5.6 Cultural Resources

Environmental laws and review processes at the federal, state, and local level require that consideration be given to protecting significant historic, archaeological, and traditional cultural properties from damage or loss from the project. FHWA and WSDOT have worked with agencies, affected tribes, and other interested parties, including the City of Seattle, King County, neighborhood associations, and historic preservation advocacy groups, to identify significant properties and develop strategies to assure that Washington's cultural heritage is protected.

The National Environmental Policy Act (NEPA) required federal agencies to conduct an environmental impact assessment for proposed action, and agencies must consider cultural resources as part of that assessment. For transportation-related projects, Section 4(f) of the Department of Transportation Act of 1966 (49 United States Code [USC] 303) and its implementing regulations (23 Code of Federal Regulations [CFR] 774) is another federal regulation that protects historic properties, along with publicly-owned park and recreation areas, and wildlife and waterfowl refuges. Section 4(f) applies to all projects that require approval by an agency of the U.S. Department of Transportation (USDOT), including FHWA. (For more information on Section 4(f), see Chapter 9.)

Other environmental laws, such as the National Historic Preservation Act (NHPA), also require that effects on significant cultural resources be considered during the public environmental review process. Section 106 of the NHPA requires that all federal agencies consider significant cultural resources as part of all licensing, permitting, and funding decisions. As part of the Section 106 process, agencies must consult with the State Historic Preservation Officer (SHPO) to assure that significant cultural resources are identified, and to obtain the SHPO's formal opinion on each property's significance and the impact of the agency's proposed action upon the property. In Washington State, the SHPO is housed in the Department of Archaeology and Historic Preservation (DAHP). To evaluate the proposed project's potential effects on cultural resources, WSDOT, in partnership with the DAHP, established the project's area of potential effects (APE), which is the geographic area within which an undertaking may directly and indirectly cause alterations in the character or use of historic properties (36 CFR 800.16). WSDOT then conducted research and completed field work to identify historic properties. WSDOT cultural resources specialists analyzed the proposed designs and operations of the build alternatives to determine their effects on the identified historic properties in the APE. WSDOT also consulted with Native American tribes that have historical ties to the study area and could be affected by the proposed action.

Coordination with the SHPO and consulting parties has substantially increased since the Preferred Alternative was identified. Establishing the

KEY POINT

Cultural and Historic Resources

The Preferred Alternative and all options would affect the settings of a number of historic properties in both positive and negative ways. The positive effects would generally result from decreased noise in the vicinity of historic properties and from the introduction of increased green space and beneficial visual effects from landscaped lids. Negative effects would result either from the acquisition of land or buildings, or from visual intrusion caused by more prominent roadway and bridge structures.

Coordination Under Section 106

WSDOT formally initiated the Section 106 process for the SR 520 SR 520, I-5 to Medina project in April and May 2009, coordinating with the State Historic Preservation Officer (SHPO), Advisory Council on Historic Preservation (ACHP), affected Indian tribes, and other consulting parties. As lead federal agency, FHWA conducts government-to-government consultations with the tribes. Under The *First Amended Programmatic Agreement Implementing Section 106 of the National Historic Preservation Act for the Federal-aid Highway Program in Washington State Administered by the Federal Highway Administration* (2007), signed by FHWA, WSDOT, SHPO, and the ACHP, FHWA delegates certain authorizes relating to Section 106 of the NHPA to WSDOT for Federal-aid highway projects in Washington state. with specific details, including processes, staff qualifications, definitions of roles and responsibilities, conditions for consultations with agencies and tribes, and documentation standards. This agreement allows WSDOT to take on many functions that would ordinarily be federal-level responsibilities for compliance with Section 106 of the NHPA. In compliance with the 2007 agreement, WSDOT has assisted FHWA with consultations since the beginning of this project, when it was known as the Trans-Lake Washington Study. The consultations will continue through project design and construction.

design of the Preferred Alternative allowed WSDOT and FHWA to better assess the potential effects on cultural resources. Since the SDEIS was published, the APE has been revised, new consulting parties have been added, and additional information has been submitted to the DAHP and consulting parties for comment and review (see the Final Cultural Resources Assessment and Discipline Report in Attachment 7). Section 106 consultations culminated with the signing of the Programmatic Agreement, which includes by reference a Foster Island Treatment Plan to resolve adverse effects on the Foster Island traditional cultural property (TCP).

Programmatic Agreement

Adverse effects on historic properties from construction and/or operation of the SR, 520: I-5 to Medina project will be mitigated in accordance with Section 106 through a project-specific Programmatic Agreement. WSDOT has engaged in consultation with the ACHP, DAHP, affected tribes, and other consulting parties to negotiate the terms and conditions of the Programmatic Agreement. The project's Programmatic Agreement memorializes the stipulations agreed upon to avoid, minimize, and mitigate adverse effects to historic properties located within the APE. Adverse effects on the Foster Island TCP will be resolved through stipulations provided in the Foster Island Treatment Plan, which is included in the Programmatic Agreement by reference.

See Attachment 9 for a copy of the Programmatic Agreement developed for the SR 520, I-5 to Medina project.

How would the project affect historic properties during operation?

WSDOT and FHWA evaluated the project's potential effects on historic properties using the Criteria of Adverse Effect (36 CFR 800.5) outlined in Section 106 of the National Historic Preservation Act NHPA. This legislation states that a project would have an adverse effect on a historic property if it results in changes to the property's characteristics that qualify it for inclusion in the NRHP. Examples of potential adverse effects include the physical destruction of an entire historic property; damaging, altering, or removing a portion of a historic property; and introducing environmental factors that are out of character with the historic property and diminish its setting and integrity (for example, visual intrusions).

The SHPO represents the interests of the state and its citizens in the preservation of their cultural heritage. To ensure consideration of historic properties at all levels of planning and development, WSDOT and FHWA have actively consulted with the SHPO throughout the SR 520, I-5 to Medina project. WSDOT analyzed the potential effects on historic properties from Options A, K, and L and presented these findings in the Draft Cultural Resources Discipline Report (Attachment 7 to the SDEIS). Following identification of the Preferred Alternative, WSDOT, on behalf of FHWA, evaluated each historic property within the APE and assessed the Preferred Alternative's effects on each property's seven aspects of integrity in accordance with 36 CFR 800. The assessment resulted in one of four findings:

- **Does Not Alter Integrity:** Either no historic properties are present, or there is no effect of any kind, neither harmful nor beneficial, on historic properties.
- **Alters Integrity:** The undertaking affects historic properties, but does not diminish the characteristics that qualify the properties for listing in the NRHP.
- **Diminishes Integrity:** There is an effect from the undertaking which alters the characteristics that qualify the property for listing in the NRHP in a way that diminishes the integrity of the historic property.

This includes diminishing the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

- **Temporarily Diminishes Integrity:** There is an effect from the undertaking, and that effect temporarily (during construction of the project) alters the characteristics that qualify the property for listing in the NRHP in a way that diminishes the integrity of the historic property. This includes diminishing the integrity of the property's location, design, setting, materials, workmanship, feeling, or association.

Subsequent to this analysis, FHWA and WSDOT determined that the project would have an adverse effect on historic properties. FHWA and WSDOT continued consultation with the SHPO and the other Section 106 consulting parties to seek resolution of the adverse effect from the project. The project's Programmatic Agreement memorializes the stipulations agreed upon to avoid, minimize, and mitigate adverse effects to historic properties located within the Area of Potential Effects. See Attachment 9 for a copy of the Programmatic Agreement.

The Preferred Alternative and all the SDEIS options would result in an "adverse effect" determination for the project as a whole (referred to in Section 106 as "the undertaking"). The findings under Section 106 for the Preferred Alternative were submitted to SHPO on January 26, 2011, and concurrence was received on February 28, 2011.

Potential effects on historic properties from construction and operation of the Preferred Alternative and Options A, K, and L are described in more detail in the following sections. The text is organized by property location roughly from west to east.

I-5 and Portage Bay Areas

Individually Eligible Historic Properties in the Portage Bay/Roanoke Park Area (Outside of the Roanoke Park Historic District)

The proposed landscaped lid at 10th and Delmar would have an effect on historic properties in this section of the APE. This lid would have beneficial effects on some properties because it would provide a pedestrian passageway between the North Capitol Hill and Portage Bay/Roanoke neighborhoods (currently separated by SR 520), increase landscaped green space in the area, and reduce noise levels. The lid would serve to shield historic properties from effects of the wider SR 520 roadway, both visual and audible. The lid's effects could be enhanced by design elements that reflect the district's historic character.

Under the Preferred Alternative, an enhanced bicycle/pedestrian path would be added to the south side of the existing East Roanoke Street Bridge over I-5. No historic properties would be affected by operation of the enhanced bicycle/pedestrian path. Under Options A, K, and L, the proposed I-5 lid would stretch across much of the front of the Seward

School property, introducing a new green space between Eastlake and the Portage Bay/Roanoke neighborhood (Exhibit 5.6-1).

The Preferred Alternative and all SDEIS options include an HOV ramp over I-5. The ramp would be the same for all except with the Preferred Alternative it would be 2 feet lower than the SDEIS options. The Preferred Alternative's HOV ramp over I-5 would be roughly 30 feet wide and at approximately the same height as the existing ramp on the east end. It would be approximately 15 feet higher than the existing ramp at the west end as the ramp turns and heads south. The new HOV ramp would be adjacent to the existing ramp and would appear similar to the existing interchange, consistent with the visual quality of the existing conditions. The new ramp would be visible from a number of historic properties, but would not be a significant change from the existing viewshed of these properties, all of which are eligible for listing in the NRHP for their architectural qualities. The visual effect would not diminish the characteristics of these historic properties (Exhibit 5.6-2).

Roanoke Park Historic District (ID 37)[1]

The entire Roanoke Park Historic District is included in the APE and was listed in the NRHP in July 2009. There are 101 properties in the district, 80 of which are contributing elements, including Roanoke Park itself and the individually listed William H. Parsons House. The Roanoke Park Historic District is significant under Criterion A because of its direct association with events that made a significant contribution to the broad patterns of local and national history. The district is also significant under Criterion C for its collection of early twentieth century residential architecture designed by many notable Seattle architects (O'Connor et al. 2009).

Preferred Alternative

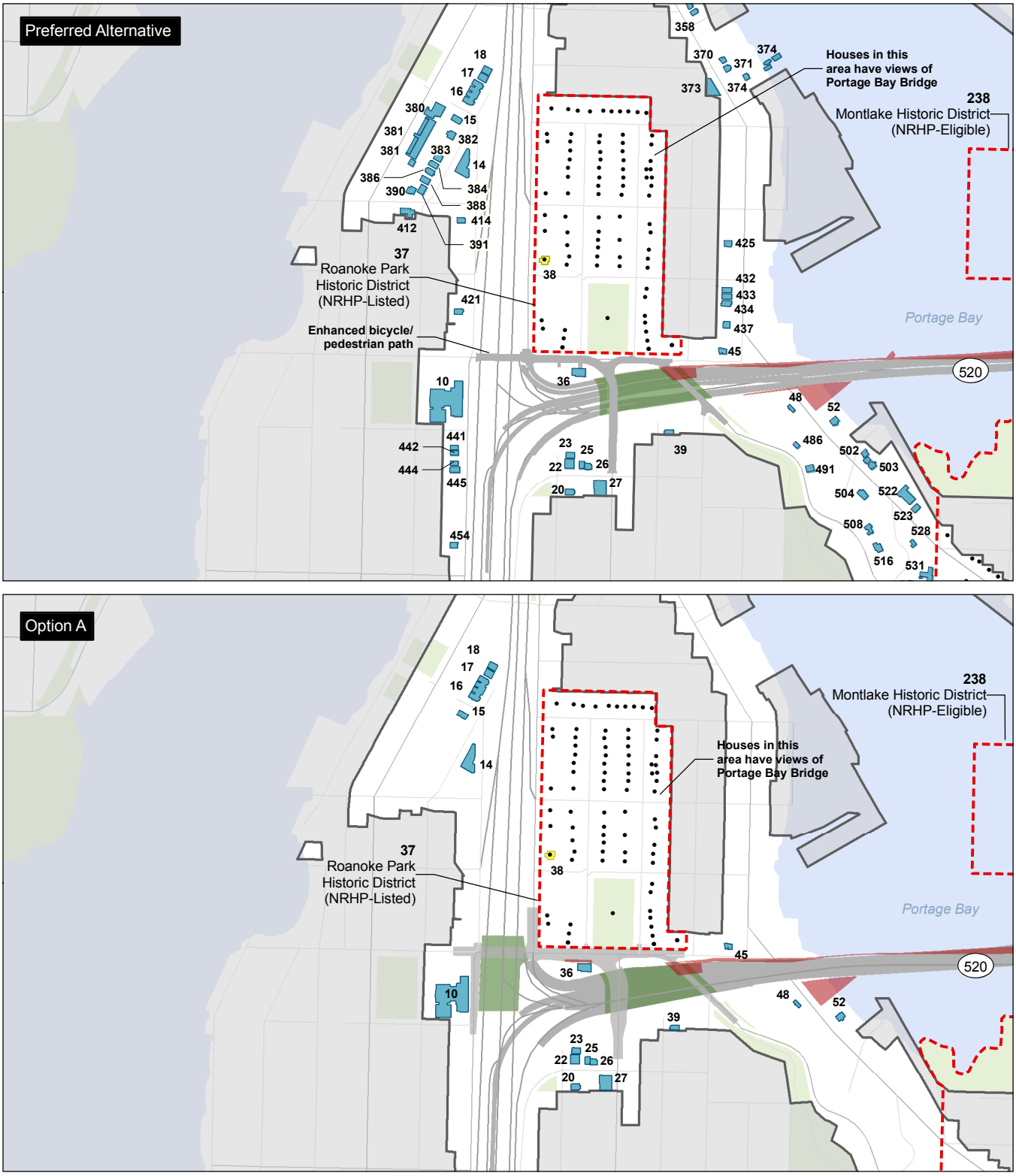
The Preferred Alternative and all the SDEIS design options would include a lid south of the Roanoke Park Historic District. As discussed above, the 10th Avenue East and Delmar Drive East lid would be beneficial to the historic district as it would increase landscaped green space in the area, reduce noise levels for some properties, and provide visual continuity by shielding a portion of the SR 520 roadway.

Under the Preferred Alternative and all the SDEIS design options, the new Portage Bay Bridge would have a visual effect on portions of the Roanoke Park Historic District. The visual effect from the new bridge would be most pronounced for houses on the east side of 10th Avenue East between East Roanoke Street and East Shelby Street. Those houses currently have direct views of the existing Portage Bay Bridge (see Exhibit 5.6-1).

---

[1] The location of each property is shown by identification (ID) number on the exhibits in Sections 4.6 and 5.6. A list of properties by ID number is presented in Table 4.6-1.

Exhibit 5.6-1. **Effects on Historic Properties within the I-5 and Portage Bay Area**



NRHP Eligibility of Surveyed Resources

- Contributing
- LListed
- Eligible

Property Effects

- Converted to Right-of-way
- Historic district boundary
- Area of potential effects
- Lid or landscape feature
- Pavement

Note: All resources are mapped and described in detail in the Final Cultural Resources Assessment and Discipline Report. See Table 4.6-1 for a list of properties that correspond to the ID numbers shown above.

N

0 250 500 1,000 Feet

Exhibit 5.6-2. **Visualization Showing the HOV Ramp over I-5 Facing West**

Existing View

- I-5 and existing on-ramp
- View toward Lake Union, Queen Anne and Aurora Bridge

Preferred Alternative

- New HOV on-ramp to SR 520
- View toward Lake Union, Queen Anne and Aurora Bridge

The bridge's wider footprint and increased height on the western end would have a visual effect on the setting and feeling of the Roanoke Park Historic District and the contributing elements that have a view of the bridge and the bay. If noise walls on the bridge were included for Options A, K, and L, they would result in a greater visual impact. Noise walls are not recommended along the Portage Bay Bridge for the Preferred Alternative because the noise analysis concluded that they would not be reasonable or feasible, as discussed in Section 5.7.

The Preferred Alternative and Option A would include a new bascule bridge across the Montlake Cut parallel to and on the east side of the historic bridge. The new bascule bridge would be visible primarily from the rear of houses on 10th Avenue East between East Hamlin and East Shelby streets. The new bascule bridge would not obscure the view of the original Montlake Bridge from these houses, and would be only slightly visible beyond the historic bridge from this vantage point. Although it could affect the setting and feeling of some contributing properties, this effect would be minor because of the distance of the historic bridge from the district.

Option L would include a new bascule bridge at the eastern end of the Montlake Cut. Because of the location of the new bascule bridge, it would only be visible from the Roanoke Park Historic District as part of the distant viewshed. This bridge would have a lesser effect on the historic district compared with the bascule bridge under the Preferred Alternative and Option A.

Seattle Yacht Club (ID 55)

As described in Chapter 4, the Seattle Yacht Club is a recreational and cultural institution that is significant under Criterion A for its direct association with the social and maritime history of Seattle. The new Portage

Bay Bridge would be approximately 110 feet farther to the north than the current bridge, bringing the bridge closer to the Seattle Yacht Club. The larger, closer bridge would alter the setting of the Seattle Yacht Club, but the property would retain integrity of feeling, location, association, design, workmanship, and materials. The visual effect of the bridge on the Seattle Yacht Club would not be substantial despite its closer location (Exhibit 5.6-3).

Exhibit 5.6-3. **Seattle Yacht Club Lawn Looking Southwest toward Portage Bay Bridge**

Existing View

- 4-lane Portage Bay bridge in distance
- Seattle Yacht Club marina (middle ground) and lawn

Preferred Alternative

- 6-lane bridge with westbound managed shoulder
- 4-foot-high traffic barriers
- ITS gantries
- Bridge design and aesthetic treatments to be determined

Montlake Area

NOAA Northwest Fisheries Science Center (ID 56)

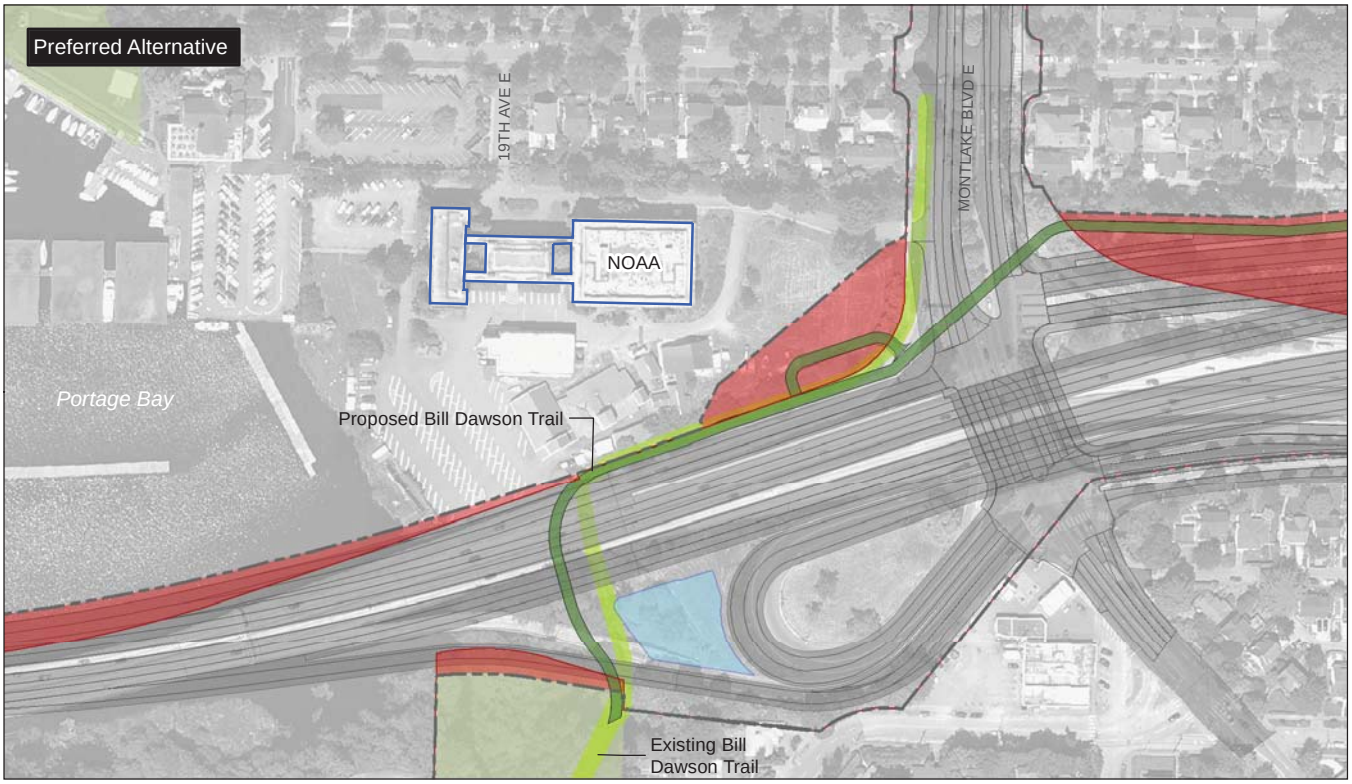
Three buildings on the NOAA Northwest Fisheries Science Center North Campus are eligible for the NRHP under Criterion A for their association with important research that is significant locally, regionally, and nationally. The oldest North Campus building, dating from 1931, is also eligible under Criterion C for its distinctive architecture that incorporates marine motifs to visually demonstrate its association with marine research, and its design by major architect John Graham, Sr.

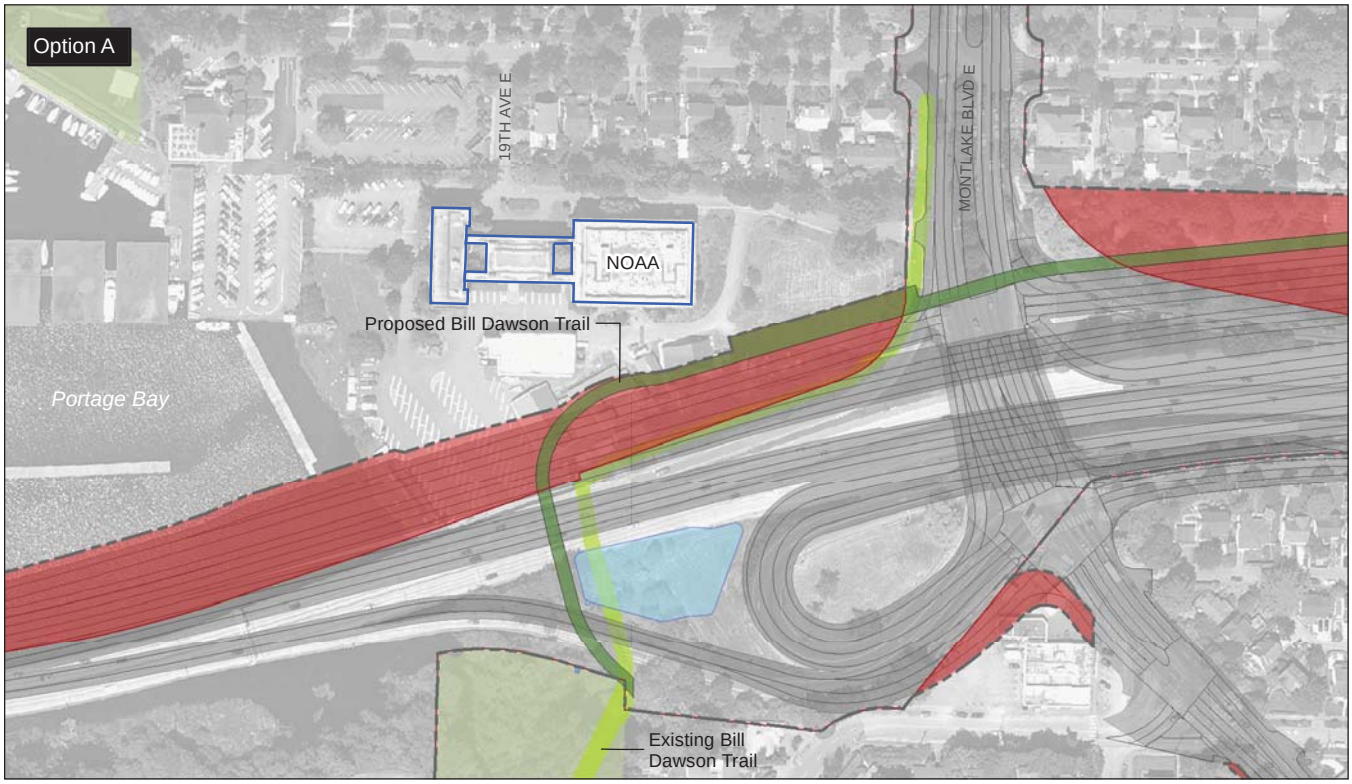
Northwest Fisheries Science Center, Montlake Historic District

Preferred Alternative

Under the Preferred Alternative, the new Portage Bay Bridge would be about 110 feet closer to the historic NOAA North Campus buildings than the current bridge (Exhibit 5.6-4). Although there would be a visual effect on the setting and feeling of the historic NOAA buildings, it would not be a significant change from the existing condition. There would be no anticipated increase in vibration from operation of the new bridge;

Exhibit 5.6-4. Effects on NOAA Northwest Fisheries Science Center





Converted to right-of-way
Historic property
Proposed right-of-way
Existing right-of-way
Travel lane
Pavement
Stormwater Facility
Proposed bicycle/pedestrian path
Existing trail\bicycle path
Park

Note: All resources are mapped and described in detail in the Final Cultural Resources Assessment and Discipline Report. See Table 4.6-1 for a list of properties.

N
0 100 200 400 Feet

vibration levels would be substantially the same as the current levels from traffic on the existing bridge and should not interfere with scientific activities at the center. The 1931 building would maintain its view north to Portage Bay, the property would retain its shoreline on the bay, and all property immediately surrounding the historic buildings would be retained.

Option A

Based on discussions with NOAA, removing part of the land and nine buildings on the South Campus under Option A (see Exhibit 5.6-4) could result in the remaining NOAA Northwest Fisheries Science Center site, including the historic buildings, being vacated if the loss of the buildings prevented the facility from carrying out its mission in this location. This would result in a change in the property's use, which contributes to its historic significance as a site that supports important fisheries research that has local, regional, and national significance. The 1931 building was built to serve as the offices for the NOAA Northwest Fisheries Science Center and has fulfilled that purpose since construction. Changing the use would diminish the buildings' association with marine research.

Options K and L

Options K and L would have similar effects on the NOAA facility as the Preferred Alternative.

Montlake Bridge (ID 54)

The Montlake Bridge is listed in the NRHP under Criterion C for its design and engineering qualities. Currently, there is a clear view of the historic bridge from many vantage points east and west of the bridge on the north and south sides of the Montlake Cut, as well as from the cut itself and from Lake Washington. The bridge is a primary part of the viewshed of the University of Washington, the Canoe House, the Montlake Historic District, and the Montlake Cut, but is also visible as far away as the Roanoke Park Historic District. This is an iconic bridge that is a part of the community's viewscape.

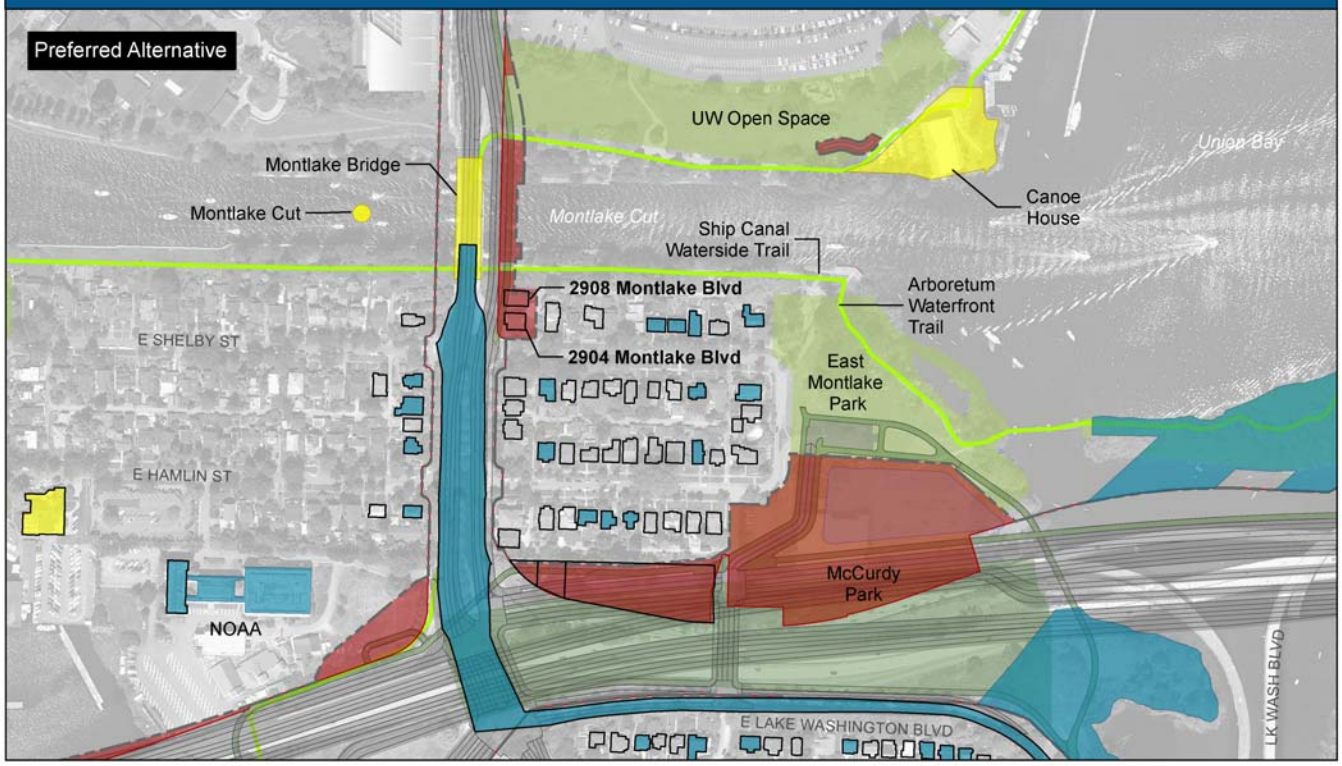
Preferred Alternative

The new bascule bridge immediately adjacent to the historic Montlake Bridge would diminish the integrity of the setting and feeling of the historic bridge (Exhibit 5.6-5). A context-sensitive design for the new bridge would help to lessen effects on the historic bridge by allowing the historic structure to remain visually prominent. Mitigation measures to ensure a context-sensitive design that follows the Secretary of the Interior's Standards are stipulated in the Programmatic Agreement.

Option A

The effects of Option A on the Montlake Bridge would be similar to those of the Preferred Alternative.

Exhibit 5.6-5. **Effects on Historic Properties from a New Bascule Bridge, Preferred Alternative**



NRHP Eligibility of Surveyed Resources

- Contributing
- Listed
- Eligible
- Converted to right-of-way

- Proposed right-of-way
- Existing right-of-way
- Travel lane
- Stormwater facility

- Existing trail/bicycle path
- Proposed bicycle/pedestrian path
- Lid or landscape feature
- Pavement
- Park

Note: All resources are mapped and described in detail in the Final Cultural Resources Assessment and Discipline Report. See Table 4.6-1 for a list of properties.

N 0 150 300 600 Feet

Options K and L

The tunnel and the new bascule bridge at the east end of the Montlake Cut under Options K and L, respectively, would not diminish the historic Montlake Bridge because of the distance between these design elements and the historic bridge. Although the new bridge would be visible from the historic bridge, this change to the setting would not diminish the qualities that make the bridge eligible for listing in the NRHP.

Canoe House (ID 203)

The Canoe House was originally designed and built in 1918 for use as a naval military hangar. It was never used by the Aviation Training Corps and was subsequently donated to the University of Washington. It is listed in the NRHP under Criterion C for its architectural significance, as follows:

> rare … example of an architectural type developed in the early years of aviation….. No other examples of the hangar type dating from the period of the First World War are known in Washington.… Moreover, no other early hangars are known to

have survived in the vicinity of Seattle, which has figured prominently in aviation history since the founding of the Boeing Company in 1916 (Potter 1975).

Preferred Alternative

The Canoe House currently has a clear, unobstructed view of the historic Montlake Bridge (see Exhibit 5.6-5). The new bridge would be constructed on the east side of the historic bridge, so the view of the historic bridge from the Canoe House would be obstructed by the new bridge. The Canoe House would have an open view of the west approach to the floating bridge and the floating bridge itself. Although these structures would be up to 20 feet higher than they are currently, it would not be a significant change from the existing condition.

The Preferred Alternative, through the introduction of the second bascule bridge, would diminish the integrity of the Canoe House by significantly impacting its setting and feeling. To mitigate this effect, the Programmatic Agreement stipulates a context-sensitive design for the new bascule bridge.

Option A

The effects of Option A on the Canoe House would be similar to those of the Preferred Alternative.

Option K

The south tunnel portal would change the landform at the former Museum of History and Industry (MOHAI) parking lot and would require ventilation towers and stormwater pump stations in East Montlake Park. These structures would be visible from the Canoe House, but the tunnel itself would be below ground and not visible.

Option L

The new bascule bridge near the east end of the Montlake Cut would diminish the setting and feeling of the Canoe House and partially block the view of the historic Montlake Bridge (Exhibit 5.6-6).

On the north side of the cut, the bridge would be a minimum of 323 feet from the southwest corner of the Canoe House. The new bridge and approaches would introduce shadows to the property and nighttime glare from lighting on the bridge and headlights of nighttime traffic.

Montlake Cut (ID 53)

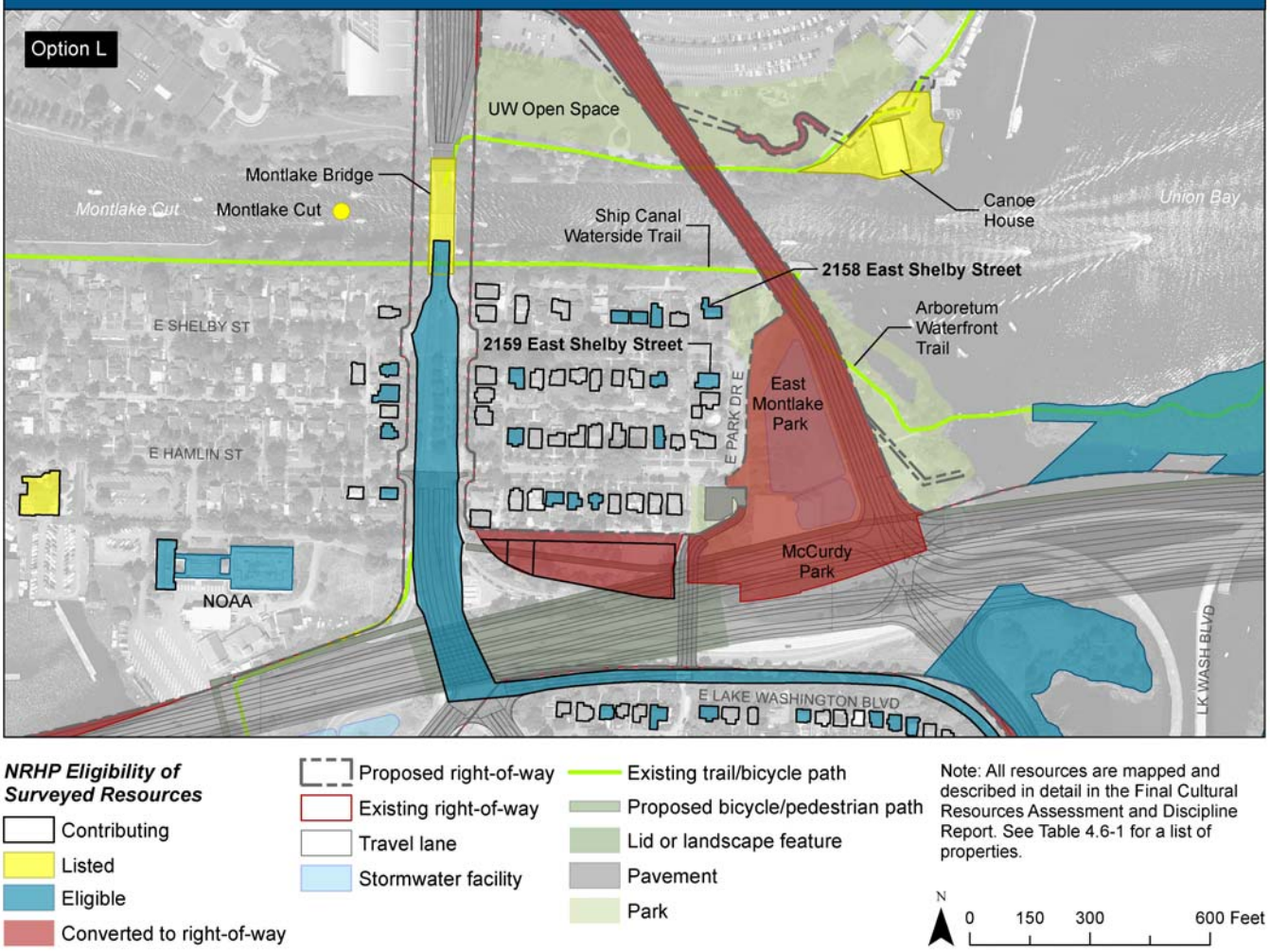
The Montlake Cut, listed in the NRHP under Criterion C for its engineering significance, is a navigable waterway with an existing bascule bridge crossing.

Preferred Alternative

The addition of a new bascule bridge of similar size adjacent to the existing bridge would affect the setting and feeling of the Montlake Cut. The greatest effect would be the partial blocking of the view of the historic

bridge from the east end of the cut (Exhibit 5.6-7). The cut would continue to operate as a navigable waterway and would not be impeded in any way by operation of the SR 520, I-5 to Medina project. The integrity of design, materials, location, workmanship, and association would remain intact. The Montlake Cut would continue to be used as a navigational channel as designed, and the additional bridge would not diminish the qualities that make it significant.

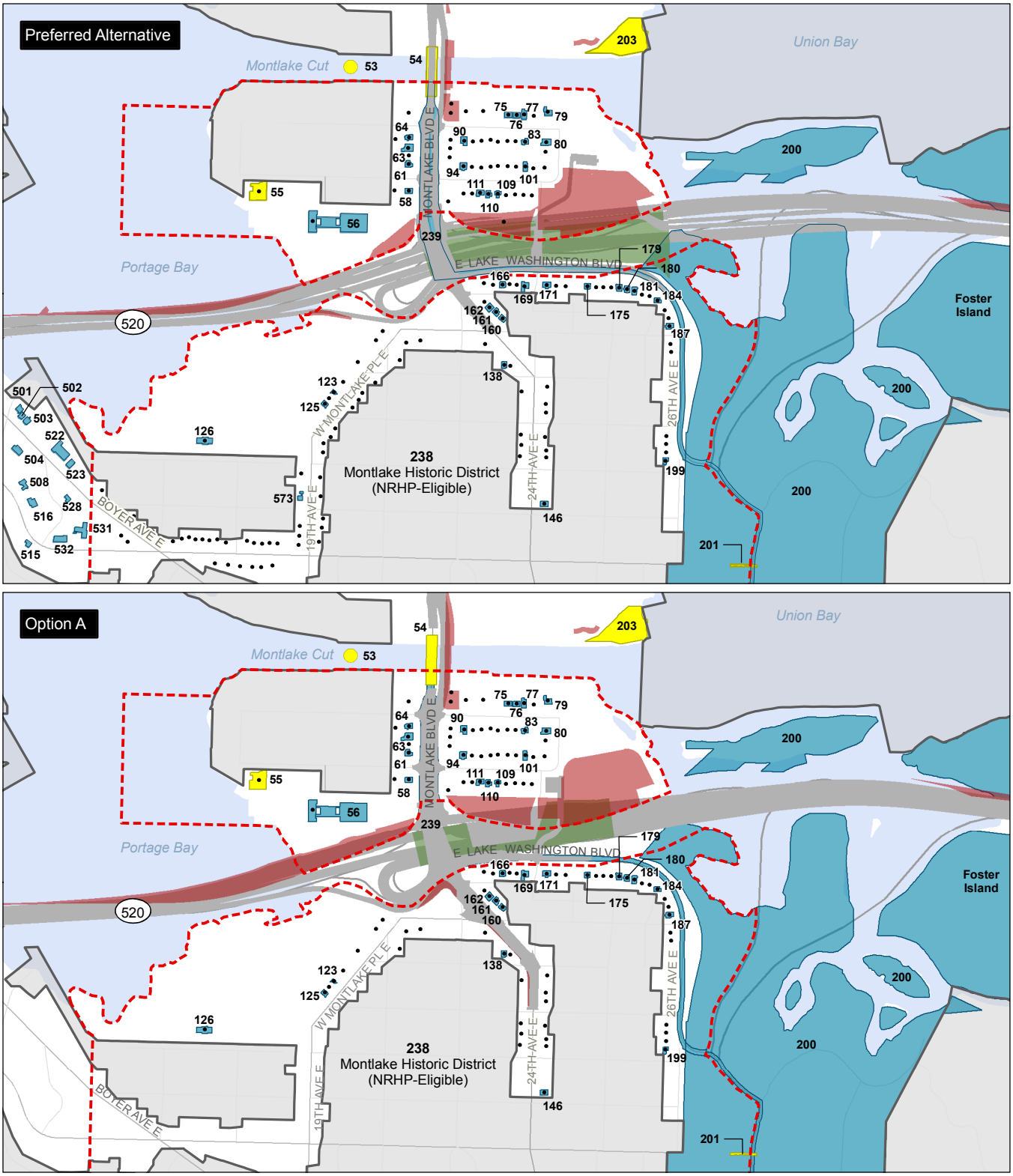
Exhibit 5.6-6. **Effects on Historic Properties from a New Bascule Bridge, Option L**



Options A and L

Options A and L would have similar effects on the Montlake Cut as the Preferred Alternative.

Exhibit 5.6-7. Effects on Historic Properties within the Montlake Area, Preferred Alternative and Option A



NRHP Eligibility of Surveyed Resources

- Contributing
- Listed
- Eligible

Property Effects

- Converted to Right-of-way
- Area of potential effects
- Historic district boundary
- Lid or landscape feature
- Pavement

Note: All resources are mapped and described in detail in the Final Cultural Resources Assessment and Discipline Report. See Table 4.6-1 for a list of properties that correspond to the ID numbers shown above.

N 0 250 500 1,000 Feet

Option K

The south tunnel portal would change the landform at the former MOHAI parking lot and would require ventilation towers and stormwater pump stations in East Montlake Park. These structures would be visible from the Montlake Cut, but the tunnel itself would be below ground and not visible. The view of the structures would not diminish the qualities that make the cut significant.

Montlake Community Center (ID 126)

The Montlake Community Center is individually eligible for listing in the NRHP under Criterion A for its association with the development of the Montlake neighborhood and the City of Seattle parks system. It is also eligible for listing under Criterion C for its distinctive characteristics as an early field house and recreation center, and as a good example of Tudor Revival style architecture. It is also eligible as a contributing element to the Montlake Historic District.

Under the Preferred Alternative and Options A, K, and L, the new Portage Bay Bridge would be visible from the Montlake Community Center, but it would be a minor change from the existing view (see Exhibit 5.6-3). The Portage Bay Bridge is partially screened from the Montlake Community Center by the adjacent gymnasium building and existing park vegetation. Noise levels would be reduced under the Preferred Alternative and all SDEIS options. The significant characteristics of the Montlake Community Center would not be diminished by the Preferred Alternative or any of the SDEIS options.

Lake Washington Boulevard (ID 239)

Lake Washington Boulevard is individually eligible for listing in the NRHP under Criterion A for its association with the citywide Olmsted Brothers parks and parkways plan. It is significant as the first boulevard constructed as a part of the plan and was the standard by which the other boulevards were designed. The boulevard also is eligible for listing in the NRHP under Criterion C as a noted work of the master landscape architects John Charles Olmsted and Frederick Law Olmsted, Jr. The segment of this linear resource surveyed for the SR 520, I-5 to Medina project extends from East Madison Street to the edge of the University of Washington campus at NE Pacific Avenue.

Preferred Alternative

A portion of Lake Washington Boulevard East would be affected by the addition of a central planted median and the widening of the roadway to the north between Montlake Boulevard and where Lake Washington Boulevard curves to the south. The addition of the planted median would visually improve the roadway, creating an enhanced park boulevard that would incorporate visual screening in keeping with the Olmsted Brothers' philosophy of blending pragmatic and picturesque design and of providing

visually appealing parkway transportation corridors (Exhibit 5.6-8). To accommodate the median, the westbound lane would be moved north, closer to the new landscaped lid.

The Preferred Alternative would remove the Montlake Boulevard median between East Hamlin Street and SR 520, which would alter the setting and feeling of this segment of historic Lake Washington Boulevard. Because it was designed as a park boulevard with planted medians, the loss of this vegetation would alter the integrity of design of this segment. The Programmatic Agreement contains stipulations to ensure that new medians constructed on the park boulevard would have a context-sensitive design and would be compatible with the original Olmsted medians.

The boulevard would operate directly adjacent to the new landscaped lid rather than running alongside SR 520, which would enhance the setting, reduce noise, and be more in keeping with the original conditions of the park boulevard. Removal of the SR 520 Lake Washington Boulevard ramps and the R.H. Thomson Expressway ramps would benefit Lake Washington Boulevard because it would eliminate a large intersection that was not part of the original boulevard plan, and it would reduce daily traffic on the park boulevard in the Arboretum. Removal of these ramps would also improve the view from Lake Washington Boulevard.

Option A

Option A would affect Lake Washington Boulevard similarly to the Preferred Alternative.

Option K

Under Option K, the segment of Lake Washington Boulevard between Montlake Boulevard and the Arboretum would be used for local traffic only. The new ramps and traffic turnaround would be east of and completely separated from Lake Washington Boulevard East and 26th Avenue East. Historic properties at the east end of Lake Washington Boulevard East and along 26th Avenue East would experience some visual effects from these new features, which would be located in a WSDOT right-of-way area that is currently natural landscape. The ramp would not be elevated, and much of the southbound section would be covered by a landscape feature that resembles a partial lid. A second landscape feature resembling a full lid would cover the entire ramp near the southern end, just before the turnaround (Exhibit 5.6-9).

These landscape features would greatly reduce the visual effects from the new ramp, which would be less intrusive than the existing ramps. The landscape features would also provide the benefit of allowing bicycle and pedestrian access to the Arboretum across the ramps. This portion of Lake Washington Boulevard would be altered and would no longer connect to the Arboretum.

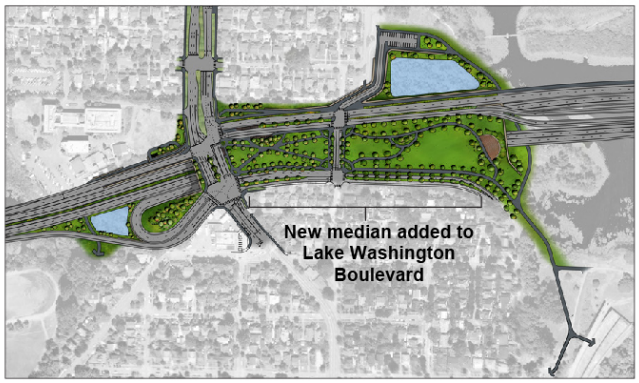
Exhibit 5.6-8. **Lake Washington Boulevard Planted Median**

Existing View

- West terminus of Lake Washington Boulevard at Montlake Boulevard
- Planted median along the north side of Lake Washington Boulevard

Preferred Alternative

- Restored and context-sensitive planted median along Lake Washington Boulevard
- Montlake lid in background



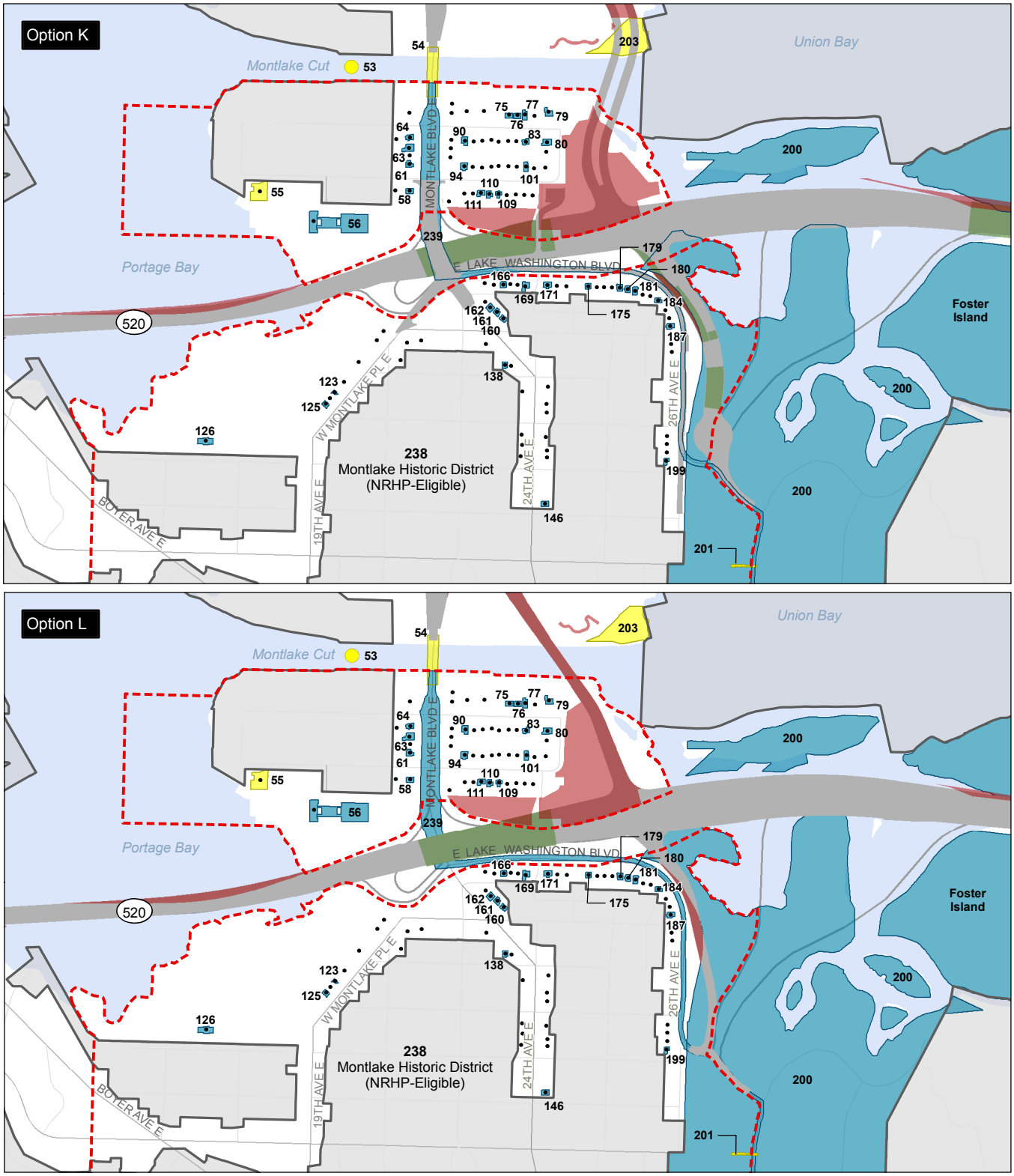
Rendering of Montlake Lid

Lake Washington Boulevard would operate with a new alignment between East Roanoke Street and where the boulevard currently connects with the Arboretum. A new traffic turnaround would be constructed at the existing connection between the boulevard and the Arboretum. This change would sever the original Lake Washington Boulevard route, which ran from the Arboretum across the Old Canal Reserve land and connected to the University of Washington Campus, as planned by the 1903 and 1909 Olmsted Park and Boulevard Plan.

Option L

Under Option L, the new SR 520 on- and off-ramps would be located to the east of Lake Washington Boulevard East. Historic properties at the east end of Lake Washington Boulevard East and along 26th Avenue East would experience a visual effect from the new ramps, which would be located in WSDOT right-of-way that is currently natural landscape. The ramps would be the same height as, or perhaps slightly higher than, the existing Lake Washington Boulevard East. The new ramps could block direct access into the Arboretum from the Montlake Historic District between SR 520 and East Calhoun Street (see Exhibit 5.6-9).

Exhibit 5.6-9. Effects on Historic Properties within the Montlake Area, Options K and L



NRHP Eligibility of Surveyed Resources

- Contributing
- Listed
- Eligible

Property Effects

- Converted to right-of-way
- Area of potential effects
- Historic district boundary
- Lid or landscape feature
- Pavement

Note: All resources are mapped and described in detail in the Final Cultural Resources Assessment and Discipline Report. See Table 4.6-1 for a list of properties that correspond to the ID numbers shown above.

N

0 250 500 1,000 Feet

Montlake Historic District (ID 238)

The Montlake Historic District is NRHP-eligible under Criterion C because of its significant, cohesive collection of residential architecture typical of early twentieth century Seattle, with a combination of distinctive builder's houses, high-style, architect-designed residences, and impressive nonresidential structures.

Preferred Alternative

Operation of the Preferred Alternative would affect the setting of the northern portion of the Montlake Historic District near the historic Montlake Bridge. The new bascule bridge would displace the two houses immediately south and east of the existing bridge, exposing the remaining elements of the district in this area to a more open view of Montlake Boulevard with associated traffic and loss of privacy compared to existing conditions. The historic Montlake Bridge and the new bascule bridge would both become visible from properties that currently are shielded from that view by the existing houses on Montlake Boulevard, leaving some houses in this part of the district more exposed to the roadway and the bridge approach.

2111 East Shelby Street, a contributing resource to the Montlake Historic District

The Programmatic Agreement contains stipulations to minimize the change of setting due to the removal of two contributing properties and introduction of a new bascule bridge. The Programmatic Agreement includes commitments to a context-sensitive bridge design and installation of buffering or screening.

Another area in the northern portion of the historic district that would be particularly affected by the project is East Hamlin Street east of Montlake Boulevard. Buildings located on the south side of East Hamlin Street would lose the landscaped buffer currently provided by the Canal Reserve land south of the alleyway behind them. Under the Preferred Alternative, the SR 520 westbound exit ramp would be closer to the rear of these properties. The new bicycle and pedestrian path would be north of the ramp, below grade, with retaining walls on each side. An approximately 45- to 100-foot buffer would remain between the rear yards of the houses and the north retaining wall of the new bicycle and pedestrian path. Although the Canal Reserve land and the mature specimen trees there would be lost, the land would become part of the landscaped lid, so open green space would remain in the area. Adding the lid would benefit the Montlake Historic District by reducing visual intrusion and noise from SR 520. In addition, the lid would partially reunite the two sides of the historic district currently separated by SR 520 and would increase the connectivity between them.

Although the Preferred Alternative would cause some visual effects on the Montlake Historic District that would affect the setting and feeling of the

district, these effects would not diminish the overall levels of integrity of association, location, design, materials, and workmanship of the district.

Measures to avoid and minimize impacts on setting and feeling of the historic district are stipulated in the Programmatic Agreement.

Option A

In addition to the effects described above for the Preferred Alternative, Option A would widen East Montlake Place East and 24th Avenue East, as shown in Exhibit 5.6-7. The widening would affect the settings of four contributing elements in the Montlake Historic District, including the individually eligible property at 2220 East Louisa Street. Option A's smaller partial lid over SR 520 would provide fewer benefits to the district than the Montlake lid included in the Preferred Alternative.

Option A Suboptions

- Adding the eastbound HOV direct-access ramp to Option A would result in no additional effects on the Montlake Historic District because it would be located within the right-of-way of the existing interchange.
- Adding the Lake Washington Boulevard ramps to Option A would result in additional effects on the Montlake Historic District. Most of the length of the new on- and off-ramps would run along the north and south sides of the main line. Because of their more westward location, these ramps would have an increased visual effect on the Montlake Historic District, affecting contributing properties along Lake Washington Boulevard East and 26th Avenue East. The houses along Lake Washington Boulevard East between Montlake Boulevard and 24th Avenue East would experience a change in setting from the increased width and added lane on Lake Washington Boulevard East in this area.
- Adding the constant-slope profile to Option A would result in no additional effects on the Montlake Historic District.

Option K

The depressed SPUI would likely not be visible from the residential areas of the Montlake Historic District because of the new lid and the depth of the interchange. The main line of SR 520 would be roughly the same height as the existing SR 520 where it is visible east of the lid, so this new road surface height would have no additional visual effect on the historic district.

The south tunnel portal would change the landform at the former MOHAI parking lot and could require stormwater pump stations and ventilation towers in East Montlake Park. These structures would be visible from the surrounding areas of the Montlake Historic District. The tunnel itself would be below ground and not visible from any historic properties.

Similar to the Preferred Alternative and Option A, the buildings located on the south side of East Hamlin Street would lose the landscaped buffer

provided by the Canal Reserve land south of the alleyway behind them. Although the Canal Reserve land and the mature specimen trees would be lost, the land would become part of the landscaped lid, so open green space would remain in the area.

Option K Suboption

- Adding the eastbound off-ramp to Montlake Boulevard to Option K would have only a minimal additional effect on the historic district because the new ramp would replace the much larger on- and off-ramp structure that is currently in the same location. Removing the existing ramp structure would be beneficial to the historic district.

Option L

Under Option L, the existing Montlake interchange would be replaced with an elevated SPUI near the current location of MOHAI. This interchange would be elevated 20 to 25 feet above the mainline SR 520 roadway, which would be approximately 3 feet higher in elevation than the existing 24th Avenue East bridge over SR 520. It is likely that the structures would be visible from some residential areas of the Montlake Historic District. The interchange could be a visual barrier to views north and northwest from historic properties on Lake Washington Boulevard East (see Exhibit 5.6-9).

The new bascule bridge near the east mouth of the Montlake Cut would affect the setting of the northeast section of the Montlake Historic District. The new bridge and approaches would block views and would introduce shadows to these properties and nighttime glare from lighting of the bridge and headlights of nighttime traffic. The bridge would degrade the integrity of the setting and feeling of this section of the Montlake Historic District. Properties at the east end of East Shelby Street would experience the most severe visual effects because the new bridge would be constructed immediately to the northeast of these properties, and would be a minimum of 131 feet from the closest house (see Exhibit 5.6-9).

2158 East Shelby Street, Montlake Historic District

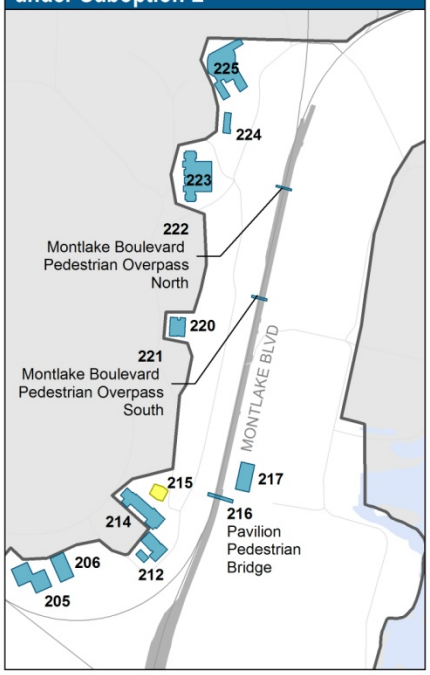
2159 East Shelby Street, Mary Houlahan House, Montlake Historic District

Similar to the Preferred Alternative and Option A, the buildings located on the south side of East Hamlin Street would lose the landscaped buffer provided by the Canal Reserve land south of the alleyway behind them. Although the Canal Reserve land and the mature specimen trees would be lost, the land would become part of the landscaped lid, so open green space would remain in the area.

Option L Suboptions

- Adding northbound capacity to Montlake Boulevard NE under Option L would necessitate removing the three existing pedestrian bridges over Montlake Boulevard NE (Exhibit 5.6-10). All three bridges are eligible for the NRHP. It would move the roadway closer to Graves Hall, also eligible for the NRHP. The wider roadway with new pedestrian bridges would be visible from the University of Washington Club and McMahon Hall, both eligible for the NRHP. However, the effect on the setting and feeling of these buildings would be minimal. No additional effects on historic properties at the University of Washington are expected from this suboption.
- Adding left-turn access from Lake Washington Boulevard onto the SPUI south ramp of the new interchange would result in no measurable difference in the effects on historic properties described above because it would not require additional right-of-way.

Exhibit 5.6-10. **Location of Pedestrian Bridge Overcrossings to be Removed under Suboption L**



NRHP Eligibility of Surveyed Resources

- Listed
- Eligible
- Area of potential effects
- Pavement

Note: All resources are mapped and described in detail in the Final Cultural Resources Assessment and Discipline Report. See Table 4.6-1 for a list of properties that correspond to the ID numbers shown above.

N 0 500 1,000 Feet

West Approach Area

Washington Park Arboretum (ID 200)

The Arboretum is a public facility that was developed as part of the Olmsted Plan for Seattle Parks and Boulevards. The park stretches across approximately 230 acres, all of which is located within the APE. The Washington Park Arboretum is eligible for listing in the NRHP under Criterion A (for its association with events that have made a significant contribution to the broad patterns of our history, including the A-Y-P Exposition, the development of the University of Washington, and the development of the parks system in Seattle) and under Criterion C (as the work of a master for its design by the noted Olmsted Brothers firm, as well as the many talented designers and architects who contributed to its designed features).

The Arboretum contains one NRHP-listed property, the Arboretum Aqueduct, which is also a designated Seattle Landmark, and the Seattle Japanese Garden, another designated Seattle Landmark.

Under the Preferred Alternative and all options, WSDOT would remove the Lake Washington Boulevard and R.H. Thomson Expressway ramps in the Arboretum. Removing these ramps would benefit the Arboretum, opening views for park users and improving the recreational experience of the land and water in this area. The new west approach would originate from the shoreline near East Montlake Park and would maintain a constant

slope through the Arboretum. The height of SR 520 at the west transition span would be similar to the existing west transition span.

Traffic to and from SR 520 would no longer exit and enter directly to and from the portion of Lake Washington Boulevard located in the Arboretum, which would benefit the park. Some of the drivers who currently use this segment of the park boulevard would choose another route to reach the Montlake interchange, which would reduce the amount of traffic on Lake Washington Boulevard in the Arboretum.

As part of the Arboretum Mitigation Plan, developed through the ESSB 6392 workgroup process, WSDOT has committed to working with the Seattle Department of Transportation to identify traffic-calming measures along Lake Washington Boulevard and to fund traffic management in the Arboretum. In addition to support for traffic calming, the Arboretum Mitigation Plan contains additional mitigation measures to reduce project effects on the Arboretum, including stipulations such as coordination on aesthetic enhancements, consultation on noise minimization measures, and WSDOT peninsula restoration following ramp removal.

WSDOT developed a memorandum of understanding (MOU) with the Arboretum and Botanical Garden Committee (ABGC) that describes the roles and responsibilities of each party involved in the various mitigation projects (see Attachment 9 for a copy of the MOU). Following execution of the MOU, which was signed in March 2011, WSDOT and the ABGC will develop scopes, cost estimates, and implementation plans for each mitigation project by late 2011. Project-specific implementation agreements are anticipated for development in late 2011 or early 2012. The traffic calming and traffic management projects were scoped and implemented by WSDOT in spring 2011.

Foster Island (ID 201)

Foster Island is currently part of the Washington Park Arboretum. The North Island is approximately 13 acres and the South Island approximately 23 acres. Although the islands were formerly separate, they are now connected as a single island, and SR 520 occupies the space between the islands as well as part of the north margin of the South Island.

Foster Island was historically and continues to be a sacred place to some local tribes (Waterman 1922, Hilbert et al. 2001). WSDOT and FHWA, in consultation with the tribes, has determined that Foster Island is a TCP eligible for listing in the NRHP.

Preferred Alternative

Under the Preferred Alternative, the highway main line would be elevated in the Washington Park Arboretum, rising from its existing clearance of approximately 8 feet over the Arboretum Waterfront Trail on Foster Island

to a clearance of approximately 16 to 20 feet at this location. Because the main line would be higher than the existing roadway, the highway would become a more dominant and noticeable feature, causing a visual effect in the northern portion of the Arboretum. However, the new SR 520 structure would produce a beneficial effect by allowing the trail to pass between columns of an elevated structure, replacing the current low and narrow pedestrian underpass, and improving the user experience by opening views at ground level. The wider column spacing (to support the elevated structure) on the proposed bridge would also contribute to the positive visual change for the area under the elevated roadway.

The Preferred Alternative and all the SDEIS design options would affect Foster Island to varying degrees, as described below (Exhibit 5.6-11). As discussed in Chapter 4, Foster Island is eligible for the NRHP as a traditional cultural property due to its cultural significance.

The Preferred Alternative would cross Foster Island with a pier and span bridge that would require acquisition of 0.5 acre of land on Foster Island north of the existing alignment. (This compares to 0.4 acre for Option A, 0.7 acres for Option K, and 0.3 acre for Option L.) There would be no right-of-way expansion south of the existing roadway.

The Preferred Alternative minimizes impacts on the Foster Island TCP. As a result of WSDOT's coordination with the affected area tribes, WSDOT limited the additional width required for design refinements, and also committed to using low-impact construction techniques by using work bridges to reduce further ground disturbance. The project would still permanently acquire 0.5 acre of land and expand a use on the island that is inconsistent with its traditional cultural use. This would diminish the integrity of the setting and feeling of Foster Island.

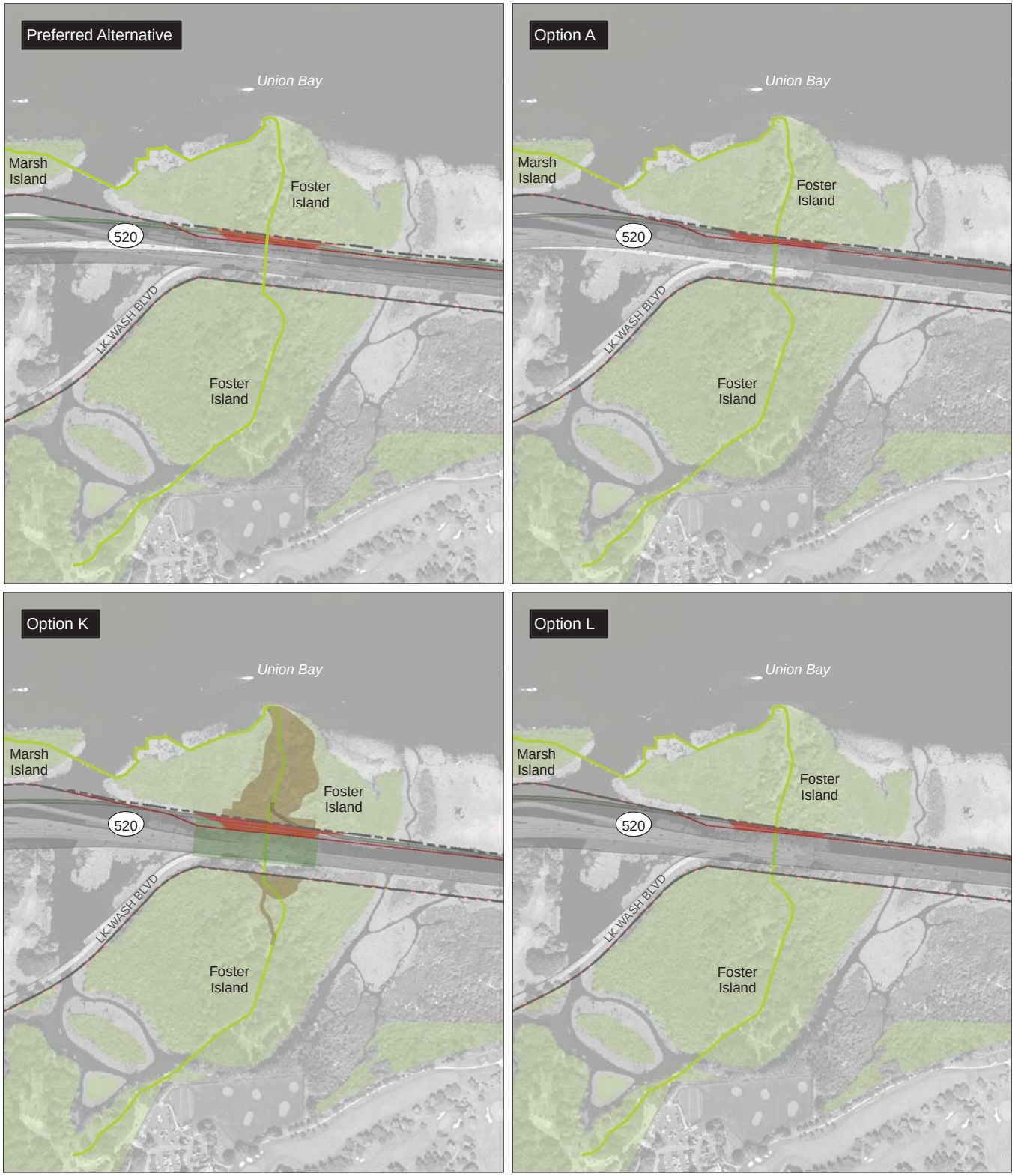
Option A

Option A would also cross Foster Island with a pier-and-span bridge that would require acquisition of 0.4 acre of land north of the existing alignment. As with the Preferred Alternative, there would be no right-of-way expansion to the south of the existing roadway (see Exhibit 5.6-11). The highway main line would be elevated, resulting in approximately 16 to 20 feet of clearance between the bottom of the bridge and the Arboretum Waterfront Trail on Foster Island. Because the main line would be higher than the existing roadway, the highway would become a more dominant and noticeable feature, causing a visual effect similar to the Preferred Alternative in this area of the Arboretum. Effects on Foster Island would also be similar to those of the Preferred Alternative.

Option A Suboptions

- Adding the Lake Washington Boulevard ramps to Option A would not result in a measurable change to the effects on historic properties in the west approach area described for the base option.

Exhibit 5.6-11. Permanent Effects on Foster Island



Park Acquistion

- Converted to right-of-way
- Permanently affected by fill and regrading
- Proposed right-of-way
- Existing right-of-way
- Existing trail/bicycle path
- Proposed bicycle/pedestrian path
- Lid or landscape feature
- Pavement
- Park

N 0 500 1,000 Feet

The added ramps would be located considerably farther west than they are currently, resulting in a positive visual change.

- Adding the eastbound HOV direct-access ramp to Option A would have no effect on the Arboretum or Foster Island.
- Changing the slope of the west approach area in Option A to a constant slope would have no effect on the Arboretum or Foster Island.

Option K

Option K's proposed land bridge would require acquisition of 0.7 acre of land on Foster Island (see Exhibit 5.6-11). Although the land bridge would be within the WSDOT right-of-way, it could be available for recreational use after construction. The Arboretum Waterfront Trail would be reconstructed to pass over the land bridge. The top of the land bridge would be landscaped, which would provide a positive effect for users, and fill would be placed north of the land bridge to create a gentle slope from the bridge to the north end of Foster Island. The character of the filled area would change somewhat from its present condition.

The right-of-way expansion for the land bridge on Foster Island would occur north of the existing alignment. There would be no right-of-way expansion in the more culturally sensitive area south of the existing roadway. However, because of the land bridge and associated grading to the north, the island would undergo a significant visual and topographic change, and the user experience would be very different from existing conditions.

Option L

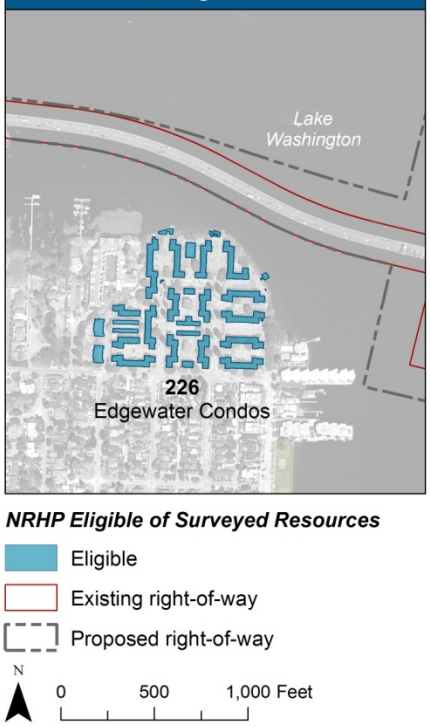
In the Arboretum, Option L would cross over Foster Island with a bridge similar to Option A, requiring acquisition of 0.3 acre of land. The highway main line would be elevated, providing approximately 10 to 12 feet of clearance above the Arboretum Waterfront Trail on Foster Island. Because the main line would be higher than the existing roadway, the highway would become a more dominant and noticeable feature

As with the Preferred Alternative and the other design options, permanent acquisition for Option L would occur on the north section of the island; there would be no right-of-way expansion in the more culturally sensitive area south of the existing roadway.

Edgewater Condominiums (ID 226)

The Edgewater Condominiums (Exhibit 5.6-12) are eligible for listing in the NRHP under Criterion C as part of the multiple property nomination for Seattle apartment buildings. They are recognized as a distinctive architectural type and as the work of master architect John Graham Jr.

Exhibit 5.6-12. **Edgewater Condos**



Preferred Alternative

The Edgewater Condominiums would experience a slight benefit from the new west approach of the Preferred Alternative. The west highrise would shift westward from its existing location and would be a few feet higher; it also would lie approximately 70 feet farther north than the existing structures. This would reveal more open water views in Union Bay from these condominiums. The height of the floating bridge would increase to an elevation of approximately 20 feet above the water surface. This change to the viewshed would affect the integrity of setting and feeling of the property, but it would not be a significant change from existing conditions, and would increase less than Options A, K, and L. No defining characteristics of the Edgewater Condominiums would be diminished by the Preferred Alternative.

Options A, K, and L

The Edgewater Condominiums would experience an effect similar to that described for the Preferred Alternative, although the floating bridge would be approximately 30 feet above the water surface rather than 20 feet. No defining characteristics of the Edgewater Condominiums would be diminished by the SDEIS options.

Lake Washington Area

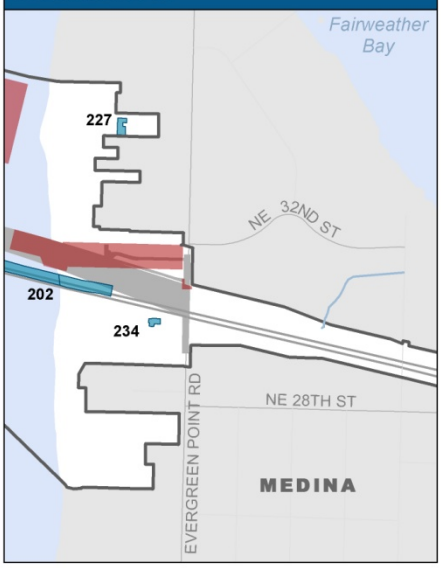
The Preferred Alternative and all the SDEIS options would demolish the existing Evergreen Point Bridge and construct a new Evergreen Point Bridge. No historic properties in the Lake Washington study area would be affected by operation of the Preferred Alternative or any SDEIS options because the only historic property present, the Evergreen Point floating bridge, would be removed during construction of the new bridge.

Eastside Transition Area

There would be no adverse effects on the historic built environment in the Eastside Transition Area from operation of the Preferred Alternative. Once completed, the floating span of the new bridge would be located approximately 160 feet north of its present location at the east end, and the east approach structure would be approximately 81 feet north, moving the bridge and approach farther away from the Helen Pierce House, which is eligible for the Washington Historic Register, and lessening the current effects, resulting in a positive change to the property (Exhibit 5.6-13). Although the new floating portion would be slightly higher than the existing floating portion, this greater height would be a minimal visual change to the setting of historic properties.

The Dixon House is located approximately 1,000 feet north of the existing east approach to the Evergreen Point Bridge. The new bridge and the approach would be about 160 feet closer to the Dixon House, but still far enough away that operation of SR 520 would not diminish the setting and

Exhibit 5.6-13. Effects on Historic Properties within the Eastside Transition Area



NRHP Eligibility of Surveyed Resources

Eligible

Property Effects

Converted to right-of-way

Area of potential effects

Pavement

Note: All resources are mapped and described in detail in the Final Cultural Resources Assessment and Discipline Report. See Table 4.6-1 for a list of properties that correspond to the ID numbers shown above.

N 0 500 1,000 Feet

feeling of this property. The intersection of SR 520 and Evergreen Point Road, near the Arntson House, would be several lanes wider than the existing intersection. This could raise the traffic noise level at this property, but the house would retain the vegetative buffer between it and the roadway. The new floating portion of the bridge would be slightly higher than the existing floating portion, but this greater height would be a minimal visual change to the setting of historic properties in the Eastside transition area.

What indirect effects would the project likely have on cultural resources?

WSDOT did not identify any indirect effects on cultural resources likely to result from operation of the SR 520 project. This is because all project-related effects on cultural resources would be within or close to the project construction footprint and would occur at the time of project construction.

What has been done to avoid or minimize the adverse effects on cultural resources?

Throughout the design and planning process, WSDOT has taken care to avoid and minimize the adverse effect on historic properties. General measures taken through planning and design to avoid and minimize the adverse effect on historic properties include the following:

- Reducing the footprint and/or shifting the alignment of SR 520 to avoid or minimize effects on historic properties, including the Montlake Historic District, the NOAA Northwest Fisheries Science Center, the Washington Park Arboretum, and Foster Island
- Incorporating a landscaped lid at Montlake Boulevard that helps physically reunite the Montlake Historic District while improving views and reducing noise
- Incorporating a landscaped lid at 10th and Delmar that helps reduce noise in the Roanoke Park Historic District and provides an opportunity to develop an adjacent open space that is compatible with the historic district
- Reducing noise levels in the two historic districts, at the Seattle Yacht Club, the NOAA Northwest Fisheries Science Center, Lake Washington Boulevard, the Washington Park Arboretum, and Foster Island by incorporating noise reduction strategies.
- Adjusting construction haul and detour routes to avoid or minimize construction impacts on the Montlake and Roanoke Park historic districts as much as possible
- Involving the affected communities in context-sensitive design of the new lids as part of SR 520 design development and under existing processes of the City of Seattle and the SDC, which will help preserve

the setting and feeling of the Roanoke Park and Montlake Historic districts as well as individually NRHP-eligible and listed properties within and adjacent to those districts.

The following specific design measures were incorporated into the Preferred Alternative to avoid or minimize effects:

- Changes to the project alignment to avoid direct physical effects on the Roanoke Park Historic District. These changes avoid direct impacts on the sidewalk, the street, and the planted median within the district.
- Changes to the Portage Bay Bridge width and alignment to avoid demolition of buildings at the NOAA Northwest Fisheries Science Center that would have occurred under previously studied designs. As described in the SDEIS, these demolitions could have had the potential to result in permanent displacement of the property's historic use.
- Posting a reduced speed limit between I-5 and the Montlake lid (45 mph) and incorporating a taller than standard traffic barrier between the Portage Bay Bridge and I-5 to help reduce noise levels at nearby properties, including the Roanoke Park Historic District, the Seattle Yacht Club, and the NOAA Northwest Fisheries Science Center.
- Developing context-sensitive designs for the Portage Bay Bridge, the new Montlake bascule bridge, and the west approach bridge that will maintain or enhance the historic setting and feeling of the Roanoke Park and Montlake historic districts, the Seattle Yacht Club, NOAA Northwest Fisheries Science Center, the Montlake Bridge, the Canoe House, and the Washington Park Arboretum.
- Designing the Preferred Alternative to minimize the width and number of columns across Foster Island to reduce effects on Foster Island and the Washington Park Arboretum.
- Enhancing the historic setting of the Washington Park Arboretum by removing the existing ramps, incorporating noise reduction strategies, and providing improved pedestrian and bicyclist connections under the highway.

No NRHP-eligible archaeological sites have been identified within the APE. To date, WSDOT has conducted archaeological investigations of the areas planned for ground-disturbing activities in high-probability areas within the limits of construction, including Foster Island. Two factors have prohibited WSDOT from investigating all locations within the APE for the presence of archaeological sites. In some cases, WSDOT has yet to identify the locations that will be needed, and in others, WSDOT does not yet have permission from property owners to perform archaeological investigations. Thus, some ground-disturbance areas, such as the natural resources and Section 6(f) mitigation sites, will not be inventoried for archaeological resources until after the Programmatic Agreement has been signed.

Therefore, the commitment to identify and evaluate these sites is memorialized through a stipulation in the Programmatic Agreement, (Attachment 9).

Improvements to the design of the west approach have reduced the number of columns that would be placed across Foster Island, an NRHP-eligible TCP. As noted previously, right-of-way expansion in this area would be restricted to the area north of the existing alignment.

How could the project mitigate unavoidable adverse effects on cultural resources?

The adverse effect on historic properties would be mitigated through the stipulations provided in the Programmatic Agreement among WSDOT, FHWA, ACHP, SHPO, affected tribes, and other consulting parties. Measures to be taken to mitigate the adverse effects of the SR 520, I-5 to Medina project were developed through consultation among these participants and are detailed in the Programmatic Agreement (Attachment 9). In accordance with 36 CFR 800.6, Resolution of Adverse Effects, WSDOT, FHWA, DAHP, and the tribes have developed a Foster Island Treatment Plan that stipulates the measures to be taken to mitigate the adverse effect on the Foster Island TCP.