

Section 4(f) Resources Subject to Use



Exhibit 4(f)-1

FHWA and the Federal Transit Administration have issued joint regulations to implement their responsibilities under Section 4(f). The regulations can be found at 23 CFR Part 774. These Section 4(f) regulations were comprehensively updated in March 2008 to reflect amendments to Section 4(f) that were made in August 2005 as part of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

FHWA has provided further guidance for implementing Section 4(f) in its “Section 4(f) Policy Paper,”¹ and in certain other guidance documents, available at <http://www.environment.fhwa.dot.gov/4f/index.asp>.

2 What is a “Section 4(f) resource”?

A Section 4(f) resource is a “publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance.”

Parks, Recreation Areas, and Refuges

Section 4(f) applies to parks, recreation areas, and wildlife and waterfowl refuges only if they are “significant” and are located on publicly owned lands. In most cases, the resource is presumed significant as long as the resource is located on publicly owned land.

Historic Sites

Section 4(f) applies to all “significant” historic sites, regardless of whether they are publicly or privately owned. Section 4(f) regulations further define an historic property as “a prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register. This includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization that are included in, or are eligible for inclusion in, the National Register.”

In general, a historic site is presumed to be significant for purposes of Section 4(f) if the site is listed in or determined eligible for the National Register of Historic Places (NRHP). FHWA identifies such historic sites through a consultation process that is required under a

separate law, known as Section 106 of the National Historic Preservation Act.

3 What is a “use” of a Section 4(f) resource?

Section 4(f) restricts the authority of the U.S. Department of Transportation (in this case, FHWA) to approve transportation projects that “use” land from Section 4(f) resources. As defined in Section 4(f), a “use” occurs when a project permanently incorporates land from a Section 4(f) property, even if the amount of land used is very small. In addition, a use can result from a temporary use of land within a Section 4(f) property, unless the temporary use meets specific criteria that allow an exception to a use. A use also can result from proximity effects—such as noise, visual impacts, or vibration—if those effects “substantially” impair the protected features of the property. A use that results from proximity effects is known as a “constructive use.”

4 How can FHWA approve an alternative that uses a Section 4(f) resource?

There are two different ways that FHWA can approve the use of a Section 4(f) resource for a transportation project.

Finding of “De Minimis Impact”

FHWA can approve the use of a Section 4(f) resource if it finds that the project would result in a “de minimis impact” on that resource. For historic sites, de minimis impact means that FHWA has determined, in accordance with 36 CFR Part 800, that no historic property is affected by the project or that the project will have “no adverse effect” on the historic property in question. For parks, recreation areas, and wildlife and waterfowl refuges, a de minimis impact is one that will not adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f).

Finding of “No Feasible and Prudent Avoidance Alternative” and “Alternative with the Least Overall Harm”
FHWA also can approve the use of a Section 4(f) resource by preparing a Section 4(f) evaluation. This approach is used in situations where impacts on the Section 4(f) resource are not de minimis. Unlike a de minimis impact

finding, a Section 4(f) evaluation requires consideration of alternatives to the use of the Section 4(f) resource. The Section 4(f) regulations establish a two-step process for considering alternatives:

- *Avoidance Alternatives.* First, FHWA must determine whether there is any “feasible and prudent avoidance alternative.” An avoidance alternative that is not feasible and prudent can be rejected. If there is any feasible and prudent avoidance alternative, FHWA cannot approve an alternative that uses a Section 4(f) resource.
- *Alternatives to Minimize Harm.* If feasible and prudent avoidance alternatives are not available, FHWA must consider alternatives to minimize harm resulting from the use of the Section 4(f) resource. In this situation, FHWA’s regulations require it to select the alternative that causes the “least overall harm.”

Based on this analysis of alternatives, FHWA can approve the use of a Section 4(f) resource if it finds that:

- There is no feasible and prudent alternative that completely avoids the use of any Section 4(f) properties and the alternative with the least harm to Section 4(f) resources has been selected.
- and
- The project includes all possible planning to minimize harm to all of the Section 4(f) properties.

These findings, and the supporting analysis considering the relative importance of the Section 4(f) resources, must be included in a Section 4(f) evaluation. The Section 4(f) regulations require these findings to be presented first in a draft Section 4(f) evaluation, which is provided to the U.S. Department of Interior and other agencies for comment. After considering any comments, FHWA can issue a final Section 4(f) evaluation.

¹ FHWA. 2005.

5 What factors must FHWA consider when determining whether an avoidance alternative is “feasible and prudent”?

The Section 4(f) regulations (23 CFR 774.17) list the factors that FHWA must consider when determining the prudence and feasibility of an avoidance alternative. An alternative is not *feasible* if it cannot be built as a matter of sound engineering judgment. An alternative is not *prudent* if:

- i. It compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need;
- ii. It results in unacceptable safety or operational problems;
- iii. After reasonable mitigation, it still causes:
 - a) Severe social, economic, or environmental impacts;
 - b) Severe disruption to established communities;
 - c) Severe disproportionate impacts to minority or low-income populations; or
 - d) Severe impacts to environmental resources protected under other federal statutes;
- iv. It results in additional construction, maintenance, or operational costs of an extraordinary magnitude;
- v. It causes other unique problems or unusual factors; or
- vi. It involves multiple factors in paragraphs (i) through (v) of this definition, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.

6 What factors must FHWA consider when determining which alternative causes “least overall harm”?

The regulations list specific factors that FHWA must consider when determining which alternative causes the “least overall harm.” See 23 USC 774.3(c)(1). These factors include:

- i. The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property);
- ii. The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection;
- iii. The relative significance of each Section 4(f) property;
- iv. The views of the official(s) with jurisdiction over each Section 4(f) property;
- v. The degree to which each alternative meets the purpose and need for the project;
- vi. After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and
- vii. Substantial differences in costs among the alternatives.

These factors are considered when comparing alternatives that all would use one or more Section 4(f) resources.

7 What does Section 106 consultation involve, and how does it relate to this Section 4(f) evaluation?

Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their undertakings on historic properties (including archaeological resources) that are listed in or eligible for listing in the NRHP. The NRHP is administered by the National Park Service (NPS).

Parties Involved in Section 106 Consultation

Compliance with Section 106 involves consultation between the federal action agency (for example, FHWA) and the State Historic Preservation Officer (SHPO). Other parties may also be involved in Section 106 consultation. The project sponsor (for example, WSDOT) typically plays an active role in the consultation process. The consultation also includes Indian tribes, and may include historic preservation groups, and property owners.

Steps in Section 106 Consultation

Section 106 consultation includes the following major steps:

- 1 Determining an area of potential effects;
- 2 Identifying any historic properties that are listed in or eligible for the NRHP within that area of potential effects;
- 3 Determining the project's effect on any listed or eligible historic properties; and,
- 4 If the project has an adverse effect, negotiating mitigation with the consulting parties and documenting the mitigation in a Memorandum of Agreement.

Criteria for Determining National Register Eligibility

To be listed in or eligible for inclusion in the NRHP, properties must meet one or more of the following criteria:

- *Criterion A.* The property is associated with events that have made a significant contribution to the broad patterns of our history.
- *Criterion B.* The property is associated with the lives of persons significant in our past.
- *Criterion C.* The property embodies distinctive characteristics of a type, period, or method of construction, or that represent the work of a master,

or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

- *Criterion D.* The property has yielded, or may be likely to yield, information important in prehistory or history. This criterion is generally associated with below-ground (archaeological) resources.

Relationship Between Section 106 and Section 4(f)

This Section 4(f) evaluation builds on the project's Section 106 compliance efforts. These two laws have several important linkages:

- *Identifying Historic Resources.* Agencies use the Section 106 process to identify historic properties that are listed in or eligible for the NRHP and to document the characteristics that contribute to the historic significance of those properties. Any properties that are listed or eligible for listing in the NRHP are subject to the requirements of Section 4(f).
- *Determining Adverse Effects.* The Section 106 process includes an assessment of each alternative's effects on historic properties. Specifically, Section 106 requires the federal action agency to determine whether the project would have any "adverse effects" on historic properties. These findings play two important roles in Section 4(f).
 - First, when an alternative directly uses land from a historic site, a finding of "no adverse effect" in the Section 106 process can support a finding of de minimis impact under Section 4(f).
 - Second, when an alternative avoids a use of land or physical alteration of a resource but has proximity impacts on a historic site (for example, noise impacts), a finding of "no adverse effect" under Section 106 usually results in a finding that there is "no constructive use" under Section 4(f).

- *Minimization of Harm.* The Section 106 process requires consultation to determine what can be done to minimize or mitigate the adverse effects. This consultation typically results in a binding memorandum of agreement, in which the federal action agency commits to implement measures to minimize and/or mitigate impacts. Commitments made in the Section 106 process may also satisfy the requirement under Section 4(f) to minimize harm resulting from the use of the historic property.

What is the process for parks and other Section 4(f) resources?

The Section 4(f) evaluation also builds on the overall EIS analysis and related public and agency involvement activities to identify Section 4(f) resources and evaluate potential uses. This includes the analysis of park and recreation effects, as sources of proximity effects from changes in visual, noise and vibration, or traffic conditions. WSDOT and FHWA also consult directly with the agencies with jurisdiction over Section 4(f) resources, such as the public entities that own a specific park or recreation property, helping to confirm the ownership, important characteristics, and boundaries of a resource. The consultation process also helps develop documentation records with these other jurisdictions.

DRAFT SECTION 4(F) EVALUATION

The remainder of this chapter serves as the draft Section 4(f) evaluation for this project. The evaluation is organized as follows:

1. *Agency Involvement.* This section describes the involvement of the U.S. Department of the Interior, the Washington SHPO, and other agencies in the preparation of this Section 4(f) evaluation.
2. *Purpose and Need.* This section summarizes the purpose and need of the project. The lead agencies have updated the project's purpose and need since issuing the previous Supplemental Draft EIS in 2006. For additional detail, refer to Chapter 1, Question 6 in this Supplemental Draft EIS.

3. *Alternatives Considered.* This section provides a basic description of the three alternatives that are the primary focus of this Supplemental Draft EIS and this draft Section 4(f) evaluation. For more detailed descriptions of these alternatives, refer to Chapter 3. This evaluation also briefly reconsiders alternatives that were dismissed in the 2004 Draft EIS² and 2006 Supplemental Draft EIS³ and related planning in order to assess their potential to avoid Section 4(f) properties or minimize harm.

4. *Section 4(f) Resources.* This section identifies the Section 4(f) resources that would result in a use by one or more alternatives. These resources and other Section 4(f) resources located in the project area are also described in Appendix J of the Supplemental Draft EIS.

5. *Bored Tunnel Alternative.* This section describes the impacts of the Bored Tunnel Alternative on Section 4(f) resources. For each resource, it determines whether this alternative would result in a "use" of the resource. Where there would be a use, it considers the potential for a de minimis impact finding. Where the impact would not be de minimis, it considers potential variations on this alternative to avoid or minimize harm to the resource.

6. *Cut-and-Cover Tunnel Alternative.* This section covers the findings regarding Section 4(f) uses for the Cut-and-Cover Tunnel Alternative.

7. *Elevated Structure Alternative.* This section covers the findings regarding Section 4(f) uses for the Elevated Structure Alternative.

8. *Other Alternatives.* This section considers other alternatives, including those previously dismissed in the National Environmental Policy Act (NEPA) process and related planning, to determine whether any of them have the potential to avoid or minimize harm to Section 4(f) resources, in comparison to the three alternatives that are currently being considered.

9. *Overall Comparison of Alternatives.* This section compares the three alternatives to one another to determine which

² WSDOT et al. 2004.

³ WSDOT et al. 2006.

of them causes the “least overall harm” based on the factors listed in Section 774.3(c)(1) of the Section 4(f) regulations. It identifies the Bored Tunnel Alternative as the alternative that causes the least overall harm.

10. Conclusions. This section summarizes the conclusions of the draft Section 4(f) evaluation. It finds that there is no feasible and prudent alternative that completely avoids the use of Section 4(f) property. It also finds that the Bored Tunnel Alternative is the alternative that causes “least overall harm” and also finds that the Bored Tunnel Alternative incorporates all possible planning to minimize harm to Section 4(f) resources.

1 Agencies Involved in Developing This Section 4(f) Evaluation

Section 4(f) requires consultation with the U.S. Department of the Interior and with other federal, state, and local agencies and tribes with jurisdiction over the resources that could be affected. The entire EIS analysis and its public, tribal, and agency involvement program and related documentation contribute to the Section 4(f) evaluation.

For the Alaskan Way Viaduct Replacement Project, the focus of the coordination has been on agencies with jurisdiction over the area’s many public parks and recreation facilities and its historic and cultural resources. There are no nature refuges in the project area that could be affected.

Throughout the development of the project and its EIS, representatives from FHWA, WSDOT and the Seattle Department of Transportation have coordinated with NPS and State, County, and City parks and recreation departments on public parks and recreation resources in the project area.

In conjunction with the Section 106 process, the following parties have worked together to determine historic and cultural resources and impacts:

- The SHPO at the Washington State Department of Archaeological and Historic Preservation (DAHP)
- The City of Seattle Preservation Officer
- Tribal governments: Muckleshoot Indian Tribe, Snoqualmie Indian Tribe, Suquamish Tribe, The Tulalip Tribes, Confederated Tribes and Bands of the Yakama Nation, and the Duwamish Tribe (a non-federally recognized tribe).

Park and Recreation Resources

Park and recreation facilities in the project area have been identified with the cooperation of Seattle Parks and Recreation, the Port of Seattle, and the Seattle Department of Planning and Development. Local plans and guidelines that address park and recreation policies and provide a framework for the evaluation of use were consulted in development of this report. A complete list of resources is provided in the 2004 Draft EIS, 2006 Supplemental Draft EIS, and this Supplemental Draft EIS, Appendix J. All park and recreation facilities within three to five blocks of the proposed project alternatives were identified for further analysis of their effects. Appendix J, Part B of this Supplemental Draft EIS provides further detail on the resources identified as being eligible for protection under Section 4(f).

Historic Properties

Historic properties have been identified through the Section 106 consultation process. The locations of historic properties in the project area are shown in Chapter 4, Exhibit 4-19 of this Supplemental Draft EIS. Detailed maps are also provided in Appendix J, Section 4(f) Supplemental Materials, Exhibits 1 through 3.

The lead agencies in consultation with the Section 106 consulting parties defined an area of potential effects that extends horizontally one block on each side of alternative alignments (including both surface or tunnel features), as well as around the existing viaduct structure. In the areas of potential effects they identified properties that are listed in or eligible for the NRHP; evaluated alternatives to assess

potential adverse effects; and considered measures to avoid, minimize, and mitigate adverse effects. Records of this consultation are included in the 2004 Draft EIS, Appendix L; in the 2006 Supplemental Draft EIS, Appendix L; and in this Supplemental Draft EIS, Appendix I, Section 106: Historic, Cultural, and Archaeological Resources Discipline Report.

National Park Service

NPS is a bureau within the U.S. Department of the Interior. The lead agencies (FHWA, WSDOT, and the City) consulted with NPS through project scoping, correspondence, and in meetings with NPS staff during the development of the 2004 Draft EIS and the 2006 Supplemental Draft EIS. The project will continue to coordinate with NPS as it continues toward the development of the Final EIS.

2 Purpose and Need of the Proposed Action

Since the 2006 Supplemental Draft EIS, the lead agencies have revised the project’s purpose and need to reflect changed conditions and other developments in the corridor.

The Alaskan Way Viaduct is seismically vulnerable and at the end of its useful life. To protect public safety and provide essential vehicle capacity to and through downtown Seattle, the viaduct must be replaced. Because this facility is at risk of sudden and catastrophic failure in an earthquake, FHWA, WSDOT, and the City of Seattle seek to implement a replacement as soon as possible. Moving people and goods to and through downtown Seattle is vital to maintaining local, regional, and statewide economic health. FHWA, WSDOT, and the City of Seattle have identified the following purposes and needs the project should address.

The purpose of the proposed action is to provide a replacement transportation facility that will:

- Reduce the risk of catastrophic failure in an earthquake by providing a facility that meets current seismic safety standards.

- Improve traffic safety.
- Provide capacity for automobiles, freight, and transit to efficiently move people and goods to and through downtown Seattle.
- Provide linkages to the regional transportation system and to and from downtown Seattle and the local street system.
- Avoid major disruption of traffic patterns due to loss of capacity on SR 99.
- Protect the integrity and viability of adjacent activities on the central waterfront and in downtown Seattle.

For further discussion of these needs, refer to Chapter 1 of this Supplemental Draft EIS.

3 Alternatives Considered

This draft Section 4(f) evaluation focuses on the three alternatives currently being considered for the project:

- Bored Tunnel
- Cut-and-Cover Tunnel
- Elevated Structure

This draft Section 4(f) evaluation also considers other alternatives, including those that were previously considered and dismissed, as well as other potential alternatives or design options, to assess their potential to avoid or minimize harm to Section 4(f) resources. See the discussion below, “Other Alternatives Considered to Avoid and Minimize Harm.”

Bored Tunnel Alternative

The Bored Tunnel Alternative would replace SR 99 between S. Royal Brougham Way and Roy Street (see Exhibit 2-1 in Chapter 2 of this Supplemental Draft EIS). The alternative includes constructing a tunnel that would replace the viaduct and the Battery Street Tunnel. The Bored Tunnel Alternative would construct a tunnel

beginning near S. King Street, curving away from the waterfront at S. Washington Street and aligned below First Avenue near University Street. It would travel under First Avenue to Stewart Street, going east to connect to Aurora Avenue near Mercer Street. The south portal of the tunnel would be located north of S. Royal Brougham Way and immediately west of the existing viaduct; the north portal would be located at Harrison Street and Sixth Avenue N. and join Aurora Avenue near Mercer Street. Local street improvements in the south and north portal areas would be combined with new access points to SR 99, increasing connectivity throughout the neighborhoods. As part of the development of the new facility, the existing viaduct would be demolished and the Battery Street Tunnel decommissioned, but they would remain in use for most of the construction period for the SR 99 replacement facility.

This alternative requires construction of new tunnel operations buildings at the south and north ends of the tunnel. The tunnel operations buildings would provide ventilation for the tunnel and also provide for other control systems, including fire and life safety systems that meet current standards. The structures would each be about a block in size and about 65 feet tall, with 30-foot vents extending above. The south tunnel operations building would be constructed in the block bounded by S. Charles Street, S. Dearborn Street, First Avenue S., and Alaskan Way. The north tunnel operations building would be between Harrison and Republican Streets, west of SR 99.

This alternative also would improve access to SR 99 near the south and north portals and improve SR 99’s connections with the surrounding street grids. Street improvements near the south portal would improve the Alaskan Way surface street and would add a wide multi-use path on one side of that street. The newly configured Alaskan Way surface street would have one or two new intersections connecting to one or two new cross-streets (S. Charles and/or S. Dearborn Streets, depending on the south portal area option selected).

Street improvements in the north portal area would occur generally between Denny Way and Harrison Street. Many of the streets and intersections adjacent to the north portal would be improved or reconnected. One of the primary changes is that the street grid between Denny Way and Harrison Street would be connected by restoring Aurora Avenue over the top of SR 99 and connecting John, Thomas, and Harrison Streets as cross streets. Mercer Street would become a two-way street and would be widened from Dexter Avenue N. to Fifth Avenue N. Broad Street would be filled and closed between Ninth Avenue N. and Taylor Avenue N.

For a more detailed description of the Bored Tunnel Alternative, refer to Chapter 5 of this Supplemental Draft EIS.

Cut-and-Cover Tunnel Alternative

The Cut-and-Cover Tunnel Alternative would develop a cut-and-cover or lidded tunnel to replace the Alaskan Way Viaduct (see Exhibit 2-2). The alternative would be generally along the alignment of the existing viaduct and Alaskan Way. At the south end, it would transition from the section of SR 99 replaced by the S. Holgate Street to S. King Street Viaduct Replacement Project, which is elevated, to descend to a cut-and-cover tunnel section. At the north end, the tunnel would rise to connect to the existing SR 99 Battery Street Tunnel. This would require lowering the southern end of the Battery Street Tunnel and making other safety and structural improvements through the entire length of the tunnel; however, these improvements to the Battery Street Tunnel would not upgrade the alignment to current WSDOT standards. This alternative would also provide improvements to better connect SR 99 and local streets in the area from Denny Way to Aloha Street. From Denny Way to Republican Street, SR 99 would be lowered in a retained cut with Thomas and Harrison Streets crossing over Aurora Avenue. Mercer Street would continue to cross under Aurora Avenue but would be reconfigured to a two-way street. In addition, Roy Street would be regraded to connect to SR 99.

The Cut-and-Cover Tunnel Alternative was examined in detail in the 2006 Supplemental Draft EIS and its accompanying draft Section 4(f) evaluation. The analysis of this alternative has been updated in this Supplemental Draft EIS. For a summary description of the Cut-and-Cover Tunnel Alternative, refer to Chapter 3 of this Supplemental Draft EIS; the 2006 Supplemental Draft EIS provides additional detail.

Elevated Structure Alternative

The Elevated Structure Alternative would develop a new, wider, double-level aerial structure to replace the existing Alaskan Way Viaduct (shown in Exhibit 2-2). The southern section would connect to the section of SR 99 replaced by the S. Holgate Street to S. King Street Viaduct Replacement Project. It features a double-level stacked structure through most of the central waterfront, transitioning to a side-by-side structure as it climbs the hill to the Battery Street Tunnel. The Elliott and Western Avenues ramp configuration for the Elevated Structure Alternative would be the same as the existing ramps. SR 99 would then pass over Elliott and Western Avenues. The Battery Street Tunnel would be retrofitted to provide seismic and other structural improvements through the entire length of the tunnel, including other fire and life safety improvements, and the vertical clearance would be increased to 16.5 feet by lowering the existing roadway. However, these improvements to the Battery Street Tunnel would not upgrade the alignment to current WSDOT standards. New ventilation buildings would be located above each Battery Street Tunnel portal. This alternative would also provide improvements to better connect SR 99 and local streets in the area from Denny Way to Aloha Street, similar to those described for the Cut-and-Cover Tunnel Alternative.

The Elevated Structure Alternative was also examined in detail in the 2006 Supplemental Draft EIS and its accompanying draft Section 4(f) evaluation. The analysis of this alternative has been updated in this Supplemental Draft EIS. For a more detailed description of the Elevated Structure Alternative, refer to Chapter 3 of this Supplemental Draft EIS.

4 Section 4(f) Resources

The project area includes a rich array of historic resources. The Area of Potential Effects (APE) for the Section 106 analysis contains portions of two districts that are listed in the NRHP: the Pioneer Square Historic District and the Pike Place Market Historic District. It also includes multiple properties outside of the districts that are NRHP-eligible.

The following Section 4(f) resources would have impacts that would constitute a use by one or more alternatives. All of the properties affected are historic resources that are also being reviewed under the project's Section 106 process, and WSDOT and FHWA have concluded that the impacts to these properties would result in an adverse effect to historic resources under Section 106:

- Alaskan Way Viaduct and Battery Street Tunnel
- Alaskan Way Seawall
- McGraw Kittenger Case (Blu Canary/MGM) Building
- The Western Building in the Pioneer Square Historic District
- Archaeological Site 45K1958 (Seattle Maintenance Yard Site)

The resources that are subject to a Section 4(f) use by one or more of the project alternatives are shown in Exhibit 4(f)-1 and Exhibit 4(f)-2 (see pages 224 and 225).

Exhibit 4(f)-3 and Exhibit 4(f)-4 (see pages 238 and 239) show a series of other Section 4(f) resources that have been evaluated for their potential to have a Section 4(f) use by one or more of the alternatives as a result of identified environmental effects including proximity effects or construction. WSDOT and FHWA are concluding that these effects do not constitute a use under Section 4(f), either because the effects do not constitute a Section 4(f) use, or because the use qualifies for an exception under Section 4(f) regulations. See each of the alternatives discussions that follow for more about these resources and the reasons why FHWA and WSDOT are concluding that no Section 4(f) use is anticipated.

The project area has a large number of other Section 4(f) resources, including parks resources and other historic and archaeological resources that have no use of land, no physical alternations, and minor to no proximity impacts. These properties have all been reviewed for potential use as well as proximity effects, including noise, visual or traffic effects, both long term and during construction. WSDOT and FHWA have concluded that these effects would be minor and would not substantially impair the protected features of the properties. Appendix J of the current Supplemental Draft EIS and Appendix N of the 2006 Supplemental Draft EIS document detail the Section 4(f) resources that have been evaluated for proximity effects and potential constructive uses under Section 4(f) for the project alternatives. Those appendices also document the project's lack of impacts to properties that have received funding from the federal Land and Water Conservation Fund.

Alaskan Way Viaduct and Battery Street Tunnel

The Alaskan Way Viaduct and Battery Street Tunnel have been determined eligible for listing in the NRHP as a single resource. Because they are physically separate, have different characteristics, and are affected differently by the alternatives, they are discussed here individually. The Alaskan Way Viaduct and Battery Street Tunnel are eligible for the NRHP under Criterion A for their association with bridge and tunnel building in Washington in the 1950s and under Criterion C for their type, period, materials, and methods of construction.

The Alaskan Way Viaduct is the only multi-span concrete double-level bridge in the state. It is also significant for its role in the development of the regional transportation system and of Seattle's waterfront.

The Battery Street Tunnel is significant under Criterion A because of its association with tunnel building in Washington in the 1950s and as the first tunnel designed and built by the City of Seattle Engineering Department. It is also significant under Criterion C for the type, period, materials, and methods of construction. It was designed and built to minimize disruption to street traffic and to

minimize the risk to adjacent buildings. In addition to its engineering importance, it is significant for its contribution to the development of the local transportation system, connecting SR 99, built in the 1930s, with the Alaskan Way Viaduct, completed in the 1950s.

Alaskan Way Seawall

The Alaskan Way Seawall is eligible for listing in the NRHP under Criterion A for its association with development of the central waterfront from the early 1900s to the mid 1930s. It is also significant under Criterion C for the type, period, materials, and methods of construction. It was designed and built by the Seattle Engineering Department using a unique piling and platform design.

McGraw Kittenger Case (Blu Canary/MGM) Building

This structure is at the southwest corner of Battery Street and Second Avenue, near the Battery Street Tunnel south portal. It is the most architecturally interesting and most intact of a set of buildings that were part of Seattle's local film distribution system beginning in the 1930s. The small art deco building was constructed in the 1930s for the Alexander Myers Company. From 1936 until the 1950s, it was the regional film distribution center for Metro-Goldwyn-Mayer.

Western Building

This six-story warehouse building at 619 Western Avenue, constructed in 1910, is a contributing resource to the Pioneer Square-Skid Road National Historic District (referred to here as the Pioneer Square Historic District). The reconstruction of the Pioneer Square district after the Great Fire of 1889 marked a period of economic and industrial growth as the City extended from the original heart of Seattle and into the former tidal flats of Elliott Bay. While less ornate than other warehouse buildings in the district, it remains an intact example of utilitarian warehouses constructed of reinforced concrete and featuring large multi-light windows.

As a contributing resource to the Pioneer Square Historic District) in the NRHP, the property is part of a larger historic area that comprises the district. It is also within a

local preservation district encompassing the area of Seattle's original downtown. The area began to be developed in 1852. It was largely rebuilt in a 2-year period after the devastating Great Fire of 1889 and expanded into the filled tidal flats to the west of the original downtown. The district features late nineteenth century brick and stone buildings and is one of the nation's best surviving collections of the "Chicago Style" of Romanesque Revival style urban architecture. It was established as a National Historic District in 1970. The district is generally bounded by Columbia and Cherry Streets to the north, Alaskan Way to the west, Fourth Avenue S. to the east, and to the south as far as S. Royal Brougham Way.

Washington Street Boat Landing

The Washington Street Boat Landing is both a park property and a historic resource. It has been determined eligible for listing in the NRHP under Criterion C for its design characteristics. It is on City of Seattle right-of-way at the end of S. Washington Street. The pergola is individually listed in the NRHP. The park facility consists of the pergola and an additional feature, the dock, which has included a float and ramp to connect with the pergola. This facility has been operated by the Seattle Parks and Recreation Department for public open space and includes benches as well as being operated as temporary moorage. However, the floats typically were removed in winter to avoid possible storm damage. The floats were not replaced in the summer of 2001, after the Nisqually earthquake, due to the need for replacement of pilings and because the investment was deemed unwise due to uncertainty about future plans for the viaduct and seawall.

Site 45KI958 (Seattle Maintenance Yard Site)

This historic archaeological resource site was discovered during investigations for the Bored Tunnel Alternative, and it is located near the north portal near Harrison Street. The site contains stratified remains of residential and commercial structures dating to the first half of the twentieth century. The remains are under 15 to 20 feet of fill that was placed on the site and surrounding areas in the 1920s and 1930s when Denny Hill was regraded and fill was distributed throughout the south Lake Union area.

The site has potential to yield information on residential life, commerce, and trade that is not available from written sources. The site also has an underlying peat layer, which indicates that it has the potential to contain prehistoric archaeological resources. While WSDOT and FHWA have conducted an archaeological investigation in one section of the site, allowing them to confirm the presence of remnants of structures, the depth of fill does not safely allow extensive investigation.

WSDOT and FHWA anticipate the site is NRHP-eligible under Criterion D for its potential to yield information about early development in Seattle, but its value is in the data that may be recovered and likely does not depend on being preserved in place. If this is the case, the site would meet the conditions needed for an exception to a Section 4(f) use, as established by 23 CFR 774.13(b), except that it does not yet have written agreement from the SHPO. However, since there is a limited amount of archaeological information that can be collected prior to construction, the SHPO may not be able to concur with the determination of eligibility or comment on whether the site's value requires protection in place prior to the completion of the Final EIS for this project. For this reason, construction activities within the site are being evaluated as a Section 4(f) use.

5 The Bored Tunnel Alternative

Summary

The Section 4(f) resources with a use by the Bored Tunnel Alternative are shown on Exhibit 4(f)-1 (page 224).

The Bored Tunnel Alternative would require the use of the Alaskan Way Viaduct and the Battery Street Tunnel. In addition, it has the potential to cause moderate to high levels of settlement that could severely damage the Western Building in the Pioneer Square Historic District. Through the Section 106 process, WSDOT and FHWA have determined that this would result in an adverse effect to the building and would be a Section 4(f) use. The Western Building would experience settlement that WSDOT's engineering assessment rates as "very severe,"

causing settlement that would likely damage major structural and architectural elements of the building and increasing concerns about the building's instability, given its poor existing structural condition. If settlement and structural damage cannot be reduced through preventative measures, the property may require demolition to avoid collapse.

This alternative also would require the removal of soils within two historic archaeological sites: the Dearborn South Tideland site and a current Seattle Maintenance Yard Site in the Denny Regrade area, near the north portal. For the Dearborn South Tideland site, these activities do not constitute a use because Section 4(f) regulations in 23 CFR 774.13(b) provides an exception for sites determined valuable chiefly for data recovery and that do not warrant preservation in place; concurrence from the SHPO is required and has been obtained for the Dearborn site. Therefore, avoidance options are not needed for the Dearborn site.

The Seattle Maintenance Yard Site is also potentially eligible for an exception to a use, since investigations by WSDOT and FHWA to date indicate it is likely to be valuable for data recovery without requiring preservation in place. However, the site is currently covered by extensive fill, limiting the extent of investigation that can be conducted safely prior to construction. The lead agencies in consultation with DAHP anticipate making the determination of the site's archaeological significance by further investigations conducted during construction, under the terms and conditions to be established by the project's Section 106 Memorandum of Agreement. Since a Section 4(f) use exception cannot be assumed, the Seattle Maintenance Yard Site is evaluated with a use by the Bored Tunnel Alternative.

Alaskan Way Viaduct

Would this alternative result in a use of this resource?

The Bored Tunnel Alternative is located to the east of the existing viaduct, so complete demolition is not needed to construct a replacement. However, given the existing viaduct's inherent structural limitations and high risk of

failure during a seismic event, and the fact that its functions would be replaced by the bored tunnel, it would not be prudent to leave it in place. This would involve unacceptable public safety risks. Because the demolition would occur as part of the construction project, it is assumed for purposes of this analysis that the Bored Tunnel Alternative results in the use of the viaduct.

Can this alternative be modified to avoid the use or to minimize the harm resulting from the use?

As described above, it is not prudent to avoid demolition of the Alaskan Way Viaduct.

What measures to minimize harm to this resource have been incorporated into this alternative?

Measures to minimize harm to the Alaskan Way Viaduct include documenting the historic attributes of the viaduct in accordance with Historic American Engineering Record (HAER) standards. The lead agencies have completed HAER documentation (including photography) for the viaduct and have submitted the HAER report to NPS. Additional interpretive programs are planned as further mitigation, and will be further defined in the Final EIS.

Battery Street Tunnel

Would this alternative result in a use of this resource?

The Bored Tunnel Alternative would replace the functions of the Battery Street Tunnel. If the Bored Tunnel Alternative is constructed, the Battery Street Tunnel would be decommissioned. Decommissioning means that the tunnel would be closed to traffic, sealed to public access, and filled, possibly with debris from the demolished Alaskan Way Viaduct. Therefore, this alternative would result in a use of the Battery Street Tunnel.

Can this alternative be modified to avoid the use or to minimize the harm resulting from the use?

The Bored Tunnel Alternative replaces the functions of the Battery Street Tunnel. Therefore, the Bored Tunnel Alternative in any form would render the Battery Street Tunnel unnecessary. Because it would no longer be

needed, the Battery Street Tunnel would be closed to traffic.

Keeping the tunnel open for nonvehicular use may be possible, but it was not designed for other uses and would be very costly to retrofit due to the need for major structural and seismic improvements as well as appropriate health and safety improvements that would be required for nonmotorized uses. These improvements would also involve major alterations to the tunnel and would still result in a Section 4(f) use. Further, the current proposal to fill the tunnel with debris from the Alaskan Way Viaduct would avoid the need to retrofit the tunnel to reduce the risk of collapse in a major seismic event, and it also reduces the construction-related traffic, noise, and high costs of transporting the remains of the demolished viaduct to another site.

What measures to minimize harm to this resource have been incorporated into this alternative?

Measures to minimize harm to the Battery Street Tunnel include documenting the historic attributes of the structure in accordance with HAER standards. The lead agencies have completed HAER documentation (including photography) for the tunnel as well as the viaduct and have submitted the HAER report to NPS. Additional interpretive programs are planned as further mitigation and will be further defined in the Final EIS.

Western Building

Would this alternative result in a use of this resource?

The Bored Tunnel Alternative would damage or alter the Western building during construction as a result of very severe settlement risks to the structure during tunneling. WSDOT and FHWA have concluded that major structural damage to the building is unavoidable and would result in an "adverse effect" under the Section 106 process. While the adverse effect is most directly to the Western Building, it is a contributing resource in the Pioneer Square Historic District, and therefore the effect and a potential use of a Section 4(f) property would apply to the building as part of the district.

The loose fill soils beneath the Western Building have a high potential for causing settlement damage. Engineering evaluations of the building found it to be in very poor structural condition due to settlement, deterioration of its wooden pile foundation, the effects of the Nisqually earthquake, and general deterioration over time. The building today has many large cracks in columns and large visible cracks on external walls, in most other structural and interior walls, and on the ground floor slab. Some cracks or gaps are 5 inches or more wide and extend through several floors of the building. There are visible variations in building settlement resulting in floor slopes of up to 5 percent, and there are gaps between floors and walls.

WSDOT's engineering review of the property indicates that due to these existing structural deficiencies, the building today could experience major damage or collapse with another major seismic event. The engineering review has identified an extensive series of measures that would be needed to help reinforce the foundation, strengthen soils, and underpin and stabilize the building. The measures themselves also require further design, but they could visually alter the building to a degree that it would no longer be eligible as an historic resource, such as if substantial exterior supports were required. Further, the engineering review found that there would still be a high risk that these measures would not be sufficient to prevent major structural damage or to avoid the risk of collapse of the building. Because the building has many existing structural deficiencies, the protective measures themselves could destabilize the building and cause its collapse. Collapse could also occur if a seismic event occurred before or during the time the stabilization and protection measures were in place. These issues also raise concerns for the safety of workers involved in the work necessary to stabilize the building.

The instability of the building also precludes the potential for moving the building, which could not be done with the building intact, nor would it allow methodical disassembly and reassembly of the building.

As design and construction planning progress, WSDOT will continue to examine options for addressing the Western Building. However, for public safety reasons, WSDOT would need to acquire this property within the Pioneer Square Historic District and close the building during construction. While WSDOT is still investigating measures to reinforce or otherwise protect the building, WSDOT may find that it needs to demolish the Western Building prior to construction to preserve public safety and surrounding property because other preventative measures would not effectively control the risk of collapse.

Therefore, this draft Section 4(f) evaluation identifies a use of the Western Building within the Pioneer Square Historic District, given the potential for settlement effects that could damage or impair the building to levels that may not be safe or repairable. The identified use of the resource also recognizes demolition of the Western Building may be necessary as a measure to preserve public safety and minimize risk to surrounding historic structures in the district, including the adjacent Polson Building, which is also a contributing building to the historic district.

Can this alternative be modified to avoid the use or to minimize the harm resulting from the use?

Several variations of the Bored Tunnel Alternative have been considered in an effort to avoid the Western Building. These variations include:

- Starting the tunnel farther south
- Moving the alignment to the east
- Moving the alignment to the west
- Using other construction methods
- Changing the size or type of tunnel being constructed

There are many engineering constraints and other factors that limit the opportunities to shift this alternative away from the Western Building. The tunnel alignment and its size are driven primarily by geotechnical conditions, highway and tunnel design standards, and project constraints to the north, south, east, and west. After thorough consideration, potential variations that would reduce or avoid impacts to the Western Building have

been rejected. The discussion below identifies the reasons for rejecting these variations as being either not prudent or feasible or because they do not avoid the use of Section 4(f) resources.

Shift alignment to the west. The location of the southern tunnel portal was identified to avoid other major foundations and buildings, including the existing Alaskan Way Viaduct structure immediately west. Moving the alignment to the west of the Western Building would potentially require closing the Alaskan Way Viaduct. It would also require a substantial deviation from geometric standards for the bored tunnel, affecting factors such as grades, site distance, and other features important to the safe and effective operation of the tunnel. With the earlier closure of the Alaskan Way Viaduct before a replacement facility is available, there would be higher environmental and transportation impacts throughout the downtown area during the construction period. WSDOT and FHWA have concluded that the deviation in geometric standards for the highway in the new tunnel would carry unacceptable safety risks to traffic operations. As improved safety is a key element of the project's purpose and need; and this option would fail to address critical safety factors, it is not considered prudent.

Shift the tunnel alignment to the east to avoid the Western Building. The project has extensively reviewed the potential for using other tunnel alignments to the east. This includes an earlier alignment for the bored tunnel that placed a tunnel portal near First Avenue S. and S. Charles Street. This location would have involved a Section 4(f) use of the Triangle Building, a historic property that is also part of the Pioneer Square Historic District, and it would have affected at least 11 other historic structures within the Pioneer Square Historic District. The extent of potential damage for the earlier alignment was more severe than for the current alignment. This would have constituted higher levels of Section 4(f) uses, and would not be an avoidance measure. The project also reviewed the potential for aligning the tunnel even farther east, but this area is occupied by several blocks of buildings, which include multistory structures and other

Section 4(f) resources. Construction period settlement affecting historic properties and other buildings would have remained an issue, particularly in the Pioneer Square Historic District where the tunnel alignment would have remained shallow. The net effect of shifting the tunnel alignment east would be to increase the use of Section 4(f) resources, and therefore would not be a prudent avoidance option.

Increase the depth of the tunnel. Deepening the tunnel would result in unacceptable grades to the north and south for effective connections to surface streets, making it not prudent. A greater depth also would not be likely to reduce the potential for settlement to the Western Building given soil and groundwater conditions and the building's currently weakened foundation and structural characteristics. Therefore, it is not likely to avoid the Section 4(f) use.

Use other construction methods. The project is already incorporating innovative methods for initiating the tunnel construction to help minimize construction impacts. The Cut-and-Cover Tunnel Alternative reflects the other most commonly used construction method for a major tunnel. Because it involves open excavation, this method is most appropriate where right-of-way is potentially available, such as where the Alaskan Way Viaduct is currently located. The alignment identified for the Bored Tunnel Alternative, which is designed to allow the viaduct to remain in place until the replacement is built, would not be appropriate using a cut-and-cover method. Open excavation through the Pioneer Square Historic District would carry much higher costs, traffic impacts, property impacts, historic resource and archaeological impacts, utility impacts, and long-term construction disruption than any of the other identified alternatives. For these reasons, other construction methods were not considered prudent.

Change the size or type of tunnel being constructed. During the development of the bored tunnel concept, several variations were considered, including a twin bored tunnel, each containing two lanes, as well as hybrids that could return to the surface north of Pioneer Square. However,

none of these options would avoid the underlying geotechnical and soil stabilization issues present in the area of the Western Building and the Pioneer Square Historic District. Other smaller tunnels with fewer lanes or with reduced shoulders were not considered to be prudent because they did not provide sufficient capacity to replace the existing viaduct facility or meet current safety standards, and therefore would not meet the project's purpose and need.

What measures to minimize harm to this resource have been incorporated into this alternative?

As described above, the lead agencies have performed detailed engineering assessments of the measures that the project could incorporate to help minimize harm to the Western Building in the Pioneer Square Historic District. However, because of the extraordinary extent of measures that would be required to preserve the Western Building, and the lead agencies are also examining other measures to minimize harm due to the potential loss of the Western Building as a contributing property within the Pioneer Square Historic District. These potential measures are currently being developed through Section 106 consultation with the SHPO, the City of Seattle, and others. If protective and preventative measures prove sufficient to reduce structural damage to the building, all repairs and restoration work would be done in compliance with The Secretary of Interior's Standards for Rehabilitation.

Other measures may be determined based on Section 106 measures to be identified for this resource.

Site 45KI958 (Seattle Maintenance Yard Site)

Would this alternative result in a use of this resource?

The Bored Tunnel Alternative would require excavation of this site to allow construction of the new tunnel portal and related ramps, structures, and roadways connecting to local streets and to the existing SR 99 facility to the north. WSDOT and FHWA are presuming this archaeological site will be determined eligible, and construction activity and the redevelopment of the site as a transportation facility would result in an adverse effect under Section 106. If the site is found to be eligible but its value is in the data that

may be recovered and does not depend on being preserved in place, the property would qualify for an exception for the use of these types of archaeological properties in 23 CFR 774.13(b), with documentation from the SHPO.

Can this alternative be modified to avoid the use or to minimize the harm resulting from the use?

Several variations of the Bored Tunnel Alternative's north portal access features have been considered in an effort to avoid this archaeological site. However, the variations would introduce other construction, safety, or operational factors that jeopardized the ability of the Bored Tunnel Alternative to satisfy the project's purpose and need, or they had a high potential for affecting other Section 4(f) resources or worsening overall environmental effects. As in the southern portion of the tunnel, the north tunnel alignment and the portal location are driven primarily by geotechnical conditions, highway and tunnel design standards, opportunities to connect to the local street system and existing portions of SR 99, and the need to minimize construction period effects by maintaining traffic on SR 99 during much of the construction period. The variations identified include the following:

- *Placing the portal to the south.* To avoid the archaeological site or other properties that have a similar potential to contain historic archaeological resources from early twentieth century development, the portal would need to be placed at least two blocks to the south, which would require substantially increased grades and bring the tunnel closer to the surface in other areas. The resulting geometry would affect operating conditions and create safety concerns for the tunnel. The revised vertical alignment would likely undermine or directly affect portions of the existing Battery Street Tunnel, which would likely need to be closed during construction, eliminating a primary benefit of the Bored Tunnel Alternative. Raising the vertical profile of the tunnel would also introduce a higher potential for ground settlement and other impacts

to historic properties, other structures, and major utilities.

- *Moving the portal to the east or north.* Other locations to the east or north would also be likely to contain historic archaeological resources as well as prehistoric resources, and would be unlikely to avoid a Section 4(f) use. The Seattle Maintenance Yard Site is not extensively developed, which minimizes property, displacement, or major utility impacts. The site also provides the opportunity to meet standards for roadway connections to the existing SR 99 to the north as well as other connections to local streets, while also allowing SR 99 traffic to be maintained during several years of construction. If the tunnel were moved to the east, such as to Dexter Avenue, the environmental effects to property and traffic would be substantially higher. This location would require removal of several blocks of developed property to make the necessary connections to SR 99 and improvements to Sixth Avenue and other east-west streets. Extending the portal to the north would have similarly worsened effects, with fewer opportunities to reconnect the street grid, and a similar or higher potential to encounter other archaeological sites from Seattle's early development.
- *Moving the portal to the west.* Moving the tunnel to the west would still involve construction within the Seattle Maintenance Yard Site, and would not avoid a Section 4(f) use. Several other features essential to safety and improved traffic circulation and access to and from the portal and nearby streets either could not be made or would directly conflict with a major new development complex for the Gates Foundation, as well as the Bored Tunnel Alternative's Mercer Street features.

What measures to minimize harm to this resource have been incorporated into this alternative?

Since the Seattle Maintenance Yard Site (45KI958) has not yet been determined eligible for listing in the NRHP,

additional investigations would be undertaken at this site in conjunction with construction. The results of this investigation would determine the NRHP eligibility of the site. If WSDOT determines that the site is NRHP eligible and DAHP concurs, data recovery would be undertaken to recover the information that qualifies the site for the NRHP. In concert with the investigation of 45KI958, additional archaeological investigation would also be undertaken in other areas within the footprint of the cut-and-cover trench where peat deposits and extant historic surfaces have been identified. If archaeological deposits are discovered and are determined eligible for the NRHP, data recovery would also be undertaken at these locations. The Archaeological Treatment Plan would provide the details of this investigation and potential data recovery. During construction, archaeological monitoring would be required for ground disturbing activities that would intersect the elevation of peat deposits and extant historic surfaces identified during geoarchaeological investigations. Methods for monitoring would be detailed in the Archaeological Treatment Plan.

Other Historic Buildings

Would this alternative result in a use of other resources within the Pioneer Square Historic District?

The Bored Tunnel Alternative has the potential to cause settlement resulting in severe to very severe damage to the Polson Building, and very slight damage to the I Yesler Building; both buildings are part of the Pioneer Square Historic District.

Polson Building

This six-story warehouse building at 61 Columbia Street was constructed in 1910 and is immediately north of the Western Building. The building was designed by Charles Saunders and George Lawton, who designed several other warehouses in the district as well as other notable buildings in Seattle. It is significant because it was part of the reconstruction of the Pioneer Square District in the original heart of Seattle and the former tidal flats of Elliott Bay.

The potential settlement damage to the Polson Building was rated "severe to very severe." However, this building is in good structural condition, and with protective measures prior to construction, along with high levels of monitoring during construction, would prevent major structural damage and the remaining structural and aesthetic damage could be repaired.

The tunneling activities beneath this building have the potential to cause settlement that could result in severe to very severe damage, including damage to architectural finishes and distortion of windows and doors. WSDOT and FHWA have concluded that without protective measures and additional mitigation, the structural and architectural damage to this building would result in an adverse effect to the property under Section 106. However, because this building is in better structural condition than the Western Building, preventative and protective measures are available to minimize the structural damage.

The Bored Tunnel Alternative would include a comprehensive program of protection measures for the Polson Building, beginning prior to tunnel construction. These measures would include detailed survey and photographic assessments of the building's condition before construction. Measures to protect and stabilize the building would include the use of various soil improvement and grouting techniques to improve soil strength or compensate for ground loss due to excavation. Protective measures also may include underpinning or strengthening other elements of the building's foundation to prevent settlement. Structural retrofits prior to construction could also help reduce damage during settlement.

While construction is under way and as construction is completed, the building would be monitored for any signs of damage. If damage does occur, all restoration and repair work would be done in compliance with the Secretary of the Interior's Standards for Rehabilitation. This and other potential mitigation actions will be defined through the Section 106 process, in consultation with the SHPO, and the City of Seattle Historic Preservation Office,

with participation by other interested parties such as the Pioneer Square Preservation Board and the Seattle Landmarks Preservation Board.

With these measures for protection, repair, and rehabilitation of the building, the lead agencies expect the property to retain the qualities, features, and attributes that qualify it as a Section 4(f) resource.

The building is expected to remain in use during construction, and no temporary or permanent acquisition of the building would occur. Therefore, no Section 4(f) use would result. A constructive use would also not occur, since the building would remain a contributing resource within the Pioneer Square Historic District, retaining its association to the surrounding district, and maintaining the warehouse building features and characteristics that also are part of its historic significance. Other proximity effects, including the short-term effects of construction disruption for areas surrounding the building, are also not expected to result in a substantial short- or long-term impairment to the building or remove the characteristics that qualify it as a Section 4(f) resource, and would not result in a constructive use.

Other long-term effects of the Bored Tunnel Alternative are considered to be beneficial because the Bored Tunnel Alternative would remove the existing viaduct and its visual and operating impacts to the setting and views of the Polson Building and the Pioneer Square Historic District.

1 Yesler Building

This three-story brick building in the Pioneer Square Historic District could have very slight structural damage due to ground settlement. As described for the Polson Building, the Bored Tunnel Alternative would include similar measures to prevent or minimize structural damage, including monitoring and protection during construction. Any damage to the building would be repaired and restored in compliance with the Secretary of the Interior's Standards for Rehabilitation. WSDOT and FHWA have preliminarily determined that this effect would be "not

adverse" under Section 106; therefore, no Section 4(f) use is anticipated.

Would this alternative result in a Section 4(f) use of other Historic Buildings?

No other historic buildings beyond the Pioneer Square Historic District are expected to result in a Section 4(f) use. The lead agencies have conducted a pre-construction assessment of all buildings that may be affected by tunnel settlement. Structural engineers have inspected every building within the anticipated settlement zone (approximately one block on each side of the proposed alignment).

Based on these investigations, WSDOT has identified the potential for minor levels of settlement damage (rated as slight or very slight) affecting the following historic buildings shown on Exhibit 4(f)-3 and listed in Exhibit 4(f)-4. These buildings qualify as Section 4(f) resources because they are on or determined eligible for the NRHP. In conjunction with the Section 106 process, WSDOT and FHWA have preliminarily determined that the effects to these buildings would be "not adverse", and that no Section 4(f) use would occur.

- Maritime Building – 911 Western Avenue
- Federal Building – 901 First Avenue
- National Building – 1000 Western Avenue
- Alexis Hotel/Globe Building – 1001 First Avenue
- Arlington South/Beebe Building – 1015 First Avenue
- Arlington North/Hotel Cecil – 1015 First Avenue
- Grand Pacific Hotel – 1115 First Avenue
- Colonial Hotel – 1123 First Avenue
- Two Bells Tavern – 2313 Fourth Avenue
- Fire Station No. 2 – 2334 Fourth Avenue
- Seattle Housing Authority – 120 Sixth Avenue N.

As described for the Polson Building and the 1 Yesler Building, the Bored Tunnel Alternative would include comprehensive protection measures to ensure that these buildings do not incur permanent damage from construction of the bored tunnel.

All restoration and repair work in these buildings will comply with the Secretary of the Interior's Standards for Rehabilitation, which would avoid impacts due to alteration of each building's historic attributes. Through the Section 106 process, the actions to protect and repair these properties will be further developed through consultation and agreements with the SHPO, the City of Seattle Historic Preservation Officer, with participation by other interested parties such as the Seattle Landmarks Preservation Board.

The Bored Tunnel Alternative would not involve the permanent incorporation of land from these properties, and protection and repair activities would not change the ownership of the land. If the SHPO concurs with the "not adverse" determinations proposed by the lead agencies, a Section 4(f) use of these properties would not occur. SHPO concurrence with a Section 106 "not adverse" determination would also help support a finding that protection and restoration efforts for these properties meet requirements for a temporary occupancy exceptions to a use, as provided under 23 CFR 774.13(d). SHPO, as the official with jurisdiction over these Section 4(f) resources, must agree in writing that the effects are minor and do not temporarily or permanently affect the historic characteristics of the buildings. FHWA and WSDOT also anticipate that the protection and repair activities for the buildings would be temporary and less than the time needed for the overall project construction.

The properties with potential settlement effects listed in Exhibit 4(f)-3 were evaluated for potential constructive use as a result of construction effects or other project effects. However, the historic attributes of all of the properties would be maintained given commitments to protect the buildings during construction and to repair potential damage consistent with the Secretary of the Interior's Standards for Rehabilitation. Therefore, no constructive use is anticipated for the properties in Exhibit 4(f)-3 with effects that are anticipated to be determined "not adverse" under Section 106, as well as the larger set of historic resources that WSDOT and FWHA have determined would have "no effect" under the Bored Tunnel Alternative.

Resources Evaluated for Potential Constructive Use

Elliott Bay

Two Bells Bar & Grill

Seattle Housing Authority

Fire Station #2

Seattle Housing Authority

Fire Station #2

Polson Building

1 Yesler Building

Polson Building

Federal Building

Alexis Hotel (Globe)

Arlington North (Hotel Cecil)

Arlington South (Beebe Building)

Colonial Grand Pacific (Colonial)

Colonial Grand Pacific (Grand Pacific)

Alexis Hotel (Globe)

Arlington North (Hotel Cecil)

Arlington South (Beebe Building)

Colonial Grand Pacific (Colonial, left, Grand Pacific, right)

* Constructive use determinations have not been made. FHWA will make determinations in consultation with Headquarters office.

Exhibit 4(f)-3

Additional details on each property are provided in Appendix J, Section 4(f) Supplemental Materials.

Archaeological Resources Affected During Construction

One archaeological property within the APE has been identified as having the potential to be disturbed during construction of the Bored Tunnel Alternative.

Dearborn South Tideland Site

The Dearborn South Tideland Site is a historic archeological resource that contains foundations, structural, and other materials from commercial and industrial development that occurred between 1895 and 1910 on filled tidelands. FHWA and WSDOT have determined that the sites is considered eligible under Criterion D for its potential to yield information about early development in Seattle, but its value is in the data that may be recovered and does not depend on being preserved in place. Section 4(f) regulations provide an exception for the use of these types of archaeological properties in 23 CFR 774.13(b), with documentation from the SHPO.

The Bored Tunnel Alternative would require removal of soils from the Dearborn South Tideland Site, but this site is valuable chiefly for data recovery and does not warrant preservation in place, and the SHPO has concurred with this finding. Therefore, under FHWA’s Section 4(f) regulations, it is exempt from Section 4(f), and there is no requirement to consider avoidance alternatives and incorporate all possible planning to minimize harm. The project is still developing mitigation measures for the Dearborn South Tideland Site. Mitigation measures will be defined in more detail in consultation with the SHPO through the Section 106 process, resulting in a memorandum of agreement that would be signed prior to the completion of the Final EIS. The likely mitigation measures would include a data recovery program, which would be undertaken prior to construction.

Other Archaeological Sites

Additional sub-surface exploration would be undertaken in areas identified as highly sensitive for archaeological

Exhibit 4(f)-4

Resources Evaluated for Use and Found to Be Not Subject to Use Under Section 4(f)

Name (Historic Name) Address	Historic Status	Key Characteristics	Potential Effect	Proposed Protection and Impact Minimization Actions	Section 106 Effects Determination	Section 4(f) Evaluation Results*
1 Yesler Way	Pioneer Square Historic District (contributing building)	Three-story brick-clad building constructed in 1911 as a hotel. Significant for its part in the reconstruction of the Pioneer Square Historic District (Criterion A) and for the building type and characteristics (Criterion C).	Very Slight Building damage due to ground settlement	Level 3 Monitoring, Possible compensation grouting.	Not adverse	No use. No constructive use anticipated.
Polson Building 61 Columbia Street	Pioneer Square Historic District (contributing building)	Six-story warehouse building, constructed in 1910. Significant for its part in the reconstruction of the Pioneer Square Historic District (Criterion A) and for the building type and characteristics (Criterion C).	Severe to Very Severe building damage due to ground settlement	Level 3 Monitoring, Compensation grouting, Foundation strengthening.	Adverse	No use. No constructive use anticipated.
Maritime Building 911 Western Avenue	Eligible for National Register	Built in 1910. Largely intact example of early 20th century warehouses. Significant under Criterion A as a work by prominent Seattle architect (Houghton) and engineers (Stone and Webster), and Criterion C, for the warehouse building type and characteristics.	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
Federal Building 901 First Avenue	Listed in the National Register	Completed in 1933. 7- and 8- story Art Deco brick and terra cotta building. Significant for Criterion A, as the first Seattle building designed for federal offices, and for Criterion C, for building type and characteristics.	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
National Building 1000 Western Avenue	Listed in the National Register	Completed in 1904. A 6-story brick building designed for the Northern Pacific Railroad. Significant under Criterion A for its role in Seattle’s development, and for Criterion C for building type and characteristics.	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
Alexis Hotel (Globe) 1001 First Avenue	Listed in the National Register	Part of the “First Avenue” group developed as a block. Significant under Criterion A as a work by noted architect (Umbrecht) and as part of Seattle development after the Great Fire, and for Criterion C, for building type and characteristics.	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
Arlington South (Beebe Building) 1015 First Avenue	Listed in the National Register	Developed in 1901. Part of the “First Avenue” group developed as a block. Significant under Criterion A as a work by noted architect (Umbrecht) and as part of Seattle development after the Great Fire, and for Criterion C, for building type and characteristics.	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
Arlington North (Hotel Cecil) 1015 First Avenue	Listed in the National Register	Completed in 1904. Part of the “First Avenue” group developed as a block. Significant under Criterion A as a work by noted architect (Umbrecht) and as part of Seattle development after the Great Fire, and for Criterion C, for building type and characteristics.	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
Colonial Grand Pacific (Grand Pacific) 1119 First Avenue	Listed in the National Register	Designed in 1901. Part of the “First Avenue” group, significant under Criterion A as a work by noted architect (Umbrecht) and as part of Seattle development, and for Criterion C, for building type and characteristics.	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
Colonial Grand Pacific (Colonial) 1123 First Avenue	Listed in the National Register	Part of the “First Avenue” group, significant under Criterion A as a work by noted architect (Umbrecht) and as part of Seattle development, and for Criterion C, for building type and characteristics.	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
Two Bells Bar & Grill 2313 Fourth Avenue	Eligible for National Register	Designed in 1923, small commercial building eligible for listing in the Listed in the National Register HP under Criterion C as a Tudor-inspired small commercial building, designed by noted local architect (Stoddard).	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
Fire Station #2 2334 Fourth Avenue	Eligible for National Register	Built in 1920. The City’s oldest fire station still in use. Significant under Criterion A for its association with the city’s development and its fire department, and under Criterion C as an example of finely detailed industrial architecture and a work by Seattle’s most prominent municipal architect (Huntington).	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.
Seattle Housing Authority 120 Sixth Avenue N	Eligible for National Register	Constructed in 1954. Eligible for listing in the Listed in the NRHP under Criterion C as an example of Modern office building design of the 1950s. Originally known as the Northwestern Mutual Life building.	Slight building damage due to ground settlement	Level 3 Monitoring, Compensation grouting.	Not adverse	No use. No constructive use anticipated.

deposits prior to construction. The construction schedule would be designed to accommodate evaluation and mitigation of significant archaeological sites found during construction in areas inaccessible for examination prior to construction. Construction would proceed in compliance with a memorandum of agreement developed to guide internal WSDOT notification protocols and consultation with the SHPO, the tribes, and consulting parties upon discovery of archaeological material or human remains. All of these measures would meet Section 106 requirements of the Memorandum of Agreement and would be explicitly outlined in the Historic Properties Treatment Plan developed for the project.

6 The Cut-and-Cover Tunnel Alternative

Summary

The Cut-and-Cover Tunnel Alternative would require the use of the Alaskan Way Viaduct, the Battery Street Tunnel, the Alaskan Way Seawall, the McGraw Kittering Case Building, and the Washington Street Boat Landing.

Alaskan Way Viaduct

Would this alternative result in a use of this resource?

The Cut-and-Cover Tunnel Alternative is located directly on the existing location of the Alaskan Way Viaduct. Therefore, it would result in a use of the viaduct.

Can this alternative be modified to avoid the use or minimize the harm resulting from the use?

Construction of this alternative requires removal of the viaduct. The alternative cannot be modified to avoid the use of this resource.

What planning to minimize harm has been incorporated into the project?

Minimization of harm for this alternative would be the same as with the Bored Tunnel Alternative. As described for the Bored Tunnel Alternative, the measures to minimize harm would include documenting the viaduct in accordance with HAER standards.

Battery Street Tunnel

Would this alternative result in a use of this resource?

The Cut-and-Cover Tunnel Alternative would include substantial modification of the Battery Street Tunnel to meet seismic design criteria and improve safety. These improvements would involve the removal of existing historically significant features of the tunnel, including the tiled walls. Therefore, this alternative would result in a use of the Battery Street Tunnel.

Can this alternative be modified to avoid the use or to minimize the harm resulting from the use?

The alternative requires the continued use of the Battery Street Tunnel to connect to the termini of the project. Continued use of the Battery Street Tunnel is only possible if the necessary upgrades are made so that the tunnel meets current safety standards. Therefore, if this alternative is implemented, it is not possible to avoid upgrades that alter the existing features of the Battery Street Tunnel.

What measures to minimize harm to this resource have been incorporated into this alternative?

The same historic documentation measures used for the Bored Tunnel Alternative are included in this alternative.

Alaskan Way Seawall

Would this alternative result in a use of this resource?

The Cut-and-Cover Tunnel Alternative would replace the seawall from S. Washington Street up to Broad Street. Between S. Washington Street and Union Street, the existing seawall would be replaced by the outer wall of the tunnel. From Union Street to Broad Street, the seawall would be rebuilt by improving the soils and replacing the existing seawall in most locations. Therefore, this alternative would result in a use of the seawall.

Can this alternative be modified to avoid the use or minimize the harm resulting from the use?

Construction of this alternative requires replacement of the seawall. The alternative cannot be modified to avoid the use of the seawall.

McGraw Kittering Case (Blu Canary/MGM) Building

Would this alternative result in a use of this resource?

The Cut-and-Cover Tunnel Alternative would need to excavate under the building to improve the Battery Street Tunnel. This would require braces and supports for the edge of the building to support it during construction. This was determined an “adverse effect” through the Section 106 consultation process, and therefore was considered a Section 4(f) use in the 2006 Supplemental Draft EIS Appendix N, Part A.

Can this alternative be modified to avoid the use or minimize the harm resulting from the use?

Other design options, such as not widening a curve at the Battery Street Tunnel portal, have been considered but would not improve existing safety concerns and therefore would not satisfy the project’s purpose and need. Further, the walls of the Battery Street Tunnel are structurally deficient and must be replaced. This cannot be accomplished without an adverse effect to this building.

What measures to minimize harm to this resource have been incorporated into this alternative?

The project would include measures to protect the building during construction and to restore or repair any possible damage, consistent with the Secretary of the Interior’s Standards for Rehabilitation. These measures would ensure that alterations to the building do not permanently affect its historic significance or its long-term economic viability and maintenance. Therefore, a Section 4(f) use could be avoided if acquisition of the building is not needed during construction and the “not adverse” determination under Section 106 was accompanied by measures that would preserve the characteristics that qualify the building as eligible for the NRHP. However, the lead agencies have not yet determined if occupation of the building can be maintained during construction; if it cannot, an acquisition would be necessary and a Section 4(f) use would still occur.

Washington Street Boat Landing***Would this alternative result in a use of this resource?***

The Cut-and-Cover Tunnel Alternative would affect the Washington Street Boat Landing pergola, which is also a historic resource. Construction of this alternative would displace the pergola, and it would then be relocated to a nearby site at the foot of S. Washington Street. Additional discussion of this alternative's effect on this site was included in the 2006 Supplemental Draft EIS Appendix N, Part A. Therefore, this alternative would result in a use of the Washington Street Boat Landing park.

Can this alternative be modified to avoid the use or minimize the harm resulting from the use?

The reconstruction of the seawall coupled with the development of the cut-and-cover tunnel involves major construction within a large linear area both along the shore and immediately offshore. No modifications have been identified that would avoid the temporary relocation of the pergola.

What measures to minimize harm to this resource have been incorporated into this alternative?

The relocation of the pergola and the boat landing provides protection during construction and includes restoration of the historic pergola, consistent with the Secretary of the Interior's Standards for Rehabilitation. The boat landing would also be restored to allow its return to public use.

7 The Elevated Structure Alternative**Summary**

The Elevated Structure Alternative would require the use of the Alaskan Way Viaduct and Battery Street Tunnel, the Alaskan Way Seawall, the McGraw Kittering Case Building, and the Washington Street Boat Landing. The uses are substantially identical to the uses resulting from the Cut-and-Cover Tunnel Alternative, because the Elevated Structure Alternative would be in the same location as the existing viaduct, requiring its removal, and it also would require replacing the seawall to provide support for the

soils surrounding the foundation of the new elevated structure.

8 Other Alternatives Considered to Avoid and Minimize Harm

WSDOT began the planning and alternatives evaluation process for the replacement of the Alaskan Way Viaduct in 2001. Nearly 100 different approaches to the project have been considered since that time, covering six groups of improvements, including improvements to the viaduct, to the Battery Street Tunnel, to the seawall, to roadways, and for multimodal systems. These formed the basis for five alternatives that were considered in the 2004 Draft EIS, in addition to a No Build Alternative:

- Rebuild
- Aerial
- Surface
- Tunnel
- Bypass Tunnel

In preparing the current Supplemental Draft EIS, the lead agencies updated and confirmed their findings, resulting in the removal of alternatives considered prior to the 2006 Supplemental Draft EIS.⁴ Following a public vote in 2007, which rejected both elevated and cut-and-cover tunnel replacements of the viaduct, in 2008 the lead agencies conducted the Partnership Process, a public evaluation of scenarios that took a systems-level approach to SR 99 replacement solutions.

Through the Partnership Process, three hybrid scenarios were considered, each incorporating an element with the potential to address the need for an SR 99 replacement, supported by other projects and strategies at the system level:

- I-5, Surface, and Transit Hybrid
- Elevated Bypass Hybrid
- Twin Bored Tunnel/Single Bored Tunnel Hybrid

In the following sections, the Section 4(f) evaluation briefly summarizes the primary reasons that other

alternatives, including potential new alternatives or variations, as well as alternatives no longer being considered in the current EIS process, do not constitute prudent or feasible avoidance alternatives to Section 4(f) uses, or because they do not represent an opportunity to further minimize harm compared to the existing EIS alternatives.

No Build Alternative

Under the No Build Alternative, there would be no construction project to replace the existing Alaskan Way Viaduct within the termini of this project. Nonetheless, for safety reasons, the Alaskan Way Viaduct would need to be closed and eventually removed; the Alaskan Way Seawall would need to be repaired or replaced; the Battery Street Tunnel would require safety upgrades; and the pergola at the Washington Street Boat Landing would likely need to be moved as part of the repair or replacement of the seawall. Therefore, No Build would not be an avoidance alternative because there would still be impacts to these Section 4(f) resources even if FHWA does not proceed with a federally funded transportation project involving replacement of the existing Alaskan Way Viaduct.

In addition, the uncertainty of when the SR 99 closure would be needed would make this alternative imprudent because it would hamper the lead agencies' ability to provide for an orderly program to preserve public safety and replace capacity or develop and implement programs to minimize construction and demolition period impacts. This alternative would leave SR 99 vulnerable to seismic events for an undetermined amount of time, with continued public safety concerns as well as a high potential for major transportation, community, and other environmental impacts.

Rebuild Alternative

The Rebuild Alternative (considered in the 2004 Draft EIS) proposed replacing the viaduct with a structure similar to what is there today; it did not include safety-related alterations to the Battery Street Tunnel. This alternative was refined into the current Elevated Structure Alternative. It did not avoid uses of Section 4(f) resources,

⁴ Parametrix. 2010.

including the Alaskan Way Viaduct, the Alaskan Way Seawall, and the Washington Street Boat Landing. This alternative was also eliminated from consideration for feasibility reasons because it did not provide the ability to meet WSDOT design standards, which are essential to achieving the safety and capacity improvements needed by the project, and it had higher construction period and long-term impacts than other alternatives. FHWA and WSDOT have concluded that it does not constitute a prudent and feasible Section 4(f) avoidance alternative.

Surface Alternative

The Surface Street Alternative would replace the viaduct with an at-grade roadway, which would have three lanes in each direction between Yesler Way and Pike Street, and two lanes in each direction north of Pike Street. The Battery Street Tunnel was to be improved with modernized safety and operational features, and there would be improvements to surface streets in the South Lake Union and Seattle Center areas.

The 2004 Draft EIS found that while the surface street alternative offered cost advantages and allowed the visual reconnection between the waterfront and downtown, it had the worst congestion impacts of any of the alternatives considered. It also would have required the removal of the viaduct and modifications to the Battery Street Tunnel, both of which are Section 4(f) resources, and therefore would not provide a Section 4(f) avoidance alternative. It was subsequently dropped from further consideration because of these factors. In addition, the Battery Street Tunnel's design deficiencies would not be improved, the alternative would lower capacity in the transportation system, it would not improve safety conditions in the tunnel, and it had higher construction period and related environmental impacts. All of these factors have led FWHA and WSDOT to conclude that the Surface Alternative does not constitute an alternative to avoid Section 4(f) use, and it also would not provide a "least harm" alternative compared to the overall effects of the three alternatives currently considered in this Supplemental Draft EIS.

Tunnel and Bypass Tunnel Alternatives

This set of alternatives proposed replacing the viaduct with a tunnel, and they have been modified to result in the Cut-and-Cover Tunnel Alternative that is still under consideration. As with the current Cut-and-Cover Tunnel Alternative, these alternatives do not avoid the use of Section 4(f) properties, with uses including the Alaskan Way Viaduct, the Alaskan Way Seawall, and the Washington Street Boat Landing. These earlier alternatives were removed from further consideration by the project because they were superseded by the Cut-and-Cover Tunnel Alternative, which added measures to address Battery Street Tunnel safety and design deficiencies.

Partnership Process Scenarios

I-5, Surface, and Transit Hybrid

This scenario would replace SR 99 with a pair of northbound and southbound one-way streets, modifying Western Avenue and Alaskan Way, coupled with additional transit investments serving downtown along with a program of I-5 improvements to improve operations. This scenario was not advanced as a project alternative because it did not address Battery Street Tunnel design deficiencies, it reduced transportation capacity and mobility, it increased travel times, and it caused several years of construction period impacts, particularly to transportation when no replacement to the loss of SR 99 capacity would be available. It also did not avoid the use of Section 4(f) resources.

Elevated Bypass Hybrid

This scenario would replace SR 99 with two side-by-side elevated roadways along the waterfront, coupled with improvements to I-5 and additional transit investments serving downtown. This scenario was not advanced as a project alternative because it would still involve the use of Section 4(f) resources; it would carry similar noise, visual, and barrier impacts as the existing viaduct; it did not address design deficiencies for the Battery Street Tunnel that are critical to the improved safety conditions identified in the project's purpose and need; it increased travel times; and it caused several years of high construction period impacts because SR 99 would need to

be removed before the replacement structures could be built.

Twin Bored Tunnel/Single Bored Tunnel Hybrid

This scenario would replace SR 99 with a bored tunnel and included additional transit investments through downtown. It was adapted to become the Bored Tunnel Alternative currently being evaluated in this Supplemental Draft EIS. It would not represent a Section 4(f) avoidance option and it carried similar environmental consequences as the current Bored Tunnel Alternative.

Conclusion

For the reasons given above, there are no feasible and prudent alternatives that completely avoid the use of Section 4(f) resources and there were no alternatives that would cause less overall harm.

9 Overall Comparison of Alternatives

Three alternatives are considered in this Supplemental Draft EIS, and each would require the use of Section 4(f) resources. Each alternative has been defined to incorporate measures to avoid Section 4(f) resources wherever it is feasible and prudent to do so, and each incorporates all possible planning to minimize harm.

In past planning and ongoing project development efforts, other alternatives have been considered and rejected, because they failed to meet the project's purpose and need, because they are not feasible and prudent avoidance alternatives, or because they would not cause less overall harm.

In this final step of the draft Section 4(f) evaluation, the three remaining alternatives are compared to one another to determine which alternative would cause the least overall harm. In this step, the alternatives are compared to one another based on the factors listed in Section 774.3(c)(1) of the Section 4(f) regulations.

Ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property), and the relative severity of the remaining

harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection.

Each of the three alternatives would involve a use of the Alaskan Way Viaduct, which would be removed, and the Battery Street Tunnel, which would be either substantially modified or decommissioned. These facilities are considered a single property under Section 106, and the Section 4(f) analysis also considers them a single resource, although for clarity the effects to each part of the resource have been described separately. All three of the current alternatives encompass the same mitigation programs, which primarily involved documentation. None of the alternatives offers the ability to preserve the existing facilities without altering the characteristics that qualify them as Section 4(f) resources.

The Elevated Structure and Cut-and-Cover Tunnel Alternatives both involve a use of the McGraw Kittenger Case Building and the Washington Street Boat Landing. Both of these uses would be accompanied by mitigation to restore these resources to a level that maintains the characteristics that qualify them as Section 4(f) resources. This, along with the additional information and documentation involved in these efforts, would help reduce the remaining harm after the Section 4(f) use occurs.

The Bored Tunnel Alternative would result in a use of the Western Building, a contributing building to the Pioneer Square Historic District. The mitigation measures for this property are still being defined through the Section 106 consultation process, which will continue during the development of the Final EIS.

The relative significance of each Section 4(f) property; The views of the official(s) with jurisdiction over each Section 4(f) property.

The NRHP status of the affected Section 4(f) resources is one measure of their relative significance, although for Section 4(f) purposes all resources determined to be eligible for the NRHP are considered significant. While more local effort and investment is required to nominate a

property for the NRHP and to have it listed, compared to the effort needed to identify a property as being eligible for the NRHP, this does not necessarily mean that a listed property is more significant than other properties. Section 106 processes do not provide procedures for evaluating relative significance among properties, as the consultation process is focused on identifying historic resources and minimizing potential harm.

The Alaskan Way Viaduct and Battery Street Tunnel are eligible for the NRHP, as is the McGraw Kittenger Case Building, but they are not listed. The Washington Street Boat Landing is listed in the NRHP. The Western Building is a contributing building of the Pioneer Square Historic District, which is listed in the NRHP. The Western Building's individual merits for inclusion in the NRHP have not been evaluated previously, but as a contributing building within an historic district it is assumed to be individually eligible as well. There are other properties in the district that are individually listed in the NRHP or have been designated as National Historic Landmarks, and there are also other examples of warehouse buildings in the district with similar characteristics.

As the EIS, Section 106 and Section 4(f) processes continue, WSDOT and FWHA will continue to consult with the SHPO and the City of Seattle Historic Preservation Office, the parties with jurisdiction over the resources, to document their opinions in response to the findings of effect for the affected properties and the potential avoidance and mitigation measures being considered.

The degree to which each alternative meets the purpose and need for the project.

Among the alternatives remaining in the EIS, the lead agencies are considering a conclusion that the Bored Tunnel Alternative would be best able to meet the purpose and need for the project and would have the least overall environmental effects. Chapter 8 of this Supplemental Draft EIS compares the three alternatives and explains this potential conclusion.

After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f); and substantial differences in costs among the alternatives.

The primary difference among the alternatives is related to their ability to minimize construction period impacts while the viaduct is being replaced. In addition, there are substantial differences in the environmental performance of the alternatives.

The Elevated Structure and Cut-and-Cover Tunnel Alternatives would require the closure of SR 99 for its demolition, and they also would include the reconstruction of the seawall. Demolition of SR 99 would be followed by several years of construction throughout the central waterfront area. Transportation impacts during construction would be high, resulting in high levels of congestion, delay, and reduced capacity throughout the downtown area, especially in the central waterfront area. Access between the central waterfront and adjacent downtown neighborhoods would be restricted, affecting not only north-south movements but also east-west movements, such as those for Washington State Ferries users or for transportation between properties on either side of the current viaduct alignment. This long period of reduced access and transportation mobility would affect properties, businesses, employees, patrons, and residences nearby, including in the Pike Place Market Historic District and the Pioneer Square Historic District, the waterfront, and the many other historic and nonhistoric properties, institutions, and public facilities that occur throughout the central downtown area. Because this portion of SR 99 provides important linkages for the regional transportation system, reducing its capacity for an extended period would have economic impacts throughout the Puget Sound region.

The Bored Tunnel Alternative would have construction period impacts related to the demolition of the viaduct and the decommissioning of the Battery Street Tunnel, but it would allow a much more rapid transition to a replacement facility, greatly reducing the project's construction period transportation and mobility impacts. It also does not tie the SR 99 replacement to the

replacement of the seawall, which further minimizes the construction period impacts in the central waterfront area and downtown compared to other alternatives. In addition, because most of the heavy construction of the replacement facility for SR 99 would be underground, compared to the surface level construction required for the other two alternatives throughout the central waterfront area, the vicinity effects of construction would be more limited, primarily occurring in the tunnel portal areas. This further reduces construction period impacts to properties, activities, and neighborhoods adjacent to the existing viaduct, and it reduces impacts to Washington State Ferry users and other activities that require crossing between downtown and the waterfront.

Longer term, the two tunnel alternatives are expected to offer lower long-term environmental effects and greater land use, aesthetic, and economic benefits compared to the Elevated Structure Alternative. The tunnel alternatives would remove and not replace an elevated structure that is adjacent to two historic districts and creates high levels of noise and visual impacts to adjacent properties. The alternatives would also remove an existing barrier between downtown neighborhoods and the waterfront and support opportunities to redevelop the urban space now occupied by the elevated structure.

10 Conclusions

In order for FHWA to ultimately approve the Bored Tunnel Alternative, the Final EIS will need to provide information allowing FHWA to determine that:

- 1 There is no feasible and prudent alternative that completely avoids the use of Section 4(f) property.
- 2 The Bored Tunnel Alternative is the alternative that causes “least overall harm.”
- 3 The Bored Tunnel Alternative incorporates all possible planning to minimize harm to Section 4(f) resources.

While no conclusions have yet been made, the lead agencies have provided this draft evaluation in the Supplemental Draft EIS to allow public comments on the current information that could result in a determination that the Bored Tunnel Alternative is the least overall harm alternative.