable span. Key activities included an online open house and survey (in seven different languages), a project webinar, discussion group meetings with

members of communities identified in the Project's DEI Plan, and over 45 virtual briefings with community organizations, agencies, and neighborhood stakeholders.

Round 5 Engagement – April 29 through June 13, 2022. The SDEIS was published; it documented the findings of the cost-saving refinements to the Preferred Alternative. The SDEIS was available for public review and comment for 45 days. The primary engagement activities included an online open house, project briefings, and an in-person hearing. The public was notified of the opportunity for comment through the project website, news release, e-newsletters, emails and social media.