



## Section 3. Avoidance Alternatives

As noted earlier, the Section 4(f) statute requires the selection of an alternative that avoids the use of Section 4(f) property if that alternative is deemed feasible and prudent.

The alternatives evaluation process conducted as part of the Sellwood Bridge Project concluded there was no feasible and prudent alternative that would address the project purpose and need without using Section 4(f) property. Consequently, each Build alternative forwarded for consideration in the Sellwood Bridge Project DEIS (Alternatives A through E) would result in a use of Section 4(f) resources. The primary reason for this finding is the presence of Section 4(f) resources on one or both sides of the Willamette River extending approximately one mile in each direction from the existing bridge location.

This section discusses the concepts to avoid the use of all Section 4(f) resources that were objectively evaluated and explains the rationale for the dismissal of each concept. The following avoidance concepts were examined:

1. No Build Alternative
2. Improve the transportation facility in a manner that addresses purpose and need without the use of Section 4(f) property
3. Build a new bridge facility at a new location without the use of Section 4(f) resource
4. Tunnel alignment

### 3.1 Avoidance Concept 1: No Build Alternative

The No Build Alternative would avoid uses of all Section 4(f) resources, but is deemed not prudent per (3)(i) and (3)(ii) under the definition of “feasible and prudent alternative” in 23 CFR 774.17.

The No Build Alternative is not prudent per (3)(i) in the 23 CFR 774.17 section noted previously because it neither addresses nor corrects the transportation purpose and need that prompted the proposed project.

- The No Build Alternative does not address the stated project purpose: “to rehabilitate or replace the Sellwood Bridge within its existing east-west corridor to provide a structurally safe bridge and connections that accommodate multi-modal mobility needs.” A No Build Alternative would leave in place a bridge that is deteriorating rapidly because of an active landslide and has been classified as functionally obsolete. It has a bridge inspection sufficiency rating of 2 (on a scale of 0 to 100) and is vulnerable to failure in the event of an earthquake (the bridge is located in a seismically active zone).
- The No Build Alternative would not address other stated project needs such as the following:
  - Existing substandard and unsafe geometric roadway conditions would not be corrected.
  - Transit service between southeast and southwest Portland in the project area would not be reestablished. (Because of imposed weight restrictions resulting from identified structural deficiencies, bus service across the existing Sellwood Bridge was eliminated in 2004.)

- Freight mobility issues associated with current load restrictions and the substandard geometrical conditions of the bridge’s west-side interchange would not be addressed.
- Safe pedestrian and bicyclist facilities across the Willamette River in the project area that would satisfy ADA standards would not be provided.

The No Build Alternative is not prudent per (3)(ii) in the 23 CFR 774.17 section noted previously because it would result in the continuation of unacceptably unsafe conditions at the Sellwood Bridge crossing.

## 3.2 Avoidance Concept 2: Improve the Transportation Facility without the Use of Section 4(f) Property

This avoidance concept would entail replacing the bridge structure with a new structure of similar dimensions inside the existing bridge footprint without widening or modifying any of the connecting ramps or the interchange at OR 43. Although this concept could potentially avoid uses of all Section 4(f) resources (if construction were conducted in such a way as to avoid a Section 4(f) use of the historic bridge and the recreational trail on the bridge), it was dismissed as not prudent per (3)(i) and (3)(ii) under the definition of “feasible and prudent alternative” in 23 CFR 774.17.

This concept is not prudent per (3)(i) in the 23 CFR 774.17 section noted previously because it would not correct the specific transportation needs that prompted the proposed project.

- This concept would not provide suitable (to standard) bicyclist and pedestrian connections to the established shared-use trail network located on both sides of the Willamette River.
- This concept would not address the substandard and unsafe roadway conditions present in the immediate vicinity of the bridge. The interchange of the bridge and OR 43 has many substandard features, including horizontal and vertical alignments that limit motorist sight distance and prohibit the ability of longer trucks to turn safely. Ramp connections also do not provide sufficient vertical clearances, sight distances, or shoulders.

This concept is not prudent per (3)(ii) in the 23 CFR 774.17 section noted previously because it would result in the continuation of unacceptably unsafe conditions in the vicinity of the Sellwood Bridge, as described in the second bullet point above.

## 3.3 Avoidance Concept 3: Build New Bridge Facility at a New Location without Use of Section 4(f) Resource

Building a new bridge facility at a new location without the use of a Section 4(f) resource is deemed not prudent according to 23 CFR 774.17 because it would not accomplish the stated purpose and need of the project. Building a new river crossing outside the Sellwood area would not meet the stated purpose of the proposed project, which is to “rehabilitate or replace the Sellwood Bridge within its existing east-west corridor...” (see Sections 1.2, 1.4, and 1.5).

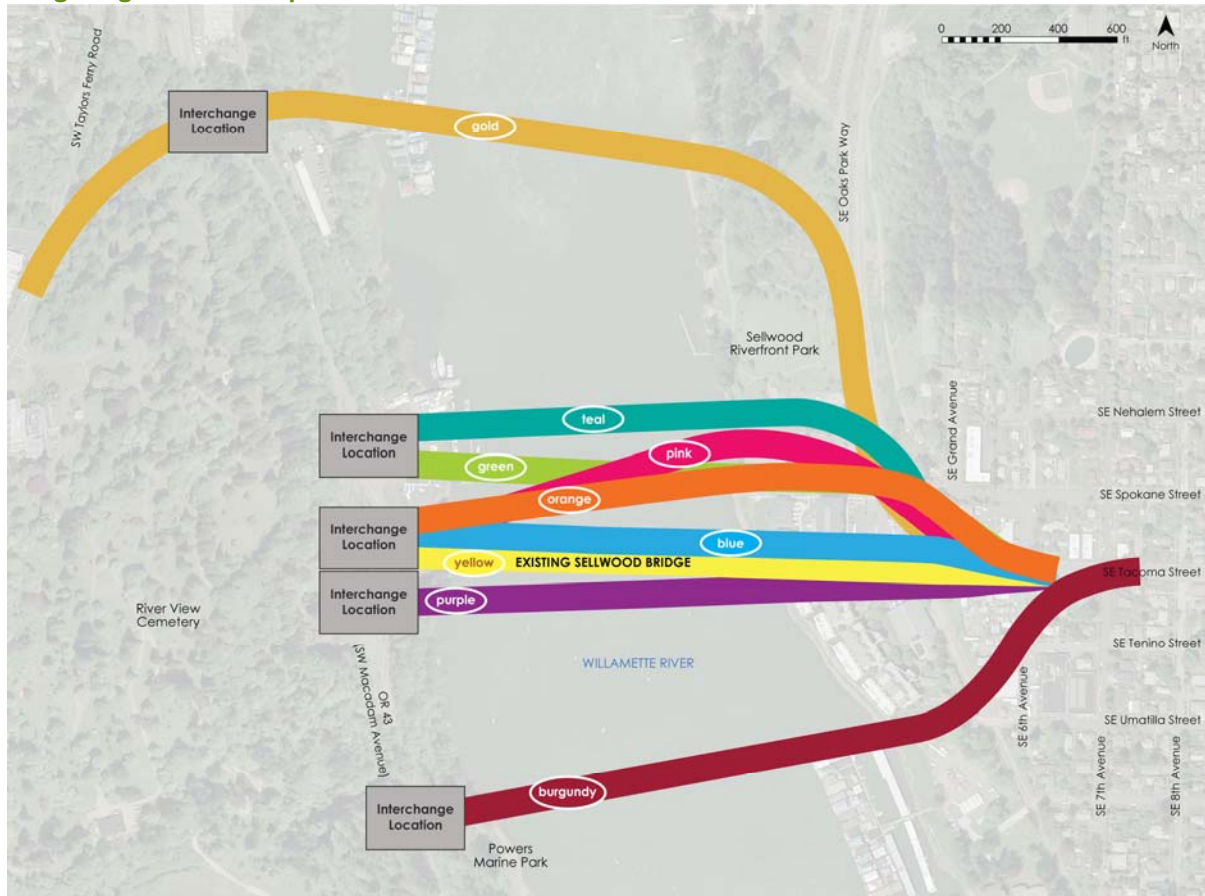
The purpose and need statement of the Sellwood Bridge Project DEIS was based on the findings of the *South Willamette River Crossing Study* (Metro, 1999), which was also approved by the City of Portland. (The summary *Findings and Recommendations Report of the South Willamette River Crossing Study* is available on the project Web site at <http://www.sellwoodbridge.org/ProjectLibrary.aspx>.) The purpose of that study was to recommend multi-modal crossing improvements to address transportation needs over a 20-year planning horizon for the Willamette River corridor between

the Ross Island Bridge in Portland and the I-205 Bridge in Oregon City. Given that the Sellwood Bridge is the only river crossing in this 10-mile corridor, plays a vital role in the city's transportation system, and is nearing the end of its usable lifespan, the study addressed the feasibility of building a new bridge at another location and assessed locations to accommodate forecasted travel demand.

The *South Willamette River Crossing Study* (Metro, 1999) originally identified 17 potential Willamette River crossing alternatives. A screening process analyzed the potential for crossing options to meet travel demand and avoid direct environmental impact to parks, water resources, schools, cemeteries, and historic sites. That screening process reduced the number of alternatives to six. After evaluating travel forecasts, examining the costs of options, and assessing the potential support for Metro's 2040 Growth Concept, the study recommended rehabilitating or replacing the Sellwood Bridge on the existing alignment as a two-lane bridge, with better service for bicyclist and pedestrian travel. The study recommended against replacing the Sellwood Bridge with a river crossing outside the vicinity of the existing Sellwood Bridge (such as in Clackamas County at north Lake Oswego, Marylhurst, or Milwaukie). The study determined that alternative crossing concepts outside the existing Sellwood Bridge alignment did not address the local needs of the Sellwood area.

As shown on Figure 3.3-1, other bridge alignments inside the immediate vicinity of the existing bridge were also considered during the Sellwood Bridge Project DEIS process.

**FIGURE 3.3-1**  
**Bridge Alignment Concepts Evaluated**



## 3.4 Avoidance Concept 4: Tunnel Alignment

The tunnel alignment concept, shown in Figure 3.4-1, would avoid uses of all Section 4(f) resources and would be feasible from an engineering perspective, but is deemed not prudent per (3)(i), (3)(ii), and (3)(iv) under the definition of “feasible and prudent alternative” in 23 CFR 774.17.

The tunnel alignment is not prudent per (3)(i) in the 23 CFR 774.17 section noted previously because it would not correct the specific transportation needs that prompted the proposed project.

- The tunnel alignment would not provide bicyclist and pedestrian connections to the established shared-use trail network located on both sides of the Willamette River.
- The tunnel alignment would not accommodate existing and future travel demands between origins and destinations served by the Sellwood Bridge. A tunnel would primarily serve through traffic, leaving local traffic with significant out-of-direction travel, particularly for neighborhood destinations.

The tunnel alignment is not prudent per (3)(ii) in the CFR 774.17 section noted previously because safety would be unacceptably compromised. The length of the tunnel and associated access points would restrict the tunnel’s usefulness for emergency vehicles, which need immediate access to local destinations.

The tunnel alignment is not prudent per (3)(iv) in the CFR 774.17 section noted previously because of the extraordinary costs of construction compared to bridge rehabilitation/ replacement options. A tunnel alignment was estimated to cost approximately 15 times more than a bridge option<sup>1</sup>.

**FIGURE 3.4-1**  
**Tunnel Alignment**



<sup>1</sup> Based on a planning-level cost estimate for a two-lane bored tunnel and a two-lane, pre-stressed girder bridge. The estimate for the tunnel was roughly \$450 million; the estimate for the bridge was roughly \$30 million.