

Attachment 6
Draft Section 4(f)/6(f) Evaluation

**SR-520, I-5 to Medina:
Bridge Replacement and HOV Project
Supplemental Draft EIS**

**Draft
Section 4(f)/6(f) Evaluation**



December 2009



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Acronyms and Abbreviations

ALEA	Aquatic Lands Enhancement Account
APE	area of potential effects
BMP	best management practice
CEVP	Cost Estimate Validation Process®
CFR	Code of Federal Regulations
EIS	environmental impact statement
FHWA	Federal Highway Administration
HABS/HAER	Historic American Buildings Survey/Historic American Engineering Record
HCT	high-capacity transit
HOV	high-occupancy vehicle
I-5	Interstate 5
I-90	Interstate 90
I-405	Interstate 405
LWCF	Land and Water Conservation Fund
Medina to SR 202 project	SR 202, Medina to SR 202: Eastside Transit and HOV Project
MOA	memorandum of agreement
MOHAI	Museum of History and Industry
mph	miles per hour
n/a	not applicable
n.d.	no date
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRHP	National Register of Historic Places



PWA	Public Works Administration
RCO	Resource Conservation Office
SDEIS	Supplemental Draft Environmental Impact Statement
SEPA	State Environmental Policy Act
SHPO	State Historic Preservation Officer
SPUI	single-point urban interchange
SR	State Route
SR 520, I-5 to Medina project	SR 520, Medina to SR 202: Eastside Transit and HOV Project
SR 520 Program	State Route 520 Bridge Replacement and HOV Program
TCP	Traditional Cultural Property
USC	United States Code
WAC	Washington Administrative Code
WPA	Works Progress Administration
WSDOT	Washington State Department of Transportation



Introduction

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 USC 303[a]) declares that “[i]t is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites.” Section 4(f) applies to the State Route (SR) 520, Interstate 5 (I-5) to Medina: Bridge Replacement and High-Occupancy Vehicle (HOV) Project (SR 520, I-5 to Medina project) 6-Lane Alternative because eligible park and recreation resources and historic properties are present within the study area. This Section 4(f) Evaluation assesses the proposed use by the project of parks, recreation areas, wildlife refuges, and historic properties protected under Section 4(f) regulations. A preferred alternative has not yet been identified for the project.

In March 2008, publication of the Section 4(f) Final Rule (23 CFR Part 774) amended existing Section 4(f) legislation. This Draft Section 4(f) Evaluation is written in accordance with this new legislation.

What is Section 4(f)?

Section 4(f) requires that particular attention be given to the proposed use of any land from a significant publicly owned park or recreation area, wildlife and waterfowl refuge, or historic property that is in or eligible for the National Register of Historic Places (NRHP).

Section 4(f) specifies that the Federal Highway Administration (FHWA) may only approve a transportation project or program requiring the use of publicly owned land of a public park, recreation resource, or wildlife and waterfowl refuge of national, state, or local significance; or land from a historic property if:

1. There is no prudent and feasible alternative to using that land; and
2. The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic property resulting from the use; or

Since properties that are eligible for listing in the National Register of Historic Places (NRHP) are regulated and treated the same as those that are considered eligible for listing, no distinction is made between these types of properties for the purposes of this evaluation. The Montlake Historic District, for instance, is eligible for the NRHP but not listed, and is simply referred to as a historic district within this document.



3. The Administration determines that the use of the property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant, will have a *de minimis* impact, as defined in §774.17, on the property.

Section 4(f) further requires consultation with the officials with jurisdiction over Section 4(f) properties when developing transportation projects and programs that use properties protected by Section 4(f).

“Use” of a Section 4(f) property, defined in Section 23 CFR 774.17, occurs in the following circumstances:

1. When land is permanently incorporated into a transportation facility;
2. When there is a temporary occupancy of Section 4(f) property that is adverse in terms of the statute’s preservationist purpose; or
3. When land is not incorporated into a transportation project, but the project’s proximity impacts are so severe that the protected activities, features, or attributes that qualify a property for protection under Section 4(f) are substantially impaired, resulting in a constructive use. A determination of constructive use is based on the criteria in 23 CFR 774.15.

From a Section 4(f) perspective, an alternative that avoids use of a Section 4(f) property must be selected if it is determined to be feasible and prudent according to 23 CFR 774.17. An alternative is not feasible if it cannot be built as a matter of sound engineering. A determination of prudence according to CFR 774.17 requires confirming that the project will not:

- Compromise the project to a degree that is unreasonable to proceed with it in light of its stated purpose and need.
- Result in unacceptable safety or operational problems.
- Result in additional construction, maintenance, or operational costs of an extraordinary magnitude.
- After reasonable mitigation, cause:
 - Severe social, economic, or environmental impacts
 - Severe disruption to established communities



- Severe disproportionate impacts to minority or low income populations
- Severe impacts to environmental resources protected under other federal statutes
- Cause other unique problems or unusual factors.
- Involve multiple factors that could cumulatively cause unique problems or impacts of extraordinary magnitude.

If analysis concludes there is no feasible and prudent avoidance alternative, then approval may only be granted for the alternative that causes the least overall harm with regard to preservation of the resource. Least overall harm is determined by balancing the ability to mitigate adverse impacts, the relative severity of remaining harm to the resource after mitigation, the relative significance of each Section 4(f) property, the views of the officials with jurisdiction, and the degree to which each alternative meets the purpose and need of the project. These are considered along with differences in cost for the alternatives and the magnitude of any adverse impacts on non-Section 4(f) resources remaining after mitigation measures are applied.

What are the key points of this evaluation?

The following list provides the key points of the Draft Section 4(f) Evaluation of the SR 520, I-5 to Medina project.

- There are 10 park and recreation facilities and 234 historic properties that could potentially be affected by the proposed project and that are protected under Section 4(f) regulations. Of these 10 park and recreation resources and 234 historic properties, 4 parks, 2 trails, and 11 historic properties would experience a use as defined by Section 4(f), depending on the 6-Lane Alternative option implemented.
- The following 10 park and recreation resources are Section 4(f) properties within the study area that could potentially be affected by the project:
 - Bagley Viewpoint
 - Interlaken Park
 - Montlake Playfield



- Bill Dawson Trail
 - East Montlake Park
 - McCurdy Park
 - Ship Canal Waterside Trail
 - University of Washington Open Space
 - Washington Park Arboretum
 - Arboretum Waterfront Trail
- There are 234 historic properties in the area of potential effects (APE), including 2 historic districts, 6 historic bridges, 1 historic waterway, 2 historic landscapes, 1 presumed eligible Traditional Cultural Property (TCP), and 220 historic buildings that are listed in or eligible for the NRHP. All of these properties are protected by Section 4(f). (For more information on historic properties in the APE, see the Cultural Resources Discipline Report or Chapter 5 of the Supplemental Draft EIS [SDEIS]). Of these, the following 12 historic properties would experience a Section 4(f) use from the project, depending on the design option:
 - Fire Station #22 (Options A, K, and L)
 - National Oceanic and Atmospheric Administration (NOAA) Northwest Fisheries Science Center
 - Montlake Historic District
 - 2220 East Louisa Street residence
 - Montlake Cut
 - Naval Military Hangar/University Shell House (Canoe House)
 - Pavilion Pedestrian Bridge
 - South Pedestrian Bridge
 - North Pedestrian Bridge
 - Washington Park Arboretum
 - Foster Island
 - Governor Albert D. Rosellini Bridge/ Evergreen Point Bridge
 - FHWA and the Washington State Department of Transportation (WSDOT) intend to make *de minimis* determinations with respect to six of the historic properties (pending State Historic Preservation Officer [SHPO] concurrence with the finding of no adverse effect on these properties):



- Fire Station #22 (Options A, K, and L)
 - Montlake Cut (Options A, K, and L)
 - Canoe House (Options A, K, and L)
 - NOAA Northwest Fisheries Science Center (Options K and L)
 - Montlake Historic District (Option K)
 - 2220 East Louisa Street (Option A)
- FHWA is considering Foster Island (located within the Washington Park Arboretum) to be a TCP and is treating it as eligible for the NRHP although a formal determination of eligibility for this property is yet to be completed. Further documentation and analysis will be undertaken to identify TCP boundaries as part of the Section 106 process. All of the design options use this property to varying degrees.
 - There is no feasible and prudent alternative that would avoid the use of all Section 4(f) properties.
 - Because there is no feasible and prudent avoidance alternative, all 6-Lane Alternative options were analyzed to determine the relative net harm of each option, so that the one that causes the least harm could be identified.
 - Due to funding limitations, there is a strong possibility that WSDOT would construct the project in phases over time. If the project is phased, WSDOT would first complete one or more of those project components that are vulnerable to earthquakes and windstorms. For more details on project phasing, see the section “What are the Project Alternatives?” below.
 - Phasing the project would not change the use of Section 4(f) properties. The same properties would experience the same uses as they would if the project was not constructed in phases. The difference would be that these properties would not all experience a use during the same construction period if the project is phased.
 - If phased construction is implemented, some properties could experience a use more than once, depending on the design option selected. East Montlake and McCurdy Parks could experience a use from the replacement of the Evergreen Point Bridge west approach and construction of associated stormwater facilities, and then later for the new bascule bridge or tunnel under Options K and L. The Montlake Historic District could experience a use for the Evergreen Point Bridge west approach and the Portage Bay Bridge



replacements, and then later for the replacement of the Montlake Boulevard interchange and the construction of the Montlake lid, and for the construction of the new bascule bridge or tunnel, depending on the design option selected.

- Parks and other recreation facilities acquired and/or developed using funds from the Land and Water Conservation Fund (LWCF) Act of 1965 are protected from conversion to non-recreational uses, as specified in Section 6(f) of that act. This evaluation addresses those properties in the “Section 6(f) Resources” section. That section also discusses protection of facilities acquired or developed using Washington State Aquatic Lands Enhancement Account (ALEA) funds.
- There are two LWCF-assisted resources protected by Section 6(f) in the study area – the Ship Canal Waterside Trail and the Arboretum Waterfront Trail. Section 6(f)-protected property includes these two trails, as well as the parcels upon which they are located.
- Construction of each of the 6-Lane Alternative options would result in conversion of Section 6(f) property through permanent right-of-way acquisition, permanent easements, and/or temporary closure of portions of the property for more than 6 months during project construction.

What are the project alternatives?

The SR 520, I-5 to Medina: Bridge Replacement and HOV Project is part of the SR 520 Bridge Replacement and HOV Program (SR 520 Program) (detailed in the text box below) and encompasses parts of three main geographic areas – Seattle, Lake Washington, and the Eastside. The project area includes the following:

- Seattle communities: Portage Bay/Roanoke, North Capitol Hill, Montlake, University District, Laurelhurst, and Madison Park
- Eastside communities: Medina, Hunts Point, Clyde Hill, and Yarrow Point
- The Lake Washington ecosystem and associated wetlands
- Usual and accustomed fishing areas of tribal nations that have historically used the area’s aquatic resources and have treaty rights



What is the SR 520 Program?

The **SR 520 Bridge Replacement and HOV Program** will enhance safety by replacing the aging floating bridge and keep the region moving with vital transit and roadway improvements throughout the corridor. The 12.8-mile program area begins at I-5 in Seattle and extends to SR 202 in Redmond.

In 2006, WSDOT prepared a Draft EIS—published formally as the **SR 520 Bridge Replacement and HOV Project**—that addressed corridor construction from the I-5 interchange in Seattle to just west of I-405 in Bellevue. Growing transit demand on the Eastside and structure vulnerability in Seattle and Lake Washington, however, led WSDOT to identify new projects, each with a separate purpose and need, that would provide benefit even if the others were not built. These four independent projects were identified after the Draft EIS was published in 2006, and these now fall under the umbrella of the entire **SR 520 Bridge Replacement and HOV Program**:

- **SR 520, I-5 to Medina: Bridge Replacement and HOV Project** replaces the SR 520 roadway, floating bridge approaches, and floating bridge between I-5 and the eastern shore of Lake Washington. This project spans 5.2 miles of the SR 520 corridor.
- **SR 520, Medina to SR 202: Eastside Transit and HOV Project** completes and improves the transit and HOV system from Evergreen Point Road to the SR 202 interchange in Redmond. This project spans 8.6 miles of the SR 520 corridor.
- **SR 520 Pontoon Construction Project** involves constructing the pontoons needed to restore the Evergreen Point Bridge in the event of a catastrophic failure and storing those pontoons until needed.
- **SR 520 Lake Washington Congestion Management Project (Variable Tolling Project)**, through a grant from the U.S. Department of Transportation, improves traffic using tolling, technology and traffic management, transit, and telecommuting.

The SR 520 Bridge Replacement and HOV Project Draft Environmental Impact Statement (EIS), published in August 2006, evaluated a 4-Lane Alternative, a 6-Lane Alternative, and a No Build Alternative. Since the Draft EIS was published 3 years ago, circumstances surrounding the SR 520 corridor have changed in several ways. These changes have resulted in decisions to forward advance planning for potential catastrophic failure of the Evergreen Point Bridge, respond to increased demand for transit service on the Eastside, and evaluate a new set of community-based designs for the Montlake area in Seattle.

To respond to these changes, WSDOT and its co-lead agency, FHWA, initiated new projects to be evaluated in separate environmental documents. Improvements to the western portion of the SR 520 corridor—known as the SR 520, I-5 to Medina: Bridge Replacement and HOV Project (the SR 520, I-5 to Medina project)—are being evaluated in an SDEIS; this evaluation is a part of that SDEIS. Project limits for this project extend from I-5 in Seattle to 92nd Avenue NE in Yarrow Point, where it transitions into the Medina to SR 202: Eastside Transit and HOV Project (the Medina to SR 202 project). Exhibit 1 shows the project vicinity.

For this project, a mediation group convened at the direction of the state legislature after the publication of the Draft EIS in 2006 to evaluate the corridor alignment for SR 520 through Seattle. The mediation group identified three 6-lane design options for SR 520 between I-5 and the floating span of the Evergreen Point Bridge; these options were documented in a Project Impact Plan (Parametrix

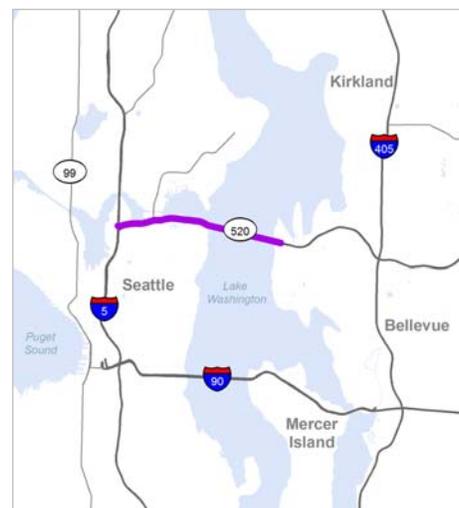


Exhibit 1. Project Vicinity Map



2008). The SDEIS evaluates the following two alternatives and the three design options and their suboptions:

- No Build Alternative
- 6-Lane Alternative
 - Option A
 - Option K
 - Option L

These alternatives, options, and suboptions are summarized below. More information on how the project has evolved since the Draft EIS was published in 2006, as well as more detailed information on the design options, is provided in Chapters 1 and 2 of the SDEIS.

What is the No Build Alternative?

Under the No Build Alternative, SR 520 would continue to operate as it does today between I-5 and Medina: as a 4-lane highway with nonstandard shoulders and without a bicycle/pedestrian path (Exhibit 2 depicts a cross section of the No Build Alternative). No new facilities would be added to SR 520 between I-5 and Medina, and none would be removed, including the unused R.H. Thomson Expressway ramps near the Washington Park Arboretum. WSDOT would continue to manage traffic using its existing transportation demand management and intelligent transportation system strategies.

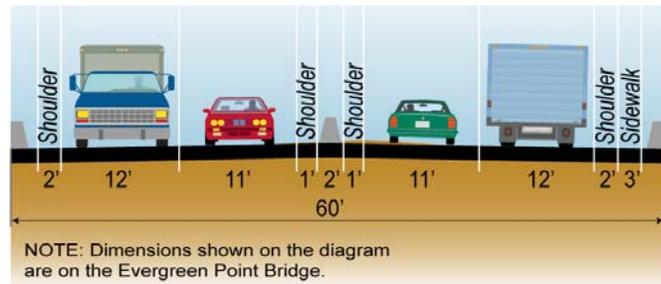


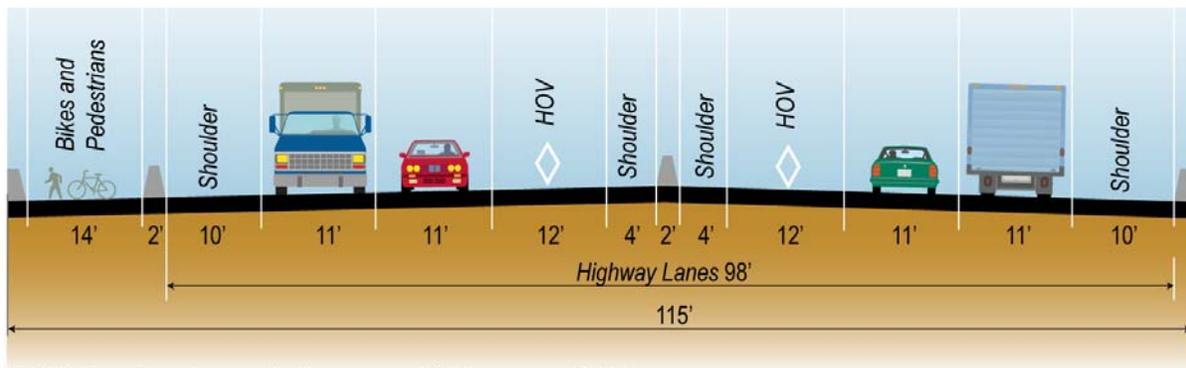
Exhibit 2. No Build Alternative Cross Section

The No Build Alternative assumes that the Portage Bay and Evergreen Point bridges would remain standing and functional through 2030 and that no catastrophic events, such as earthquakes or extreme storms, would cause major damage to the bridges. The No Build Alternative also assumes completion of the Medina to SR 202 project as well as other regionally planned and programmed transportation projects. The No Build Alternative provides a baseline against which WSDOT can measure and compare the effects of each 6-Lane Alternative build option.



What is the 6-Lane Alternative?

The 6-Lane Alternative would complete the regional HOV connection (3+ HOV occupancy) across SR 520. This alternative would include six lanes (two 11-foot-wide outer general-purpose lanes and one 12-foot-wide inside HOV lane in each direction), with 4-foot-wide inside and 10-foot-wide outside shoulders (Exhibit 3 depicts a cross section of the 6-Lane Alternative). The proposed width of the roadway would be narrower than the one described in the Draft EIS and reflects public comment from local communities.



NOTE: Dimensions shown on the diagram are on the Evergreen Point Bridge.

Exhibit 3. 6-Lane Alternative Cross Section

SR 520 would be rebuilt from I-5 to Evergreen Point Road in Medina and restriped and reconfigured from Evergreen Point Road to 92nd Avenue NE in Yarrow Point. A 14-foot-wide bicycle/pedestrian path would be built along the north side of SR 520 through the Montlake area and across the Evergreen Point Bridge, connecting to the regional path on the Eastside. A bridge maintenance facility and dock would be built underneath the east approach to the Evergreen Point Bridge.

The sections below describe the design options identified for the 6-Lane Alternative in each of the three geographical areas it would encompass.

Seattle

Elements Common to the 6-Lane Alternative Options

SR 520 would connect to I-5 in a configuration similar to the way it connects today. Improvements to the I-5/SR 520 interchange would include a new reversible HOV ramp connecting the new SR 520 HOV lanes to existing I-5 reversible express lanes. WSDOT would replace the Portage Bay Bridge and the Evergreen Point Bridge (including the west approach and floating span), as well as the existing local street bridges across SR 520. New stormwater facilities would be constructed for the



project to provide stormwater retention and basic treatment, as well as enhanced treatment where feasible. The project would include landscaped lids across SR 520 at I-5, 10th Avenue East and Delmar Drive East, and in the Montlake area to help reconnect the communities on either side of the roadway. The project would also remove the Montlake freeway transit station.

The most substantial differences among the three options are the interchange configurations in the Montlake and University of Washington areas. Exhibit 4 depicts these key differences in interchange configurations. Another substantial difference among the three options is how they affect Foster Island. The following text describes elements unique to each option.

Option A

Option A would replace the Portage Bay Bridge with a new seven-lane bridge (four general-purpose lanes, two HOV lanes, and a westbound auxiliary lane) (Exhibit 5). WSDOT would replace the interchange at Montlake Boulevard East with a new, similarly configured interchange that would include a transit-only off-ramp from westbound SR 520 to northbound Montlake Boulevard. The Lake Washington Boulevard ramps and the median freeway transit stop near Montlake Boulevard East would be removed, and a new bascule bridge (i.e., drawbridge) would be added to Montlake Boulevard NE, parallel to the existing Montlake Bridge. SR 520 would maintain a low profile through the Washington Park Arboretum and flatten out east of Foster Island, before rising to the west transition span of the Evergreen Point Bridge. Citizen recommendations made during the mediation process defined this option to include sound walls and/or quieter pavement, subject to neighborhood approval and WSDOT's reasonability and feasibility determinations.

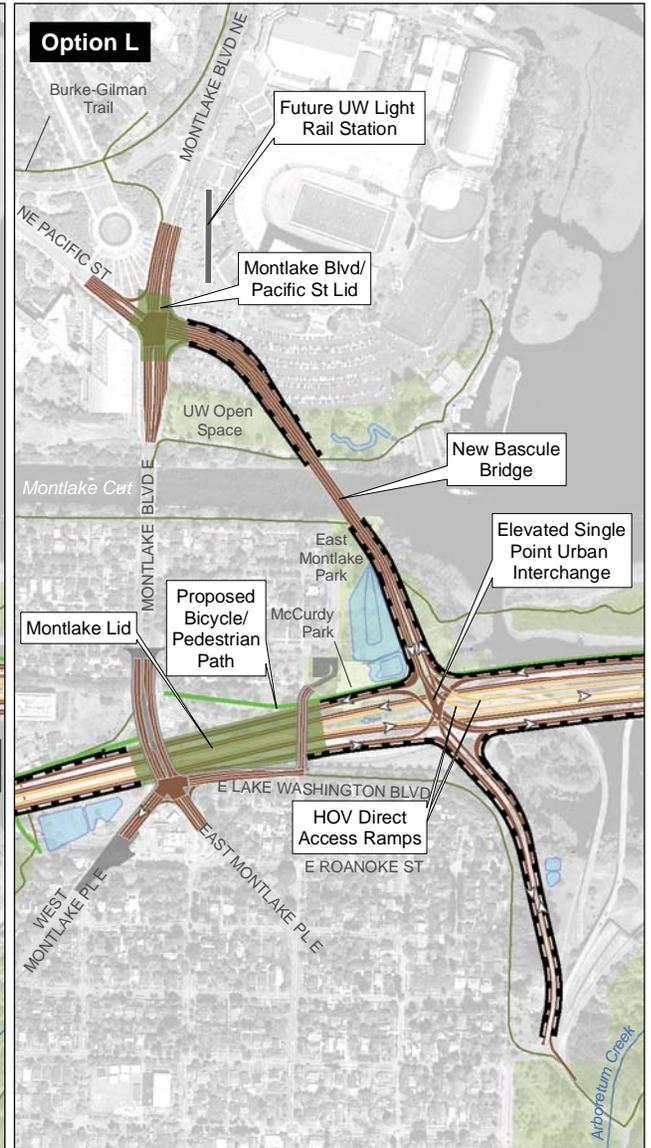
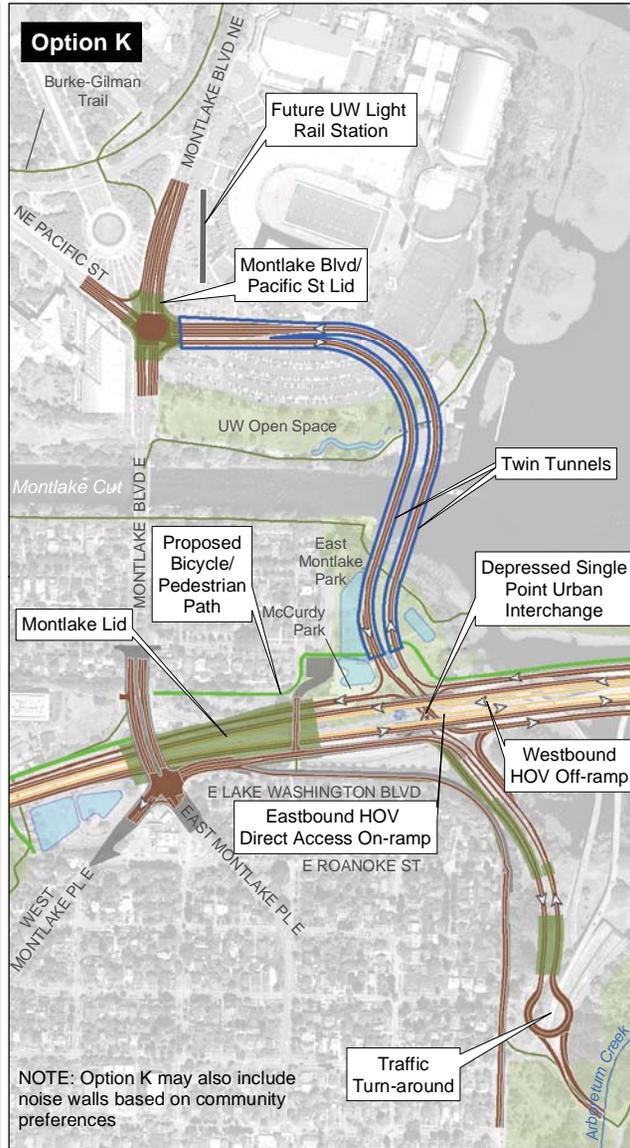
Is it a highrise or a transition span?



A transition span is a bridge span that connects the fixed approach bridge to the floating portion of the bridge. The Evergreen Point Bridge has two transition spans, one at the west end of the floating bridge transitioning traffic on and off of the west approach, and one on the east end of the floating bridge transitioning traffic on and off of the east approach. These spans are often referred to as the "west highrise" (shown) and the "east highrise" during the daily traffic report, and the west highrise even has a traffic camera mounted on it.

Today's highrises have two characteristics—large overhead steel trusses and navigation channels below the spans where boat traffic can pass underneath the Evergreen Point Bridge. The new design for the floating bridge would not include overhead steel trusses on the transition spans, which would change the visual character of the highrise. For the SDEIS, highrise and transition span are often used interchangeably to refer to the area along the bridge where the east and west approach bridges transition to the floating bridge.



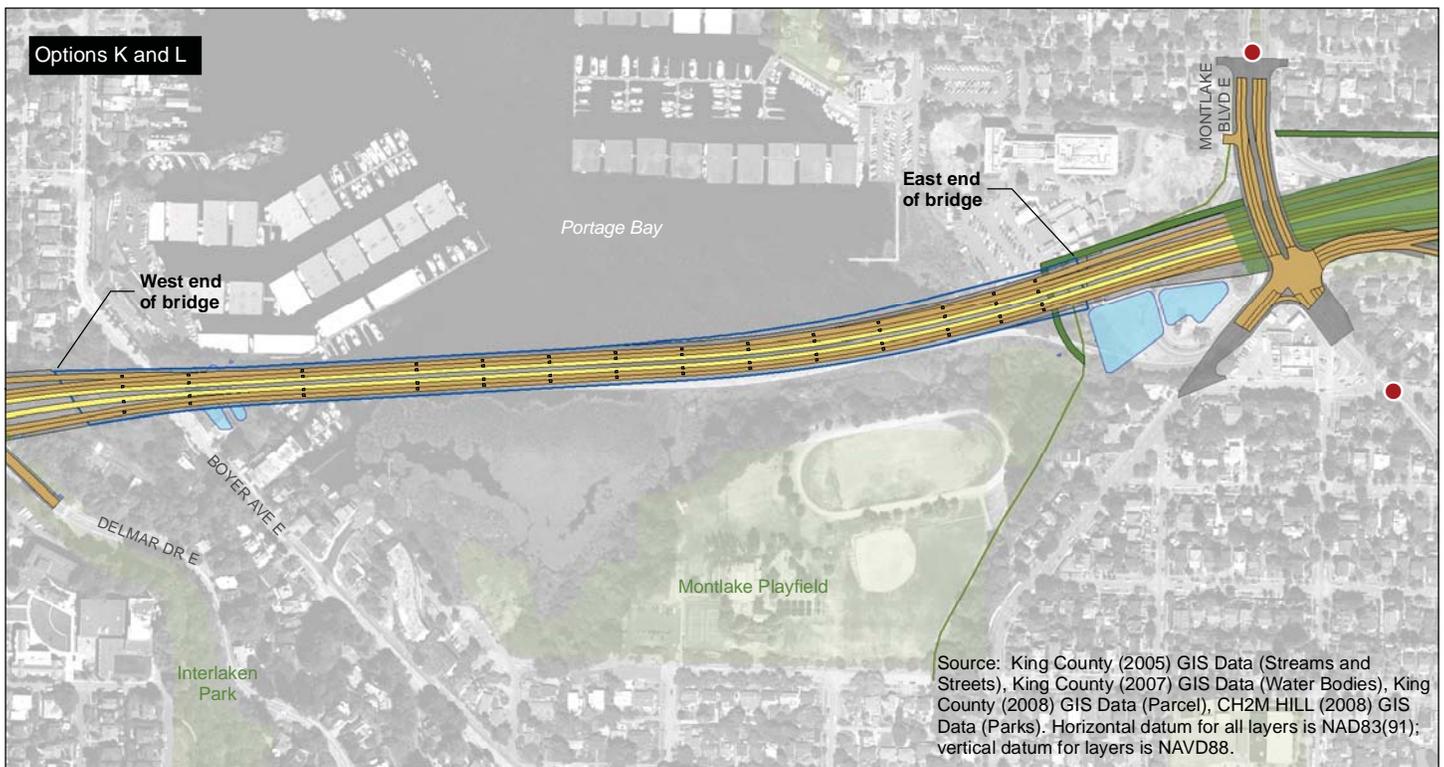
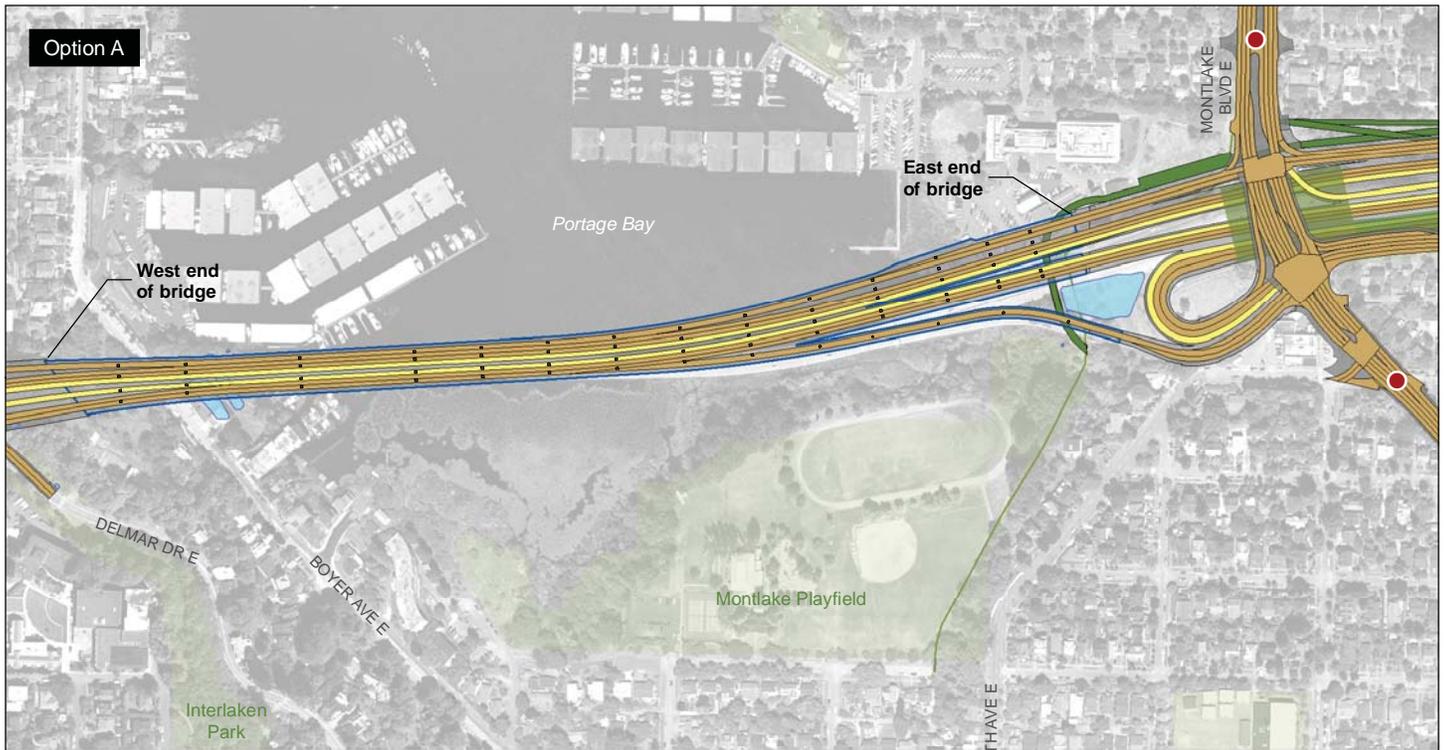


- Potential Sound Wall
- Existing Regional Bicycle/Pedestrian Path
- Tunnel
- Lid or Landscape Feature
- Proposed Bicycle/Pedestrian Path
- Stormwater Facility
- General-Purpose Lane
- HOV, Direct Access, and/or Transit-Only Lane
- Future UW Light Rail Station
- Park

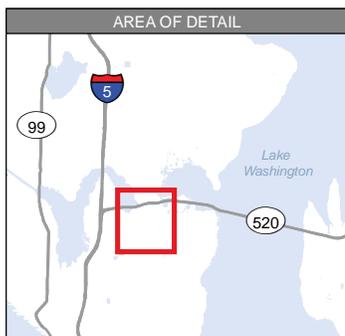


Source: King County (2006) Aerial Photo, King County (2005) GIS Data (Streams), City of Seattle (1994) GIS Data (Bike/Ped Trail), Seattle Bicycle Map (2008) GIS Data (Bike/Ped Trail) CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 4. Options A, K, and L: Montlake and University of Washington Areas
SR 520, I-5 to Medina Bridge Replacement and HOV Project



Source: King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), King County (2008) GIS Data (Parcel), CH2M HILL (2008) GIS Data (Parks). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



- Columns
- Signalized Intersection
- Existing Regional Bicycle/ Pedestrian Path
- Proposed Bicycle/ Pedestrian Path
- General-Purpose Lane
- HOV, Direct Access, and/or Transit-Only Lane
- ▭ Bridge Limits
- ▭ Lid or Landscape Feature
- ▭ Pavement
- ▭ Stormwater Treatment Facility

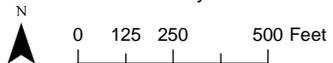


Exhibit 5. Portage Bay Bridge

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Suboptions for Option A would include adding a SR 520 eastbound on-ramp and a SR 520 westbound off-ramps to Lake Washington Boulevard, creating an intersection similar to the one that exists today but relocated northwest of its current location. The suboption would also include adding an eastbound direct access on-ramp for transit and HOV from Montlake Boulevard East, and providing a constant slope profile from 24th Avenue East to the west transition span.

- Option A has three potential suboptions. All of these suboptions are included in Option A+ as recommended by the legislative workgroup:
 - Add an eastbound HOV direct access ramp from Montlake Boulevard.
 - Add an eastbound on-ramp and a westbound off-ramp between SR 520 and Lake Washington Boulevard.
 - Use the Option L profile for the west approach bridge, which maintains a constant slope from the Montlake shoreline to the west highrise.

Option K

Option K would also replace the Portage Bay Bridge, but the new bridge would include four general-purpose lanes and two HOV lanes with no westbound auxiliary lane (see Exhibit 5). In the Montlake area, Option K would remove the existing Montlake Boulevard East interchange and the Lake Washington Boulevard ramps and replace their functions with a depressed, single-point urban interchange (SPUI) at the Montlake shoreline. Two HOV direct-access ramps would service the new interchange, and a tunnel under the Montlake Cut would move traffic from the new interchange north to the intersection of Montlake Boulevard NE and NE Pacific Street. SR 520 would maintain a low profile through Union Bay and would make landfall at Foster Island and remain flat before rising to the west transition span of the Evergreen Point Bridge. A land bridge would be constructed over SR 520 at Foster Island. Citizen recommendations made during the mediation process defined this option to include only quieter pavement for noise abatement, rather than the sound walls that were included in the 2006 Draft EIS. Because quieter pavement is not currently recognized as a reasonable and feasible form of noise mitigation in Washington state, sound walls could be included in Option K. The decision to build sound walls depends on neighborhood interest, the



findings of the Noise Discipline Report in the SDEIS (WSDOT 2009b), and WSDOT's reasonability and feasibility determinations.

- Option K has one potential suboption:
 - Addition of an eastbound off-ramp from SR 520 to Montlake Boulevard.

Option L

Under Option L, the Montlake Boulevard East interchange and the Lake Washington Boulevard ramps would be replaced with a new, elevated SPUI at the Montlake shoreline. A bascule bridge (drawbridge) would span the east end of the Montlake Cut, from the new interchange to the intersection of Montlake Boulevard NE and NE Pacific Street. This option would also include a ramp connection to Lake Washington Boulevard and two HOV direct-access ramps providing service to and from the new interchange. SR 520 would maintain a low, constant slope profile from 24th Avenue East to just west of the west transition span of the floating bridge. Noise mitigation identified for this option would include sound walls as defined in the Draft EIS.

Suboptions for Option L would include adding left-turn movement from Lake Washington Boulevard for direct access to SR 520 and adding capacity on northbound Montlake Boulevard NE to NE 45th Street.

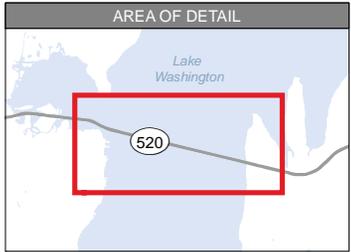
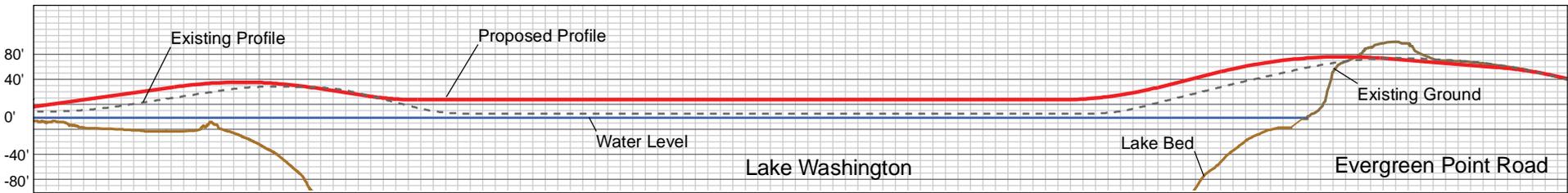
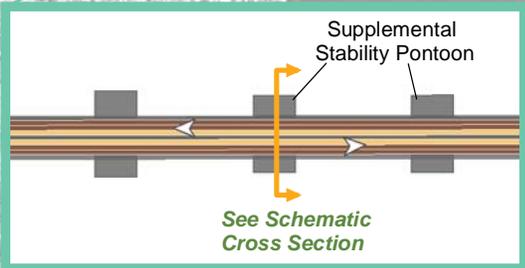
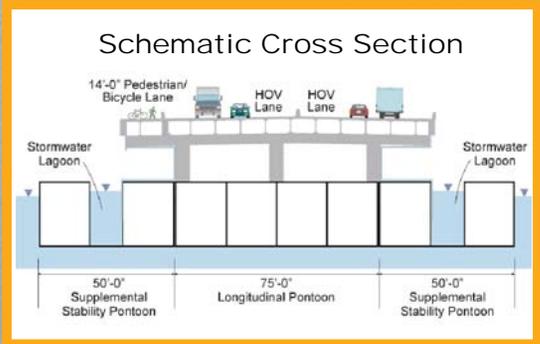
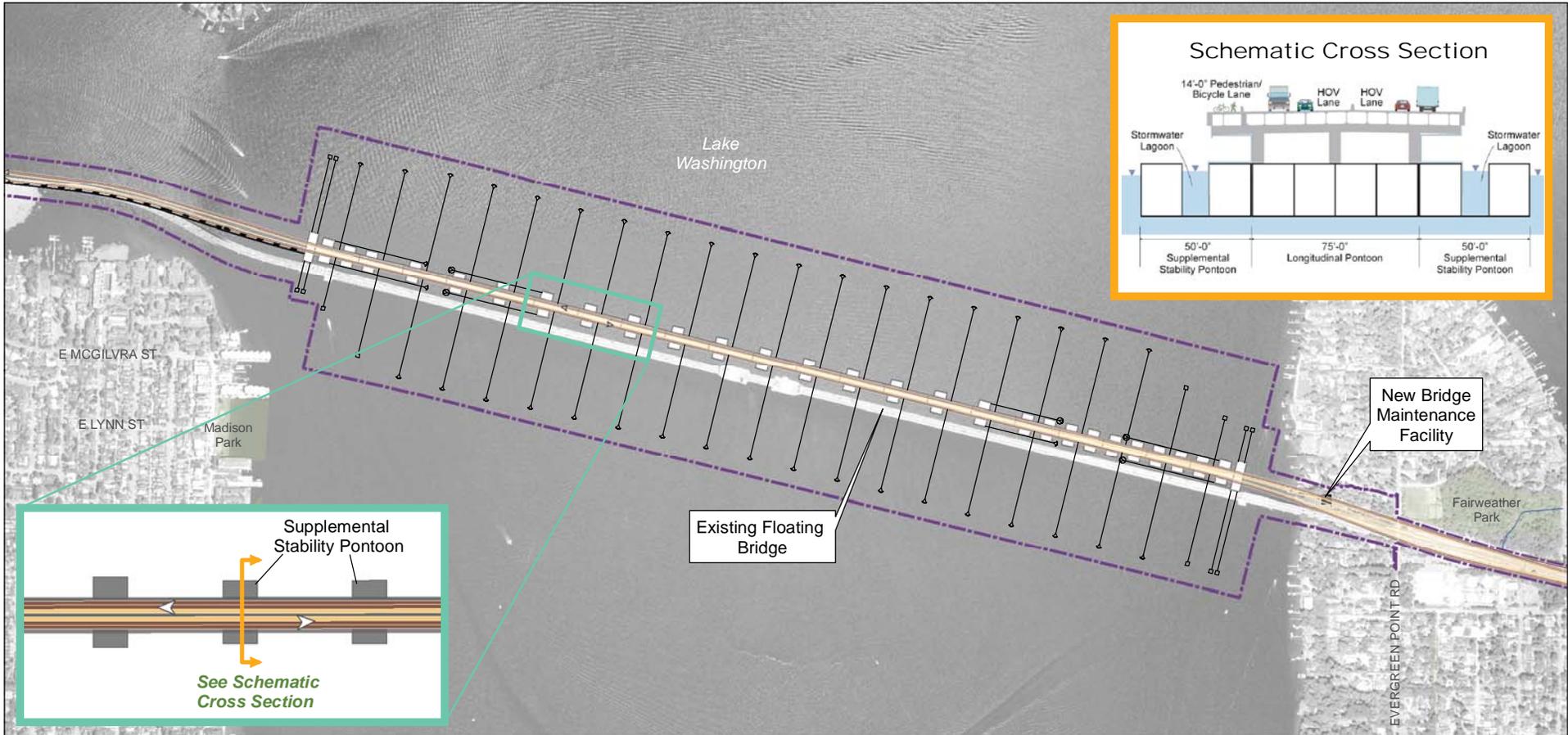
- Option L has two potential suboptions:
 - Addition of one northbound lane on Montlake Boulevard from Pacific Street to 25th Avenue NE
 - Addition of left-turn access from Lake Washington Boulevard to the SPUI south ramp

Lake Washington

Floating Bridge

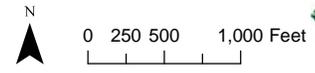
The floating span would be located approximately 190 feet north of the existing bridge at the west end and 160 feet north at the east end (Exhibit 6). Rows of three 10-foot-tall concrete columns would support the roadway above the pontoons, and the new spans would be approximately 22 feet higher than the existing bridge. A 14-foot-wide bicycle/pedestrian path would be located on the north side of the bridge.





- Anchor and Cable
- Pontoons
- Limits of Construction
- Proposed Bicycle/Pedestrian Path
- General-Purpose Lane
- HOV, Direct Access, and/or Transit-Only Lane

Park



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 6. 6-Lane Alternative at the Evergreen Point Bridge (Common to All Options)
 SR 520, I-5 to Medina Bridge Replacement and HOV Project

The new 6-lane floating bridge would be supported by 21 longitudinal pontoons, two cross pontoons, and 54 supplemental stability pontoons. A single row of 75-foot-wide by 360-foot-long longitudinal pontoons would provide the main support for the new floating bridge. One 240-foot-long by 75-foot-wide cross-pontoon at each end of the bridge would be set perpendicularly to the longitudinal pontoons. The longitudinal pontoons would be bolstered by the 54 smaller supplemental stability pontoons on each side for stability and buoyancy. The longitudinal pontoons would not be sized to carry future high-capacity transit (HCT), but would be equipped with connections for additional supplemental stability pontoons to support HCT in the future. As with the existing floating bridge, the floating pontoons for the new bridge would be anchored to the lake bottom to hold the bridge in place.

Near the east approach bridge, the roadway would be widened to accommodate transit ramps to the Evergreen Point Road transit stop. Exhibit 6 shows the alignment of the floating bridge, the west and east approaches, and the connection to the east shore of Lake Washington.

Bridge Maintenance Facility

Routine access, maintenance, monitoring, inspections, and emergency response for the floating bridge would be based out of a new bridge maintenance facility located underneath SR 520 between the east shore of Lake Washington and Evergreen Point Road in Medina. This bridge maintenance facility would include a working dock, an approximately 7,200-square-foot maintenance building, and a parking area.

Eastside Transition Area

The SR 520, I-5 to Medina project and the Medina to SR 202 project overlap between Evergreen Point Road and 92nd Avenue NE in Yarrow Point. Work planned as part of the SR 520, I-5 to Medina project between Evergreen Point Road and 92nd Avenue NE would include moving the Evergreen Point Road transit stop west to the lid (part of the Medina to SR 202 project) at Evergreen Point Road, adding new lane and ramp striping from the Evergreen Point lid to 92nd Avenue NE, and moving and realigning traffic barriers as a result of the new lane striping. The restriping would transition the SR 520, I-5 to Medina project improvements into the improvements to be completed as part of the Medina to SR 202 project. If the Medina to SR 202 project is not complete before the SR 520, I-5 to Medina project begins, WSDOT would either use the existing transit stop in the new configuration, or



propose an alternate location, which would be considered during a National Environmental Policy Act (NEPA) reevaluation.

Pontoon Construction and Transport

If the Evergreen Point Bridge does not suffer a catastrophic failure prior to a planned reconstruction, the SR 520, I-5 to Medina project would build the new floating portion of the bridge using pontoons constructed and stored as part of the SR 520 Pontoon Construction Project. The SR 520, I-5 to Medina project would also build an additional 44 pontoons necessary to complete the new 6-lane floating bridge. Additional information about the status of the Pontoon Construction Project is located in Chapter 1 of the SDEIS.

Some of the additional supplemental stability pontoons could be constructed at the existing Concrete Technology Corporation facility in Tacoma, and some could be constructed at a new facility in the Port of Grays Harbor being developed as part of the SR 520 Pontoon Construction Project. The new supplemental stability pontoons would be towed from the construction location to Lake Washington for incorporation into the floating bridge. Towing from Concrete Technology Corporation would occur in established shipping lanes within Puget Sound. The pontoon towing would not substantially increase the amount of shipping traffic occurring in the Sound.

The longitudinal and cross pontoons built as part of the SR 520 Pontoon Construction Project would be towed to a moorage location in Puget Sound for outfitting (see the sidebar to the right for an explanation of pontoon *outfitting*), or would be towed to Lake Washington for incorporation into the floating bridge. Towing would occur as weather permits during the months of March through October. Exhibit 7 illustrates the general towing route from pontoon construction locations to Lake Washington and identifies potential outfitting locations.

For additional information about pontoon type, pontoon construction and towing, and pontoon installation, please see Chapter 3 of the SDEIS.

What is Outfitting?

Pontoon outfitting is a process by which the columns and elevated roadway of the bridge are built directly on the surface of the pontoon.





Exhibit 7. Possible Towing Route and Pontoon Outfitting Locations

Would the project be built all at once or in phases?

Revenue sources for the SR 520, I-5 to Medina project would include allocations from various state and federal sources and from future tolling, but there remains a gap between the estimated cost of the project and the revenue available to build it. Because of these funding limitations, there is a strong possibility that WSDOT would construct the project in phases over time.

If the project is phased, WSDOT would first complete one or more of those project components that are vulnerable to earthquakes and windstorms; these components include the following:

- The floating portion of the Evergreen Point Bridge, which is vulnerable to windstorms. This is the highest priority in the



corridor because of the frequency of severe storms and the high associated risk of catastrophic failure.

- The Portage Bay Bridge, which is vulnerable to earthquakes. This is a slightly lower priority than the floating bridge because the frequency of severe earthquakes is significantly less than that of severe storms.
- The west approach of the Evergreen Point Bridge, which is vulnerable to earthquakes (see comments above for the Portage Bay Bridge).

Exhibit 8 shows the vulnerable portions of the project that would be prioritized, as well as the portions that would be constructed later. The vulnerable structures are collectively referred to in the SDEIS as the Phased Implementation scenario. It is important to note that, while the new bridge(s) might be the only part of the project in place for a certain period of time, WSDOT’s intent is to build a complete project that meets all aspects of the purpose and need.

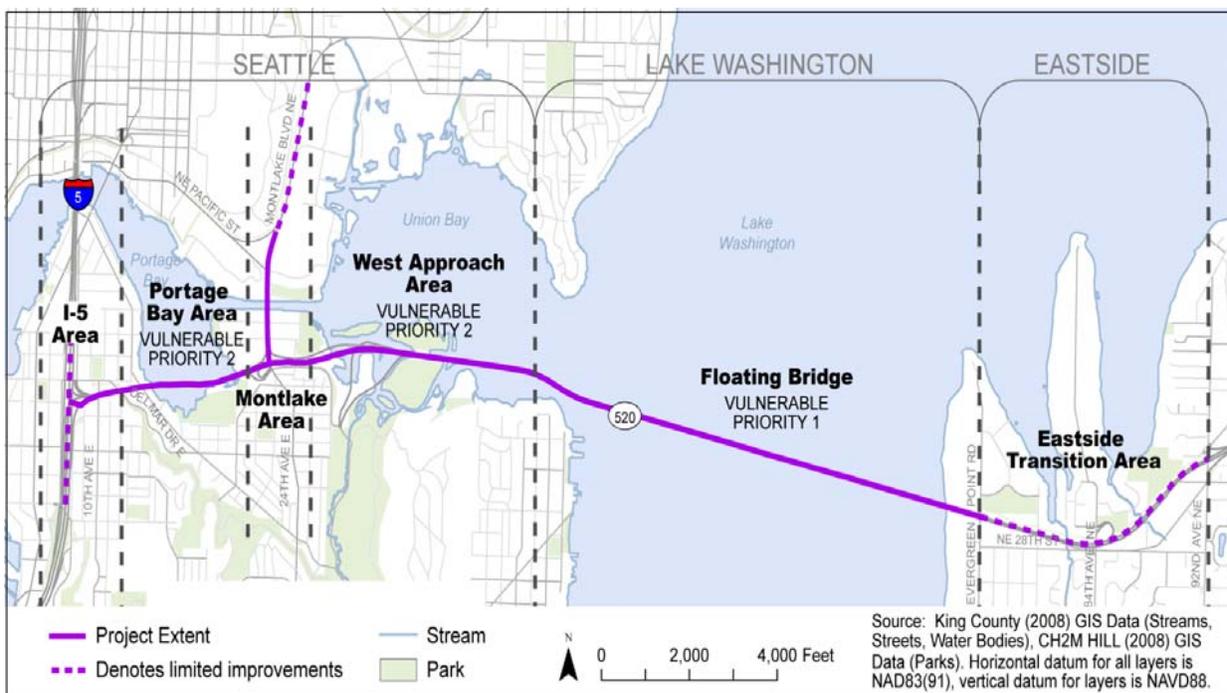


Exhibit 8. Geographic Areas along SR 520 and Project Phasing

The Phased Implementation scenario would provide new structures to replace the vulnerable bridges in the SR 520 corridor, as well as limited transitional sections to connect the new bridges to existing facilities. This scenario would include stormwater facilities, noise mitigation, and



the regional bicycle/pedestrian path, but lids would be deferred until a subsequent phase. WSDOT would develop and implement all mitigation needed to satisfy regulatory requirements.

To address the potential for phased project implementation, the SDEIS evaluates the vulnerable structures separately as a subset of the “full build” analysis. The evaluation focuses on how the effects of phased implementation would differ from those of full build and on how constructing the project in phases might have different effects from constructing it all at one time. A discussion about the effects of phased implementation is presented alongside effects for full build where applicable.



Affected Environment

What are the existing Section 4(f) properties in the study area?

This section describes each Section 4(f) property that would be potentially used by the SR 520, I-5 to Medina project 6-Lane Alternative option under consideration. These properties were identified in coordination with the agencies with jurisdiction in this area, as described later in this document. WSDOT identified the potentially affected public parks, recreation areas, and historic properties based on the Recreation Discipline Report in the SDEIS (WSDOT 2009d) and the Cultural Resources Discipline Report in the SDEIS (WSDOT 2009e). No designated wildlife or waterfowl refuges were identified in the study area. Consequently, this Draft Section 4(f) Evaluation focuses on public parks, recreation areas, and historic properties.

A 'use' is a legal term under Section 4(f) that occurs when:

- Land is permanently incorporated into a transportation facility;
- There is a temporary occupancy of Section 4(f) property that is adverse in terms of the statute's preservation purpose; or
- Land is not incorporated into a transportation project, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired.

WSDOT surveyed all historic resources in the area of potential effects (APE) that predate 1972. The year 1972 was conservatively selected to cover all historic properties that would be 45 or more years old when the Record of Decision for the SR 520, I-5 to Medina project is issued, and could be 50 or more years old by the time some parts of the project are built. Exhibit 9 shows the boundaries of the APE in relation to the geographic study area for the project.

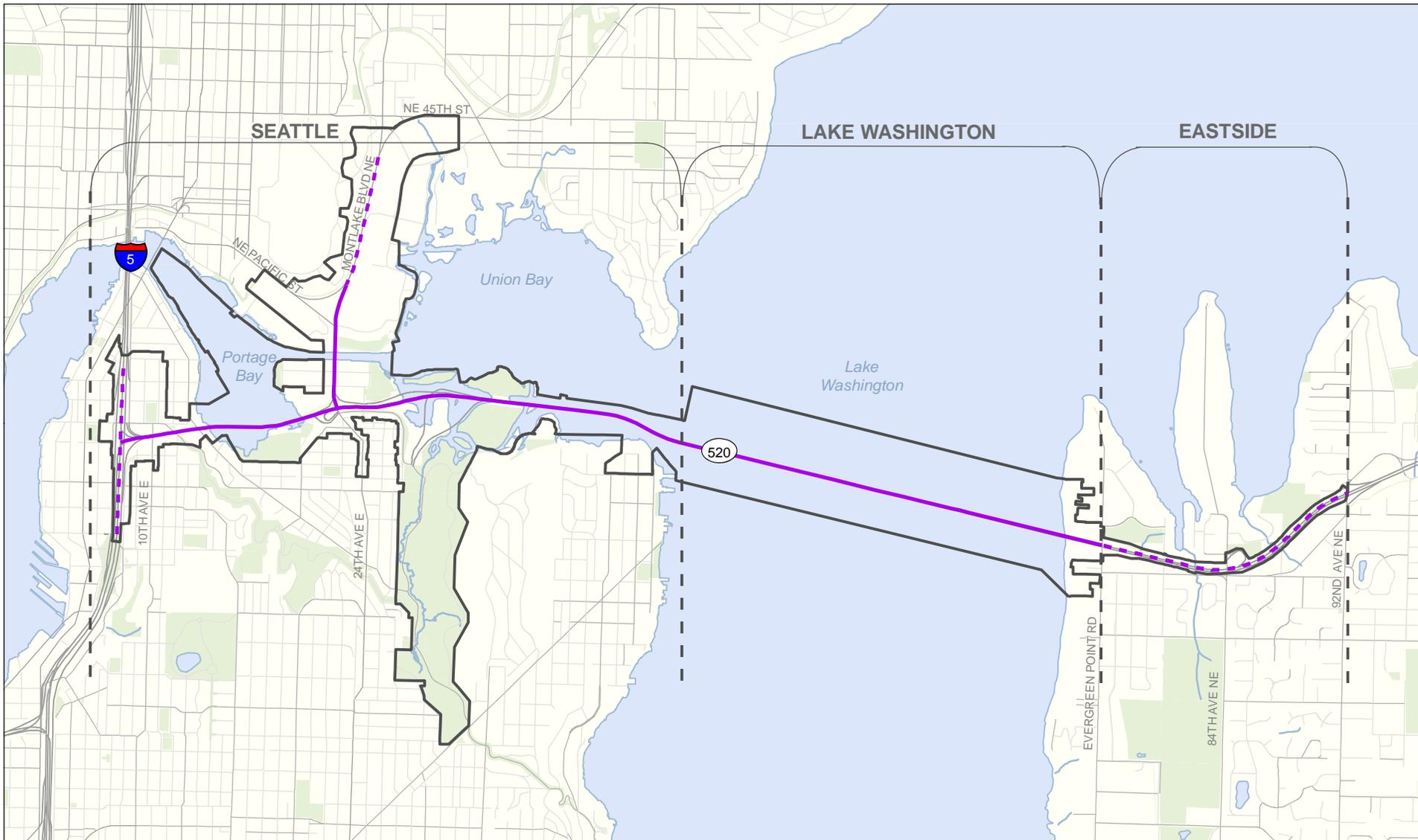
WSDOT prepared this Draft Section 4(f) Evaluation based on the guidance contained in the FHWA *Section 4(f) Policy Paper* (issued September 24, 1987, and revised March 1, 2005); Title 23 CFR, Part 774 ; and the WSDOT *Environmental Procedures Manual* updated in June 2008 (WSDOT 2008).

Exhibits 10 and 10a through 10e below depict the properties in the study area that would experience a use as defined by 23 CFR 774.17.

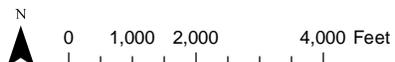
The following 10 park and recreation properties protected by Section 4(f) are inside the study area:

- Bagley Viewpoint
- Interlaken Park
- Montlake Playfield
- Bill Dawson Trail





- Area of Potential Effects
- Project Extent
- Limited Improvement
- Park

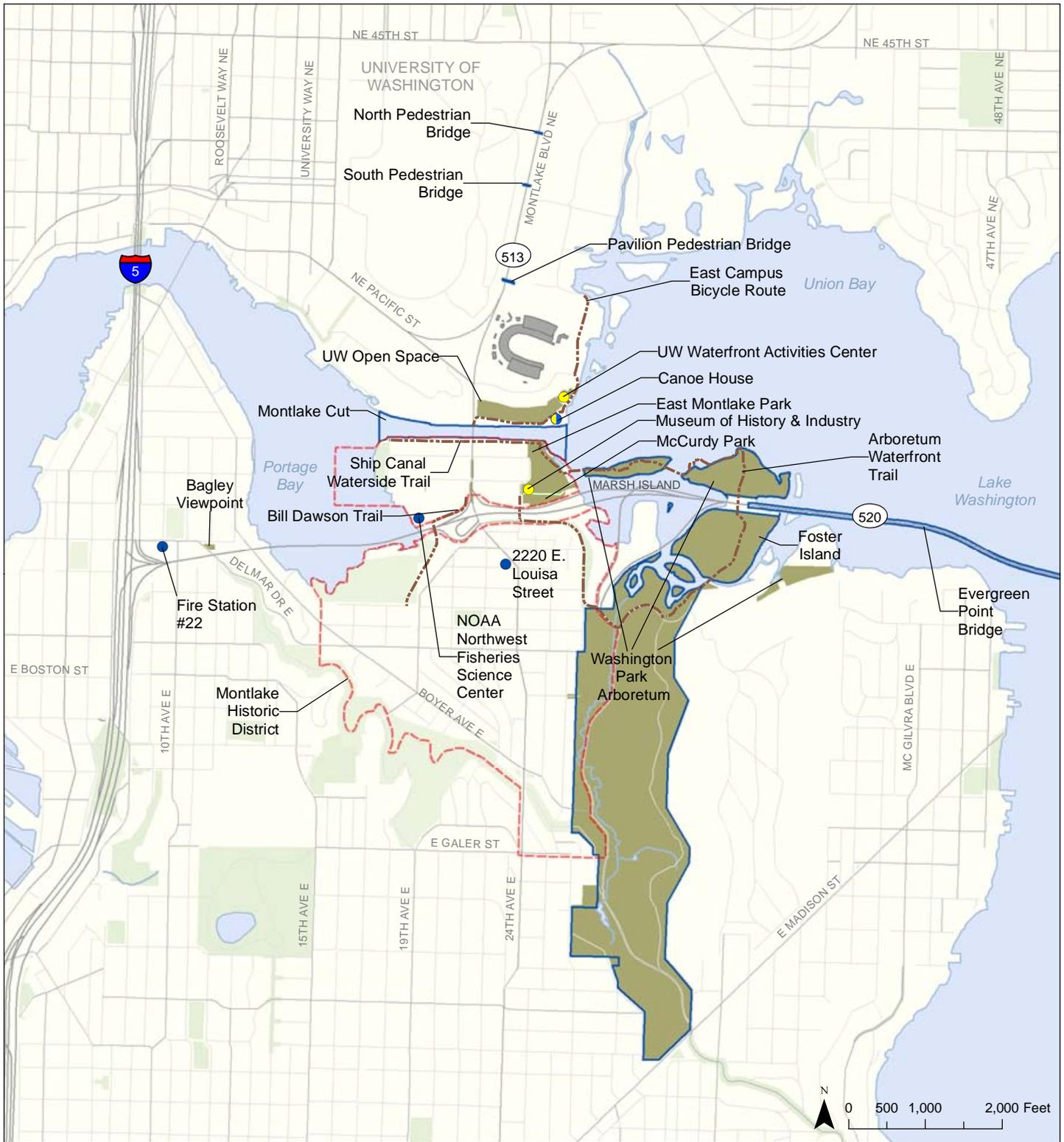


Source: King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), CH2M HILL (2008) GIS Data (Parks). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 9. Area of Potential Effects in the Study Area

SR 520, I-5 to Medina Bridge Replacement and HOV Project A



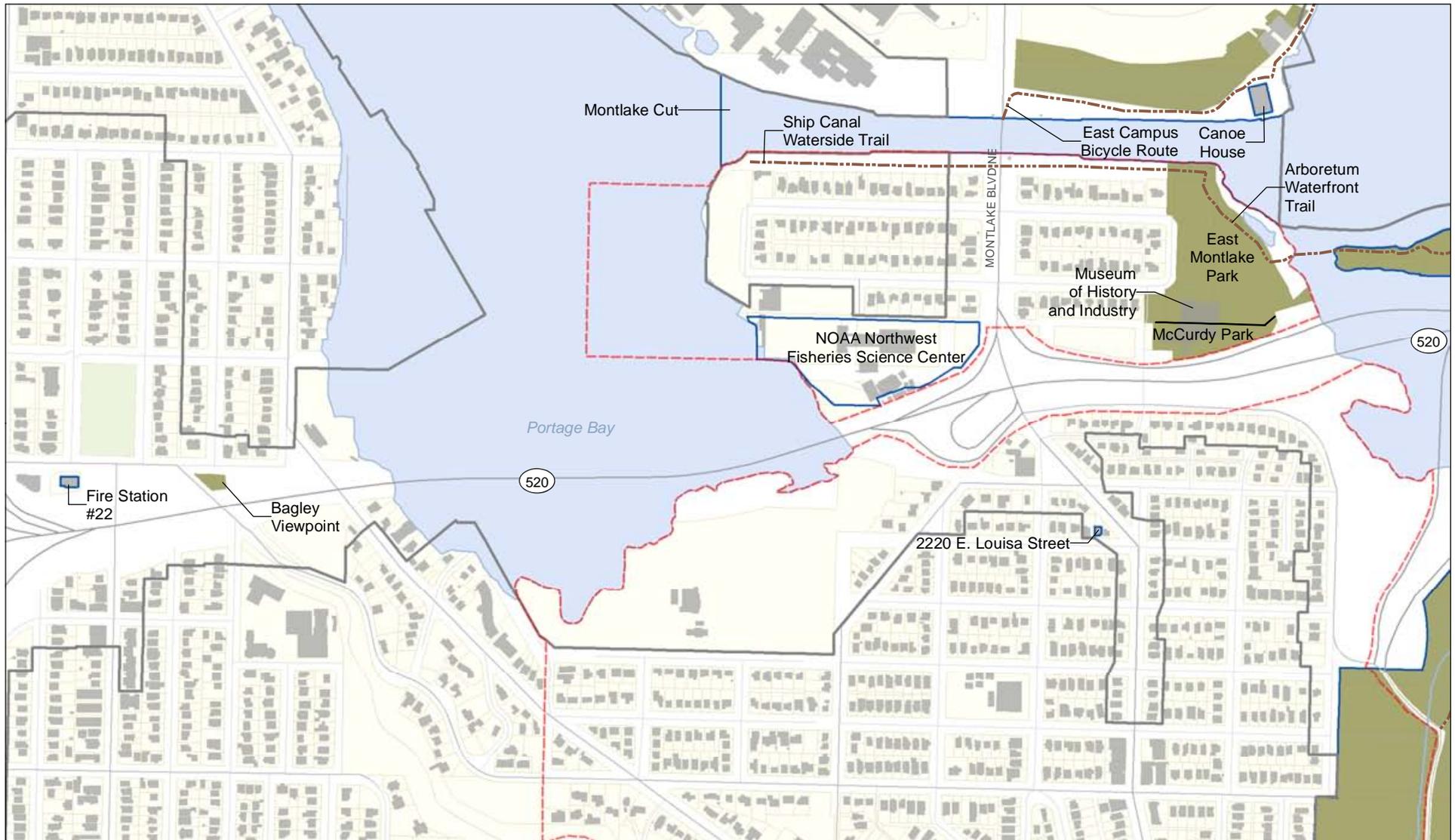
- Historic Building
- Parks/Recreation Related Building
- Parks/Recreation Related and Historic Building
- Existing Regional Bicycle/ Pedestrian Path
- ▭ Historic Property
- ▭ Montlake Historic District
- ▭ Affected Park/Open Space
- ▭ Seattle Park

Source: City of Seattle (2008) GIS Data (Trails), Seattle Bicycle Map (2008) GIS Data (Trails) and King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), CH2M HILL (2008) GIS Data (Parks). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 10. Properties with a Section 4(f) Use in the Seattle Area Overview Map

SR 520, I-5 to Medina Bridge Replacement and HOV Project



- Existing Regional Bicycle/Pedestrian Path
- Montlake Historic District
- Area of Potential Effects
- Historic Property
- Affected Park/Open Space
- Building
- Parcel



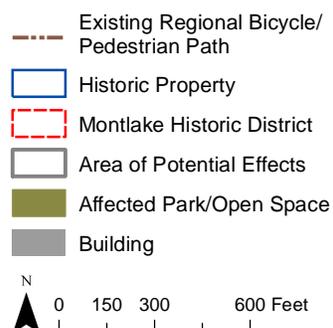
0 150 300 600 Feet



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary), City of Bellevue (2004) GIS Data (Buildings). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 10a. Detail of Properties with a Section 4(f) Use - South Montlake Area

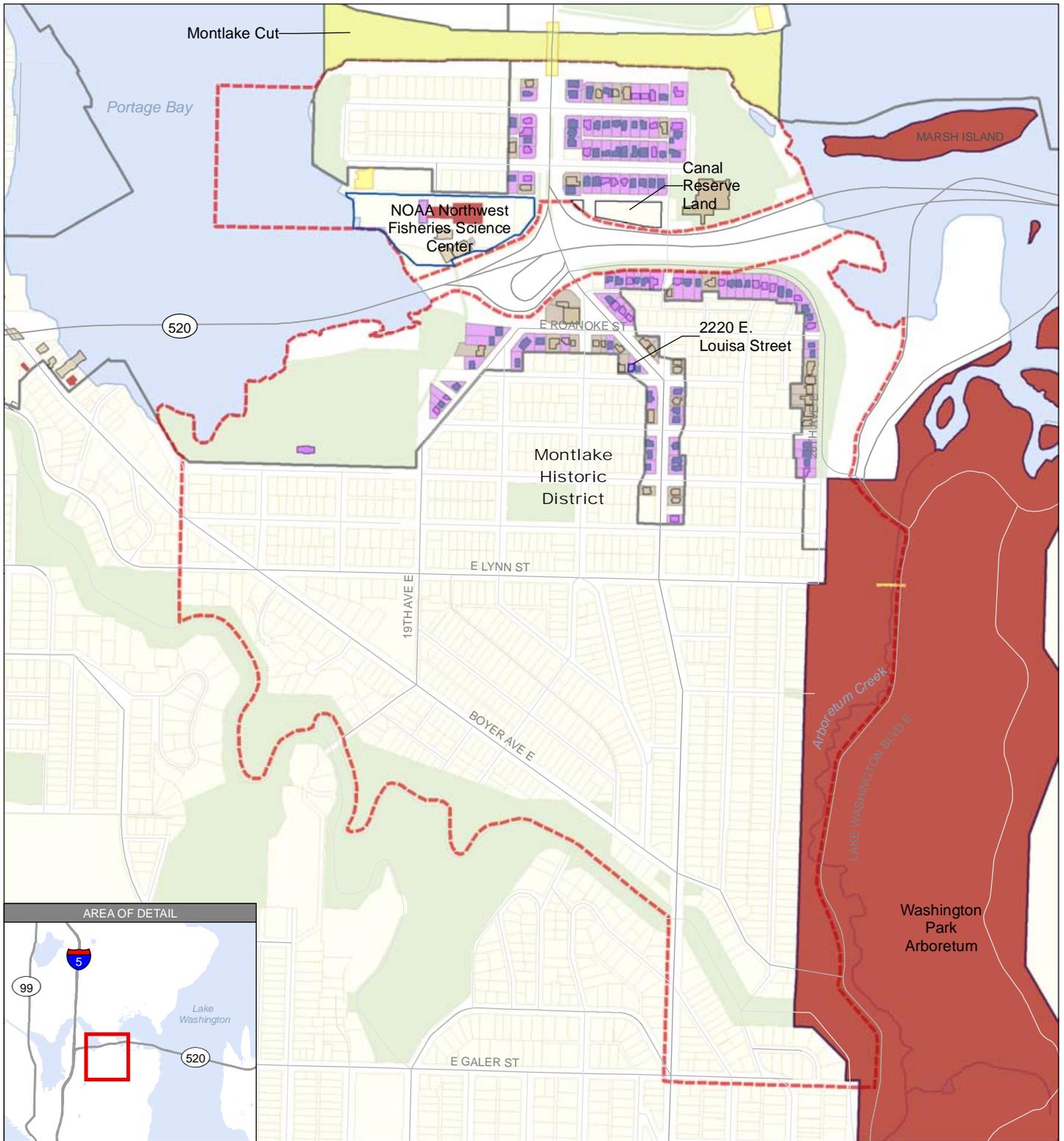
SR 520, I-5 to Medina Bridge Replacement and HOV Project



Source: City of Seattle (2008) GIS Data (Trails), Seattle Bicycle Map (2008) GIS Data (Trails) and King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), CH2M HILL (2008) GIS Data (Parks), City of Bellevue (2004) GIS Data (Buildings). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

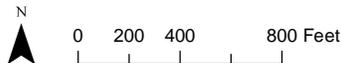
Exhibit 10b. Detail of Properties with a Section 4(f) Use - University of Washington Area

SR 520, I-5 to Medina Bridge Replacement and HOV Project



NRHP Eligibility of Surveyed Resources

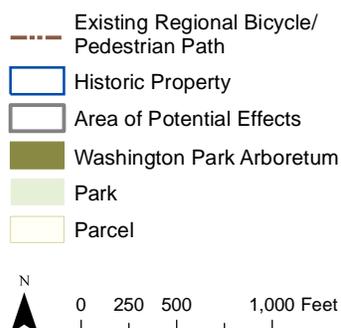
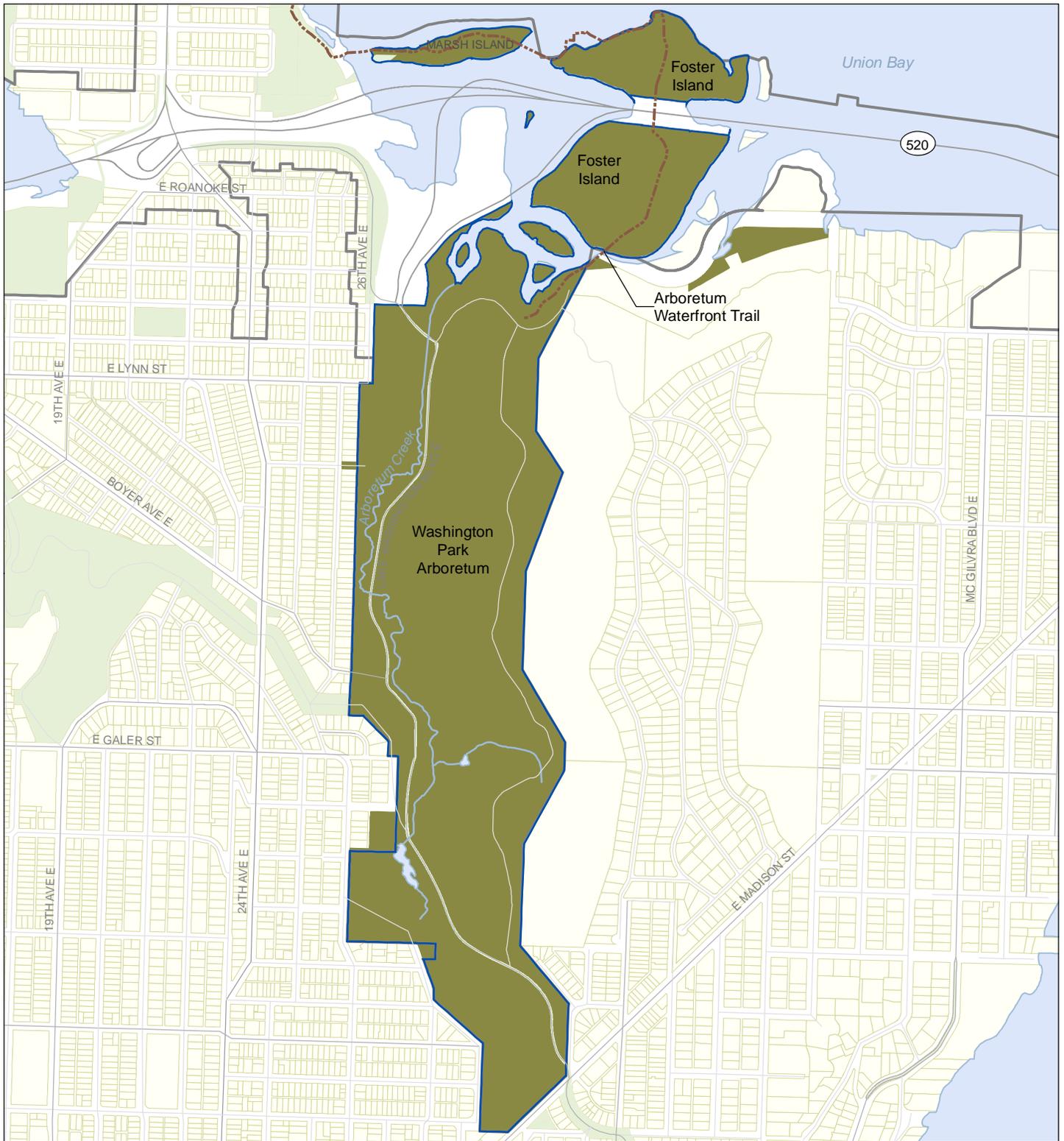
- Listed
- Eligible
- Contributing
- Contributing and Eligible
- Not Eligible
- Montlake Historic District
- Area of Potential Effects
- Historic Property
- Affected Feature
- Park
- Parcel



Source: King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), King County (2008) GIS Data (Parcel), CH2M HILL (2008) GIS Data (Parks). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 10c. Detail of Properties with a Section 4(f) Use - Montlake Historic District

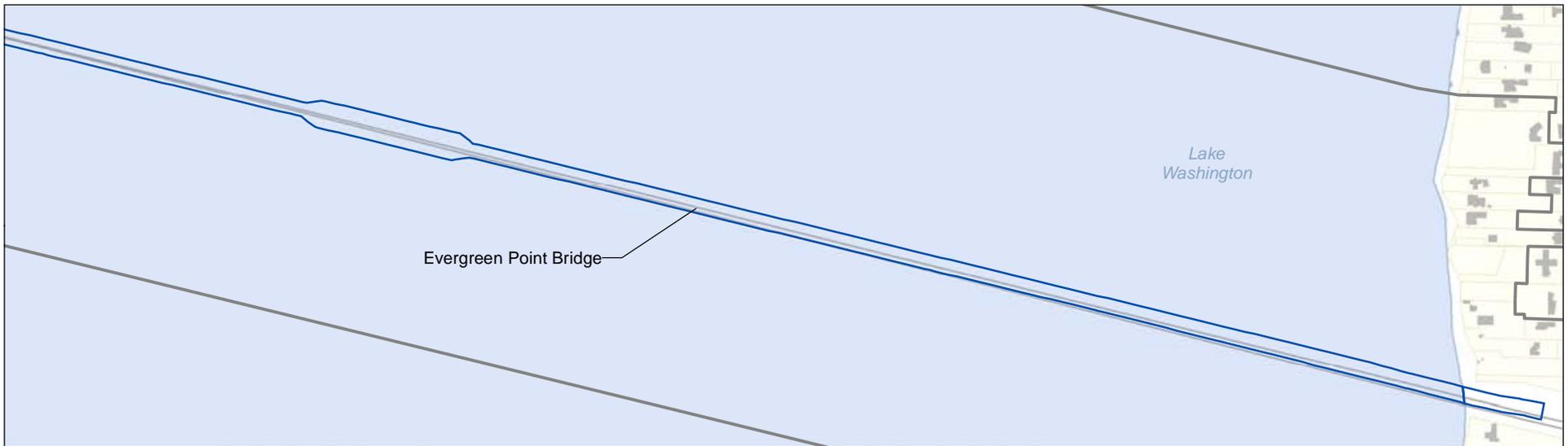
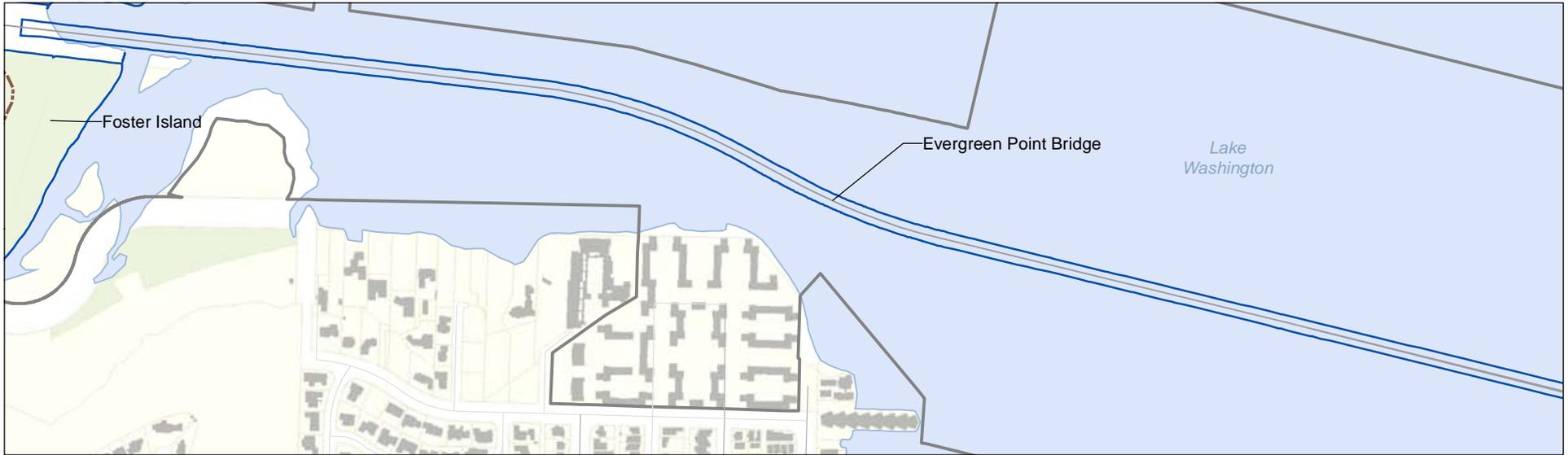
SR 520, I-5 to Medina Bridge Replacement and HOV Project



Source: King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), King County (2008) GIS Data (Parcel), CH2M HILL (2008) GIS Data (Parks). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 10d. Detail of Properties with a Section 4(f) Use - Washington Park Arboretum

SR 520, I-5 to Medina Bridge Replacement and HOV Project



-  Existing Regional Bicycle/ Pedestrian Path
-  Historic Property
-  Area of Potential Effects
-  Building
-  Park
-  Parcel



0 150 300 600 Feet



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary), City of Bellevue (2004) GIS Data (Buildings). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 10e. Detail of Properties with a Section 4(f) Use - Evergreen Point Bridge

SR 520, I-5 to Medina Bridge Replacement and HOV Project

- East Montlake Park
- McCurdy Park
- Ship Canal Waterside Trail
- University of Washington Open Space
- Washington Park Arboretum
- Arboretum Waterfront Trail

The Seattle study area contains 234 historic properties that are listed in or eligible for the NRHP, including 2 historic districts, 6 historic bridges, 1 historic waterway, 2 historic landscapes, 1 presumed traditional cultural property (TCP), and 220 historic buildings (WSDOT 2009e). Of these 234 historic properties, the following 12 properties would experience a use as defined by Section 4(f):

- Fire Station #22, 901 East Roanoke Street
- NOAA Northwest Fisheries Science Center, 2723 Montlake Boulevard NE
- Montlake Historic District, generally bounded by the Washington Park Arboretum, the Montlake Cut, Portage Bay, and Interlaken Park or Interlaken Boulevard
- 2220 East Louisa Street residence, individually eligible, within the Montlake Historic District boundaries
- Montlake Cut, part of the Lake Washington Ship Canal
- Naval Military Hangar/University Shell House (Canoe House) on the University of Washington campus near the east end of the Montlake Cut
- Pavilion Pedestrian Bridge, crossing Montlake Boulevard NE on the University of Washington campus
- South Pedestrian Bridge, crossing Montlake Boulevard NE on the University of Washington campus
- North Pedestrian Bridge, crossing Montlake Boulevard NE on the University of Washington campus
- Washington Park Arboretum, 2300 Arboretum Drive East, which qualifies as a Section 4(f) property both as a park and as a historic designed landscape, and includes Foster Island
- Foster Island, located along the north edge of the Arboretum, presumed eligible for the NRHP as a TCP



- Governor Albert D. Rosellini Bridge/Evergreen Point Bridge, on Lake Washington

Foster Island is being treated as a TCP, eligible for the NRHP, although a formal determination of eligibility for this property is yet to be completed. Further documentation and analysis will be undertaken to identify the TCP boundaries as part of the Section 106 process, but it is assumed that all of Foster Island will be included within these boundaries. Foster Island experiences a use under all design options, to varying degrees.

FHWA and WSDOT intend to make *de minimis* determinations with respect to six of these properties (FHWA and WSDOT are coordinating with SHPO on 4(f) determinations for historic properties):

- Fire Station #22 (Options A, K, and L)
- Montlake Cut (Options A, K, and L)
- Montlake Historic District (Option K)
- 2220 East Louisa Street (Option A)
- NOAA Northwest Fisheries Science Center (Options K and L)
- Canoe House (Option A, K, and L)

Park and Recreation Resources

Bagley Viewpoint

Bagley Viewpoint is located at 2548 Delmar Drive East, adjacent to the north boundary of the Roanoke Street off-ramp from westbound SR 520. Seattle Parks and Recreation owns this small (0.15-acre) park. The viewpoint was originally part of Interlaken Park in the early 1900s. However, with the construction of SR 520 in 1963, the viewpoint was effectively cut off from the remainder of Interlaken Park (City of Seattle

What are the Criteria for Listing in the NRHP?

To qualify for listing in the NRHP, a property must have historic significance and integrity, and generally be at least 50 years old. Historic significance is the importance of a property to a community, state, or the nation. Historic significance in American history, architecture, archaeology, engineering, and culture may be present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, material, workmanship, feeling, and association. A property must demonstrate significance in at least one of the following areas:

- A Association with events that have made a significant contribution to the broad patterns of our history; or
- B Association with the lives of persons significant in our past; or
- C Embodiment of the distinctive characteristics of a type, period, or method of construction or representative of the work of a master, or possessing high artistic value, or representative of a significant and distinguishable entity whose components may lack individual distinction; or
- D Yielding, or likely to yield, information important in prehistory or history.

In addition to the above criteria, significance is defined by the area of history in which the property made important contributions and by the period of time when these contributions were made (National Register Bulletin 16 NPS 1991).



1999). The viewpoint contains two historic markers, off-street parking, and seating for users. The facility offers views of Portage Bay, Lake Washington, and the Cascade Mountains, although invasive vegetation has limited the extent of these views. Access is available at the top of the slope from East Roanoke Street and at the bottom of the slope using a concrete stairway. Vehicular and sidewalk access is available from Delmar Drive East.

Bagley Viewpoint is considered significant by the City of Seattle. The City of Seattle's State Environmental Policy Act (SEPA) ordinance protects Bagley Viewpoint as a "SEPA viewpoint," meaning special protections are in place for protection of the view. Proposed alterations to the viewpoint is subject to visual guidelines set forth in *Seattle Views: An Inventory of 86 Public View Sites Protected under SEPA* (City of Seattle 2002). The property is also addressed in the draft *Vegetation Management for Seattle Parks Viewpoints* report (City of Seattle 2005), which proposes procedures for controlling erosion and removing weeds in the viewpoint. A phased replanting and weed control plan is intended to reclaim the views lost to invasive vegetation.

The Seattle Department of Transportation provides funding for maintenance of the vegetation, amenities, and stairway. Seattle Parks and Recreation maintains the vegetation.

Bagley Viewpoint is a publicly owned park considered significant by the City of Seattle. Therefore, it is subject to the provisions of Section 4(f) if the SR 520, I-5 to Medina project would result in a use of this recreation resource.

Interlaken Park

Interlaken Park is a densely wooded City of Seattle park, located at 2451 Delmar Drive East on the north end of Capitol Hill. The park is located on a hillside and through a valley, which is located between SR 520 and the Washington Park Arboretum. The park contains paths and trails that bikers, hikers, and joggers frequent. The park is primarily vegetated in a natural state, with trail and bike access maintained within the park. Access from the north is available from Delmar Drive, through Interlaken Boulevard, but many access points are available from local roadways. A striped and designated bike path is located either on the street or adjacent to Delmar Drive for pedestrian and bicycle access.



The 1903 “Olmsted Plan for Seattle Parks, Boulevards, and Playgrounds” developed the Interlaken Park around a boulevard to showcase the natural setting of the park (City of Seattle 2007). No master plans have changed the original uses of the park, and it is actively managed by the City of Seattle and considered a significant park resource.

The Seattle Department of Transportation provides funding for maintenance of the on-street bike pathway. Seattle Parks and Recreation maintains the park’s vegetation, trails, and amenities.

Interlaken Park is publicly owned and is considered significant by the City of Seattle. Therefore, it is subject to the provisions of Section 4(f) if the project would result in a use of this recreation resource.

Montlake Playfield

Located at 1618 East Calhoun Street on the shore of Portage Bay, Montlake Playfield is a 27-acre City of Seattle regional park. The park was created in the 1920s as a means to help solve the crime and juvenile delinquency problems in the neighborhood. The playfield, associated recreation fields, and community center were dedicated in 1935. The community center was recently expanded and renovated, including a children’s play area adjacent to the building. Seattle Parks and Recreation general funds have been used to construct, improve, and maintain the community center and playfields.

In the 1960s, substantial amounts of fill material were deposited onsite. For example, spoils from construction of SR 520 were deposited on the main park site and at the shoreline to allow for continued expansion of the facilities. However, in 1968, the dumping of fill material stopped when Seattle Parks and Recreation decided to preserve the shoreline environment. The City of Seattle has been restoring the western shoreline to make the area more accessible.

The playfield is used for many recreation events, including football, baseball, soccer, tennis, and track. The community center, which hosts many neighborhood meetings and events, is also a historic property, eligible for listing in the NRHP.

Events are held weekly at the community center, and recreation events (track, soccer, football, tennis, and adult softball leagues) occupy the park daily throughout the recreation seasons. Access to Montlake



Playfield is available from Calhoun Street, with off-street parking. Pedestrian access from the north is available from the Bill Dawson Trail.

The draft *Vegetation Management for Seattle Parks Viewpoints* (City of Seattle 2005) identifies restoring intended views at Montlake Playfield as “high priority” because invasive species and overgrown vegetation obscure the views to a high degree.

Montlake Playfield is a publicly owned, documented recreation resource of significance for the City of Seattle. Therefore, it is subject to the provisions of Section 4(f) if the SR 520, I-5 to Medina project would result in a use of this recreation resource.

Montlake Playfield originally extended north of the current SR 520 alignment. Because of the rising water level of Portage Bay, however, 6.8 acres of the original playfield (not included in the 27-acre usable site) are now submerged in Portage Bay. A portion of the submerged land would be acquired from the City of Seattle for the 6-Lane Alternative options. However, the affected submerged land is not currently used for recreational purposes, is not accessible to the public for recreational use, and is not designated as parkland on the *Seattle Park Guide* (City of Seattle 2006). In addition, there are no formal plans for its recreational use in the future. As a result, the affected submerged lands are not protected by Section 4(f).

Bill Dawson Trail

The Bill Dawson Trail (Montlake Bike Path) is a multi-use pathway that extends under SR 520 between the northeast corner of Montlake Playfield and the southern edge of the NOAA Northwest Fisheries Science Center. The trail does not have official dedicated property lines. Portions of the trail are located within Montlake Playfield, within WSDOT SR 520 right-of-way, and on NOAA Northwest Fisheries Science Center property. The trail is accessible from the north at Montlake Boulevard and from the south in Montlake Playfield at East Calhoun Street. It receives considerable use because it connects to the larger citywide trail system. The Seattle Department of Transportation and Seattle Parks and Recreation each maintain sections of the trail.

The Bill Dawson Trail is a documented recreation resource of significance for the City of Seattle. As detailed above, sections of the Bill Dawson Trail cross through multiple ownerships. All of the land that the trail occupies is publicly owned, and the primary purpose of the trail is recreation, regardless of land ownership. Therefore, the Bill



Dawson Trail is subject to the provisions of Section 4(f) if the SR 520, I-5 to Medina project would result in a use of this recreation resource.

East Montlake Park and McCurdy Park

East Montlake Park and McCurdy Park are located on the shore of Union Bay adjacent to the Shelby-Hamlin portion of the Montlake neighborhood.

East Montlake Park was created from land deeded to the City of Seattle for park purposes in the 1909 plat of the Montlake neighborhood. The 7.1-acre park is jointly owned by Seattle Parks and Recreation (western section of the park), and the Arboretum Foundation (eastern section of the park). While the split in ownership of the land is still in effect, the entire area is signed and recognized by the City of Seattle and the public as East Montlake Park. Today, East Montlake Park provides trail connections to the Washington Park Arboretum and the Montlake neighborhood and contains trailheads for both the Arboretum Waterfront Trail and the Ship Canal Waterside Trail. This waterfront park has a launch point for canoes and kayaks; a viewing platform with views of the ship canal, Lake Washington, and the Cascade Mountains; and a grassy passive use area. People use the shoreline for viewing wildlife. Park amenities include a totem pole, a bike path, and a parking lot.

McCurdy Park is situated between the north side of SR 520 and the southern boundary of East Montlake Park. In the 1940s, the Port of Seattle deeded a portion of the old canal right-of-way (originally reserved for the Lake Washington Ship Canal) to the City for park use. Currently, the draft *Vegetation Management for Seattle Parks Viewpoints* (City of Seattle 2005) rates restoring intended views at McCurdy Park as “high priority” because of the high degree of obstruction that has occurred at the park from invasive species and overgrown vegetation. The City of Seattle has designated McCurdy Park as a SEPA viewpoint because of its views of Marsh and Foster islands and limited views of Lake Washington (Exhibit 11).

Because there is no apparent physical separation between these parks, they are discussed as one recreational feature for this evaluation.

The Museum of History and Industry (MOHAI) straddles the property line between East Montlake Park and McCurdy Park. This



Exhibit 11. McCurdy Park



structure was built by the Seattle Historical Society (now the Seattle-King County Historical Society), completed in 1952, and then deeded to the City of Seattle. The MOHAI building is located in the Montlake Historic District, which is eligible for the NRHP, but MOHAI is not a contributing element to the historic district. Vegetation in McCurdy Park separates SR 520 and MOHAI. The Cultural Resources Discipline Report in the SDEIS (WSDOT 2009e) provides more information about the history of MOHAI and the Montlake Historic District.

Vehicular access to the East Montlake and McCurdy parks and MOHAI is from the 24th Avenue East overcrossing, with off-street parking. Pedestrian traffic can access these parks from the Montlake neighborhood, the Arboretum Waterfront Trail, and the Ship Canal Waterside Trail.

Annual events attract thousands to the parks for the opening day of the boating season and for events in Union Bay and the Montlake Cut. MOHAI has grown to become the largest private heritage organization in the Washington, attracting more than 60,000 visitors annually.

There is no master park plan for East Montlake Park or McCurdy Park. These parks have individual vegetative management plans for viewsheds of Union Bay (City of Seattle 2005) and Lake Washington (City of Seattle 2005).

The City of Seattle constructed East Montlake and McCurdy parks and maintains them. A 1966 LWCF grant was co-sponsored by the City of Seattle and the University of Washington to develop the original Arboretum Waterfront Trail through East Montlake Park (refer to the "Section 6[f] Resources" section regarding the relevance of LWCF use).

East Montlake and McCurdy parks are publicly owned, and they are documented recreation resources of significance. Therefore, they are subject to the provisions of Section 4(f) if the SR 520, I-5 to Medina project would result in a use of these recreation resources.

Ship Canal Waterside Trail

The Ship Canal Waterside Trail is located east of Montlake Boulevard along the south side of the Montlake Cut. The 1,200-foot-long trail connects the Arboretum Waterfront Trail in East Montlake Park with West Montlake Park on Portage Bay. Designed by the U.S. Army Corps of Engineers and the Seattle Garden Club, the trail was constructed in



1970 and designated as a National Recreation Trail a year later (City of Seattle 1974).

Popular year-round activities along the trail include sightseeing, picnicking, fishing, and jogging. A variety of plants and animals can be seen along the footpath and at the three observation decks. A small interpretive kiosk at the trailhead located in East Montlake Park includes benches and picnic tables adjacent to a waterfront viewing platform.

The Ship Canal Waterside Trail is accessible from a vehicle parking lot at East Montlake Park. Bicycles or pedestrians have access from 24th Avenue East or Montlake Boulevard. There is no known user count or survey for this resource. Annually in May, thousands of people line the shores of the Montlake Cut to watch the parade of boats that marks the opening day of boating season. There is no master plan for the Ship Canal Waterside Trail.

The City of Seattle maintains the Ship Canal Waterside Trail, which the U.S. Army Corps of Engineers constructed using LWCF funds (refer to the “Section 6[f] Resources” section regarding the relevance of LWCF use).

The Ship Canal Waterside Trail is a publicly owned, documented recreation resource of significance for the City of Seattle. Therefore, it is subject to the provisions of Section 4(f) if the SR 520, I-5 to Medina project would result in a use of this recreation resource.

University of Washington Open Space

The University of Washington Open Space is an area located between the Husky Stadium parking lot and the Montlake Cut. The open space includes a passive use grassy area about 3 acres in size. It also has active recreation facilities, including a climbing wall, the Waterfront Activities Center, and the Canoe House.

Water-related recreation facilities are available at the Waterfront Activities Center, which is located south of Husky Stadium on Union Bay and the Montlake Cut. The Washington Yacht Club, Sailing Team, Kayak Club (flat and white water), and Union Bay Rowing Club organize their activities at the Waterfront Activities Center. The Waterfront Activities Center also rents canoes and rowboats to the general public.



The Canoe House in the University of Washington Open Space is listed in the NRHP. It is located adjacent to the Waterfront Activities Center at the entrance to the Montlake Cut from Union Bay. Vehicular access to the Canoe House and the Waterfront Activities Center is available from Montlake Boulevard through parking lots adjacent to Husky Stadium. Pedestrians and bicyclists can access these facilities from the East Campus Bicycle Route. Watercraft have launching points at the Canoe House as well as docks at the Waterfront Activities Center. Annual events attract thousands to this area for the opening day of the boating season and for events in Union Bay and the Montlake Cut.

Section 4(f) would apply to the University of Washington Open Space because the property is publicly owned and its property and facilities are open to the public – the green space is open and accessible, the climbing rock is used by the general public, and the Waterfront Activities Center rents canoes and rowboats to the general public. Although it contains specific active recreational facilities, it is officially designated as open space in the *University of Washington Master Plan Seattle Campus* (University of Washington 2003). The plan details goals for management of bicycle and pedestrian circulation, open space management, and waterfront activities.

Washington Park Arboretum and Arboretum Waterfront Trail

Within the study area in the Washington Park Arboretum, there are three distinct features: the main portion of the Washington Park Arboretum, containing the majority of the biological collection; Foster and Marsh islands; and part of the Arboretum Waterfront Trail, which is also partially located in East Montlake Park.

Washington Park Arboretum began as Washington Park in the early 1900s on private parkland acquired by the City. The Washington Park Arboretum was established in 1934 by an agreement approved by both the University of Washington (Board of Regents) and the City of Seattle (City Council/Mayor). In this agreement, the City of Seattle gave the University permission to design, construct, plant, and manage an Arboretum and Botanical Garden in Washington Park. The Arboretum and Foster Island are also protected under Section 4(f) as historic properties. For more information, see the Historic Properties subsection.

The Washington Park Arboretum contains more than 40,000 trees, shrubs, and vines, which include more than 4,600 cultivated species



from around the world. These include 750 species collected in the wild and 139 plants on the endangered species list. Approximately 95 percent of these species are available to the public for viewing. The University of Washington, the Washington Park Arboretum's major educational user, offers some 40 courses each year using the Arboretum collections in fields such as urban horticulture, botany, forestry, and landscape architecture (University of Washington 1997).

The original construction of SR 520 substantially altered the northern portion of the park. The Highway Commission (now WSDOT) acquired over 40 acres of park property for right-of-way and did extensive dredging around Foster and Marsh islands.

Foster and Marsh islands occupy the southern shore of Union Bay. They are wetland and waterway landscape features in the Washington Park Arboretum located north of the main features of the park (which include the Japanese Garden and the greenhouses at the Graham Visitors Center) (City of Seattle 2001). The waterways surrounding these islands consist of wetlands and open-water channels that contain native and non-native vegetation unique to this portion of the park. The park provides four designated non-motorized watercraft landings in the waterways with access to the trail system.

The Arboretum Waterfront Trail is a 0.5-mile trail that meanders on a series of floating piers and structures through the wetlands and that connects Marsh and Foster islands to the main features of the Washington Park Arboretum. Raised observation platforms provide views of the various wetlands around the islands and of Union Bay and Husky Stadium. The western trailhead is located in East Montlake Park and connects to the Ship Canal Waterside Trail near the east end of the Montlake Cut. The Arboretum Waterfront Trail was constructed in 1967 using LWCF funds. An ALEA grant was funded in 1985 to redevelop the boardwalk and trail system on Foster Island and over water. (Refer to the "Section 6[f] Resources" section regarding the relevance of this funding.)

Seattle Parks and Recreation and the University of Washington cooperatively manage the Washington Park Arboretum. Seattle Parks and Recreation maintains its park functions and the University of Washington owns, maintains, and manages the plant collections and associated programs. The Arboretum Foundation manages fund raising, membership, and volunteer services. Although the City of Seattle owns most of the Washington Park Arboretum, the University of



Washington owns portions of the park, and the Washington Department of Natural Resources owns most of Marsh Island and the northern half of Foster Island.

Existing park facilities include the Japanese Garden; Graham Visitor's Center; several canoe and kayak launches to Union Bay; paved and unpaved walking paths (including the Arboretum Waterfront Trail); islands; picnic tables; parking lots; natural areas; and manicured lawns. The Washington Park Arboretum, which has a nationally and internationally recognized woody plant collection, is a significant educational resource as well as a recreation resource.

Lake Washington Boulevard provides access to the Washington Park Arboretum. Parking is available from Lake Washington Boulevard and at the main visitor's center and trailheads. North of SR 520, users access Foster Island from Union Bay. Access is also available from the Arboretum Waterfront Trail.

The Arboretum Foundation has over 3,200 members and services over 6,000 students in K-12 educational programs. The University of Washington students use the park for study during the educational year. Thousands of recreational users access the park from Union Bay during the summer months.

The *Washington Park Arboretum Master Plan* (City of Seattle et al. 2001) guides future development of the Washington Park Arboretum. Planned improvements in the study area include the addition of a 300-square-foot outdoor educational building on Foster Island and a viewing platform on Marsh Island. The Master Plan also proposes to modify the unused R.H. Thomson freeway ramp at the north end to make a multi-use link to MOHAI (including bicycles and service vehicles).

The Washington Park Arboretum is a publicly owned, documented recreation resource of significance for the City of Seattle. Therefore, it is subject to the provisions of Section 4(f) if the SR 520, I-5 to Medina project would result in a use of this recreation resource.

Historic Properties

Fire Station #22 at 901 East Roanoke Street

Constructed in 1965 on a narrow strip of land between East Roanoke Street and SR 520, Fire Station #22 replaced a historic fire station at a nearby site after the construction of SR 520 (Exhibit 12). When it is



50 years old (in 2015), the fire station will be eligible for the NRHP under Criterion A (for its association with the development of the Seattle Fire Department) and under Criterion C (for its distinctive Modern architectural style). It is located across the street from the Roanoke Park Historic District. However, it is outside the suggested boundaries and its age is beyond the period of significance (1900 to 1940) for that district.

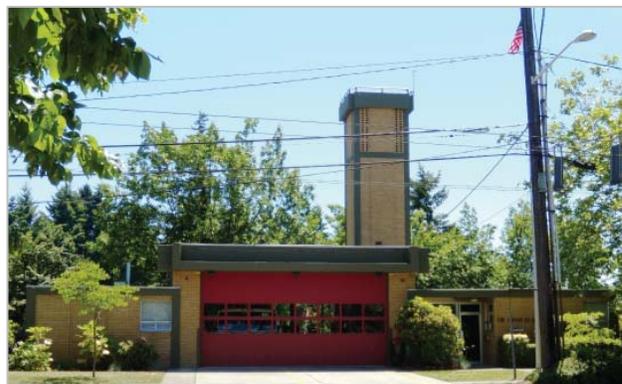


Exhibit 12. Fire Station #22, 901 East Roanoke Street

According to the Seattle Department of Neighborhoods historical site summary:

"[T]his modern fire station ... replaced the original Fire Station No. 22, which was located some five blocks to the south on the northwest corner of the intersection of East Howe Street and 11th Avenue East.... In 1964, the Fire Department was able to build its new Fire Station No. 22 across the street from the [Roanoke] park on surplus land owned by the state, which had been condemned for the construction of State Route 520. Architect LaMonte Shorett was selected to prepare the design for the modern one-story brick fire station. This building is significant for its design and for its associations with the development of the Seattle Fire Department and the North Capitol Hill neighborhood."

The SHPO concurred on the NRHP eligibility of the fire station on August 27, 2009.

NOAA Northwest Fisheries Science Center

Located in the Montlake neighborhood at 2723 Montlake Boulevard NE, the NOAA Northwest Fisheries Science Center research complex contains multiple buildings and has restricted access. Five buildings on the site predate 1972.

- The original building on the property is from 1931, and is located at the western end of the site. It is eligible for the NRHP, both individually and as part of the Montlake Historic District.
- Immediately to the east of the 1931 building is a three-story building constructed in 1965. It is individually eligible for the NRHP.
- To the east of this 1965 building is a larger building constructed in 1966. It is individually eligible for the NRHP. Covered exterior



walkways connect these three buildings, which are known as the North Campus.

- To the south of these three buildings is a hatchery constructed in 1940.
- To the southeast of the hatchery is a small metal “Butler” building, also from 1940.

West Wing Building

Of the five buildings that meet the age criteria, only the original building on the NOAA Northwest Fisheries Science Center site, known as the West Wing and constructed in 1931 (Exhibits 13 and 14), is contributing to the Montlake Historic District. The building is also individually eligible under Criterion A for its association with important research that is significant locally, regionally, and nationally. It is also eligible under Criterion C for its distinctive architectural characteristics, and for its design by a major architect, John Graham, Sr. SHPO concurred on the NRHP eligibility of the NOAA Northwest Fisheries Science Center West Wing building on August 27, 2009.

The original West Wing building was the first federal fisheries building constructed on the West Coast (Peacock 2004). Facing Portage Bay, this building was designed in the Art Deco style and is ornamented with terra cotta details (such as seashells, coral, sea horses, and waves with fish) that reflect the marine nature of the facility. These details extend to the interior, as well.

The West Wing building contains a number of different science labs. The building has had few alterations, the most significant being the addition of a modern building to the rear. This addition is connected to



Exhibit 13. NOAA Northwest Fisheries Science Center, 1931 building – Montlake Historic District – View from Portage Bay



Exhibit 14. NOAA Northwest Fisheries Science Center, 1931 building – Montlake Historic District



the historic building by two covered walkways. However, the significance of this alteration is reduced by the clearly secondary nature of the newer building to the historic building, and the easily reversible attachment of the walkways. In addition, the newer building is not visible when viewed from the front of the historic building.

1965 and 1966 Buildings

The 1965 building (Exhibit 15) was constructed to provide laboratory space for scientific research conducted by the NOAA. This building also contains a large library and a 150-seat auditorium. The 1966 building (Exhibit 16) was constructed to house offices and meeting space to accommodate the expanded staff and mission of the NOAA at this site. The two buildings are individually eligible for the NRHP under Criteria A and C for their association with important research that is significant locally, regionally, and nationally, and for their distinctive architectural characteristics, representative of the Modern style.

However, they do not contribute to the Montlake Historic District because they are outside of the period of significance for the district (1905 to 1952).

1940 Hatchery Building

The 1940 hatchery building is significant for its continuous role in marine research. The hatchery building is the second oldest building remaining on the campus. However, it has had numerous additions and alterations, resulting in a loss of integrity of design, materials, workmanship, and feeling. In addition, the construction of many newer buildings adjacent to it, as well as the construction of SR 520 immediately to its south, has affected its setting. Therefore, it lacks sufficient integrity to be eligible for the NRHP.



Exhibit 15. NOAA Northwest Fisheries Science Center, 1965 building – Montlake Historic District



Exhibit 16. NOAA Northwest Fisheries Science Center, East building – Montlake Historic District



1940 Butler Building

The Butler building is a prefabricated metal building used to store chemicals. It is not architecturally significant and is utilitarian in design. It is not eligible for the NRHP and does not contribute to the Montlake Historic District.

Montlake Historic District

The Montlake neighborhood has been determined eligible for the NRHP as a historic district under Criterion C. The Montlake area is generally considered to be from the Washington Park Arboretum to Portage Bay, with the northern boundary at the Montlake Cut and the southern boundary often listed as Interlaken Park or Interlaken Boulevard. The name “Montlake” frequently appears on historic maps as the label for this entire neighborhood. Taken as a whole, the area represents a significant, cohesive collection of residential architecture typical of early twentieth century Seattle, with a combination of distinctive builders’ houses, high-style, architect-designed residences, and impressive non-residential structures. There is a very low level of intrusion. The period of significance is 1905 to 1952, from the platting of the neighborhood to the construction of MOHAI.

The Montlake neighborhood was first developed starting in 1909. The main era of construction was from the 1910s through the 1940s. The side streets appear to have been paved in 1926 (Gould 2000). The residential styles in the district are cohesive, mainly Craftsman, Tudor, and Colonial Revival, but the houses are “individually distinctive” (Gould 2000). Exhibits 17 and 18 demonstrate some of the diversity of architectural styles found in the neighborhood. The large Tudor style house at 2158 East Shelby Street has picturesque details from 1925 (Exhibit 17). Across the street, the noted Seattle architecture firm Bebb and Gould designed the Mary Houlahan House at 2159 East Shelby Street in 1914 as a Colonial Revival-style residence that mimics the Georgian period (Exhibit 18). Both of these houses are also individually eligible for the NRHP under Criterion C.

Noteworthy nonresidential properties in the area include the Montlake Bridge; the Seattle Yacht Club; the Fisheries Building (the historic NOAA Northwest Fisheries Science Center buildings); and structures such as the Arboretum Aqueduct and the Japanese Garden teahouse in the Washington Park Arboretum, which borders the neighborhood.





Exhibit 17. 2158 East Shelby Street, Montlake Historic District



Exhibit 18. 2159 East Shelby Street, Mary Houlahan House, Montlake Historic District

Within the APE, 109 properties are eligible for the NRHP as contributing elements to the Montlake Historic District. Thirty-five of these are also individually eligible for the NRHP under Criterion C. The properties within the district boundaries are significant for their architectural characteristics, representing the distinct design styles from the early twentieth century. As a group, they represent a distinguishable entity recognizable as the Montlake Historic District. Resources within this district include the following:

- An architecturally cohesive residential neighborhood, largely developed from 1909 until approximately 1945
- The Seattle Yacht Club, established in 1892, which moved to its current Montlake location on Portage Bay and constructed the present clubhouse in 1920, and is individually listed in the NRHP as well as being a contributing element to the historic district
- The NOAA Northwest Fisheries Science Center property, including the first federal fisheries building constructed on the West Coast, designed by John Graham, Sr. and built in 1931
- Numerous individually eligible properties that lie within the historic district boundaries

Although construction of SR 520 in the early 1960s compromised the Montlake neighborhood, most of the neighborhood remains intact. While many of the individual buildings have experienced minor alterations, such as window replacements and rear additions, most of these do not detract significantly from the integrity of the properties. Only a rare few have been so altered as to make them non-contributing, and the percentage of these in the district is very low. The SHPO



concluded on the NRHP eligibility of the Montlake Historic District on August 27, 2009.

2220 East Louisa Street Residence

The residence at 2220 East Louisa Street is located within the Montlake Historic District (Exhibit 19). It is a contributing element to the district and is also individually eligible for the NRHP under Criterion C. The house was built in 1930 in the Tudor Revival style. It embodies the distinctive characteristics of Tudor Revival style architecture and retains very good integrity.

Montlake Cut

The Montlake Cut is a half-mile-long segment of the Lake Washington Ship Canal that joins Lake Union to Lake Washington (Exhibit 20). The Montlake Cut is listed in the NRHP as part of the “Hiram M. Chittenden Locks and Related Features of the Lake Washington Ship Canal,” which is eligible under Criteria A and C for its significant contribution to the development of the Puget Sound region and as an outstanding engineering accomplishment. “The Lake Washington Ship Canal is significant to Seattle, the state and the nation as a major engineering achievement completed under government auspices which added more than 90 miles to the city’s water frontage, accessible to ocean-going vessels” (Potter 1977). The Montlake Cut is oriented east and west and cuts through a narrow strip of land between Lake Union’s Portage Bay and Lake Washington’s Union Bay. It was named for the Montlake residential neighborhood on the south shore. The University of Washington campus is on the north shore, and the historic Montlake Bridge crosses the canal near the center point, connecting the two areas. The channel width is 100 feet, although the right-of-way controlled by the U.S. Army Corps of Engineers is typically 325 feet wide. It is dredged to an authorized depth of 30 feet. The tops of the concrete revetments are used as waterside walks (Potter 1977).



Exhibit 19. 2220 East Louisa Street residence in Montlake Historic District



Exhibit 20. Montlake Cut



Naval Military Hangar/University Shell House (aka Canoe House) on University of Washington campus near the east end of the Montlake Cut

The Canoe House (Exhibit 21) was erected in 1918 during World War I, when the U.S. Navy occupied part of the University of Washington campus. It was built to shelter seaplanes as part of the Navy's temporary training camp. The hangar was unused until 1922, when it became the headquarters for campus crew racing activities. In 1949, it was converted to use for storage and rental of boats. The Canoe House building is owned by the University of Washington but sits on a piece of property where the north section is owned by the University of Washington, but the south section, nearest the Montlake Cut, is owned by U.S. Army Corps of Engineers. The property is maintained by the University of Washington. It was listed in the NRHP in 1975 under Criterion C as a "rare ... example of an architectural type developed in the early years of aviation. Because the airplane hangar was a response to new technology, its efficient form was essentially without historical precedent. 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). The area included in the nomination covers approximately 1.9 acres, bound on the south by the natural shoreline of the north bank of the Montlake Cut, and on the north by the northernmost boundary of the property governed by U.S. Army Corps of Engineers. The west boundary is a line running perpendicular from the north boundary to the end of the Montlake Cut revetment, which is a distance of approximately 248.7 feet. The east boundary is a line running perpendicular from the north boundary to its point of intersection with the natural shoreline, which is a distance of slightly less than 150 feet. The distance between the east and west boundaries is approximately 300 feet.



Exhibit 21. Canoe House

Pavilion Pedestrian Bridge

The Pavilion Pedestrian Bridge (Exhibit 22), which crosses over Montlake Boulevard NE and connects the Hec Edmundson Pavilion with the Burke-Gilman Trail and the main University of Washington



campus, is eligible for the NRHP. The City of Seattle built this pedestrian bridge in 1938 for student use at the request of the University of Washington. The bridge is designed in poured concrete, with restrained Art Moderne lines and minimal detailing, typical of the WPA/Public Works Administration (PWA) designs of the 1930s. It is eligible for the NRHP under Criterion C for its distinctive Art Moderne style. SHPO concurred on the NRHP eligibility of the Pavilion Pedestrian Bridge on August 27, 2009.

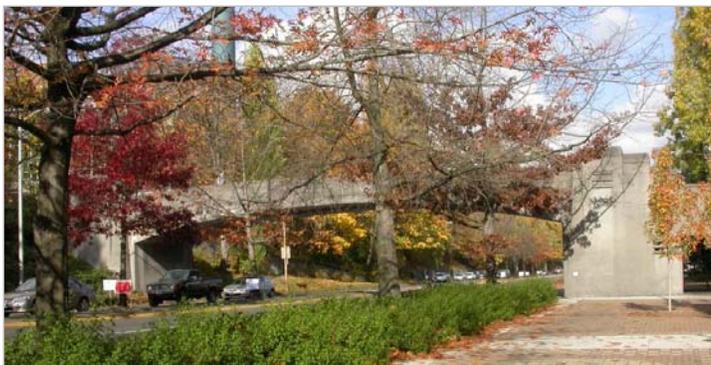


Exhibit 22. Pavilion Pedestrian Bridge

North and South Pedestrian Bridges

The North and South Pedestrian Bridges, which are eligible for the NRHP, are identical concrete bridges that cross Montlake Boulevard NE, connecting the University of Washington campus and the Burke-Gilman Trail to parking lots on the east side of Montlake Boulevard. An early example of post tension pre-stress concrete, they were built in 1958 and designed by noted structural engineer Jack Christiansen. These bridges served as models for other pedestrian bridges throughout the state. They are eligible for the NRHP under Criterion C for their distinctive design and important engineering qualities. The SHPO concurred on the NRHP eligibility of the North and South Pedestrian Bridges on October 26, 2009. Exhibit 23 is a photograph of the South Pedestrian Bridge.



Exhibit 23. South Pedestrian Bridge

Washington Park Arboretum

The Washington Park Arboretum is protected under Section 4(f) as both a park and as a historic property. The Arboretum, located at 2300 Arboretum Drive East, is a public facility that was developed as part of the “Olmsted Plan for Seattle Parks, Boulevards, and Playgrounds” (University of Washington 1997). Stretching across approximately 230 acres, it contains one NRHP-listed resource, the Arboretum Aqueduct (Exhibit 24). The Washington Park Arboretum as a whole is eligible for



the NRHP. Foster Island, within the Arboretum, is presumed eligible for the NRHP as a TCP. For more description of Foster Island as a TCP, see the discussion in the following section.

Created from 1900 to 1904, the Washington Park Arboretum (first known as Washington Park) was one of Seattle's first parks. Originally owned by the Puget Mill Company, it was logged and slated for development, along with the adjacent area that is now known as Broadmoor. However, the financial panic of 1893 put the company's plans on hold. To get needed infrastructure improvements from the City of Seattle, Puget Mill Company deeded the City 62 acres of land that would become the park. More acreage was added over the next few years, and by 1916, the City owned a total of 165.22 acres (BOLA and Kiest 2003). The City of Seattle largely completed its acquisition of land for Washington Park with the 1917 purchase of Foster Island and the 1920–1921 purchase of all but one lot of the Bard-Foster Washington Park Addition (City of Seattle 2008).

In 1903, the Olmsted Brothers came to Seattle and prepared a plan for Seattle's park system, including Washington Park. In March 1924, Washington Park was officially set aside as a botanical garden and arboretum by the Board of Park Commissioners. In 1925, the federal government leased the "Old Government Canal" property to the City for 99 years, to be used for park purposes. The leased land was considered an expansion of Washington Park and was the location of the first official plantings in the park in 1935–1936.

The first formal plan for the Arboretum, which the Olmsted Brothers drew up in March 1936, included an illustrated plan, a nine-page letter, a collection of photographs, and plant lists. Chief designer J. Frederick Dawson used an earlier design by the Parks Department's staff landscape architect, Frederick W. Leissler, Jr., as the basis for the Olmsted plan. Dawson worked closely with Leissler (who had been hired by Dean Winkenwerder of the University of Washington College of Forestry to oversee development of the Arboretum).

As this was during the Great Depression, 500 men in the Public Works Administration/Works Progress Administration (WPA) did much of the construction. Between 1936 and 1941, WPA workers completed much of the basic infrastructure that is present today. They also built a



Exhibit 24. Arboretum Aqueduct, Washington Park Arboretum



stone gatehouse located near the south entrance at Madison Street, an overlook or gazebo on a hillside at the southern end of the Arboretum, and a stone kiosk at the Interlaken Boulevard intersection with Lake Washington Boulevard (the original kiosk was demolished). Much of the Arboretum plant collection development occurred after World War II, when the late Brian O. Mulligan was director.

The area around Foster Island and along the shoreline was included in both the 1904 and 1936 Olmsted plans as an area of lagoons. The lowering of Lake Washington in 1916 changed the shoreline and created a marsh at the north end of the Arboretum around Foster Island. By 1936, this area was “extensive marshlands, interrupted by landfills, following two decades of exposure since the lowering of the lake. The plan proposed the introduction of waterways labeled ‘lagoons’ to be developed through dredging of the marshland. Dredge spoils would be used to raise the adjacent marshland and to cover the dumps. A future Alpine collection could expand into the area surrounding Foster Island, from the primary Alpine garden proposed west of the nursery” (BOLA and Kiest 2003). To implement the lagoon plan, extensive dredging was done in 1938–1939, dredging out 1¼ miles of lagoons. In 1939, 16 species of bamboo and 3,500 Japanese iris were planted; however, few of these plants survived after World War II.

After construction of SR 520 through this area, landscape architect Hideo Sasaki was hired in 1964 to salvage what was left of the northern Arboretum area. Few elements of his plan were implemented, except for the Arboretum Waterfront Trail. In 2003, a historic review conducted by BOLA Architecture + Planning and Karen Kiest/Landscape Architects stated: “An estimated 60 acres were lost in the lagoon area, which had been part of the Olmsted Brothers proposed plan for the Arboretum. Excavations, which extended along the east side of 26th Avenue, filled with water. The resulting topography and the presence of the off-ramps eliminated the possibility of further development at the north end of the Arboretum” (BOLA and Kiest 2003). The construction of SR 520 and the Evergreen Point Bridge severely compromised the integrity of this area as a historic planned landscape.

The undeveloped property north of SR 520 behind the houses facing East Hamlin Street is what remains of the “canal reserve land,” the location of the original log canal between Lake Union and Lake Washington. This piece of land was not included in the Olmsted plans for the park, but, as noted above, was one of the first areas formally



planted. Frederick W. Leissler, Jr., who was appointed assistant director of the Arboretum in 1936, directed WPA crews in planting Yoshino cherry trees and incense cedars on the “canal land” during the winter of 1935-1936. The trees remained until the construction of SR 520 in 1961. At that time, many of the cherry trees were relocated to the liberal arts quad of the University of Washington. These trees were removed in 1998 because of their advanced age (BOLA and Kiest 2003). In 1963, the State Department of Highways condemned approximately 47 acres of Arboretum property for SR 520, including most of the canal reserve land. Two of the cherry trees that were not relocated remain today. However, most of the surrounding land and plantings have been removed, and the introduction of SR 520 severely compromised the integrity of this early landscape.

After the plan of 1936, the next master plan adopted for the park was in 1978. In May 2001, the Seattle City Council approved a new long-range master plan for the Arboretum, *Renewing the Washington Park Arboretum* (City of Seattle et al. 2001). The plan was developed by Seattle Parks and Recreation, the University of Washington, and the Arboretum Foundation to ensure that the Arboretum could effectively fulfill three primary purposes – conservation, recreation, and education.

As a public park, teaching and research institution, and outdoor recreation area, the Arboretum has changed and evolved to meet changing demands, accommodate differing financial climates, and adapt to new challenges and desires from varied stakeholders. The extensive plantings and landscape improvements have matured. The plan (City of Seattle 2001b) has had to be altered to fit SR 520 and the Evergreen Point Bridge approach. However, the Arboretum retains its basic design and feeling, and continues to fulfill its mission:

The Washington Park Arboretum is a living plant museum emphasizing trees and shrubs hardy in the maritime Pacific Northwest. Collections are selected and arranged to display their beauty and function in urban landscapes, to demonstrate their natural ecology and diversity, and to conserve important species and cultivated varieties for the future. The Arboretum serves the public, students at all levels, naturalists, gardeners, and nursery and landscape professionals with its collections, educational programs, interpretation, and recreational opportunities.

This mission statement was adopted January 4, 1996, and remains true to the initial founding of the Arboretum in 1924. The Arboretum cannot be judged as a sum of its parts, many of which have adapted and



changed over time, with renewed plantings, new signage and lighting, new paving, and so forth. As a historic designed landscape meant to educate and provide public beautification, it is an icon of the Seattle parks system. Although construction of SR 520 heavily affected the northern section of the Arboretum, which suffered a loss of integrity, the rest of the Arboretum remains intact. Taken as a whole, the Arboretum retains good integrity.

The Washington Park Arboretum is eligible for 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 Alaska-Yukon-Pacific Exposition, the development of the University of Washington, the work of the WPA, 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 and by the many talented designers and architects who contributed to its multiple designed features). The SHPO concurred on the NRHP eligibility of the Washington Park Arboretum on August 27, 2009.

Foster Island

Foster Island is presumed eligible for the NRHP as a TCP, although a formal determination of eligibility has not yet been completed. Because research is ongoing, the boundaries of the TCP remain undefined. Further documentation and analysis will be undertaken to identify the TCP boundaries as part of the Section 106 process, but it is assumed that all of Foster Island will be included in these boundaries. Foster Island is recognized as a place of great cultural importance to Native American tribes of the area. In addition to being a burial ground, important spiritual events were conducted on the island or in its immediate vicinity. It is being treated as eligible for the NRHP under Criterion A (events important to history) and Criterion D (potential to contribute information important to history). Foster Island may also be considered eligible for the NRHP as an archaeological site, but at present this is unknown. Further archeological investigation at Foster Island could result in the discovery of below-ground resources that warrant determination of Foster Island eligible under Criterion D as an archaeological site. However, archeological sites that are important chiefly because of what can be learned by data recovery and have minimal value for preservation in place are exempt from protection by Section 4(f).



Governor Albert D. Rosellini Bridge/Evergreen Point Bridge

The Evergreen Point Bridge (Exhibit 25) has been determined eligible for listing in the NRHP. The bridge was the second span across Lake Washington and lies 4 miles north of the first floating bridge, the Lacey V. Murrow Memorial Bridge. The Evergreen Point Bridge formed the center portion of the 5.8-mile project connecting the area's two main north-south highways, Interstate 405 (I-405) on the lake's east side and Seattle's I-5 (Hobbs and Holstine 2005). The Evergreen Point Bridge opened in 1963. Although still generally referred to as the Evergreen Point Bridge, it was officially renamed the Governor Albert D. Rosellini Bridge in 1988 (Mauldin no date [n.d.]).



Exhibit 25. Evergreen Point Bridge

At the time of its construction, the Evergreen Point Bridge was the largest floating span in the world at 1.4 miles long. It cost \$24,972,000 (the floating section alone was \$10.9 million), making it the most expensive floating bridge in the world at the time (Hobbs and Holstine 2005). The bridge enabled the rapid growth of the northern part of the Eastside, especially northern Bellevue, Redmond, and Kirkland, leading to greatly increased development and with it, greatly increased commuter traffic.

The bridge, having had few substantial alterations over its lifetime, appears today much as it did when completed in 1963. It continues to fulfill its original function, although it now must handle more than twice its intended capacity. The bridge is already over 40 years old, and will meet the 50-year mark for NRHP eligibility in August 2013. With the sinking of the Lacey V. Murrow Bridge (the original Lake Washington floating bridge), the Evergreen Point Bridge became the oldest remaining floating bridge across Lake Washington, exemplifying an engineering feat of outstanding proportions. As noted previously, it was also the longest and most expensive at its time of construction. Due to its exceptional importance, the bridge is already eligible for the NRHP, even though it is not yet 50 years old. It is significant as a structure under Criterion C for its outstanding and innovative engineering design, and it meets Criteria Consideration G for



exceptional importance. It is also significant under Criterion A for its lasting effect on the development of the Seattle metropolitan area, especially on the communities of the Eastside. The SHPO concurred with this eligibility on January 26, 2009.

Pontoon Production and Transport

A new 6-lane floating bridge would need 21 longitudinal pontoons, 2 cross pontoons, and 54 supplemental stability pontoons to support the new roadway across Lake Washington. As previously discussed in this evaluation, and detailed in Chapters 1 and 3 of the SDEIS, the SR 520, I-5 to Medina project would construct 44 supplemental stability pontoons needed for the 6-lane design of the new floating bridge. If the Evergreen Point Bridge does not suffer catastrophic failure prior to a planned reconstruction, then the 21 longitudinal pontoons, 2 cross pontoons, and 10 supplemental stability pontoons constructed and stored as part of the SR 520 Pontoon Construction Project would be available for use.

Pontoons for the SR 520, I-5 to Medina project could be constructed at the Concrete Technology Corporation Facility in Tacoma and a new casting basin facility in Grays Harbor, the same sites addressed within the Draft Environmental Impact Statement (DEIS) and Section 4(f) documentation being prepared for the SR 520 Pontoon Construction Project (WSDOT 2009f). Analysis to date indicates that there would be no effects on any Section 4(f) properties from construction or towing of pontoons to the temporary moorage sites. Based on this analysis, this 4(f) evaluation also anticipates that no Section 4(f) properties will be affected by construction and towing of pontoons for this project.

The possible pontoon towing routes to Puget Sound and Lake Washington are shown in Exhibit 7. There are no Section 4(f) properties that would be affected by the transport of pontoons to the project site, except for the Montlake Cut. The Montlake Cut would experience no adverse effects from the towing of pontoons through it. Pontoon towing would occur in the cut several times over the course of 2 to 3 years. Towing pontoons through the Montlake Cut would be a use, but as the Cut is an active navigational channel, it would be in keeping with the nature and normal function of the Cut. The towing of pontoons would have no effect on the qualities that qualify the Montlake Cut for the NRHP and would be considered *de minimis*.



Coordination Plan

What are the key elements of the Section 4(f) coordination plan?

Coordination with the entities that have jurisdiction over Section 4(f) properties helped assure that the design options of the 6-Lane Alternative and their respective effects included all practical planning measures to avoid or minimize harm to Section 4(f) properties. The entities involved in coordination, include the SHPO, the Seattle Historic Preservation Officer, Seattle Parks and Recreation, and the University of Washington. Coordination efforts were conducted early in the Draft EIS process and within the SDEIS process and included Section 106 consultation to identify historic properties. The following list summarizes coordination efforts:

- Within the Section 106 consultation process multiple meetings, conference calls, and written correspondence with the SHPO, numerous consulting parties, and interested Native American tribes have occurred to determine the eligibility of and effects on historic properties within the APE. Consultation on determinations of effects and potential mitigation measures is ongoing.
- WSDOT also held several consultations to discuss location of the design options of the 6-Lane Alternative in relation to the eligible properties, and avoidance alternatives. These consultations varied, but included such participants as the WSDOT project engineers, the project consulting engineers and designers, the SHPO, Seattle Parks and Recreation representatives, the University of Washington, the City of Seattle, WSDOT cultural resources and environmental specialists, the consulting environmental specialists, and the consulting cultural resources specialists.
- WSDOT conducted public meetings to involve agencies, the public, consulting parties, and interested tribes in the SR 520, I-5 to Medina project. The SDEIS describes these outreach efforts.
- WSDOT will continue to coordinate with the SHPO, FHWA, and all interested tribes and consulting parties to develop a memorandum of agreement (MOA) to resolve adverse effects identified under Section 106, pursuant to 36 CFR 800.6. For more information on the



Section 106 process and specific consulting parties, see the Cultural Resources Discipline Report in the SDEIS (WSDOT 2009e).



Potential Effects of the Project

How would the project alternatives use the Section 4(f) properties?

This section contains summary tables for each 6-Lane Alternative option that compare the quantitative impacts of the options on Section 4(f) properties (see Exhibits 38, 44, and 49 later in this chapter). These exhibits also clearly note which properties would experience a “use.”

Each of the 6-Lane Alternative options forwarded for consideration in the SDEIS would result in a “use” of at least one property protected under Section 4(f). Section 23 CFR 774.17 defines what constitutes a “use” of an eligible Section 4(f) property as a result of transportation project actions:

1. *When land is permanently incorporated into a transportation facility;*
2. *When there is a temporary occupancy of land that is adverse in terms of the statute’s preservation purpose and that occupancy does not meet any of the exceptions to 4(f); or*
3. *When there is a constructive use of a Section 4(f) property as determined by the criteria in Sec. 774.15. (See 23 CFR 774.17).*

An exception to 4(f) use is a temporary occupancy of land, which is defined as one that is “so minimal as to not constitute a use within the meaning of Section 4(f)” as determined by the criteria in Sec. 774.13(d). The following conditions must be satisfied:

1. *Duration must be temporary, i.e., less than the time needed for construction of the project, and there should be no change in ownership of the land;*
2. *Scope of the work must be minor, i.e., both the nature and the magnitude of the changes to the Section 4(f) property are minimal;*
3. *There are no anticipated permanent adverse physical impacts, nor will there be interference with the protected activities, features, or attributes of the property, on either a temporary or permanent basis;*



4. *The land being used must be fully restored, i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project; and*
5. *There must be documented agreement of the official(s) with jurisdiction over the Section 4(f) resource regarding the above conditions.*

23 CFR, Part 774.13[d] requires documented agreement by the official(s) with jurisdiction over the Section 4(f) property that the proposed temporary occupancy is so minimal that it does not constitute a use under Section 4(f).

For all properties associated with this project where a temporary occupancy finding is made, coordination with the officials with jurisdiction is ongoing, and letters of agreement from the City and the University of Washington are expected before the final NEPA decision document for the project is completed. The letters are anticipated to express agreement with the decision that the temporary occupancies will not result in a Section 4(f) use of those properties.

Under Section 4(f), a use may also occur when there is a *constructive* use of land, which occurs when the transportation project does not incorporate land but its proximity substantially impairs the protected activities, features, or attributes that qualify a resource for protection under Section 4(f). A determination of constructive use is based on the criteria in 23 CFR 774.15. WSDOT has made every attempt to identify all foreseeable effects to recreation, parks, and historic properties and has disclosed them in the Recreation and Cultural Resources discipline reports in the SDEIS (WSDOT 2009d, e) for review and comment. Not all of the potential effects on these properties from construction of the project are known at this time. For example, any effects on listed or eligible properties from potential haul routes are not anticipated to rise to the level of constructive use. Potential haul routes include Montlake Boulevard between SR 520 and NE Pacific Street and NE Pacific Street between Montlake Boulevard and 15th Avenue NE. Potential haul routes on residential streets include 11th Avenue East and East Miller Street, East Shelby Street, and East Hamlin street east of Montlake Boulevard. Potential haul routes for the east approach include Evergreen Point Road and 92nd Avenue NE.

Once a preferred alternative has been selected and more detailed construction effects can be evaluated, additional effects determinations specific to construction can be made, particularly for historic properties under Section 106. To date, three historic properties would experience



an adverse effect under Section 106, due to changes to their setting and feeling caused by the project:

- Montlake Bridge
- 2111 East Shelby Street
- 2158 East Shelby Street
- 2159 East Shelby Street

Based on available information, none of the Section 4(f) properties in the study area has been found to experience construction-related impacts such as noise, dust, or vibration that would substantially impair the use of the properties. Although many properties would experience effects from construction, none of these construction effects is anticipated to rise to the level of constructive use.

FHWA may also determine that a use is so minor that it may be considered *de minimis*. In accordance with 23 CFR Part 774, FHWA's "Guidance for Determining *de minimis* Impacts to Section 4(f) Resources" states "... once the U.S. Department of Transportation determines that a transportation use of Section 4(f) property, after consideration of any impact avoidance, minimization, and mitigation or enhancement measures, results in a *de minimis* impact on that property, an analysis of avoidance alternatives is not required and the Section 4(f) evaluation process is complete."

For *de minimis* to be applicable, a project must meet specified impact criteria. The criteria and associated determination requirements are different for parks and recreation areas, and wildlife and waterfowl refuges than for historic properties:

- *De minimis* impacts on publicly owned parks, recreation areas, and wildlife and waterfowl refuges are defined as those that do not "adversely affect the features, attributes, or activities qualifying the property for protection under Section 4(f)."
- *De minimis* impacts on historic properties are defined as impacts that, in compliance with Section 106 of the National Historic Preservation Act (NHPA), have resulted in a determination "that no historic property is affected by the project or that the project will have 'no adverse effect' on the historic property in question."

As noted earlier, six properties have been determined to have *de minimis* findings for this project. Based on FHWA guidance for determining *de minimis* impacts (FHWA 2005), the agency with



jurisdiction must concur that the project effects would not adversely affect the activities, features, and attributes of the Section 4(f) property. WSDOT has initiated consultation with the agencies with jurisdiction. Concurrence on effects of the project has not yet been reached with SHPO, but coordination with SHPO is ongoing. A letter of concurrence from the agencies with jurisdiction on a finding of de minimis or no adverse effect will be necessary before the final decision document is completed.

This section describes the effects on Section 4(f) properties for each 6-Lane Alternative option and makes determinations on whether the effects result in a “use” of the resource under Section 4(f). Where a suboption uses Section 4(f) properties differently than the primary option, those differences are discussed. In all other cases, suboptions are not depicted separately because they would not create additional effects on Section 4(f) properties than the design options they are associated with. Determinations of Section 4(f) uses at the properties were made in accordance with the applicable Section 4(f) statute and FHWA’s *Section 4(f) Policy Paper* guidance (2005). References to preliminary findings of adverse effect under Section 106 made in this section were based on analyses performed for the Cultural Resources Discipline Report in the SDEIS (WSDOT 2009e). In all cases below where a temporary construction activity has been determined to be a temporary occupancy (not constituting a use), all of the temporary occupancy criteria above were met. All effects determinations on historic properties are subject to concurrence by the SHPO and may change.

6-Lane Alternative

Seattle

All Options

Fire Station #22

Options A, K, and L would all result in a permanent incorporation of land from the parcel that holds Fire Station #22 (Exhibit 26). The improved intersection at East Roanoke Street and 10th Avenue East would use 0.03 acre. The land acquired would be along the east edge of the parcel and would not include the historic building. In addition, the historic and current function of the building as a fire station would be maintained and would not be affected throughout the construction



period. This loss of land would result in no adverse effect on the historic property (pending SHPO concurrence).

All options would have no discernible effect on the characteristics that make Fire Station #22 eligible for the NRHP, and thus would have no adverse effect on the historic property and would be considered *de minimis*.

Bagley Viewpoint

Options A, K, and L would all require the permanent acquisition of the entire 0.15-acre viewpoint to accommodate the widened SR 520 roadway (Exhibit 27). Therefore, all options would result in Section 4(f) use of Bagley Viewpoint.

Interlaken Park

None of the options would require permanent incorporation of land from Interlaken Park. Options A, K, and L would all require a construction easement of 0.05 acre within the park.

Delmar Drive East passes through the northwest end of Interlaken Park. A construction easement of 0.05 acre within the park would be needed for replacing the curbs and sidewalks along Delmar Drive East (see Exhibit 27). This construction activity is associated with building the 10th Avenue East/Delmar Drive East lid (which is scheduled to take approximately 15 to 24 months). The easement would be in use for 9 months. The scope of work would be minor and would involve replacing curbs and sidewalks. No permanent adverse physical impacts or interference with the protected activities, features, or attributes of the property would occur. After construction, the easement area would be fully restored and returned to park use. These construction effects would be temporary, and the scope of the work would be minor. Therefore, this construction easement would meet the temporary occupancy exception criteria of 23 CFR 774.13(d) and would not constitute a Section 4(f) use. Coordination with the City of Seattle is ongoing, and a letter of agreement from them will be received before the final decision document for the project is completed. The letter will express agreement with the decision that the temporary occupancy of Interlaken Park will not result in a Section 4(f) use of the property.

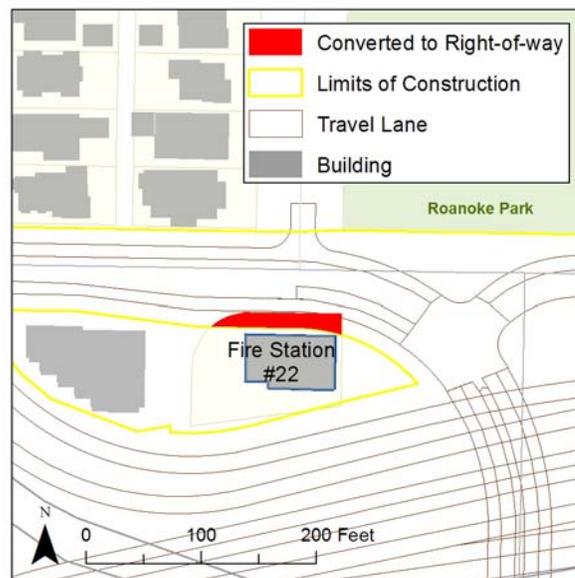


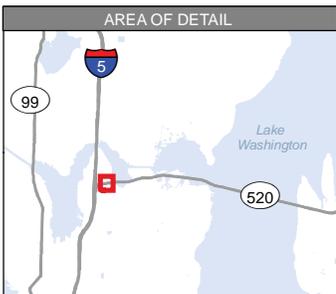
Exhibit 26. Limits of Construction and Converted Right-of-Way for Fire Station #22



Options A, K, and L



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Park Effect

- Converted to Right-of-way
- Construction Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction
- Proposed Lid
- Travel Lane
- Pavement
- Park or Recreation Feature

N
0 50 100 200 Feet

Exhibit 27. Effects on the Bagley Viewpoint and Interlaken Park for Options A, K, and L

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Based on the above discussion, there would be no Section 4(f) use of Interlaken Park as a result of Options A, K, or L.

Governor Albert D. Rosellini Bridge/Evergreen Point Bridge

The entire Evergreen Point Bridge would be removed under all options. As part of the SR 520, I-5 to Medina project, the bridge would be replaced with a new bridge. The removal of the bridge would result in an adverse effect on the historic property and would be a Section 4(f) use of the Evergreen Point Bridge under Options A, K, and L.

Option A

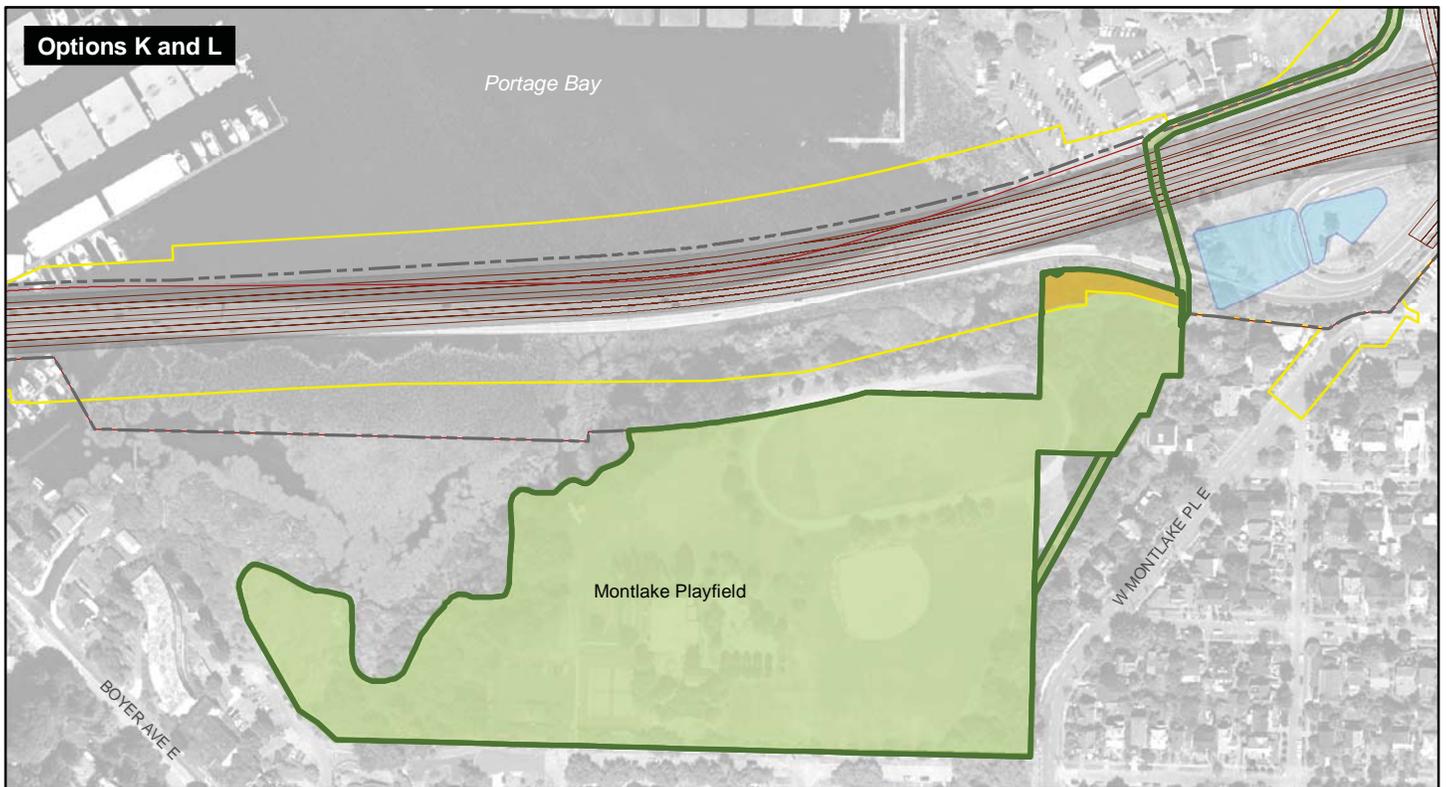
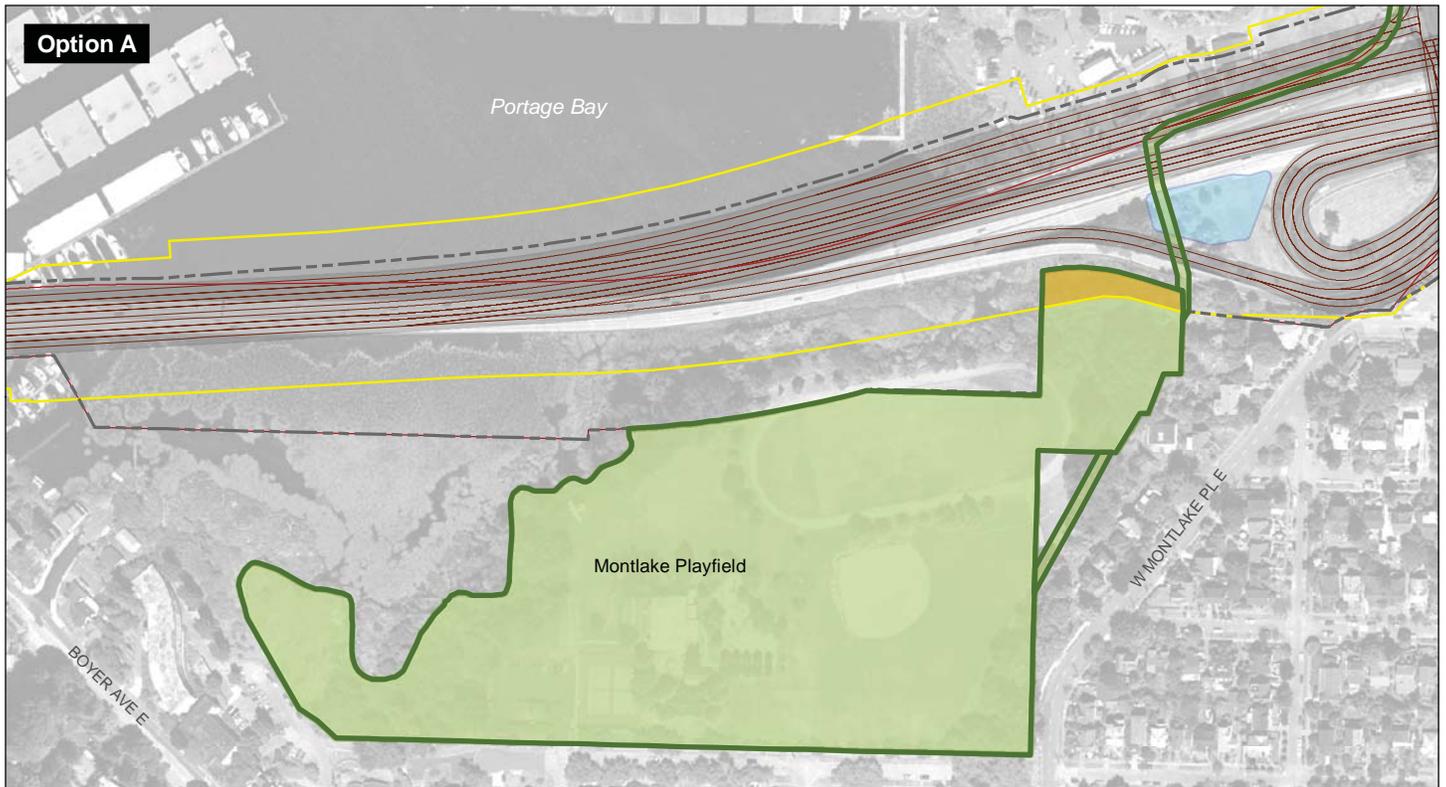
Park and Recreation Resources

Montlake Playfield

Option A would not entail a permanent incorporation of Montlake Playfield property. SR 520 would be widened to the north into the NOAA Northwest Fisheries Science Center property and away from Montlake Playfield.

Approximately 0.3 acre of construction easement within the park boundary would be needed, but would not affect any of the park facilities (Exhibit 28). A temporary support structure would be built along the northeast edge of the park. While this temporary structure would be a work bridge used to remove and replace the SR 520 off-ramp to Montlake Boulevard, this section of the work bridge would only provide access to the south side of the Portage Bay bridge, and facilitate construction there. The temporary structure would be located at the far edge of the park property, near the existing bridge and ramps, in an area that would not impact any of the park activities or features. Construction activities within the park are scheduled to take 2.5 to 3 years. This is less than the construction duration of the entire project, which is estimated at 6 to 8 years, depending on the design option selected. The temporary work bridge structure would be removed as soon as construction was complete, so no permanent adverse physical impacts or interference with the protected activities, features, or attributes of the park will occur. After construction, the easement property at the northeast edge of the park would be fully restored and returned to park use. These construction effects would be temporary, are located in a less active area of the park, and are minor in scope because this section of the work bridge mainly provides access and facilitates construction of the new Portage Bay bridge. Therefore, this construction easement would meet the temporary occupancy exception criteria of 23 CFR 774.13(d), and would not constitute a Section 4(f) use.





- Park Effect**
- Construction Easement
 - Proposed Right-of-way
 - Existing Right-of-way
 - Limits of Construction
 - Travel Lane
 - Park or Recreation Feature
 - Stormwater Facility
 - Pavement

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

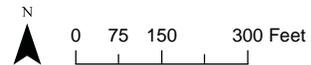


Exhibit 28. Effects on the Montlake Playfield for Options A, K, and L

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Coordination with the City of Seattle is ongoing, and a letter of agreement from them will be received before the final decision document for the project is completed. The letter will express agreement with the decision that the temporary occupancy of Montlake Playfield will not result in a Section 4(f) use of the property.

Based on the above discussion, there would be no Section 4(f) use of Montlake Playfield as a result of Option A.

Bill Dawson Trail

Option A would entail the replacement, widening, and removal of SR 520 structures within existing WSDOT right-of-way. These activities require the relocation of the Bill Dawson Trail that currently crosses under SR 520. The trail would be moved approximately 80 feet north of its current location along SR 520, and approximately 46 feet east as it crosses beneath SR 520. There would be no change in land ownership of the affected trail segment.

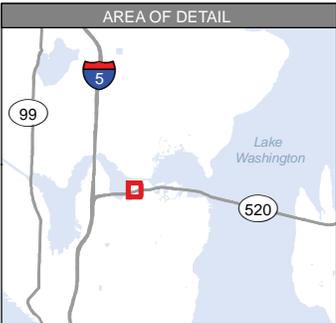
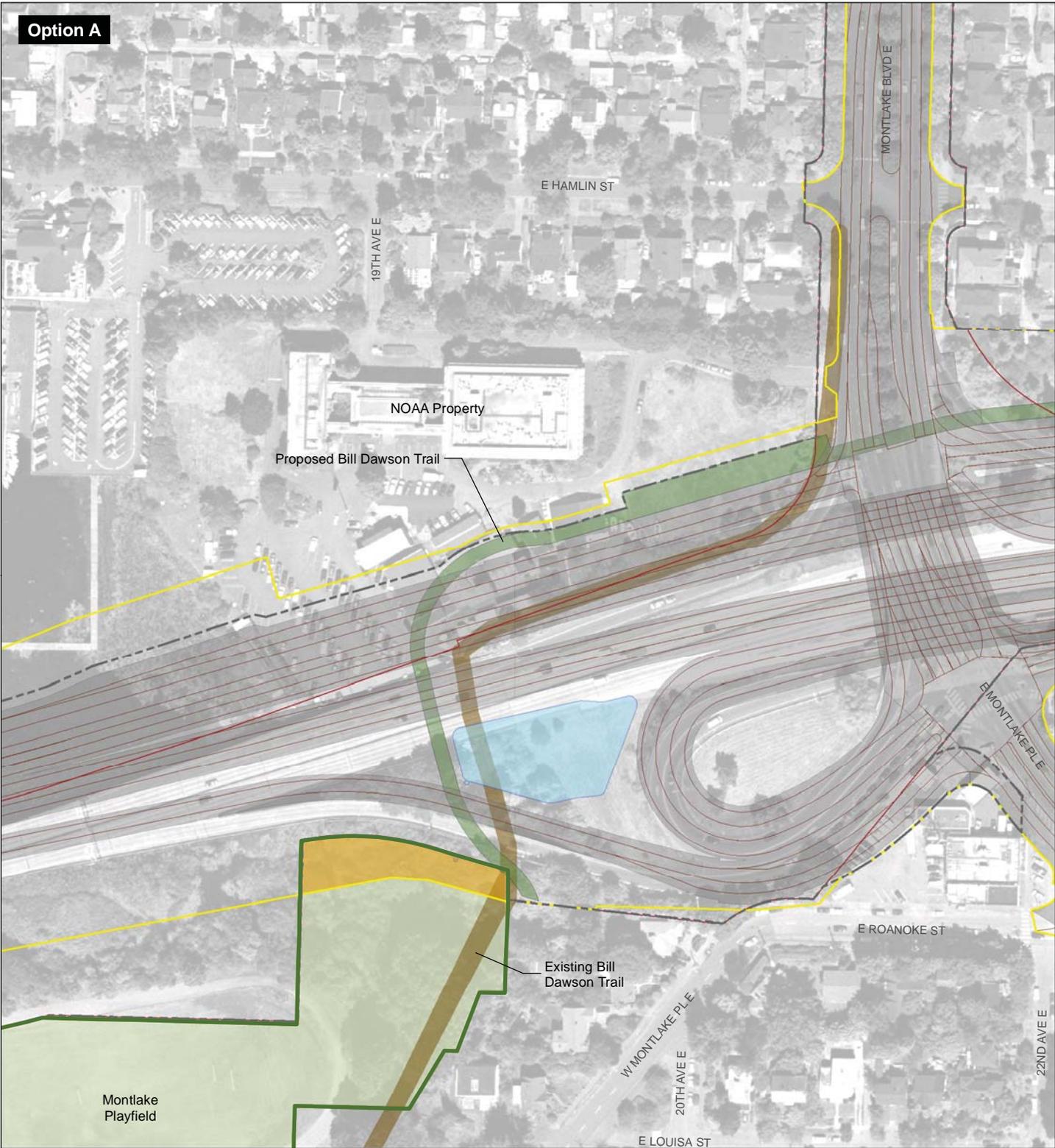
During construction, the segment of the trail within WSDOT right-of-way would be closed for 2.5 to 3 years (Exhibit 29) and a pedestrian-safe detour would be provided. Detours would be provided using on-street connections to maintain trail connectivity between Montlake Boulevard NE and Montlake Playfield. The detour would be 1,520 feet longer than the closed portion of the trail. Proceeding from west to east, the detour would run from the Montlake Playfield north along 18th Avenue East to East Lynn Street, then follow 19th Avenue East to West Montlake Place East. It would then run west along East Roanoke Street, round the Hop In Market, and head south along Montlake Boulevard NE, where it would rejoin the trail. See Exhibit 30 for the planned detour path.

Because of the widened highway, the length of the roadway under the highway would increase from 100 feet to 120 feet. This additional length beneath the roadway would not substantially impair the continued use of the trail.

The trail would be closed for 2.5 to 3 years. This is less than the project construction period, which is estimated to be 6 to 8 years. The scope of the work is minor, and entails relocation of the trail to accommodate new transportation structures. The trail would retain the same linear pattern, in the same area, with a similar setting. It would serve the same location and require no new access points. Therefore, this relocation constitutes a minor alignment change. No adverse physical impacts or



Option A



- Construction Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction
- Pavement
- Travel Lane
- Park or Recreation Feature
- Stormwater Facility
- Existing Trail/Bicycle Path
- Proposed Bicycle/Pedestrian Path

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

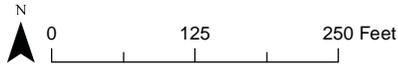


Exhibit 29. Effects on the Bill Dawson Trail for Option A

SR 520, I-5 to Medina Bridge Replacement and HOV Project



interference with the protected activities, features, or attributes of the trail are anticipated from this construction, as a detour will be provided to ensure continuity of the trail during construction. After construction, the trail would be reopened with the new alignment. Therefore, this construction would meet the temporary occupancy exception criteria of 23 CFR 774.13(d), and would not constitute a Section 4(f) use. Coordination with the City of Seattle is ongoing, and a letter of agreement from them will be received before the final decision document for the project is completed. The letter will express agreement with the decision that the temporary occupancy of the Bill Dawson Trail will not result in a Section 4(f) use of the property.

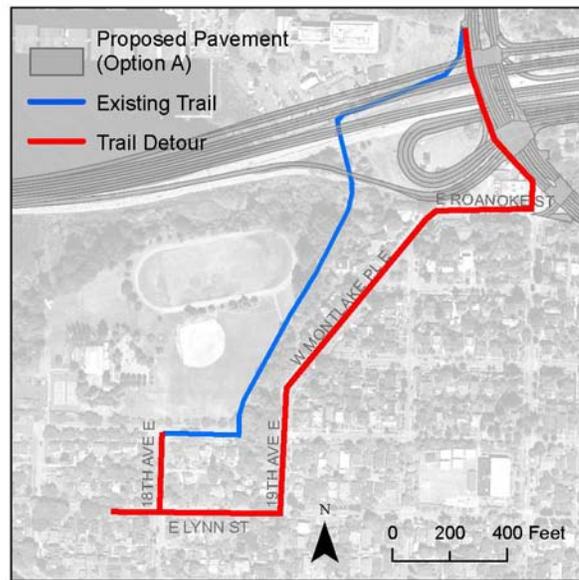


Exhibit 30. Proposed Detour for Bill Dawson Trail During Construction for Options A, K, and L

East Montlake Park and McCurdy Park

Option A would result in a permanent incorporation of land at East Montlake and McCurdy parks (Exhibit 31). Widening of SR 520, installation of floating bridge trail connection ramps, installation of the Montlake lid, and development of associated stormwater facilities would necessitate the incorporation of the entire McCurdy Park (1.5 acres) and approximately 2.2 acres of land from East Montlake Park (which represents roughly 43 percent of the parks' combined total land size). The MOHAI building and its 150-space parking lot would be removed. The existing vehicular access to the park from 24th Avenue East would be relocated. New access would be provided from the Montlake lid.

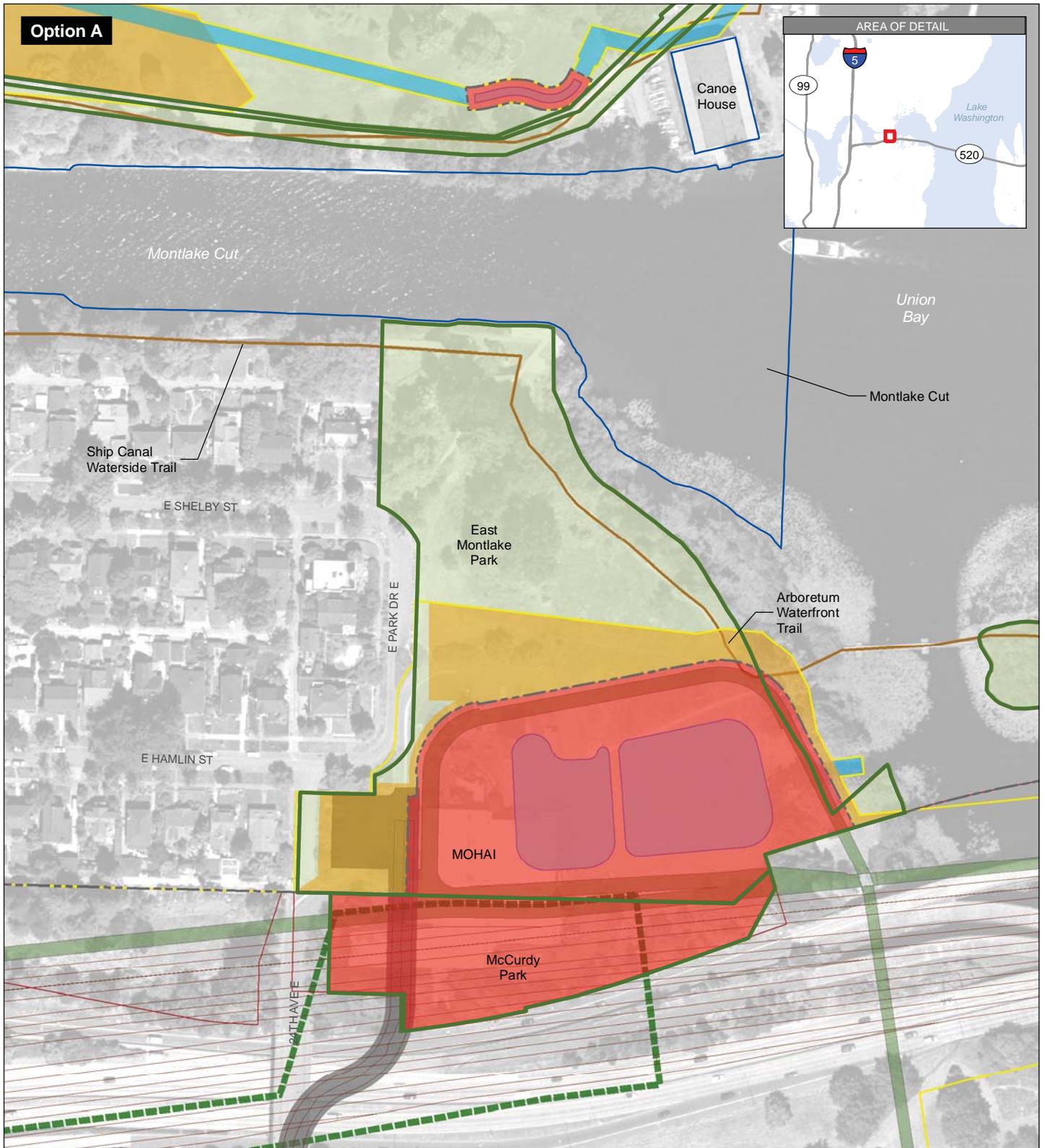
Option A would require 1.1 acres of construction easement in East Montlake Park for 24 to 30 months. The suboption for Option A that adds ramps to and from Lake Washington Boulevard would require an additional 0.1 acre of construction easement in the park. After construction, the easement would be returned to park use.

Based on the above discussion, there would be a Section 4(f) use of East Montlake and McCurdy parks as a result of Option A.

Ship Canal Waterside Trail

Option A would result in a permanent incorporation of approximately 0.08 acre of land from the Ship Canal Waterside Trail (Exhibit 32) for placement of a new bascule bridge on Montlake Boulevard NE. This





Park Effect

- Converted to Right-of-way
- Construction Easement
- Underground Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction
- Travel Lane
- Lid or Landscape Feature
- Park or Recreation Feature
- Stormwater Facility
- Existing Trail/
Bicycle Path
- Proposed Bicycle/
Pedestrian Path
- Pavement
- Historic Property

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

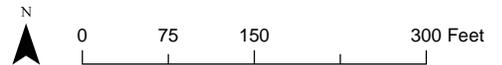


Exhibit 31. Effects on Parks in the Montlake Area for Option A

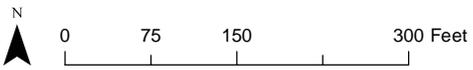
SR 520, I-5 to Medina Bridge Replacement and HOV Project



Park Effect

- Converted to Right-of-way
- Construction Easement
- Underground Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction

- Historic Property
- Pavement
- Park or Recreation Feature
- Stormwater Facility
- Existing Trail/Bicycle Path
- Proposed Bicycle/ Pedestrian Path



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 32. Effects on Parks in the University of Washington Open Space for Option A

SR 520, I-5 to Medina Bridge Replacement and HOV Project

incorporation would represent roughly 6 percent (70 feet) of the approximately 1,200-foot trail length. In addition, 0.02 acre of land from the trail would be needed for a construction easement.

The existing pedestrian access to the trail from Montlake Boulevard would be relocated approximately 70 feet to the east of its existing location. During construction, the trail would be closed to access from Montlake Boulevard East (Exhibit 33). Portions of the trail outside the construction limits would be accessible from either West Montlake Park or East Montlake Park. However, pedestrians would not be able to pass through the construction area, disrupting the connectivity of the trail.

Based on the above discussion, there would be a Section 4(f) use of the Ship Canal Waterside Trail as a result of Option A.

University of Washington Open Space

Approximately 0.2 acre at the western end of the University of Washington Open Space would be acquired for the new bascule bridge and a stormwater outfall, and an underground easement of 0.66 acre would also be acquired (see Exhibit 32). Therefore, the University of Washington Open Space would experience a Section 4(f) use as a result of Option A.

In addition, 1.1 acres of construction easement would be required at the western end of the University of Washington Open Space for approximately 27 months to construct the new bascule bridge. During construction, recreation activities at the Waterfront Activities Center and the Canoe House would not be affected. After construction, the easement would be restored to its current recreation use.

Washington Park Arboretum and Arboretum Waterfront Trail

Option A would require a permanent incorporation of 0.9 acre (less than 1 percent) of land on Foster Island within the Washington Park Arboretum (Exhibit 34). Option A would cross Foster Island with a pier-and-span bridge that would require expanding the right-of-way to the north of the alignment.

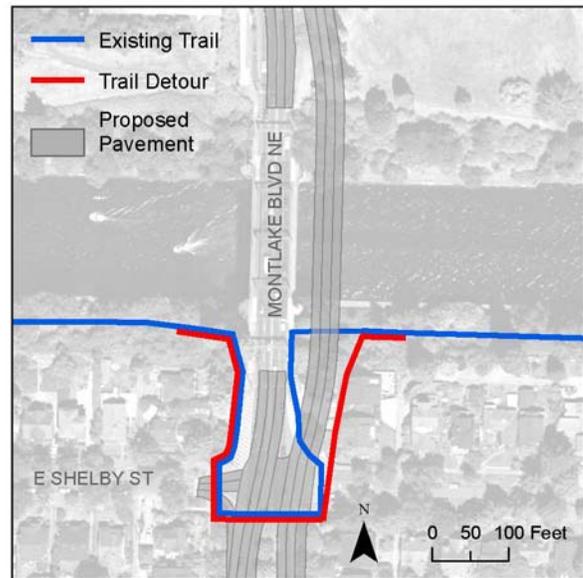
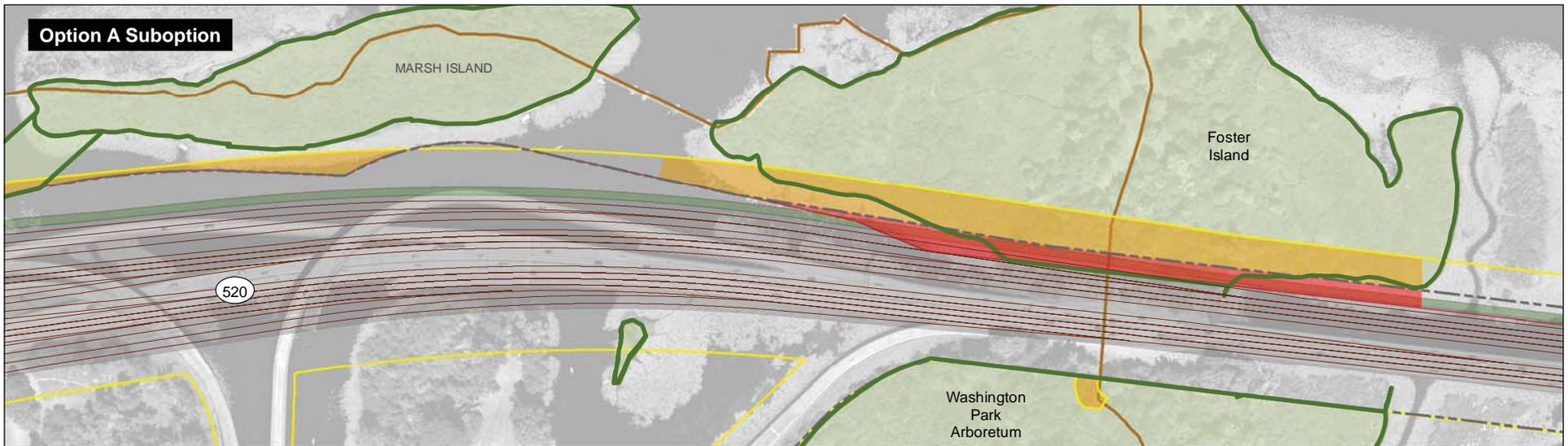
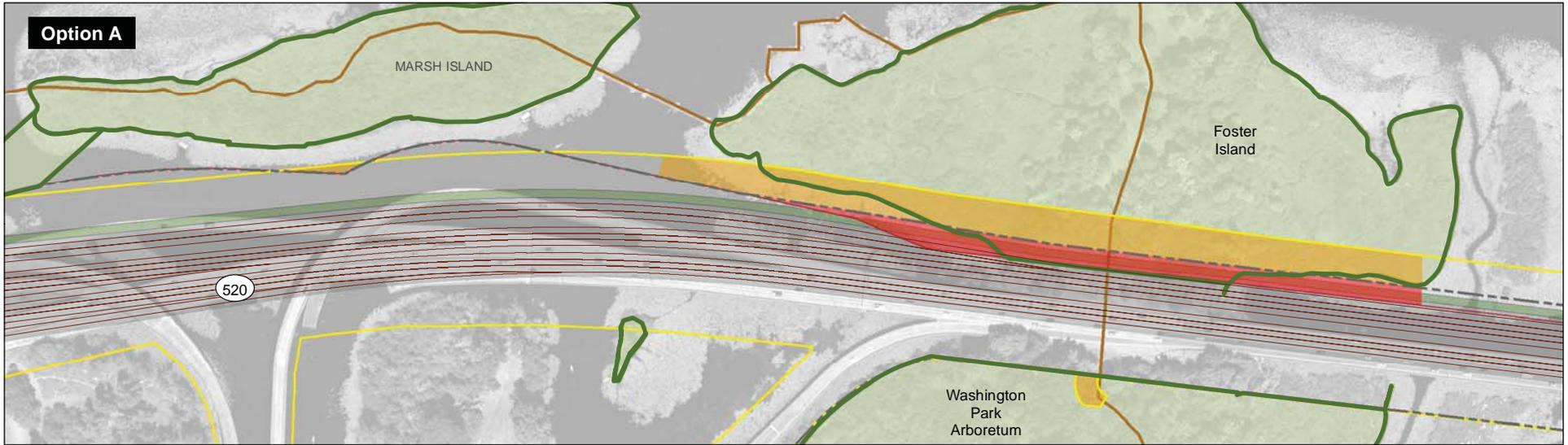


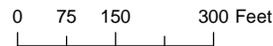
Exhibit 33. Proposed Detour for Ship Canal Waterside Trail During Construction for Option A





Park Effect

- Converted to Right-of-way
- Construction Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction
- Travel Lane
- Pavement
- Park or Recreation Feature
- Existing Trail/Bicycle Path
- Proposed Bicycle/Pedestrian Path



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 34. Effects on Parks in the Foster Island Area for Option A

SR 520, I-5 to Medina Bridge Replacement and HOV Project

In addition, Option A would require 2.4 acres of construction easement on Foster and Marsh islands for about 6 years. Construction would include access work bridges on and adjacent to Foster and Marsh islands. These bridges would be located parallel to SR 520 in the approach areas. The work bridges would be removed after completion of the permanent structure. The construction easement would be returned to park use after construction was completed.

Closures of the Arboretum Waterfront Trail where it crosses beneath SR 520 on Foster Island are anticipated during construction. For Option A, a trail detour around the SR 520 construction on Foster Island could not be provided (Exhibit 35), and this would disrupt the connectivity of the trail. The trail segment between East Montlake Park and the northern portion of Foster Island could be accessed from the East Montlake Park trailhead. Access to this trailhead would be maintained throughout the construction period, even though it lies within the limits of construction.

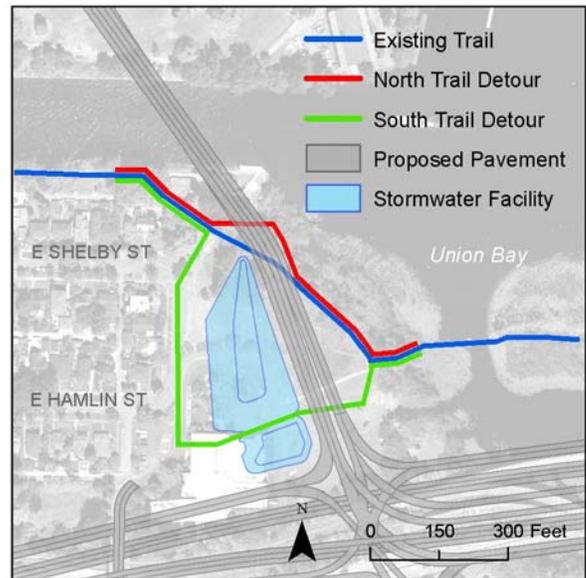


Exhibit 35. Proposed Detour Routes for Arboretum Waterfront Trail During Construction for Options A and L

Historic Properties

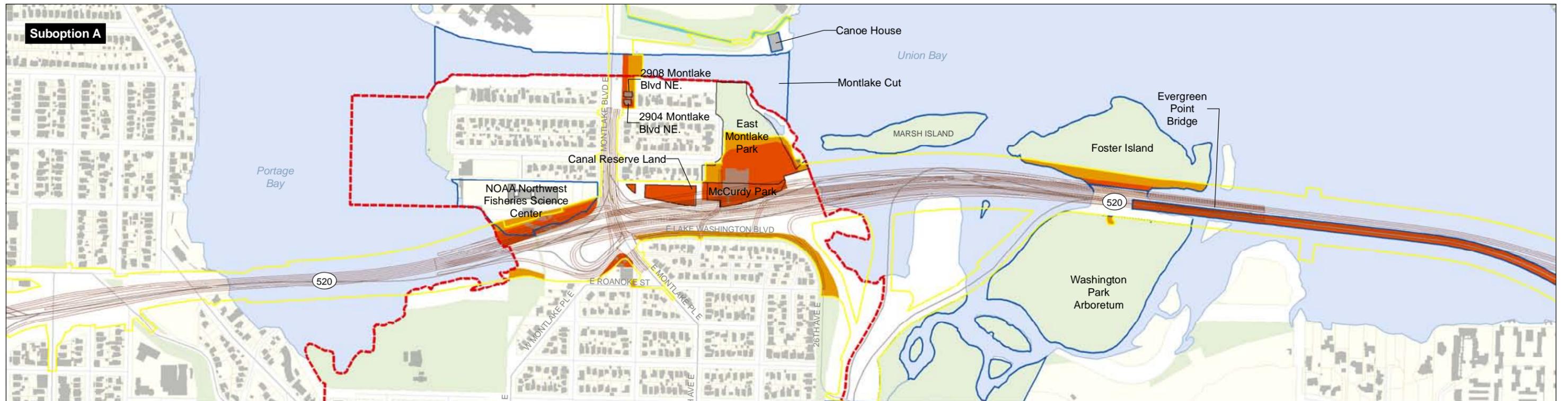
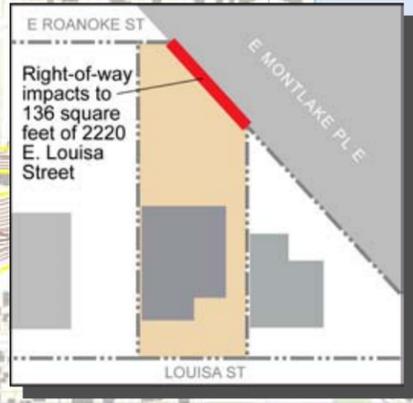
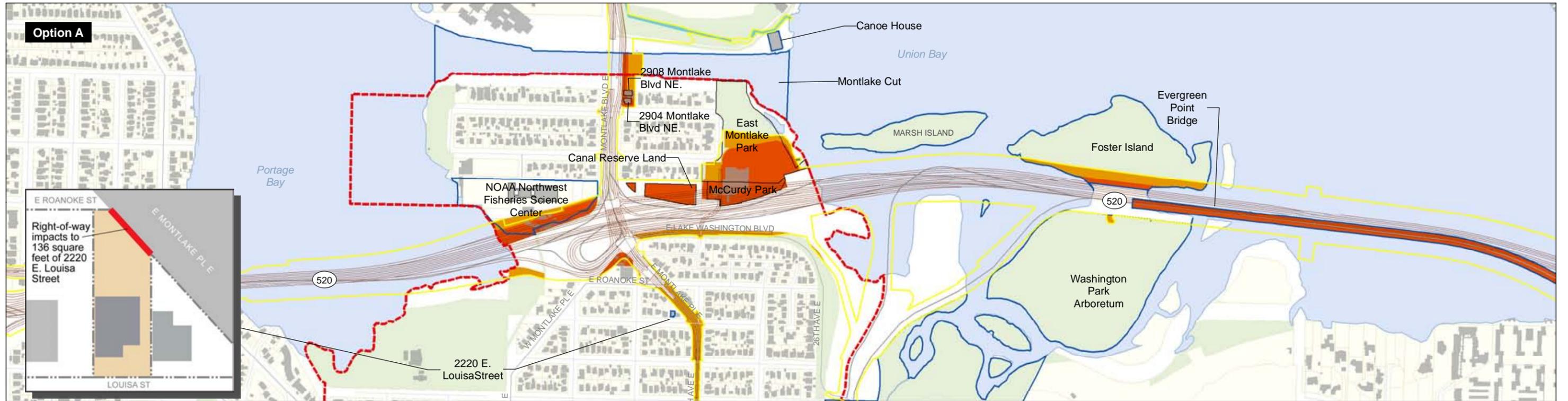
Exhibit 36 shows historic properties with a Section 4(f) use under Option A. (This section includes WSDOT's preliminary effects findings under Section 106. SHPO concurrence with these findings has been requested and Section 106 consultation is ongoing.)

NOAA Northwest Fisheries Science Center

Option A would result in a permanent incorporation of land from the parcel that contains the historic buildings of the NOAA Northwest Fisheries Science Center. The new Portage Bay Bridge would use 0.51 acre along the south side of the property. This acquisition would cause the removal of the hatchery and other buildings. Option A poses an adverse effect under Section 106 for the NOAA Northwest Fisheries Science Center because it disrupts the vital relationship of the site activities with the historical function of the West Wing Administration building. NOAA could choose to relocate the entire campus, effectively abandoning the historic property because of the project impacts.

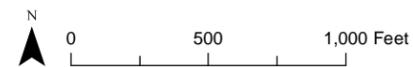
In addition, a portion of undeveloped property at the east end of the NOAA Northwest Fisheries Science Center property (0.20 acre) would





Effects

Permanently Affected Property	Affected Feature
Temporarily Affected Property	Travel Lane
Limits of construction	Building
Montlake Historic District	Park
Historic Property	



Source: King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), City of Bellevue (2004) GIS Data (Buildings), CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 36. Historic Properties with a Section 4(f) Use under Option A
SR 520, I-5 to Medina Bridge Replacement and HOV Project

be used for construction staging and access during Montlake lid and Portage Bay Bridge construction. This easement would be used for the duration of the construction period. This property would be restored to its current condition after construction.

Based on the above discussion, there would be a Section 4(f) use of the NOAA Northwest Fisheries Science Center as a result of Option A.

Montlake Historic District

Option A would result in a permanent incorporation of land from the Montlake Historic District. Approximately 0.12 acre of property from seven private properties on the west side of Montlake Place East and 24th Avenue East would be acquired to accommodate added capacity along Montlake Place East and 24th Avenue East for widening the roadway to the west. This action would move the road and the sidewalk closer to the residences. No structures would be directly affected, but the properties could lose a small portion (0.01 acre) of front yard along the roadway, and some trees could be removed. Four of these properties are residences that are contributing elements to the Montlake Historic District, including 2220 East Louisa Street, which is also individually eligible for the NRHP. The other three are non-contributing properties.

A constructed wetland for stormwater treatment would be built on most of the current site occupied by MOHAI, necessitating the removal of the MOHAI building and acquisition of the property (1.49 acres) within the historic district. In addition, 2.74 acres of East Montlake Park within the district would also be acquired. Option A would build a new bascule bridge immediately to the east of the existing historic Montlake Bridge. To accommodate the footprint of the new bridge, two residential properties that contribute to the Montlake Historic District, 2904 and 2908 Montlake Boulevard NE, would be acquired and removed, for a total acquisition of 0.24 acre. The project would also remove a swath of mature trees and shrubs on these properties.

To accommodate construction of westbound SR 520 and the new bicycle and pedestrian path, the remaining piece of the Old Canal Reserve property (0.98 acre that sits between the SR 520 off-ramp and the alleyway along the south side of the properties on East Hamlin Street) would be acquired. The properties on East Hamlin, in the Montlake Historic District, would not experience increased noise, and the acquisition of this property alone would not be considered an adverse effect. In addition, as the NOAA Northwest Fisheries Science



Center contains a contributing element to, and is within the boundaries of, the Montlake Historic District, the acquisition of 0.51 acre of that property and 0.20 acre of construction easement there, discussed above, would also affect the historic district.

The effects of Option A, once combined, exert considerable pressure on the historic district, removing approximately 6.08 acres, including the demolition of two contributing properties, and adversely affecting the contributing NOAA Northwest Fisheries Science Center building. It is the only 6-Lane Alternative option to remove contributing elements from the district. Therefore, Option A has an adverse effect on the Montlake Historic District.

Based on the above discussion, there would be a Section 4(f) use of the Montlake Historic District, including seven properties that contribute to the district (three houses on Montlake Place East/24th Avenue East, one on East Louisa Street, two on Montlake Boulevard, and the NOAA property) as a result of Option A. Two of these properties that would experience a use – the house at 2220 East Louisa Street and the NOAA building – are also individually eligible.

2220 East Louisa Street

The residence at 2220 East Louisa Street is individually eligible for the NRHP. Under Option A, less than .01 acre (approximately 136 square feet) would be acquired from the rear of the property. The rear of the parcel abuts E. Montlake Place East, and it is here that a small portion would be required to accommodate increased capacity of the roadway. The building will not be impacted, and this option will not have an adverse effect on the property. The project would have no discernible effect on the characteristics that make the residence at 2220 E. Louisa Street eligible for the NRHP, and would be considered *de minimis*.

Montlake Cut

Option A would place a new bridge just east of the existing bascule bridge. This would result in a permanent incorporation of land on both shores of the Montlake Cut. Option A would incorporate 0.15 acre of the Montlake Cut and convert it to transportation right-of-way (3,299 square feet on the north shore and 3,223 square feet on the south shore). Under Section 106, the addition of another bridge across the Montlake Cut is not considered an adverse effect on the Cut. The new bridge would span the official navigation channel in the Montlake Cut. Temporary construction supports and barges might be placed in the Montlake Cut for in-water activities associated with construction of the



new bascule bridge. Because the Montlake Cut must be open to ship traffic all year-round, bridge construction in the Montlake Cut would not be allowed to interfere with marine navigation. The only exception to this would be a few short periods of time when spans were being erected that required the closure of the Montlake Cut to marine traffic. However, these closures (up to five total), would be of short duration, ranging from several hours to two days. In addition, Option A would require 0.33 acre of land for construction easement along the Cut. When construction is complete, the easement along the sides of the Cut would be restored. Option A would have minimal effect on the characteristics that make the Montlake Cut eligible for the NRHP, and thus would have no adverse effect on the historic Montlake Cut and would be considered *de minimis*.

Canoe House

Option A would require an underground easement of 0.06 acre beneath a section of the Canoe House property to the north of the building. This easement is to accommodate a stormwater outfall. It would have no physical impact on the Canoe House property. The Canoe House would remain accessible and recreation activities, which focus on the south (waterside) of the building would not be impacted. The underground easement would have no discernible effect on the characteristics that qualify the Canoe House for listing in the NRHP, and thus would have no adverse effect on the historic Canoe House and would be considered *de minimis*.

Washington Park Arboretum

As discussed above under “Park and Recreation Resources,” Washington Park Arboretum would experience a use under Section 4(f) with Option A. However, none of the acquired land would incorporate significant historic elements of the property and no adverse effect on the historic property is anticipated from this use.

Foster Island

As noted above, Option A would require a permanent conversion to right-of-way of 0.9 acre of land on Foster Island, which is significant as a TCP (see Exhibit 34). This represents about 0.1 percent of the island’s land area. Option A would cross Foster Island with a pier-and-span bridge that would require expanding the right-of-way approximately 35.93 feet to the north of the existing alignment. The bridge superstructure would be about 17 feet above the ground surface at this



point, and three piers of five columns each, with each column 6 feet in diameter, would be placed on the island to support the bridge.

In addition, Option A would require 2.08 acres of construction easement on Foster Island for about 6 years. Construction would include access work bridges on and adjacent to Foster Island. These bridges would be located parallel to SR 520 in the approach areas. The work bridges would be removed after completion of the permanent structure.

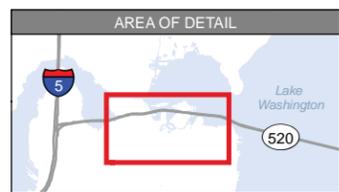
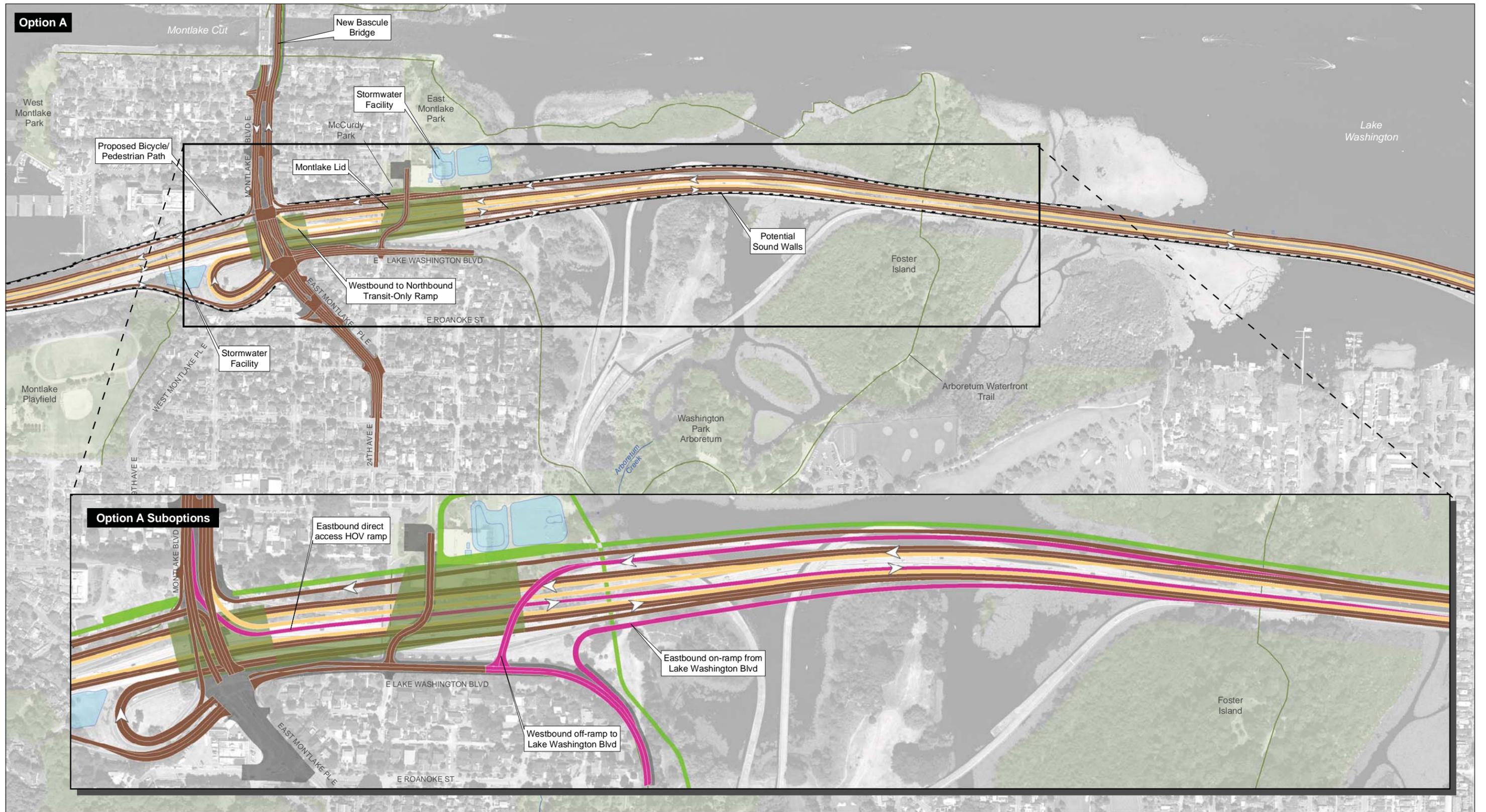
According to coordination with tribal staff and ethnographic research done to date, the portion of Foster Island south of the existing SR 520 alignment, which includes the historic south island, has greater cultural significance than the northern portion. Locating the pier-and-span bridge north of the existing alignment in the area that was historically a channel between the north and south islands would use less land from the more significant part of the TCP. The permanent acquisition would occur on the north section of the island, and the majority of the construction easement would also be on the north side of the existing right-of-way. The only construction easement on the south part of the island (0.06 acre) would be immediately adjacent to the existing bridge. Therefore, the construction would not interfere with any ongoing cultural activities that may occur on the southern part of Foster Island, and would involve little or no ground disturbance within the known historic land area of the south island. Access to the northern part of the island will be restricted throughout construction, but access to this area is not as important for traditional cultural activities. No construction staging will occur on the island outside of the construction easement.

Option A Suboptions

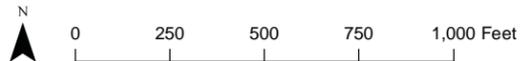
Option A with added eastbound on-ramp and westbound off-ramp between SR 520 and Lake Washington Boulevard

Adding a Lake Washington Boulevard eastbound on-ramp and westbound off-ramp to Option A would result in slightly less acreage being removed from the Montlake Historic District than under Option A. With the new on- and off-ramps, additional capacity would not be added to East Montlake Place East and 24th Avenue East (Exhibit 37). Therefore, acquisitions of properties along East Montlake Place East and 24th Avenue East associated with adding capacity there would not occur – no acreage would be acquired from the four contributing Montlake Historic District properties in that area, including 2220 East Louisa Street. This suboption for Option A would





- Potential Sound Wall
- Existing Regional Bicycle/Pedestrian Path
- Lid or Landscape Feature
- Proposed Bicycle/Pedestrian Path
- Stormwater Facility
- General-Purpose Lane
- HOV, Direct Access, and/or Transit-Only Lane
- Suboption Element
- Park



Source: King County (2002) Aerial Photo, King County (2005) GIS Data (Streams), CH2M HILL (2008) GIS Data (Park and Trails). Horizontal datum for all layers is NAD83(91); vertical datum for layers is



Exhibit 37. Option A from Portage Bay to Lake Washington
 SR 520, I-5 to Medina Bridge Replacement and HOV Project

permanently acquire 5.96 acres, constituting a Section 4(f) use, but with 0.12 acre less than Option A without the suboption.

In the Arboretum, the suboption with added Lake Washington Boulevard ramps would require a construction easement of 0.3 acre, in addition to the 2.4-acre construction easement for Option A without this suboption. No additional permanent acquisition would be necessary.

This suboption would use an additional 750 feet of historic East Lake Washington Boulevard in the Montlake Historic District for construction. This would be located at the eastern end of East Lake Washington Boulevard, where it curves to become 26th Avenue East and heads south, and would be contained within the existing roadway. As the Montlake Historic District already experiences a use under Option A, this additional construction easement for the suboption would not be a significant change. No additional permanent acquisition would be necessary.

Option A with eastbound HOV direct access ramp from Montlake Boulevard

Adding an eastbound HOV direct-access on-ramp from Montlake Boulevard would not use any additional Section 4(f) properties.

Option A with the constant slope profile of Option L

Changing the profile of Option A to a constant-slope in the western approach would result in no additional use to Section 4(f) properties.

Summary

None of the Section 4(f) properties in the project area has been found to experience construction-related impacts such as noise and dust that would substantially impair the use of the properties. Exhibit 38 summarizes potential impacts to Section 4(f) properties resulting from Option A and its suboptions.



Exhibit 38. Summary of Potential Section 4(f) Use Impacts: Option A

Section 4(f) Property	Section 4(f) Use?	Amount of Section 4(f) Land Used (acres)	Area/Functions Affected
Park and Recreation Resources			
Bagley Viewpoint	Yes	0.15	Permanent acquisition of entire viewpoint.
Interlaken Park	No	0	No permanent acquisition. Construction easement needed to reconstruct Delmar Drive East curbs and sidewalks; meets criteria for temporary occupancy exception.
Montlake Playfield	No	0	No permanent acquisition. Construction easement needed for temporary work bridge structure; meets criteria for temporary occupancy exception.
Bill Dawson Trail	No	0	No permanent acquisition. Detour provided for segment of trail closed and relocated during construction; meets criteria for temporary occupancy exception.
East Montlake and McCurdy Parks	Yes	3.7	Permanent acquisition of 3.7 acres of park property.
Ship Canal Waterside Trail	Yes	0.08	Permanent acquisition of 0.08 acre of the trail adjacent to Montlake Boulevard NE. Trail closure in the construction area would disrupt trail connectivity.
University of Washington Open Space	Yes	0.85	Permanent acquisition of 0.2 acre of University of Washington Open Space adjacent to Montlake Boulevard for the new bascule bridge, and 0.65 acre of underground easement for a stormwater outfall.
Washington Park Arboretum	Yes	0.9	Permanent acquisition of 0.9 acre of park property.
Arboretum Waterfront Trail	Yes	Trail closure during construction	Closure of Arboretum Waterfront Trail in the construction area on Foster Island. No detour would be provided to maintain trail connectivity during construction.
Historic Properties			
Fire Station #22	Yes	0.03	Permanent acquisition of 0.03 acre of the parcel to accommodate intersection reconfiguration. No adverse effect to historic property. <i>De minimis</i> impact.
Governor Albert D. Rosellini Bridge/Evergreen Point Bridge	Yes	Removal of bridge	Removal of bridge. Adverse effect under Section 106.



Exhibit 38. Summary of Potential Section 4(f) Use Impacts: Option A

Section 4(f) Property	Section 4(f) Use?	Amount of Section 4(f) Land Used (acres)	Area/Functions Affected
NOAA Northwest Fisheries Science Center	Yes	0.71	Permanent acquisition of 0.51 acre of the parcel to accommodate the wider Portage Bay Bridge. Adverse effect to historic property under Section 106. ^a Additional use of an 0.20 acre of land at the east end of the NOAA Northwest Fisheries Science Center property for construction staging and access during Montlake lid and Portage Bay Bridge construction for duration of construction period.
2220 East Louisa Street	Yes	0.01	Permanent acquisition of property along edge of parcel. Historic building not impacted. ^a No adverse effect to historic property.
Option A with Lake Washington Ramps Suboption	No	0	No Section 4(f) use
Montlake Historic District	Yes	6.28	Permanent acquisition of 6.08 acres of historic district. Adverse effect on Montlake Historic District, including removal of two contributing properties. ^a Use of an additional 0.2 acre of construction easement on the NOAA property.
Option A with Lake Washington Ramps Suboption	Yes	6.16	No acquisitions from the properties along East Montlake Place East and 24th Avenue East. Permanent acquisition of 5.96 acres from historic district, which is .12 acre less than Option A without the suboption. Adverse effect on historic district. ^a Use of an additional 0.2 acre of construction easement on the NOAA property.
Montlake Cut	Yes	0.15	Permanent acquisition of 0.15 acre for new bascule bridge. No adverse effect to historic property. <i>De minimis</i> impact
Canoe House	Yes	0.06	Underground easement for stormwater facility. No adverse effect to historic property. <i>De minimis</i> impact
Washington Park Arboretum	Yes	0.9	Permanent acquisition of 0.9 acre of park property adjacent to SR 520. No acquisition of significant historic elements. No adverse effect to historic property. ^a
Foster Island	Yes	0.9	Permanent acquisition of 0.9 acre of land

^a All effects determinations to historic properties are preliminary and may change, subject to the SHPO's concurrence.



Option K

Park and Recreation Resources

Montlake Playfield

Option K would not entail a permanent incorporation of Montlake Playfield property. SR 520 would be widened to the north into the NOAA Northwest Fisheries Science Center property and away from Montlake Playfield.

Approximately 0.2 acre of construction easement within the park would be needed, but would not affect any of the park facilities (see Exhibit 28). Similar to Option A, a temporary support structure would be built along the northeast edge of the park. While this temporary structure would be a work bridge used to remove and replace the SR 520 off-ramp to Montlake Boulevard, this section of the work bridge would only provide access to the south side of the Portage Bay bridge, and facilitate construction there. The temporary structure would be located at the far edge of the park property, near the existing bridge and ramps, in an area that would not impact any of the park activities or features. Construction activities within the park are scheduled to take 2.5 to 3 years. This is less than the construction duration of the entire project, which is estimated at 6 to 8 years, depending on the design option selected. The temporary work bridge structure would be removed as soon as construction was complete, so no permanent adverse physical impacts or interference with the protected activities, features, or attributes of the park will occur. After construction, the easement property at the northeast edge of the park would be fully restored and returned to park use. These construction effects would be temporary, are located in a less active area of the park, and are minor in scope because this section of the work bridge mainly provides access and facilitates construction of the new Portage Bay bridge. Therefore, this construction easement would meet the temporary occupancy exception criteria of 23 CFR 774.13(d), and would not constitute a Section 4(f) use. Coordination with the City of Seattle is ongoing, and a letter of agreement from them will be received before the final decision document for the project is completed. The letter will express agreement with the decision that the temporary occupancy of Montlake Playfield will not result in a Section 4(f) use of the property.

Based on the above discussion, there would be no Section 4(f) use of Montlake Playfield as a result of Option K.



Bill Dawson Trail

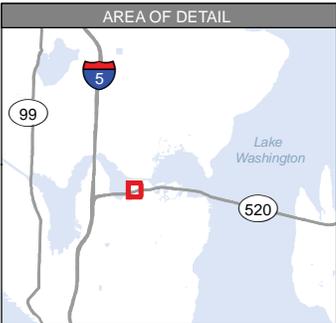
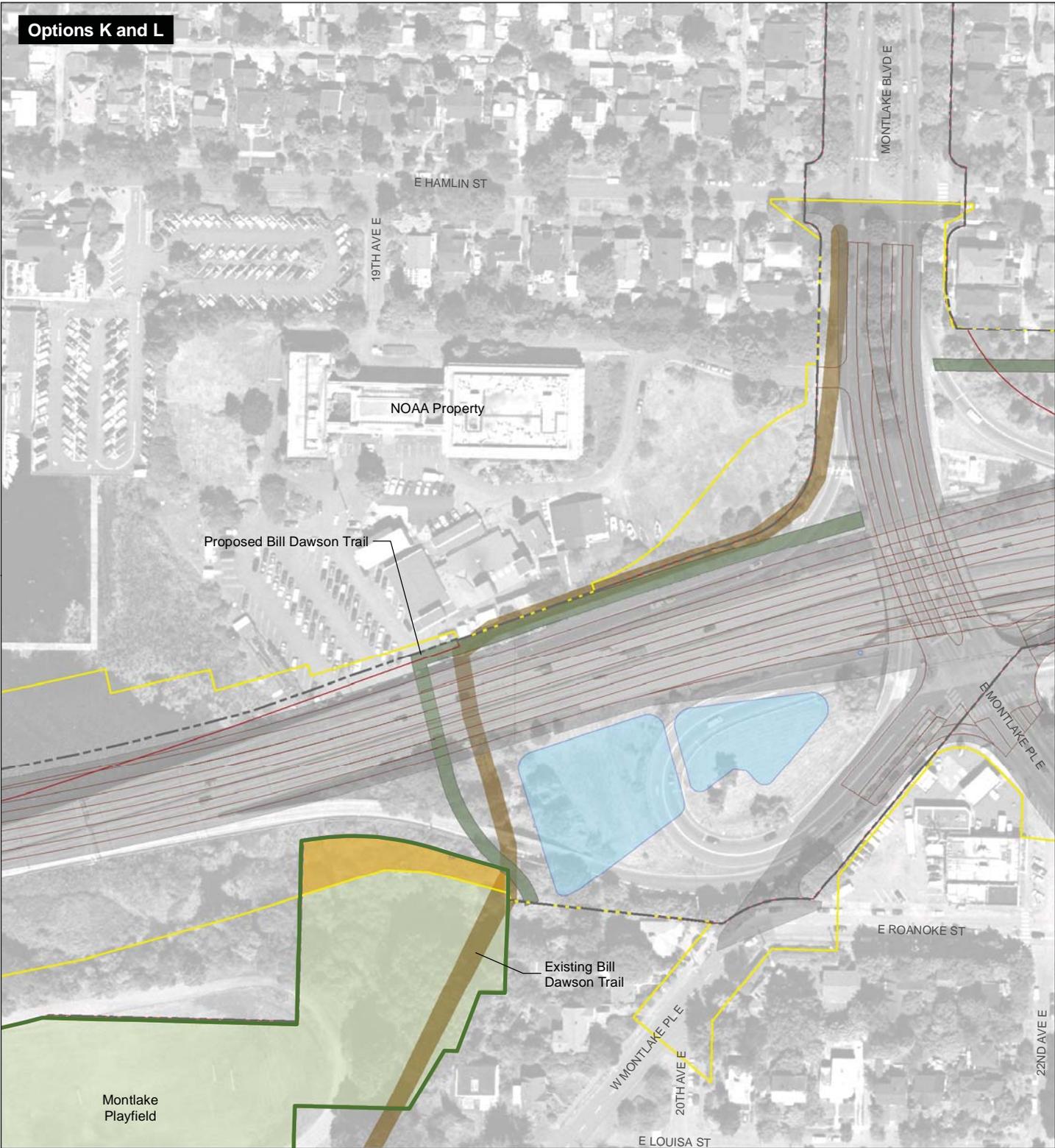
Option K would entail the replacement, widening, and removal of SR 520 structures within existing WSDOT right-of-way. These activities require the relocation of the Bill Dawson Trail that crosses under SR 520. The trail crossing beneath SR 520 would be moved approximately 45 feet west of its current alignment to a new alignment within the existing right-of-way (Exhibit 39). There would be no change in land ownership of the affected trail segment.

During construction, a pedestrian-safe detour would be provided using on-street connections to maintain trail connectivity between Montlake Avenue NE and Montlake Playfield. The detour would be 1,520 feet longer than the closed portion of the trail. Proceeding from west to east, the detour would run from the Montlake Playfield south along 18th Avenue East to East Lynn Street, then follow 19th Avenue East to West Montlake Place East. It would then run west along East Roanoke Street, round the Hop In Market, and head south along Montlake Boulevard NE, where it would rejoin the trail. (See Exhibit 30 for detour route.)

Because of the widened highway, the length of the roadway under the highway would increase from 100 feet to 115 feet. This additional length beneath the roadway would not substantially impair the continued use of the trail. The trail would be closed for 2.5 to 3 years. This is less than the project construction period of 6 to 8 years. The scope of the work is minor, and entails relocation of the trail to accommodate new transportation structures. The trail would retain the same linear pattern, in the same area, with a similar setting. It would serve the same location and require no new access points. Therefore, this relocation constitutes a minor alignment change. No adverse physical impacts or interference with the protected activities, features, or attributes of the trail are anticipated from this construction, as a detour will be provided to ensure continuity of the trail during construction. After construction, the trail would be reopened in the new alignment. Therefore, this construction would meet the temporary occupancy exception criteria of 23 CFR 774.13(d), and would not constitute a Section 4(f) use. Coordination with the City of Seattle is ongoing, and a letter of agreement from them will be received before the final decision document for the project is completed. The letter will express agreement with the decision that the temporary occupancy of the Bill Dawson Trail will not result in a Section 4(f) use of the property.



Options K and L



- Construction Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction
- Pavement
- Travel Lane
- Park or Recreation Feature
- Stormwater Facility
- Existing Trail/Bicycle Path
- Proposed Bicycle/Pedestrian Path

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

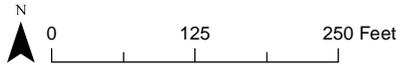


Exhibit 39. Effects on the Bill Dawson Trail for Options K and L

SR 520, I-5 to Medina Bridge Replacement and HOV Project

East Montlake Park and McCurdy Park

Option K would result in a permanent incorporation of land at East Montlake and McCurdy parks (Exhibit 40). Widening of SR 520, installation of floating bridge trail connection ramps, tunnel construction, installation of the Montlake lid, and development of associated stormwater facilities would necessitate the incorporation of the entire McCurdy Park (1.5 acres) and approximately 4.5 acres of land from East Montlake Park (which represents roughly 70 percent of the parks' combined total land size). The MOHAI building and its 150-space parking lot would be removed. The existing vehicular access to the park from 24th Avenue East would be relocated. New access would be provided from the Montlake lid. Option K would also require an underground easement for the tunnel of 0.43 acre in the remaining land of East Montlake Park.

In addition, Option K would require 0.6 acre of construction easement in East Montlake Park to construct the stormwater treatment wetland and the tunnel beneath the Montlake Cut. Construction activities within the park is expected to take 4 to 5 years. The construction easement property would be restored and returned to park use when the project was completed.

Based on the above discussion, there would be a Section 4(f) use of East Montlake and McCurdy parks as a result of Option K.

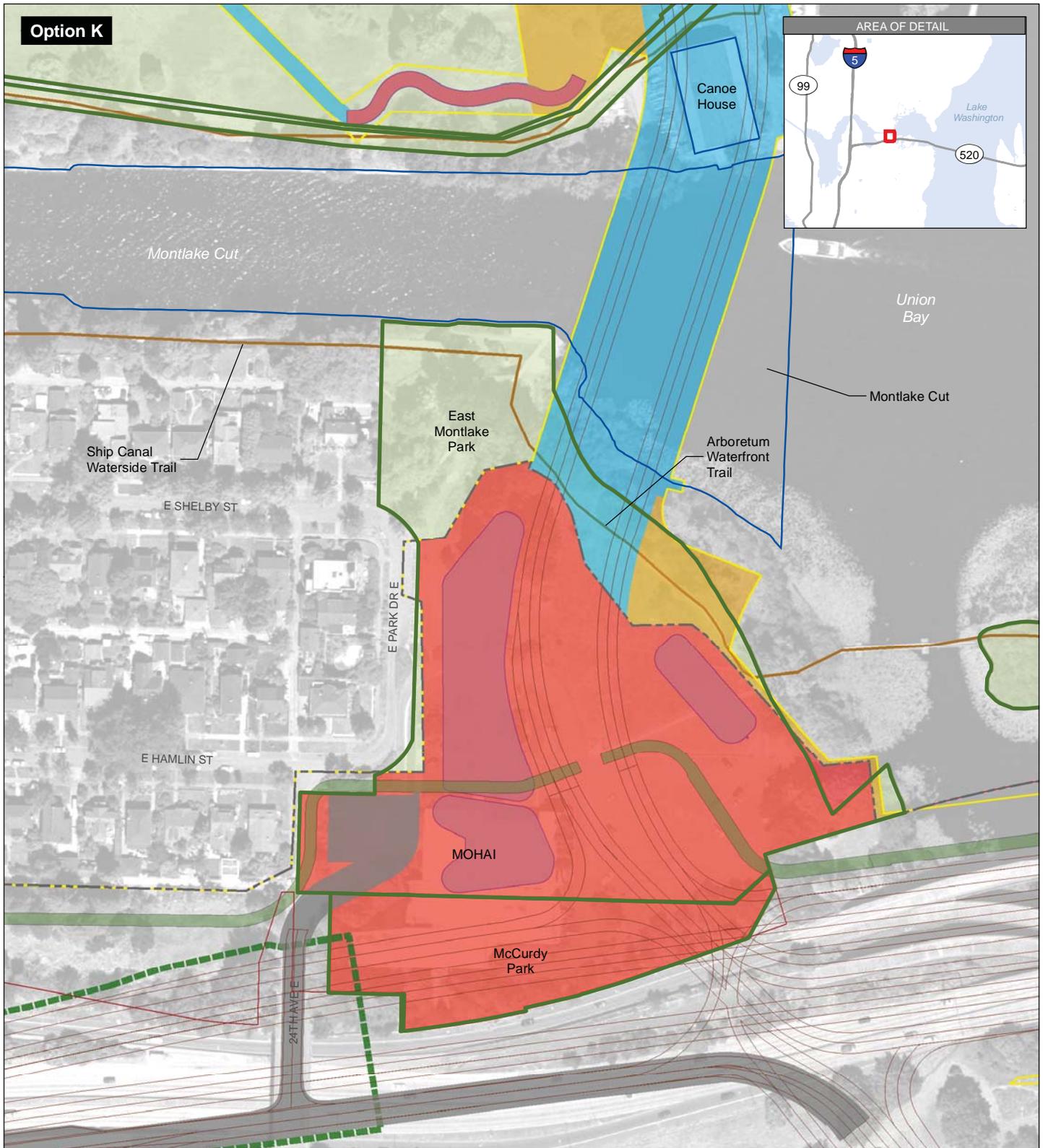
Ship Canal Waterside Trail

There would be no permanent acquisition of land from the Ship Canal Waterside Trail resulting from Option K (see Exhibit 40).

No construction easement would be needed along the trail.

Construction of the tunnel option within East Montlake Park would close access to the trail from East Montlake Park for between 6 and 7 years. However, the entire trail would remain open during the construction period, including the viewing platform within East Montlake Park, and the trail would remain accessible from West Montlake Park and Montlake Boulevard. No construction work would occur on the trail itself. No adverse physical impacts or interference with the protected activities, features, or attributes of the trail are anticipated, as the trail will remain open and accessible throughout the construction period. Therefore, there would be no use or temporary occupancy of the trail during construction.





Park Effect

- Converted to Right-of-way
- Construction Easement
- Underground Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction
- Travel Lane
- Lid or Landscape Feature
- Park or Recreation Feature
- Stormwater Facility
- Existing Trail/
Bicycle Path
- Proposed Bicycle/
Pedestrian Path
- Pavement
- Historic Property

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

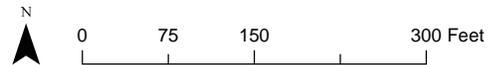


Exhibit 40. Effects on Parks in the Montlake Area for Option K

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Based on the above discussion, there would be no Section 4(f) use of the Ship Canal Waterside Trail as a result of Option K.

University of Washington Open Space

Option K would result in a permanent incorporation of 0.1 acre of land in the University of Washington Open Space for a stormwater outfall (Exhibit 41). Option K would tunnel beneath the Montlake Cut, passing under the University of Washington Open Space to its connection with Montlake Boulevard. An underground easement of 0.56 acre would be needed under the University of Washington Open Space for the tunnel. The underground easement would be a permanent acquisition and would be classified as a use under Section 4(f).

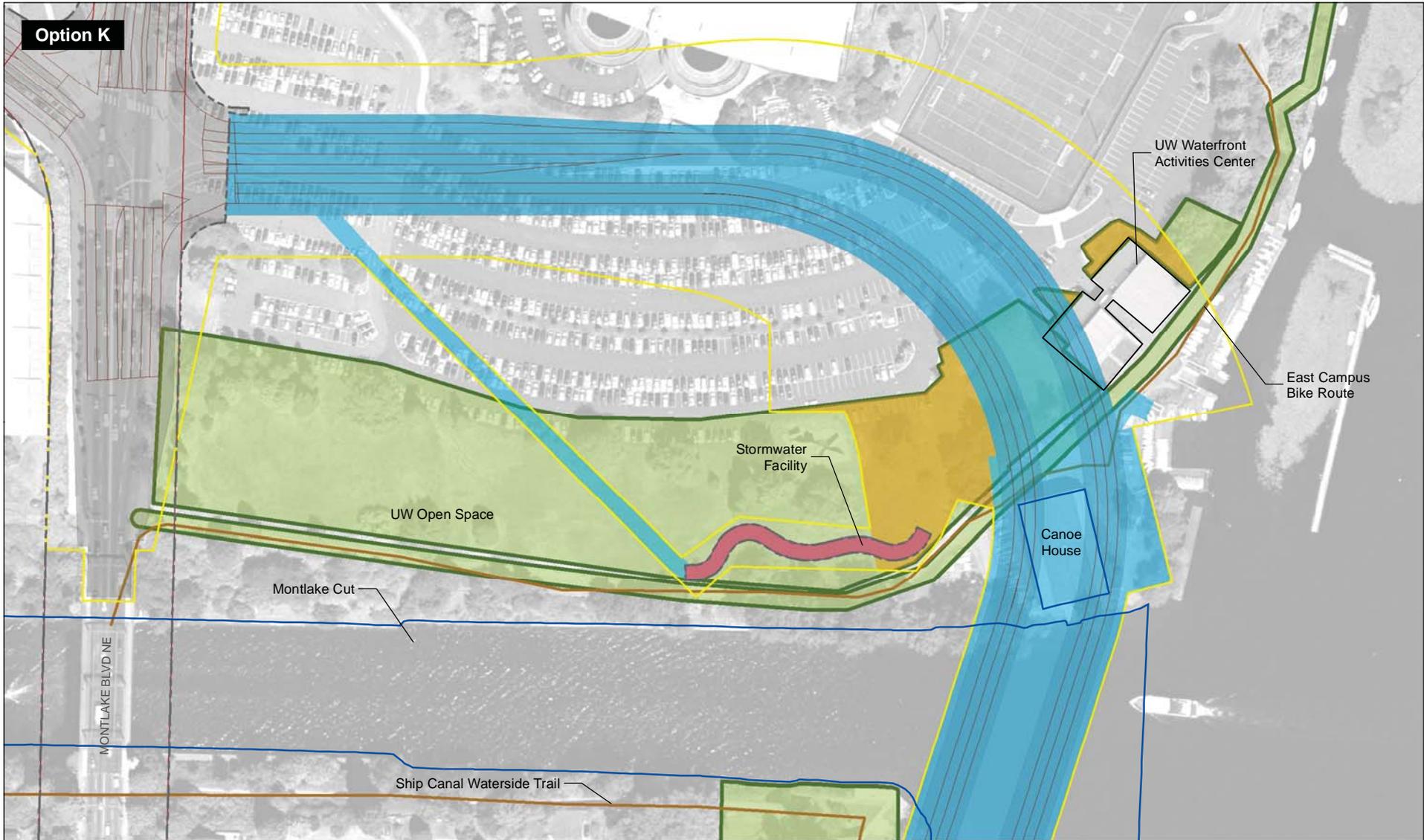
In addition, 0.77 acre of construction easement would be required at the University of Washington Open Space for approximately 45 months. After construction, the area would be returned to recreational use. Tunnel construction would require removal of the southern building of the Waterfront Activities Center. An alternate, temporary location for boat rentals would be provided during construction. After construction, a new Waterfront Activities Center would be built at either its current location or a new location. Access to the Canoe House would be limited to pedestrian and water access from the south, from the trail along the Montlake Cut. Access from the north would be restricted or eliminated during construction, and no parking for the Canoe House would be available during construction of the tunnel. The Canoe House would not be closed during project construction and no physical construction would occur on the Canoe House site.

Based on the above discussion, there would be a Section 4(f) use of the University of Washington Open Space as a result of Option K.

Washington Park Arboretum and Arboretum Waterfront Trail

Option K would require a permanent incorporation of 1.4 acres of land on Foster Island, of which 0.4 acre is forested (Exhibit 42). In Option K, SR 520 would cross Foster Island beneath a "land bridge." The roadway would be at or slightly below the existing grade, but would be lidded by a large berm. The Arboretum Waterfront Trail that currently passes beneath SR 520 would be reconstructed on the berm to provide pedestrian access over the highway. The land bridge is intended to have the beneficial purpose of facilitating park-user access across Foster Island from north to south, over SR 520. The intention is that the new crossing and associated fill would be enhancements to the park. Even though more land would be acquired, users could potentially maintain



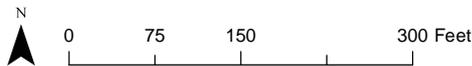


Park Effect

- Converted to Right-of-way
- Construction Easement
- Underground Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction

- Historic Property
- Pavement
- Park or Recreation Feature
- Stormwater Facility
- Existing Trail/Bicycle Path

- Proposed Bicycle/
Pedestrian Path



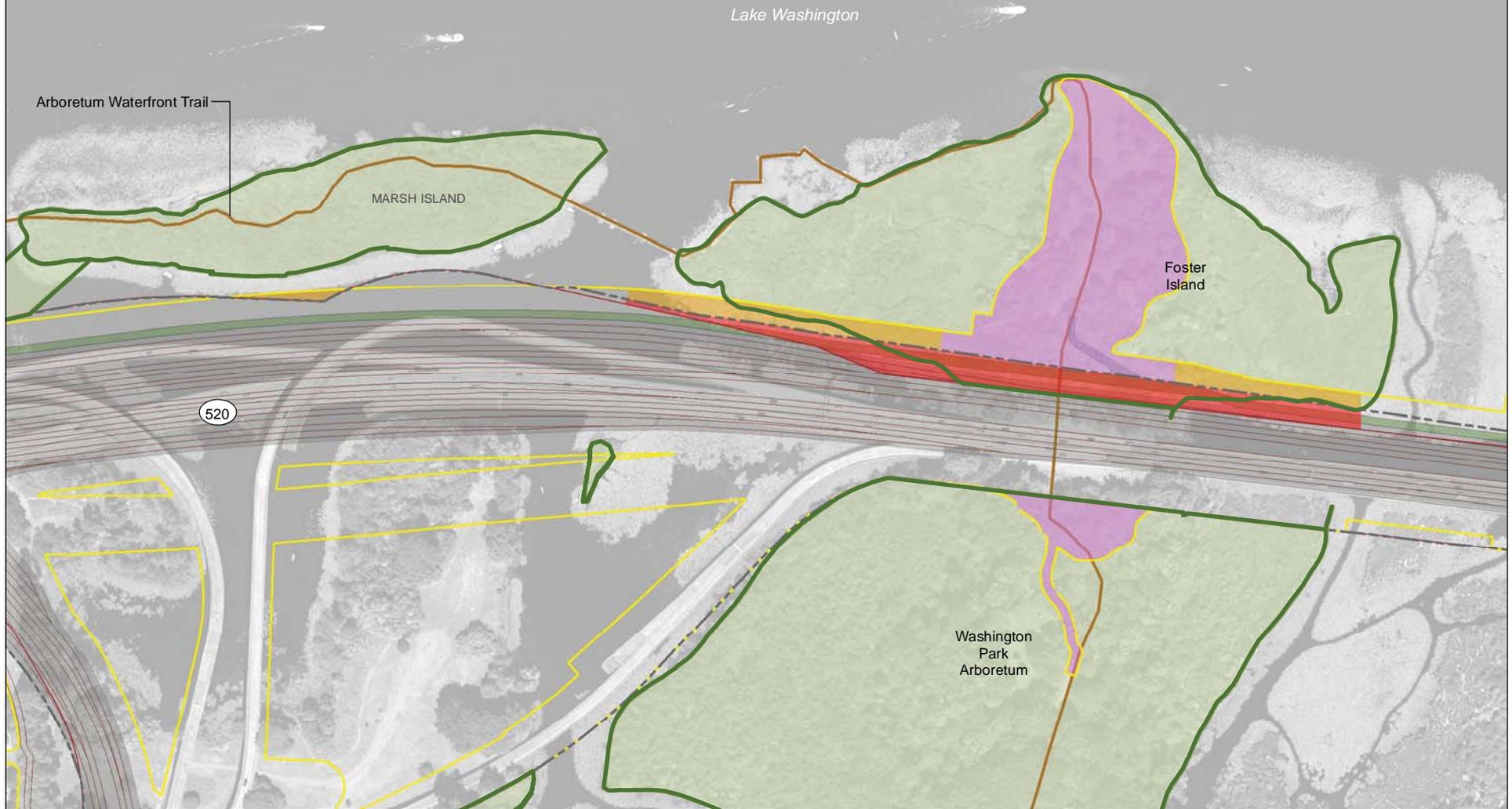
Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 41. Effects on Parks in the University of Washington Open Space for Option K

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Option K

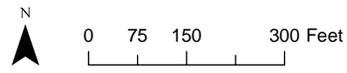
NOTE: Areas shown in purple on Foster Island will be permanently affected by fill and re-grading.



Park Effect

- Converted to Right-of-way
- Construction Easement
- Construction Easement (Re-grading)
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction

- Travel Lane
- Pavement
- Park or Recreation Feature
- Existing Trail/Bicycle Path
- Proposed Bicycle/Pedestrian Path



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 42. Effects on Parks in the Foster Island Area for Option K
 SR 520, I-5 to Medina Bridge Replacement and HOV Project

more of a park experience walking over a lidded highway than walking beneath an elevated one. Although the land bridge itself would be within the WSDOT right-of-way, it would be available for park use after construction.

In addition, Option K would require 5.3 acres of construction easement on Foster Island and Marsh Island for work bridges, trail reconstruction, and fill. Construction is expected to take 7 years to complete. The work bridges would be removed and construction easement property would be returned to park use after construction was completed.

Option K would also permanently acquire an underground easement of 0.04 acres underneath the western section of the Arboretum Waterfront Trail (see Exhibit 40). This easement would not physically affect the trail nor have any impact on its recreational use. The section of the Arboretum Waterfront Trail within the construction limits on Foster Island would be closed during construction. Option K would not provide a detour around the SR 520 construction on Foster Island, so continuity of the trail would be disrupted. The trail segment between East Montlake Park and the northern portion of Foster Island could be accessed from the trailhead in East Montlake Park. Access to this trailhead would be maintained throughout the construction period, even though it lies within the limits of construction.

Based on the above discussion, there would be a Section 4(f) use of the Washington Park Arboretum and the Arboretum Waterfront Trail as a result of Option K.

Historic Properties

Exhibit 43 shows historic properties with a Section 4(f) use under Option K.

NOAA Northwest Fisheries Science Center

Option K would use an undeveloped portion of land at the east end of the NOAA Northwest Fisheries Science Center property (0.17 acre) as a construction easement for construction staging and access during Montlake lid and Portage Bay Bridge construction. The easement would be used for the duration of the construction period. Although this property would be restored to its current condition after construction, and would not have an adverse effect on the historic buildings on the parcel, the length of time needed for the use of the property would constitute a use under Section 4(f). Since this use would not cause an





NOTE: Areas shown in purple on Foster Island will be permanently affected by fill and re-grading.



Effects

- Permanently Affected Property
- Temporarily Affected Property
- Temporarily Affected Property (Re-grading)
- Underground Easement
- Limits of Construction
- Montlake Historic District
- Historic Property
- Affected Feature
- Travel Lane
- Building
- Park

N

0 300 600 Feet

Source: King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), City of Bellevue (2004) GIS Data (Buildings), CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 43. Historic Properties with a Section 4(f) Use under Option K
 SR 520, I-5 to Medina Bridge Replacement and HOV Project

adverse effect on the historic property, it would be considered *de minimis*.

Montlake Historic District

Option K would result in a permanent incorporation of land from the Montlake Historic District. A constructed wetland for stormwater treatment would be built on most of the current site occupied by MOHAI, necessitating the removal of the MOHAI building and acquisition of the property within the Montlake Historic District. To accommodate construction of westbound SR 520 and the new bicycle and pedestrian path, the remaining piece of the Old Canal Reserve property (0.98 acre that sits between the SR 520 off-ramp and the alleyway along the south side of the properties on East Hamlin Street) would be acquired. Option K would acquire approximately 6.98 acres of land from the Montlake Historic District, but unlike Option A, it would not remove any contributing elements or have an adverse effect on any individually eligible properties within the district. Unlike Option L, it would not adversely affect the setting and feeling of the northeast part of the district or of individually eligible properties in the district. In addition, the NOAA Northwest Fisheries Science Center contains a contributing element to, and is within the boundaries of, the Montlake Historic District; therefore, the 0.17 acre of construction easement there, discussed above, would also affect the historic district.

With Option K, a large amount of dewatering is likely to occur, and such dewatering might cause settlement of adjacent loose sands. The settlement could affect nearby structures. However, typical design and construction mitigation measures identified for the SR 520, I-5 to Medina project would reduce the chance of structure settlement. These measures include using cofferdams, slurry cutoff walls, and secant pile walls in the large excavations to minimize the amount of water flowing into the construction area. Therefore, no settlement of properties in the Montlake Historic District is expected to occur.

Based on the above discussion, there would be a Section 4(f) use of the Montlake Historic District as a result of Option K. However, Option K would have minimal effect on the characteristics that make the Montlake Historic District eligible for the NRHP, and thus would have no adverse effect on the historic property and would be considered *de minimis*.



Montlake Cut

Under Option K, a permanent underground easement of 1.27 acres would be necessary under the Cut to accommodate the tunnel. This easement would have no physical or operational impacts on the Cut. It would have no effect on the qualities that qualify the Cut for the NRHP and would be considered *de minimis*.

Canoe House

Under Option K, a permanent underground easement of 0.82 acre would be necessary under the Canoe House to accommodate the tunnel (see Exhibit 41). Tunnel design and construction techniques would be utilized to account for the Canoe House loading and to control settlement, so that construction of the tunnel under the Canoe House would not cause vibrations or soil settlement that could impair the structural integrity of the building. With Option K, a large amount of dewatering is likely to occur, and such dewatering might cause settlement of adjacent loose sands. The settlement could affect nearby structures. However, typical design and construction mitigation measures identified for the SR 520, I-5 to Medina project would reduce the chance of structure settlement. These measures include using cofferdams, slurry cutoff walls, and secant pile walls in the large excavations to minimize the amount of water flowing into the construction area. Therefore, no settlement of the Canoe House is expected to occur. Access to the Canoe House would be limited to pedestrian and water access from the south, from the trail along the Montlake Cut. Access from the north would be restricted or eliminated during construction, and no parking for the Canoe House would be available during construction of the tunnel. The Canoe House would not be closed during project construction and no physical construction would occur on the Canoe House site. This underground easement would have no effect on the qualities that qualify the Canoe House for the NRHP and would be considered *de minimis*.

Washington Park Arboretum

As discussed above under “Park and Recreation Resources,” Washington Park Arboretum would experience a use under Section 4(f) with Option K. However, none of the acquired land would incorporate significant historic elements of the property. Under Section 106, no adverse effect is anticipated from this use.



Foster Island

As noted above, Option K would require a permanent conversion to right-of-way of 1.4 acres of land on Foster Island (see Exhibit 42). In Option K, SR 520 would cross Foster Island beneath a “land bridge” approximately 250 feet wide, with the right-of-way expanded approximately 25 feet north of the existing alignment. The roadway would be at or slightly below the existing grade and would be lidded by a large concrete berm that would be partially covered with vegetation.

In addition, Option K would require 4.63 acres of construction easement on Foster Island for work bridges, trail reconstruction, and fill. Construction is expected to take 7 years to complete. The work bridges would be removed after construction was completed. Due to the invasive nature of the construction activities, the construction easement on Foster Island would be considered a use.

As noted earlier, according to coordination with tribal staff and ethnographic research done to date, the southern half of Foster Island has greater cultural significance than the northern portion. The SR 520 right-of-way would be expanded to the north, which would use less land from the more significant part of the presumed TCP. The permanent acquisition would occur on the north section of the island, and the majority of the construction easement also would be on the north side of the island. Six-tenths of an acre (0.6 acre) of the construction easement would be located on the south part of the island, and this construction would have the potential to interfere with cultural activities that may occur on the southern part of Foster Island. Access to the northern part of the island would be restricted throughout construction, but access to this area is not as important for traditional cultural activities. No construction staging would occur on the island outside of the construction easement. Construction for the land bridge would involve excavation to a depth of about 4 feet across Foster Island, resulting in disturbance of approximately 1.2 acres, including the area currently within WSDOT right-of-way. Approximately 4.7 acres of Foster Island would be subject to a substantial amount of fill, subsequent regrading, and the loss of all vegetation within the construction area. Although the area would be revegetated after construction, the island would undergo a significant change, and the user experience would be very different from existing conditions. The land bridge over SR 520 would appear as a large landscaped hill with some concrete edges, and would be a less natural landscape than what



is there currently. The roadway would be concealed beneath the land bridge, as opposed to the visible piers described for Options A and L or the uncovered roadway making landfall on the island today. While Option K may provide a more park-like recreational experience, it requires a much more invasive construction approach than Options A and L. This degree of construction disturbance and extreme change to the setting of the historic island could be determined to be an adverse effect on the presumed TCP. Consultation with SHPO and tribes is ongoing to reach a determination of effects on the presumed TCP from the project.

Based on the above discussion, there would be a Section 4(f) use of Foster Island as a result of Option K.

Option K Suboptions

Option K with added eastbound off-ramp to Montlake Boulevard

Adding an eastbound Montlake Boulevard off-ramp to Option K would result in no additional use of Section 4(f) properties because the added ramp would be located within the existing right-of-way of the current Montlake Boulevard ramp and construction duration would be similar.

Summary

None of the Section 4(f) properties in the project area has been found to experience construction-related impacts such as noise and dust that would substantially impair the use of the properties. Exhibit 44 summarizes potential impacts to Section 4(f) properties resulting from Option K actions.

Option L

Park and Recreation Resources

Montlake Playfield

Option L would not entail a permanent incorporation of Montlake Playfield property. SR 520 would be widened to the north into the NOAA Northwest Fisheries Science Center property and away from Montlake Playfield.

Approximately 0.2 acre of construction easement would be required that would extend approximately 30 feet west of the existing Bill Dawson Trail, within the park boundary, but would not affect any of the park facilities (see Exhibit 28). A temporary support structure would be built along the northeast edge of the park. While this



temporary structure would be a work bridge used to remove and replace the SR 520 off-ramp to Montlake Boulevard, this section of the

Exhibit 44. Summary of Potential Section 4(f) Use Impacts: Option K

Section 4(f) Property	Section 4(f) Use?	Amount of Section 4(f) Land Used (acres)	Area/Functions Affected
Park and Recreation Resources			
Bagley Viewpoint	Yes	0.15	Permanent acquisition of entire viewpoint.
Interlaken Park	No	0	No permanent acquisition. Construction easement needed to reconstruct Delmar Drive East curbs and sidewalks; meets criteria for temporary occupancy exception.
Montlake Playfield	No	0	No permanent acquisition. Construction easement needed for temporary work bridge structure; meets criteria for temporary occupancy exception.
Bill Dawson Trail	No	0	No permanent acquisition. Detour provided for segment of the trail closed during construction; meets criteria for temporary occupancy exception.
East Montlake and McCurdy Parks	Yes	6.43	Permanent acquisition of 6.0 acres of park property, and permanent underground easement of 0.43 acre.
Ship Canal Waterside Trail	No	0	No permanent acquisition or construction easement. Temporary closure of trail access from East Montlake Park during construction. Entire trail accessible from West Montlake Park and Montlake Boulevard.
University of Washington Open Space	Yes	0.66	Permanent acquisition of 0.1 acre of Open Space and permanent acquisition of 0.56 acre for underground easement for tunnel. Relocation of the Waterfront Activities Center.
Washington Park Arboretum	Yes	1.4	Permanent acquisition of 1.4 acres of park property.
Arboretum Waterfront Trail	Yes	Trail closure 0.04	Closure of the Arboretum Waterfront Trail in the construction area on Foster Island. No detour route would be provided to maintain trail connectivity in this area during construction. 0.04 acre of permanent underground easement.
Historic Properties			
Fire Station #22	Yes	0.03	Permanent acquisition of 0.03 acre of the parcel to accommodate intersection reconfiguration. No adverse effect to historic property. <i>De minimis</i> impact
Governor Albert D. Rosellini Bridge/ Evergreen Point Bridge	Yes	Removal of bridge	Removal of bridge. Adverse effect under Section 106.
NOAA Northwest Fisheries Science Center	Yes	0.17	Construction easement of a portion of land (0.17 acre) at the east end of the NOAA Northwest Fisheries Science Center property for construction staging and access during Montlake lid and Portage Bay Bridge construction. Does not meet criteria for temporary occupancy exception. No adverse effect on historic property. ^a <i>De minimis</i> impact.



Exhibit 44. Summary of Potential Section 4(f) Use Impacts: Option K

Section 4(f) Property	Section 4(f) Use?	Amount of Section 4(f) Land Used (acres)	Area/Functions Affected
Montlake Historic District	Yes	7.15	Permanent acquisition of 6.98 acres of historic district. Use of an additional 0.17 acre of construction easement on the NOAA property. No adverse effect on Montlake Historic District, <i>De minimis</i> impact.
Montlake Cut	Yes	1.27	Permanent underground easement of 1.27 acres for tunnel. No adverse effect to historic property. <i>De minimis</i> impact
Canoe House	Yes	0.82	Permanent underground easement of 0.82 acre for tunnel. No adverse effect to historic property. <i>De minimis</i> impact
Washington Park Arboretum	Yes	1.4	Permanent acquisition of 1.4 acres of park property adjacent to SR 520. No acquisition of significant historic elements. No adverse effect on historic property. ^a
Foster Island	Yes	6.03	Permanent acquisition of 1.4 acres of property. Additional construction easement of 4.63 acres.

^a All effects determinations to historic properties are preliminary and may change, subject to the SHPO's concurrence.

work bridge would only provide access to the south side of the Portage Bay bridge, and facilitate construction there. The temporary structure would be located at the far edge of the park property, near the existing bridge and ramps, in an area that would not impact any of the park activities or features. Construction activities within the park are scheduled to take 2.5 to 3 years. This is less than the construction duration of the entire project, which is estimated at 6 to 8 years, depending on the design option selected. The temporary work bridge structure would be removed as soon as construction was complete, so no permanent adverse physical impacts or interference with the protected activities, features, or attributes of the park will occur. After construction, the easement property at the northeast edge of the park would be fully restored and returned to park use. These construction effects would be temporary, are located in a less active area of the park, and are minor in scope because this section of the work bridge mainly provides access and facilitates construction of the new Portage Bay bridge. Therefore, this construction easement would meet the temporary occupancy exception criteria of 23 CFR 774.13(d), and would not constitute a Section 4(f) use. Coordination with the City of Seattle is ongoing, and a letter of agreement from them would be needed before the final decision document for the project is completed. The letter would express agreement with the decision that the temporary



occupancy of Montlake Playfield will not result in a Section 4(f) use of the property.

Based on the above discussion, there would be no Section 4(f) use of Montlake Playfield as a result of Option L.

Bill Dawson Trail

Option L would entail the replacement, widening, and removal of SR 520 structures within existing WSDOT right-of-way. These activities require the relocation of the Bill Dawson Trail that crosses under SR 520. The trail crossing beneath SR 520 would be moved approximately 45 feet west of its current alignment to a new alignment within the existing right-of-way (see Exhibit 39). There would be no change in land ownership of the affected trail segment.

During construction, a pedestrian-safe detour would be provided using on-street connections to maintain trail connectivity between Montlake Boulevard and Montlake Playfield. The detour would be 1,520 feet longer than the closed portion of the trail. Proceeding from west to east, the detour would run from the Montlake Playfield south along 18th Avenue East to East Lynn Street, then follow 19th Avenue East to West Montlake Place East. It would then run west along East Roanoke Street, round the Hop In Market, and head south along Montlake Boulevard NE, where it would rejoin the trail. (See Exhibit 30 for detour route.)

Because of the widened highway, the length of the roadway under the highway would increase from 100 feet to 130 feet. This additional length beneath the roadway would not substantially impair the continued use of the trail.

The trail would be closed for 2.5 to 3 years. This is less than the project construction period of 6 to 8 years. The scope of the work is minor, and entails relocation of the trail to accommodate new transportation structures. The trail would retain the same linear pattern, in the same area, with a similar setting. It would serve the same location and require no new access points. Therefore, this relocation constitutes a minor alignment change. No adverse physical impacts or interference with the protected activities, features, or attributes of the trail are anticipated from this construction, as a detour will be provided to ensure continuity of the trail during construction. After construction, the trail would be reopened. Therefore, this construction would meet the temporary occupancy exception criteria of 23 CFR 774.13(d), and



would not constitute a Section 4(f) use. Coordination with the City of Seattle is ongoing, and a letter of agreement from them would be needed before the final decision document for the project is completed. The letter would express agreement with the decision that the temporary occupancy of the Bill Dawson Trail will not result in a Section 4(f) use of the property.

Based on the above discussion, these conditions would meet the temporary occupancy exception criteria of 23 CFR 774.13(d), and would not constitute a Section 4(f) use.

East Montlake Park and McCurdy Park

Option L would result in a permanent incorporation of land at East Montlake and McCurdy parks (Exhibit 45). Widening of SR 520, installation of floating bridge trail connection ramps, new bascule bridge construction, installation of the Montlake lid, and development of associated stormwater facilities would necessitate the incorporation of the entire McCurdy Park (1.5 acres) and approximately 4.2 acres of land from East Montlake Park (which represents roughly 66 percent of the parks' total combined land size). The existing vehicular access to the parks from 24th Avenue East would be relocated. New access would be provided from the Montlake lid.

Option L would require 0.9 acre of construction easement in East Montlake Park for 27 to 36 months. After construction, the easement would be returned to park use.

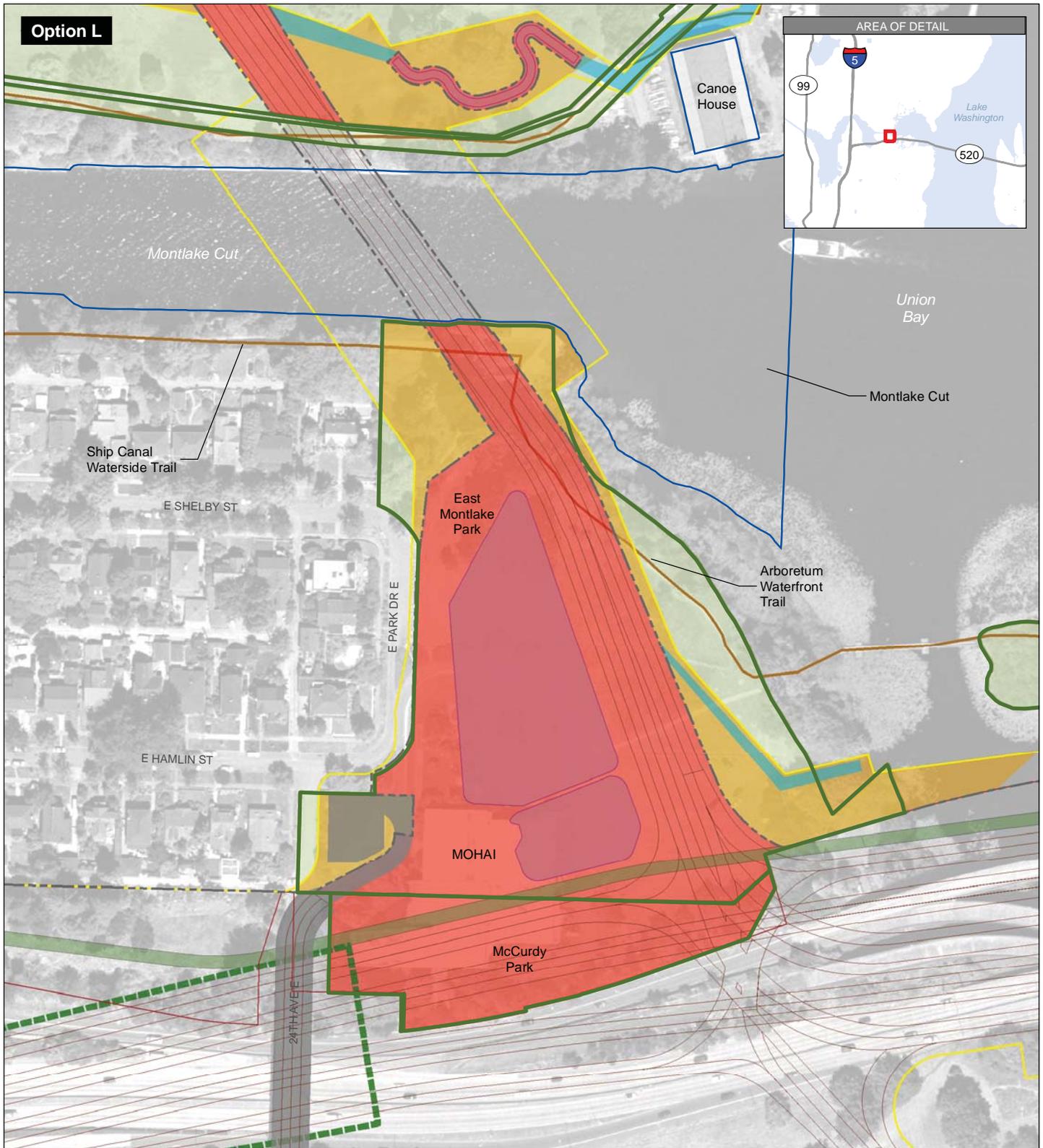
Based on the above discussion, there would be a Section 4(f) use at East Montlake and McCurdy parks as a result of Option L.

Ship Canal Waterside Trail

Option L would result in a permanent incorporation of 0.15 acre of land from the Ship Canal Waterside Trail (see Exhibit 45) for the new bascule bridge. This incorporation would represent roughly 8 percent (100 feet) of the approximately 1,200-foot trail length. During construction, the trail would not be accessible from East Montlake Park, and the 300 feet of the trail within the construction area, including the viewing platform, would be closed. Once completed, the trail would pass beneath the new bascule bridge.

Based on the above discussion, there would be a Section 4(f) use of the Ship Canal Waterside Trail as a result of Option L.





Park Effect

- Converted to Right-of-way
- Construction Easement
- Underground Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction
- Travel Lane
- Lid or Landscape Feature
- Park or Recreation Feature
- Stormwater Facility
- Existing Trail/
Bicycle Path
- Proposed Bicycle/
Pedestrian Path
- Pavement
- Historic Property

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

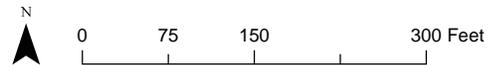


Exhibit 45. Effects on Parks in the Montlake Area for Option L

SR 520, I-5 to Medina Bridge Replacement and HOV Project

University of Washington Open Space

Option L would result in a permanent incorporation of 0.5 acre of land from the University of Washington Open Space for construction of a new bascule bridge (Exhibit 46). An additional 0.25 acre would be required for a permanent underground easement to accommodate a stormwater facility. Once construction was completed, the area beneath the bridge would link the passive recreation use area to the west with the remainder of the open space, including the Waterfront Activities Center and the Canoe House.

The bridge construction would relocate the climbing wall for the duration of construction. Construction of the bridge span and support columns would require the periodic closure of the Waterfront Activities Center. Although these effects would be temporary, they would interfere with the recreation activities at the University of Washington Open Space.

In addition, approximately 0.9 acre of construction easement would be required in the center of the University of Washington Open Space for approximately 30 months. After construction, this area would be returned to recreational use.

Based on the above discussion, there would be a Section 4(f) use of the University of Washington Open Space as a result of Option L.

Washington Park Arboretum and Arboretum Waterfront Trail

Option L would require a permanent acquisition of 0.6 acre of land on Foster Island (Exhibit 47). Similar to Option A, under Option L, SR 520 would cross over Foster Island with a pier-and-span bridge that would be widened to the north of the alignment. The highway mainline would provide approximately 7 to 10 feet of clearance above the crossing of the Arboretum Waterfront Trail on Foster Island.

Closures of the Arboretum Waterfront Trail where it crosses beneath SR 520 on Foster Island are anticipated during construction. For Option L, a trail detour around the SR 520 construction on Foster Island could not be provided, which would disrupt the connectivity of the trail. The trail segment between East Montlake Park and the northern portion of Foster Island could be accessed from the East Montlake Park trailhead. Access to this trailhead and to the connection with the Ship Canal Waterside Trail would be maintained throughout the construction period with detours through East Montlake Park (see Exhibit 35). After construction, the trail would cross underneath the new bridge.



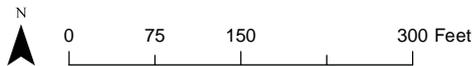


Park Effect

- Converted to Right-of-way
- Construction Easement
- Underground Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction

- Historic Property
- Pavement
- Park or Recreation Feature
- Stormwater Facility
- Existing Trail/Bicycle Path

Proposed Bicycle/
Pedestrian Path

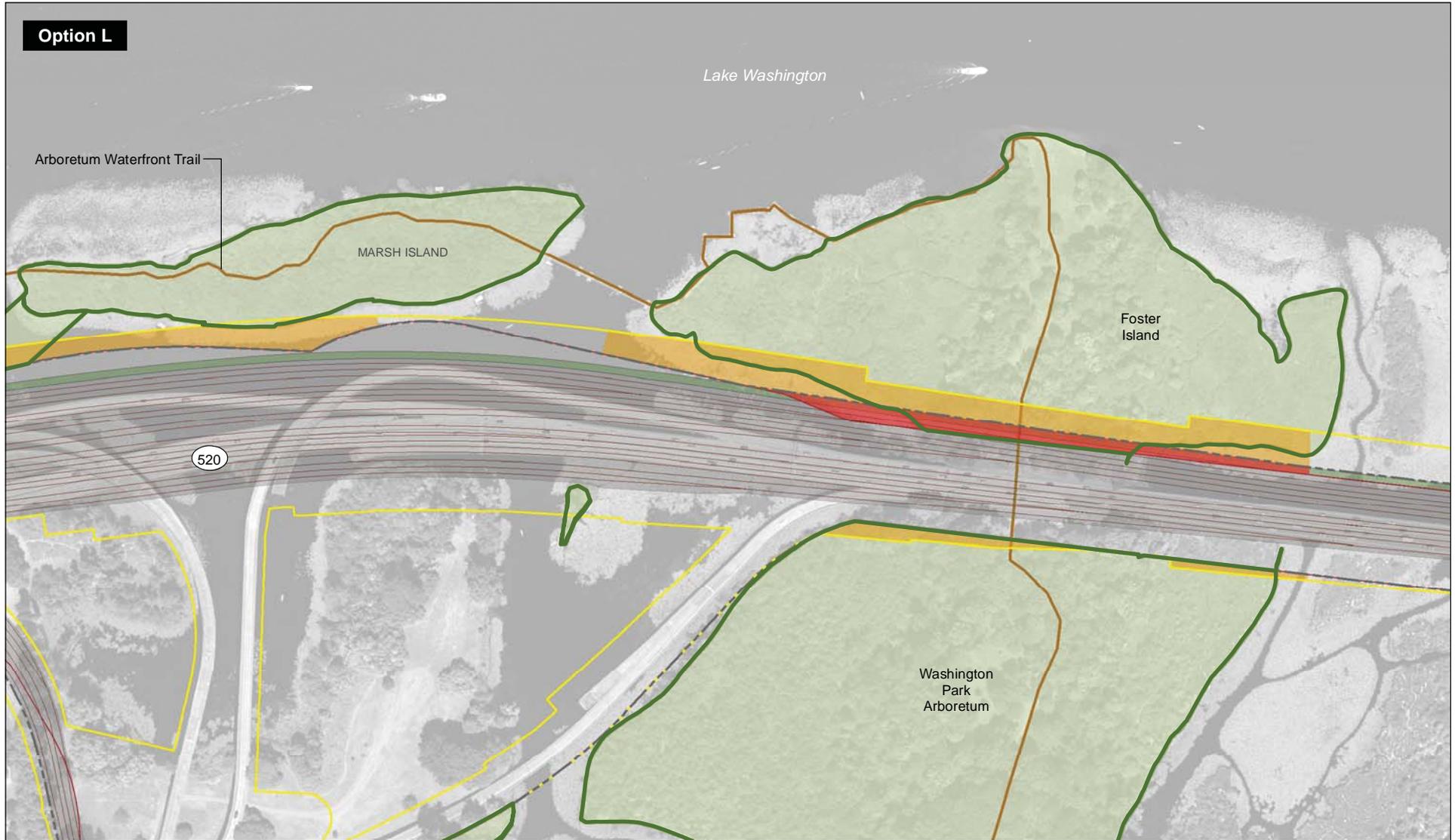


Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 46. Effects on Parks in the University of Washington Open Space for Option L

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Option L



Park Effect

- Converted to Right-of-way
- Construction Easement
- Proposed Right-of-way
- Existing Right-of-way
- Limits of Construction
- Travel Lane
- Pavement
- Park or Recreation Feature
- Existing Trail/Bicycle Path
- Proposed Bicycle/Pedestrian Path



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 47. Effects on Parks in the Foster Island Area for Option L

SR 520, I-5 to Medina Bridge Replacement and HOV Project

In addition, Option L would require 3.5 acres of construction easement on Foster and Marsh islands for about 6 years. Similar to Option A, construction would require access work bridges on and adjacent to Foster and Marsh islands. The work bridges would be removed after completion of the permanent structure. The construction easement would be returned to park use after construction was completed.

Based on the above discussion, there would be a Section 4(f) use of the Washington Park Arboretum and the Arboretum Waterfront Trail as a result of Option L.

Historic Properties

Exhibit 48 shows historic properties with a Section 4(f) use under Option L.

NOAA Northwest Fisheries Science Center

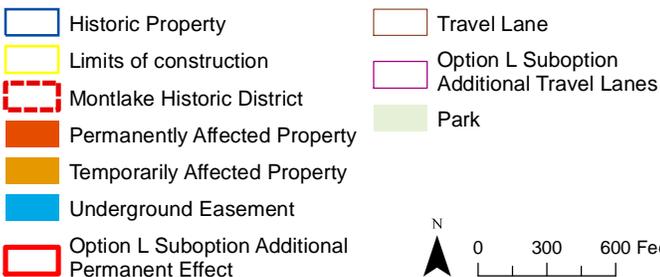
Option L would use a portion of land at the east end of the NOAA Northwest Fisheries Science Center property (0.21 acre) as a construction easement for construction staging and access during Montlake lid and Portage Bay Bridge construction. The easement would be used for the duration of the construction period. Although this property would be restored to its current condition after construction, and would not have an adverse effect on the historic buildings on the parcel, the length of time needed for the use of the property would constitute a use under Section 4(f). Since this use would not cause an adverse effect on the historic property, it would be considered *de minimis*.

Montlake Historic District

Option L would result in a permanent incorporation of land from the Montlake Historic District. A constructed wetland for stormwater treatment would be built on most of the current site occupied by MOHAI, necessitating the removal of the MOHAI building and acquisition of the property within the historic district. To accommodate construction of westbound SR 520 and the new bicycle and pedestrian path, the remaining piece of the Old Canal Reserve property (0.98 acre that sits between the SR 520 off-ramp and the alleyway along the south side of the properties on East Hamlin Street) would be acquired. Due to the permanent property acquisition of 6.62 acres, there would be a Section 4(f) use of the Montlake Historic District as a result of Option L.

Option L has an adverse effect on the Montlake Historic District because in addition to the acquisition of 6.62 acres of property, it would





Source: King County (2005) GIS Data (Streams and Streets), King County (2007) GIS Data (Water Bodies), CH2M HILL (2008) GIS Data (Park), City of Bellevue (2004) GIS Data (Buildings). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 48. Historic Properties with a Section 4(f) Use under Option L

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also visually affect the district and undermine its integrity of setting and feeling. 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 two individually eligible properties at 2158 and 2159 East Shelby Street would experience the most severe visual effects because the new bridge would be constructed immediately to the northeast of these properties. The new bridge would be a minimum of 131 feet from the northeast corner of the house at 2158 East Shelby. The new bridge would significantly degrade the integrity of the setting and feeling of this section of the Montlake Historic District and of all the individually eligible properties at the east end of East Shelby Street. The effects from the new bridge on the setting and feeling of the individually eligible houses at 2158 and 2159 East Shelby Street would be adverse. As noted earlier in this evaluation, although these houses would experience an adverse effect from the change to their setting, it is not anticipated that they would experience a constructive use under Section 4(f). For more information on effects to historic properties under Section 106, please see the Cultural Resources appendix to the SDEIS (WSDOT 2009e).

Once combined, the sum of all the effects on the Montlake Historic District under Option L (removing approximately 6.62 acres from the district, significantly degrading the setting and feeling of the northeast section of the district, and having an adverse effect on the setting and feeling of individually eligible properties) would affect the integrity of the district. Therefore, Option L would result in an adverse effect on the historic district.

Based on the above discussion, there would be a Section 4(f) use of the Montlake Historic District as a result of Option L.

Montlake Cut

Option L would place a new bascule bridge near the east end of the Montlake Cut. This would result in a permanent incorporation of land on both shores of the Montlake Cut. Option L would incorporate 0.40 acre of the Montlake Cut and convert it to transportation right-of-way (8,521 square feet on the north shore and 8,768 square feet on the south shore). Under Section 106, the addition of another bridge across the Montlake Cut is not considered an adverse effect on the Cut. The new bridge would span the official navigation channel in the Montlake Cut. Temporary construction supports and barges might be placed in the Montlake Cut for in-water activities associated with construction of the



new bascule bridge. Because the Montlake Cut must be open to ship traffic all year-round, bridge construction in the Montlake Cut would not be allowed to interfere with marine navigation. The only exception to this would be a few short periods of time when spans were being erected that required the closure of the Montlake Cut to marine traffic. However, these closures (up to five total), would be of short duration, ranging from several hours to two days. In addition, Option L would require 1.23 acres of land for construction easement. When construction is complete, the easement along the sides of the Cut would be restored. Option L would have minimal effect on the characteristics that make the Montlake Cut eligible for the NRHP, and thus would have no adverse effect on the historic Montlake Cut and would be considered *de minimis*.

Canoe House

Option L would require an underground easement of 0.07 acre beneath a section of the Canoe House property to the north of the building. This easement is to accommodate a stormwater outfall. It would have no physical impact on the Canoe House property. The Canoe House would remain accessible and recreation activities, which focus on the south (waterside) of the building, would not be impacted.

The setting and feeling of the Canoe House would not be adversely affected by the new bascule bridge, which would be approximately 323 feet to the west. The Canoe House was built as a hangar and used to store boats, and it was constructed near the water to serve the navigational channel. It does not sit up on the bluff above the water like the historic properties on the south side of the Cut but instead is down lower near the water. The addition of another bascule bridge would affect the setting and feeling of the Canoe House, but due to the industrial nature of the Canoe House and its setting down near the water, this effect would not be adverse. The construction effects associated with the bridge construction and the change to the setting caused by the new bridge are not anticipated to rise to the level of constructive use.

The underground easement would have no discernible effect on the characteristics that qualify the Canoe House for listing in the NRHP, and thus would have no adverse effect on the historic Canoe House and would be considered *de minimis*.



Washington Park Arboretum

As discussed above under “Park and Recreation Resources,” Washington Park Arboretum would experience a use under Section 4(f) with Option L due to the acquisition of 0.6 acre of land. However, none of the acquired land would incorporate significant historic elements of the property. No adverse effect on the historic property is anticipated from this use.

Foster Island

As noted above, Option L would require a permanent incorporation of 0.6 acre (less than 1 percent) of land on Foster Island, which is significant as a presumed TCP (see Exhibit 34). Option L would cross Foster Island with a pier-and-span bridge that would require expanding the right-of-way 40 feet to the north of the alignment. The bridge superstructure would be about 7 feet above the ground surface at this point, and 18 columns each 7 feet in diameter would be placed on the island to support the bridge.

In addition, Option L would require 2.19 acres of construction easement on Foster Island for about 6 years. Construction would include access work bridges on and adjacent to Foster Island. These bridges would be located parallel to SR 520 in the approach areas. The work bridges would be removed after completion of the permanent structure.

As noted earlier, coordination with tribal staff and ethnographic research done to date indicates that the southern half of Foster Island has greater cultural significance than the northern portion. Locating the pier-and-span bridge north of the existing alignment in the area that was historically a cut between the two pieces of Foster Island would use less land from the more significant part of the presumed TCP. The permanent acquisition occurs on the north section of the island, and the majority of the construction easement is also on the north side of the existing right-of-way. The only construction easement on the south part of the island (0.34 acre) would be immediately adjacent to the existing bridge. Therefore, the construction would not interfere with any cultural activities that would occur on the southern part of Foster Island. Access to the northern part of the island will be restricted throughout construction, but access to this area is not as important for traditional cultural activities. No construction staging will occur on the island outside of the construction easement.



Option L Suboptions

Option L with one northbound lane on Montlake Boulevard from Pacific Street to 25th Avenue NE

Adding one northbound lane for additional capacity on Montlake Boulevard NE north of Pacific Street would result in construction along Montlake Boulevard and in removal and reconstruction of three existing pedestrian crossings.

Pavilion Pedestrian Bridge

The Pavilion Pedestrian bridge would not experience a use under Option L. However, under the suboption for Option L that would add capacity to Montlake Boulevard NE, the bridge would be removed to accommodate widening of Montlake Boulevard NE for increased traffic capacity. Under this suboption, 0.6 acre of land would be permanently acquired. This would result in an adverse effect on the historic property, and in a use under Section 4(f).

North and South Pedestrian Bridges

The North and South Pedestrian Bridges would not experience a use under Option L. However, under the suboption for Option L that would add capacity to Montlake Boulevard NE, both bridges would be removed to accommodate widening of Montlake Boulevard NE for increased traffic capacity. Under this suboption, 0.5 acre of land would be permanently acquired. This would result in an adverse effect to the historic properties, and in a use under Section 4(f).

Option L with addition of left-turn access from Lake Washington Boulevard to the SPUI south ramp

Adding left-turn access from Lake Washington Boulevard onto the SPUI south ramp would result in no additional use of Section 4(f) properties because it would require no additional construction.

Summary

None of the Section 4(f) properties in the project area have been found to experience construction-related impacts such as noise and dust that would substantially impair the use of the properties. Exhibit 49 summarizes potential impacts to Section 4(f) properties resulting from Option L actions.



Exhibit 49. Summary of Potential Section 4(f) Use Impacts: Option L

Section 4(f) Property	Section 4(f) Use?	Amount of Section 4(f) Land Used (acres)	Area/Functions Affected
Park and Recreation Resources			
Bagley Viewpoint	Yes	0.15	Permanent acquisition of entire viewpoint.
Interlaken Park	No	0	No permanent acquisition. Construction easement needed to reconstruct Delmar Drive East curbs and sidewalks; meets criteria for temporary occupancy exception.
Montlake Playfield	No	0	No permanent acquisition. Construction easement needed for temporary work bridge structure; meets criteria for temporary occupancy exception.
Bill Dawson Trail	No	0	No permanent acquisition. Detour provided for segment of the trail closed during construction; meets criteria for temporary occupancy exception.
East Montlake and McCurdy Parks	Yes	5.7	Permanent acquisition of 5.7 acres of park land.
Ship Canal Waterside Trail	Yes	0.15	Permanent acquisition of 0.15 acre at the eastern end of the trail.
University of Washington Open Space	Yes	0.75	Permanent acquisition of 0.5 acre of University of Washington Open Space and 0.25 acre for permanent underground easement. Temporary closure of the Waterfront Activities Center and relocation of the climbing wall during construction.
Washington Park Arboretum	Yes	0.6	Permanent acquisition of 0.6 acre of park property.
Arboretum Waterfront Trail	Yes	Trail closure during construction	Closure of the Arboretum Waterfront Trail in the construction area on Foster Island. No detour route would be provided to maintain trail connectivity during construction.
Historic Properties			
Fire Station #22	Yes	0.03	Permanent acquisition of 0.03 acre of the parcel to accommodate intersection reconfiguration. No adverse effect to historic property. <i>De minimis</i> impact
Governor Albert D. Rosellini Bridge/ Evergreen Point Bridge	Yes	Removal of bridge	Removal of bridge. Adverse effect under Section 106.



Exhibit 49. Summary of Potential Section 4(f) Use Impacts: Option L

Section 4(f) Property	Section 4(f) Use?	Amount of Section 4(f) Land Used (acres)	Area/Functions Affected
Park and Recreation Resources			
NOAA Northwest Fisheries Science Center	Yes	0.21	Use of a portion of land (0.21 acre) at the east end of the NOAA Northwest Fisheries Science Center property for construction staging and access during Montlake lid and Portage Bay Bridge construction. Does not meet criteria for temporary occupancy exception. No adverse effect on historic property. ^a <i>De minimis</i> impact.
Montlake Historic District	Yes	6.83	Permanent acquisition of 6.62 acres. Adverse effect on historic district. ^a Additional use of 0.21 acre of NOAA property for construction easement within historic district.
Montlake Cut	Yes	.40	Permanent acquisition of .40 acre for new bascule bridge. No adverse effect to historic property. <i>De minimis</i> impact
Canoe House	Yes	0.07	Permanent underground easement of 0.07 acre for stormwater facility. No adverse effect to historic property. <i>De minimis</i> impact
Washington Park Arboretum	Yes	0.6	Permanent acquisition of 0.6 acre of park property adjacent to SR 520. No acquisition of significant historic elements. No adverse effect on historic property. ^a
Foster Island	Yes	0.6	Permanent acquisition of 0.6 acre of property
Pavilion Pedestrian Bridge	Yes (under suboption only)	0.6	Removal of the bridge under the suboption for Option L. Permanent acquisition of 0.6 acre of land. Adverse effect on historic property. ^a
North Pedestrian Bridge	Yes (under suboption only)	0.02	Removal of the bridge under the suboption for Option L. Permanent acquisition of 0.02 acre of land. Adverse effect on historic property. ^a
South Pedestrian Bridge	Yes (under suboption only)	0.03	Removal of the bridge under the suboption for Option L. Permanent acquisition of 0.03 acre of land. Adverse effect on historic property. ^a

^a All effects determinations to historic properties are preliminary and may change, subject to the SHPO's concurrence.



Lake Washington

There are no formally designated parks or recreation facilities on Lake Washington within the study area.

The floating portion of the Governor Albert D. Rosellini Bridge/ Evergreen Point Bridge is on Lake Washington. This Section 4(f) property will experience a use under each option equally, as discussed previously. All three 6-Lane Alternative options would remove the historic bridge.

Eastside Transition Area

There is one NRHP-eligible property within the APE in the Eastside Transition Area: the Arntson, James House at 2851 Evergreen Point Road in Medina. It would not experience any adverse effects from the project. No Section 4(f) properties would experience a use from the Eastside improvements. The completed project would connect the Points Loop Trail with the bike lane on the new Evergreen Point Bridge, thereby providing a non-motorized connection between the Eastside and Seattle.

Phased Implementation Scenario

Under the Phased Implementation scenario, the use of Section 4(f) properties would be expected to remain the same, although they would occur over a longer period of time. Because replacement of the Evergreen Point Bridge is Vulnerability Priority 1, the bridge would experience a use in the initial phase.

Phasing the project would not change the use of Section 4(f) properties. The same properties would experience the same uses as they would if the project was not constructed in phases. The difference would be that these properties would not all experience a use during the same construction period if the project is phased.

Depending on the design option selected, some properties could experience a use more than once. East Montlake and McCurdy Parks could experience a use from the replacement of the Evergreen Point Bridge west approach and construction of associated stormwater facilities, and then later for the new bascule bridge or tunnel under Options K and L. The Montlake historic district could experience a use for the Evergreen Point Bridge west approach and the Portage Bay Bridge replacements, and then later for the replacement of the Montlake Boulevard interchange and the construction of the Montlake lid, and for



the construction of the new bascule bridge or tunnel, depending on the design option selected.

Summary of Section 4(f) Use

Exhibit 50 summarizes the use of Section 4(f) property for each design option.

Exhibit 50. Summary Use by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Specific Section 4(f) Property Use after Measures to Minimize Harm ^a
Park and Recreation Resources			
Bagley Viewpoint	A	Yes	Permanent acquisition of entire Bagley Viewpoint (0.15 acre).
	K	Yes	Permanent acquisition of entire Bagley Viewpoint (0.15 acre).
	L	Yes	Permanent acquisition of entire Bagley Viewpoint (0.15 acre).
Interlaken Park	A	No	No permanent acquisition. Construction easement needed to reconstruct Delmar Drive East curbs and sidewalks; meets criteria for temporary occupancy exception.
	K	No	No permanent acquisition. Construction easement needed to reconstruct Delmar Drive East; meets criteria for temporary occupancy exception.
	L	No	No permanent acquisition. Construction easement needed to reconstruct Delmar Drive East; meets criteria for temporary occupancy exception.
Montlake Playfield	A	No	No permanent acquisition. Construction easement needed for temporary work bridge structure; meets criteria for temporary occupancy exception.
	K	No	No permanent acquisition. Construction easement needed for temporary work bridge structure; meets criteria for temporary occupancy exception.
	L	No	No permanent acquisition. Construction easement needed for temporary work bridge structure; meets criteria for temporary occupancy exception.
Bill Dawson Trail	A	No	No permanent acquisition. Detour provided for segment of trail closed and relocated during construction; meets criteria for temporary occupancy exception.
	K	No	No permanent acquisition. Detour provided for segment of trail closed and relocated during construction; meets criteria for temporary occupancy exception.
	L	No	No permanent acquisition. Detour provided for segment of trail closed and relocated during construction; meets criteria for temporary occupancy exception.
East Montlake and	A	Yes	Permanent acquisition of 3.7 acres of park property.



Exhibit 50. Summary Use by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Specific Section 4(f) Property Use after Measures to Minimize Harm ^a
McCurdy Parks	K	Yes	Permanent acquisition of 6.0 acres of park property, and 0.43 acre of permanent underground easement.
	L	Yes	Permanent acquisition of 5.7 acres of park property.
Ship Canal Waterside Trail	A	Yes	Permanent acquisition of 0.08 acre of the trail. Trail closure in construction area would disrupt trail connectivity.
	K	No	No permanent acquisition or construction easement. Temporary closure of trail access from East Montlake Park during construction; entire trail accessible from West Montlake Park and Montlake Boulevard.
	L	Yes	Permanent acquisition of 0.15 acre of the trail.
University of Washington Open Space	A	Yes	Permanent acquisition of 0.2 acre of University of Washington Open Space. Permanent underground easement of 0.65 acre.
	K	Yes	Permanent acquisition of 0.1 acre of University of Washington Open Space, and permanent underground easement of 0.56 acre for tunnel; relocation of the Waterfront Activities Center,
	L	Yes	Permanent acquisition of 0.5 acre of University of Washington Open Space and 0.25 acre for permanent underground easement. Temporary closure of the Waterfront Activities Center and relocation of the climbing wall during construction.
Washington Park Arboretum	A	Yes	Permanent acquisition of 0.9 acre of park property.
	K	Yes	Permanent acquisition of 1.4 acres of park property.
	L	Yes	Permanent acquisition of 0.6 acre of park property.
Arboretum Waterfront Trail	A	Yes	Closure of the trail in the construction area on Foster Island. No detour route would be provided to maintain trail connectivity in this area during construction.
	K	Yes	Closure of the trail in the construction area on Foster Island. No detour route would be provided to maintain trail connectivity in this area during construction. 0.04 acre for permanent underground easement beneath western section of trail.
	L	Yes	Closure of the trail in the construction area on Foster Island. No detour route would be provided to maintain trail connectivity in this area during construction. Detour routes provided for the western section of the trail.
Historic Properties			
Fire Station #22	A	Yes	Permanent acquisition of 0.03 acre of the parcel to accommodate intersection reconfiguration. No adverse effect to historic property. <i>De minimis</i> impact.
	K		
	L		



Exhibit 50. Summary Use by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Specific Section 4(f) Property Use after Measures to Minimize Harm ^a
Governor Albert D. Rosellini Bridge/Evergreen Point Bridge	A	Yes	Removal of bridge. Adverse effect on historic property.
	K	Yes	Removal of bridge. Adverse effect on historic property.
	L	Yes	Removal of bridge. Adverse effect on historic property.
NOAA Northwest Fisheries Science Center	A	Yes	Permanent acquisition of 0.51 acre of the parcel. Adverse effect on historic property under Section 106. ^b In addition, use of 0.20 acre for construction staging.
	K	Yes	Use of 0.17 acre for construction staging. Does not meet criteria for temporary occupancy exception. No adverse effect on historic property. ^b <i>De minimis</i> impact finding.
	L	Yes	Use of 0.21 acre for construction staging. Does not meet criteria for temporary occupancy exception. No adverse effect on historic property. ^b <i>De minimis</i> impact finding.
Montlake Historic District	A	Yes	Permanent acquisition of 6.08 acres of historic district (including two contributing properties). Adverse effect on historic district. ^b In addition, use of 0.20 acre of NOAA property for construction staging.
	Option A with Lake Washington Ramps Suboption	Yes	No acquisitions from the properties along East Montlake Place East and 24th Avenue East. Permanent acquisition of 5.96 acres of historic district, which is 0.12 acre less than Option A without the suboption. Adverse effect on historic district. ^a In addition, use of 0.20 acre of NOAA property for construction staging.
	K	Yes	Permanent acquisition of 6.98 acres of historic district. Use of an additional 0.17 acre of construction easement on the NOAA property. No adverse effect on historic district. ^b <i>De minimis</i> impact finding.
	L	Yes	Permanent acquisition of 6.62 acres. Adverse effect on historic district. ^b In addition, use of 0.21 acre of NOAA property for construction staging.
	A	Yes	Permanent acquisition of approximately 136 square feet from rear of property. No adverse effect on historic property. ^b <i>De minimis</i> impact finding.
2220 East Louisa Street residence	Option A with Lake Washington Ramps Suboption	No	No use.
	K	No	No use.
	L	No	No use.
	A	Yes	Permanent acquisition of approximately 136 square feet from rear of property. No adverse effect on historic property. ^b <i>De minimis</i> impact finding.



Exhibit 50. Summary Use by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Specific Section 4(f) Property Use after Measures to Minimize Harm ^a
Montlake Cut	A	Yes	Permanent acquisition of 0.15 acre for new bascule bridge. No adverse effect to historic property. <i>De minimis</i> impact finding.
	K	Yes	1.27 acres for permanent underground easement for tunnel. No adverse effect to historic property. <i>De minimis</i> impact finding.
	L	Yes	Permanent acquisition of .40 acre for new bascule bridge. No adverse effect to historic property. <i>De minimis</i> impact finding.
Canoe House	A	Yes	0.06 acre for permanent underground easement for stormwater facility. No adverse effect to historic property. <i>De minimis</i> impact finding.
	K	Yes	0.82 acre for permanent underground easement for tunnel. No adverse effect to historic property. <i>De minimis</i> impact finding.
	L	Yes	0.07 acre for permanent underground easement for stormwater facility. No adverse effect to historic property. <i>De minimis</i> impact finding.
Washington Park Arboretum	A	Yes	Permanent acquisition of 0.9 acre of park property. No acquisition of significant historic elements. No adverse effect on historic property. ^b
	Option A with Lake Washington Ramps Suboption	Yes	Permanent acquisition of 0.9 acre of park property. No acquisition of significant historic elements. No adverse effect on historic property. ^b
	K	Yes	Permanent acquisition of 1.4 acres of park property. No acquisition of significant historic elements. No adverse effect on historic property. ^b
	L	Yes	Permanent acquisition of 0.6 acre of park property. No acquisition of significant historic elements. No adverse effect on historic property. ^b
Foster Island	A	Yes	Permanent acquisition of 0.9 acre of property.
	K	Yes	Permanent acquisition of 1.4 acres of property and additional construction easement of 4.63 acres. Potential adverse effect on historic property. ^b
	L	Yes	Permanent acquisition of 0.6 acre of property
Pavilion Pedestrian Bridge	A	No	No use.
	K	No	No use.
	L	No	No use.
	Option L with Suboption	Yes	Removal of bridge to allow for widened roadway along Montlake Boulevard NE. Permanent acquisition of 0.6 acre of land. Adverse effect on historic property. ^b



Exhibit 50. Summary Use by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Specific Section 4(f) Property Use after Measures to Minimize Harm ^a
North and South Pedestrian Bridges	A	No	No use.
	K	No	No use.
	L	No	No use.
	Option L with Suboption	Yes	Removal of bridge to allow for widened roadway along Montlake Boulevard NE. Permanent acquisition of 0.02 acre of land for the North Bridge, and 0.03 for the South Bridge. Adverse effect on historic properties. ^b

^a Because all 6-Lane Alternative options use Section 4(f) properties, there are no prudent and feasible avoidance alternatives, and only the option that causes the least overall harm in light of the statute's preservation purpose may be approved.

^b All effects determinations to historic properties are preliminary and may change, subject to SHPO concurrence.



Avoidance, Minimization of Harm, and Mitigation

Are there feasible and prudent alternatives that would avoid the Section 4(f) properties?

This section discusses the concepts to avoid the use of all Section 4(f) properties that were objectively evaluated, and explains the rationale for the dismissal of each concept. There is no feasible and prudent alternative that would avoid the use of all Section 4(f) properties.

The following avoidance concepts were examined:

- No Build Alternative
- New corridors
- Operational changes
- New travel modes
- Design-specific avoidance measures

For more detail about the range of alternatives evaluated for the SR 520, I-5 to Medina project, please see the Range of Alternatives and Options Evaluated Report in the SDEIS (WSDOT 2009g).

No Build Alternative

The No Build Alternative would avoid use of all Section 4(f) properties, but is deemed not prudent according to 23 CFR 774.17 because it neither addresses nor corrects the transportation need cited as the National Environmental Policy Act (NEPA) purpose and need, which prompted the proposed project. (See *What is the project purpose and need?* Section of the SDEIS.)

Most importantly, a do-nothing alternative would leave in place a bridge that is deteriorating rapidly, and that has been classified as functionally obsolete. The floating span of the Evergreen Point Bridge is highly vulnerable to windstorms, with an estimated service life of 10 to 15 years. The pontoons now supporting the floating span have approximately 6,000 linear feet of cracks, which leak water and decrease the structural integrity of the bridge. The east and west approaches to the Evergreen Point Bridge are vulnerable to collapse during an



earthquake because the existing hollow columns do not meet current seismic design standards. The bridge is in danger of structural failure during a severe windstorm or seismic event.

The No Build Alternative would also fail to address the project need for improving mobility in the SR 520 corridor. It would only maintain the four existing general-purpose lanes, without adding HOV lanes to meet regional and local planning goals. It would also preserve the highway's existing non-standard geometry, which results in increased congestion when disabled vehicles cannot pull out of traffic. As the bridge continues to age, closures for wind protection or repairs would become increasingly frequent, with resulting negative effects on regional mobility.

New Corridors

New corridors were evaluated, such as a new bridge from Sand Point to Kirkland, an HCT crossing between SR 520 and Interstate 90 (I-90), and a new submerged tunnel underneath SR 520. The possible new corridors that were preliminarily evaluated were determined to not meet the purpose and need as they would result in low transportation effectiveness, or would cause substantial adverse environmental effects.

Operational Changes

Operational changes were evaluated, such as closing the SR 520 on- and off-ramps between I-5 and I-405, modifying HOV operations, and increasing investment in transportation demand measures.

Transportation effectiveness resulting from operational changes would be low, and changing the operation of SR 520 would not meet the project's purpose and need of improving mobility for people and goods across SR 520. Increasing the investment in transportation demand measures was determined to be beneficial in combination with a design option, and was carried forward as part of the SDEIS 6-Lane Alternative options.

New Travel Modes

New trans-lake travel modes were evaluated, such as passenger ferries and new HCT corridors between Madison Park and Kirkland. The transportation effectiveness of new travel modes would be low, and changing the operation of SR 520 would not meet the project's purpose and need of improving mobility for people and goods across SR 520.



Design-Specific Avoidance Measures

In addition to broader options reviewed, a number of design options were considered that had the potential to avoid use of specific protected properties. These options are described below, and the three avoidance concepts are illustrated in Exhibit 51.

Under all 6-Lane Alternative options, the existing curves in the alignment of SR 520 were retained in the Montlake area. The more efficient, straight-line alternative was not selected in order to avoid existing structures and minimize property acquisition and displacements.

Bagley Viewpoint

To avoid the Bagley Viewpoint, the proposed highway footprint would need to be shifted farther south 45 feet or 65 feet, depending on the option (see Exhibit 51). Holding the existing southern edge of the WSDOT right-of-way and extending northward was viewed from an engineering perspective as the best means of improving the highway geometrics (specifically the Portage Bay Bridge alignment) and heightening driver safety. Shifting the highway alignment south was not considered prudent because of the greater number of property acquisitions that would be necessary.

Shifting the alignment south would require acquisition and demolition of two waterfront residences with docks along Boyer Avenue, one of which is a duplex, and the 24-unit Portage Bayshore Condominiums with 30 moorages, and would entail the relocation of those residents. It would also require acquisition of part of the Seattle Preparatory School playfield acreage, a property that is not impacted under the current options. It would permanently acquire a small section of Interlaken Park, which is not acquired under the proposed options. It would also move the roadway closer to historic properties on East Miller Street, Broadway Avenue East, 10th Avenue East, and Federal Avenue East, resulting in greater effects to multiple properties, some of which could be adverse. This alignment would move the roadway 45 to 65 feet closer to the historic Alden Mason House and relocate the bridge immediately adjacent to the historic Kelley House. This would likely cause a change in setting on these two houses that would be considered adverse under Section 106. This would be a more severe environmental impact under Section 106 by introducing additional adverse effects on historic properties that are effected by the current options, but not



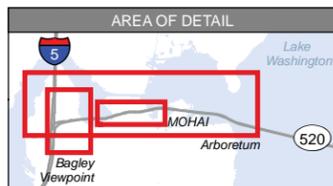
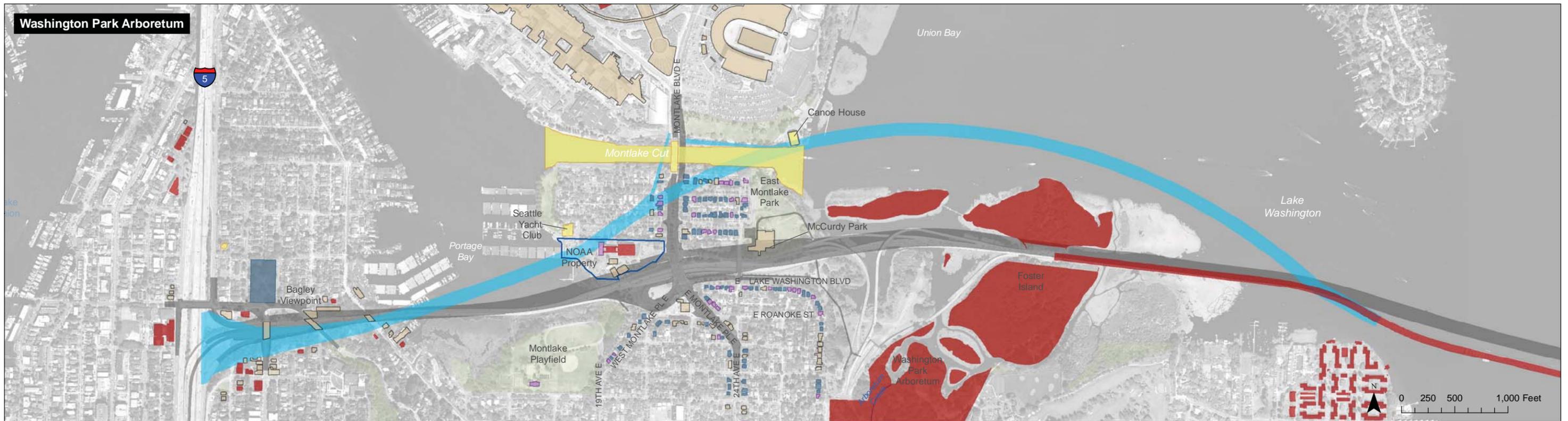
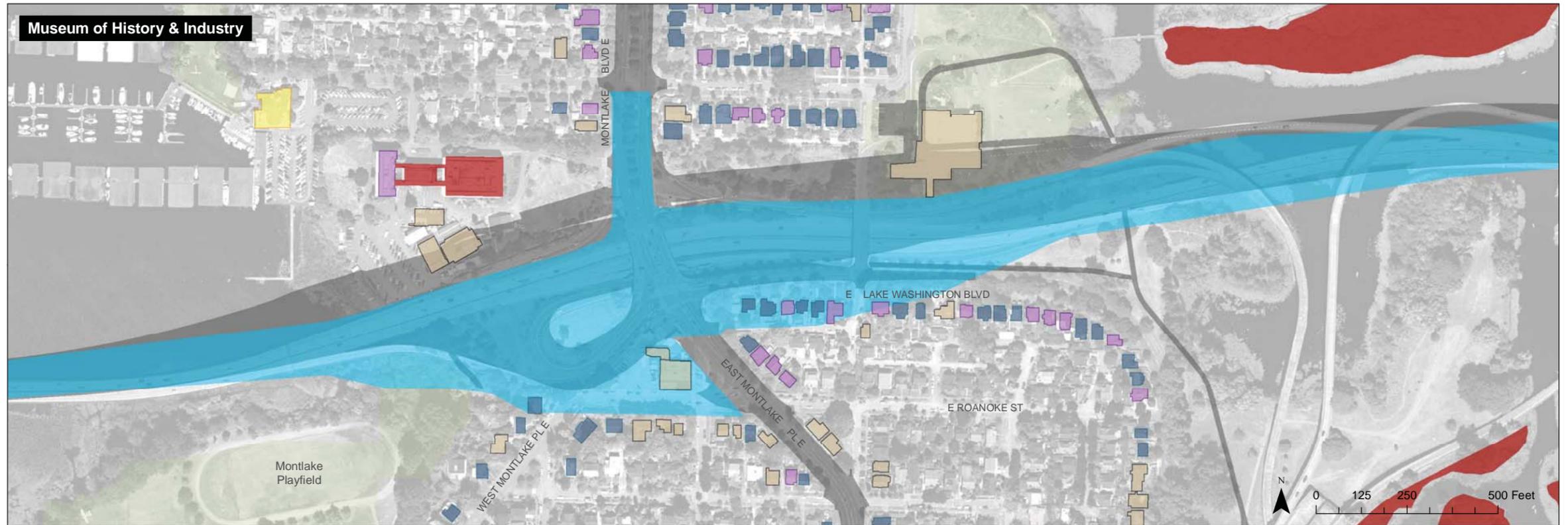
adversely. Additional mitigation would be needed to resolve those adverse effects, resulting in greater cost. This shift in alignment to avoid the Bagley Viewpoint would remove two additional residential buildings than the current options, and cause the displacement of 26 additional residential units. It would entail the greater cost of acquisition of these two additional waterfront properties with docks and moorages, and the cost of relocation of 26 additional residents. It would require the additional cost to acquire land from a school playfield that is not currently impacted. Finally, this avoidance option would cause more harm to two historic houses and would require permanent acquisition of a piece of Interlaken Park, impacting a greater number of properties protected under Section 4(f) than the proposed options. In addition, Bagley Viewpoint can potentially be recreated and replaced in the new green space on the new 10th Avenue/Delmar Drive lid. While this is also true of for re-creation of land acquired from Interlaken Park in the avoidance scenario, the adverse effects created on the two historic properties by the avoidance of Bagley Viewpoint would be permanent. Although mitigation could be done to account for the adverse effects, once the setting and feeling of these two historic properties is altered, that setting could not be recaptured. Therefore, the effects to these historic 4(f) properties after mitigation is more severe than the effects to either Interlaken Park or Bagley Viewpoint.

Based on the discussion above, avoiding Bagley Viewpoint is not prudent due to the combination of higher cost from a greater number of property acquisitions, relocations, and Section 106 mitigation; greater community disruption from 26 additional residential relocations and acquisition of school playfield; more severe environmental impacts under Section 106 through increased adverse effects; and greater impact to protected 4(f) properties.

East Montlake Park, McCurdy Park, and Arboretum Waterfront Trail

Shifting the highway alignment farther south would avoid effects on these parks and the Arboretum Waterfront Trail (which is also a Section 6(f) property) (see Exhibit 51). However, a more southerly alignment would have far more extensive effects on the Montlake Historic District, resulting in severe disruption of an established community and severe environmental impacts under Section 106. The Montlake Historic District is a mostly residential district with a very high degree of physical integrity. It is the only historic district to experience a use from the project. Under the proposed options, only





- NRHP Eligibility of Surveyed Resources**
- Proposed Edge of Pavement - Option A
 - Listed
 - Contributing and Eligible
 - Avoidance Route
 - Eligible
 - Not Eligible
 - Park
 - Contributing

Source: King County (2006) Aerial Photo, King County (2008) GIS Data (Stream), CH2M HILL (2008) GIS Data (Park). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 51. Section 4(f) Avoidance

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Option A removes any contributing elements to the district, or has an adverse effect on any of many individually listed or eligible properties in the district. The avoidance caused by a shift to the south would result in the acquisition and removal of nine properties in the Montlake Historic District, of which eight are contributing to the district, and of those eight, three are also individually eligible. This is a far greater impact than any of the proposed options, and would result in an adverse effect on the district and on the three individually eligible properties. Unlike the proposed options, none of which permanently acquire any land from the Montlake Playfield, the avoidance shift would remove 6,400sf (0.15 acre) from the Montlake Playfield, which is also part of the historic district. However, it would not impact the active parts of the park and would take a piece of the section that is currently adjacent to SR 520. In addition, the avoidance shift would remove a section of Lake Washington Boulevard's historic alignment in the historic district. The proposed realignment that would need to occur is a substantial effect because it removes a section of the road from the landscape context that contributes to the reasons why it is historic. Realignment of this section of the boulevard to a new location and new landscape context and setting dilutes the overall historic character and significance of the road. Moving SR 520 to the south would not only remove a section of land and eight contributing properties from the historic district, it would also change the setting of many other adjacent contributing properties in that area of the district, causing further potential adverse effects.

The avoidance shift would entail the greater cost of acquisition of nine additional properties, and the cost of relocation of eight additional residences and one commercial business. These are historic houses of exceptional quality and condition, with large lots and views of Lake Washington in a very desirable neighborhood. It would require the additional cost to acquire land from the Montlake Playfield that is not acquired under the proposed options. Finally this avoidance option would cause more harm to the historic district and to three individually eligible historic houses and acquire property from Montlake Playfield, impacting a greater number of properties protected under Section 4(f) than the proposed options. In addition, McCurdy Park and part of East Montlake Park are being acquired for a stormwater facility under all proposed options, and even if the alignment were shifted south to avoid the parks, they would still be needed for the stormwater facility. The stormwater treatment wetland is proposed to be located at the low point topographically within the parks. The highly urbanized and



developed condition of the Montlake area leaves few options for adequate treatment of pollutant-generating impervious surface and severely limits where these facilities can be sited. The McCurdy/East Montlake Park location contains the most acreage of uninhabited land for such treatment without requiring displacement of residences. Further, it is one of the few less developed topographic low points where it is feasible to engineer a treatment system. Therefore, even if the highway alignment were shifted further south, this stormwater treatment facility would still need to be located where it is currently proposed, so MOHAI would be demolished and the impacts to the parks would remain. McCurdy Park is mainly composed of the MOHAI building and parking lot, with some green space and plantings adjacent to the SR 520 roadway. Its relative value as a park and recreation resource is low compared to other parks in the immediate area, including West Montlake Park, Montlake Playfield, Interlaken Park, and the Arboretum. East Montlake Park has also lost green space to the parking lot, and its greatest asset is the waterfront acreage and trail with canoe/kayak launch point. However, the other parks in the immediate area listed above provide similar amenities with more green space. The historic district, with hundreds of historic houses and three parks within its boundaries, has greater relative value as a Section 4(f) property than do McCurdy and East Montlake Parks. In addition, East Montlake Park would retain its waterfront views and trail after project construction, so the effects of the proposed options on this 4(f) property would be much less severe than those from the avoidance option on the Montlake Historic District and the three individually eligible houses along Lake Washington Boulevard. The demolitions of the eight historic houses and the adverse effects created on the historic properties by the avoidance of the parks would be permanent. Although mitigation could be done to account for the adverse effects, once the properties are removed and the setting and feeling of the historic district is altered, that setting could not be recaptured. Therefore, the effects to these historic 4(f) properties after mitigation is more severe than the effects to either McCurdy or East Montlake parks.

Based on the discussion above, avoiding these parks is not prudent due to the combination of a greater number of property acquisitions, relocations, and Section 106 mitigation; greater community disruption from 8 additional residential relocations and one additional business relocation; more severe environmental impacts under Section 106 through increased adverse effects; and impact to a greater number of



and more significant, protected 4(f) properties. As a result, a southern shift was not considered prudent.

University of Washington Open Space

Option A acquires a small amount of open space, but does not impact the Waterfront Activities Center or the Canoe House. Under Option L, the new bascule bridge structure would be located to avoid the Waterfront Activities Center and the Canoe House. Under Option K, there was no alignment possible to avoid the Waterfront Activities Center, but the Canoe House will remain open during construction.

Washington Park Arboretum and Foster Island

There are no feasible and prudent avoidance alternatives for the Washington Park Arboretum and Foster Island. Shifting the alignment north of the park (through the northern portion of the Montlake Historic District, along the Ship Canal, and over Portage Bay) would avoid the Arboretum and East Montlake Park, including the Arboretum Waterfront Trail (see Exhibit 51). However, this shift would cause severe disruption to the established Montlake community, additional construction costs of an extraordinary magnitude, and severe environmental impacts under Section 106. Shifting the alignment north of the park would require the acquisition and removal of approximately 44 residences in the Montlake Historic District, and entail the relocation of those residents. Most of this part of the district has not yet been surveyed, but given the high level of physical integrity of the district, it is likely that most of these properties are contributing elements to the Montlake Historic District, and several of them are individually eligible as well. This would cause a much greater use of historic properties and a more severe adverse effect on the Montlake Historic District under Section 106, as well as additional adverse effects on the individually listed properties. It would essentially demolish a wide diagonal section of the Shelby-Hamlin area of the district and could result in the removal of so many buildings and such disruption to the setting of the remaining buildings that the section of the district currently north of SR 520 would no longer be considered eligible. It would also remove the historic West Wing building of the NOAA, which is individually eligible as well as a contributing element to the historic district. The removal of this important building is a more severe adverse effect than proposed under the current options. The avoidance shift would also remove the Seattle Yacht Club building, some of their parking and several docks. This would add another additional adverse effect, as the



Seattle Yacht Club is listed in the NRHP for its cultural importance to the boating and maritime culture of the region. The shift in alignment could avoid East and West Montlake parks, but would significantly impact the Ship Canal Waterside Trail, either removing portions of it or changing them significantly by placing them under the elevated roadway. It would have an adverse effect on the historic Montlake Cut by placing the roadway across it, and on the setting of the historic Montlake bridge. It would acquire property from the University of Washington Open Space, and would remove the Canoe House, listed in the NRHP. It would also remove the Queen City Yacht Club building relocate the Portage Bay bridge crossing to the north.

The avoidance shift north would entail the greater cost of acquisition of 44 additional residential properties, the Seattle Yacht Club, the NOAA West Wing building, the Queen City Yacht Club, the Canoe House, and a portion of the University of Washington Open Space, as well as the cost of relocating of 44 additional residences, the NOAA administrative facilities, two yacht clubs with extensive docks and moorages, and the Canoe House facilities on the University of Washington campus. These are historic houses of exceptional quality and condition, in a very desirable neighborhood. This avoidance option would cause more harm to the historic district and the individually eligible historic houses there, to the historic Seattle Yacht Club and NOAA West Wing building, to the Montlake Cut and Montlake Bridge, to the Canoe House, to the University of Washington Open Space, and to the Ship Canal Waterside Trail, impacting a greater number of properties protected under Section 4(f) than the proposed options. While the Arboretum and Foster Island are very important resources, the impacts from the proposed options are mostly contained to the area immediately adjacent to the already disturbed area of SR 520, and the proposed uses would not remove the properties nor make them no longer functional. The impacts associated with the avoidance shift would cause multiple properties to be removed and no longer functional or in existence. It would degrade the integrity of the northern portion of the Montlake Historic District so much that it would likely lose its NRHP eligibility. It would cause the Ship Canal Waterside Trail to either be partially removed or greatly reduced in recreational value. The Seattle Yacht Club and NOAA might be able to continue to function, but at greatly reduced capacity. The Canoe House would no longer exist. The avoidance shift would cause more severe impacts to a much greater number of protected Section 4(f) properties. The demolition of multiple historic properties and the adverse effects created by the avoidance of the Arboretum and Foster



Island would be permanent. Although mitigation could be done to account for the adverse effects, once the properties are removed and the setting and feeling of the historic district is altered, that setting could not be recaptured. Therefore, the effects to the historic 4(f) properties noted above after mitigation is more severe than the effects to either the Arboretum or Foster Island.

Based on the discussion above, avoiding the Arboretum and Foster Island is not prudent due to the combination of higher cost from a greater number of property acquisitions, relocations, Section 106 mitigation, two yacht club relocations, NOAA administrative building relocation, and the Canoe House function relocation; greater community disruption from 44 additional residential relocations, the loss of the yacht clubs, and the changes to the Ship Canal Waterside Trail; more severe environmental impacts through use of the Ship Canal Waterside Trail, relocation of the Portage Bay bridge, and under Section 106 through increased adverse effects; and more significant impact to a greater number of protected 4(f) properties. As a result, a southern shift was not considered prudent.

Governor Albert D. Rosellini Bridge/Evergreen Point Bridge

The floating portion of the Evergreen Point Bridge, which is vulnerable to windstorms, is the highest priority for replacement in the SR 520 corridor because of the frequency of severe storms and the high associated risk of catastrophic failure. Therefore, there are no feasible and prudent avoidance alternatives for the Evergreen Point Bridge. The primary hazards to the floating portion of the Evergreen Point Bridge are from wind and wind-induced wave loads. The floating bridge was originally designed for a sustained wind velocity of 57.5 miles per hour (mph) (50 knots), which is significantly less than the current 100-year design wind speed of 92 mph. Over the last 25 to 30 years, the floating bridge has undergone several strengthening and improvement retrofits. Currently, the floating bridge can withstand a 20-year storm with wind speeds of 77 mph. However, because of limitations with respect to pontoon and anchor strength and pontoon flotation, it is not feasible to retrofit the floating bridge to withstand the 100-year storm loads. The floating bridge has reached the limit for retrofits and must be replaced in order to provide a structure capable of withstanding the 100-year storm event without damage (WSDOT 2007).



Montlake Historic District

There are no feasible and prudent avoidance alternatives for the Montlake Historic District. As noted above, holding the existing southern edge of the WSDOT right-of-way and extending northward was viewed from an engineering perspective as the best means to improve highway geometrics (specifically the Portage Bay Bridge alignment) and driver safety. From an environmental perspective, extending northward was also preferred because expanding the Portage Bay Bridge over open water would avoid wetlands and shoreline. Shifting the alignment to the south could avoid taking the property at the NOAA Northwest Fisheries Science Center under Option A, but that would require taking additional land from the Montlake Playfield and an additional business in the Montlake Historic District. Shifting the bridge to the south would require land from Montlake Playfield (which would still affect the Montlake Historic District) and would have a adverse effect on the historic Mason and Kelley Houses on the west shore of the bay, as described earlier. In addition, holding the southern right-of-way between Montlake Boulevard and the Washington Park Arboretum would take no further resources to the south and would involve no residential displacements, whereas shifting to the south could involve 9 acquisitions and relocations along Lake Washington Boulevard as described above, causing severe community disruption and much more significant adverse effects on the Montlake Historic District and three individually eligible properties, as noted earlier. Whether the alignment shifts to the north or to the south, it would still impact the Montlake Historic District. The proposed options impact less of the district and fewer individually eligible properties than either of the avoidance shifts.

NOAA Northwest Fisheries Science Center

The NOAA Northwest Fisheries Science Center property would be used under all options. Option A uses the most property and is the only option that permanently acquires land from the NOAA site and has an adverse effect on the historic buildings. Options K and L would use a portion of the property during construction, but would restore the property after project completion.

Pavilion Pedestrian Bridge

If the suboption to Option L that adds capacity to Montlake Boulevard NE is not implemented, then the project would avoid a use of the Pavilion Pedestrian Bridge.



North and South Pedestrian Bridges

If the suboption to Option L that adds capacity to Montlake Boulevard NE is not implemented, then the project would avoid a use of the North and South Pedestrian Bridges.

Which design option would cause the least overall harm to Section 4(f) properties?

According to 23 CFR 774.3(c), because there is no feasible and prudent avoidance alternative, FHWA may approve only the alternative that causes the least overall harm based on an assessment of the seven factors listed in 23 CFR 774.3(c)(1):

1. The ability of the alternative to mitigate adverse impacts on each Section 4(f) property (including any measures that result in benefits to the property)
2. 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
3. The relative significance of each Section 4(f) property
4. The views of the official(s) with jurisdiction over each Section 4(f) property
5. The degree to which each alternative meets the purpose and need for the project
6. After reasonable mitigation, the magnitude of any adverse impacts on resources not protected by Section 4(f)
7. Substantial differences in costs among the alternatives

Exhibit 52 summarizes affected acreage by option. The six park and recreation resources used are Bagley Viewpoint, Ship Canal Waterside Trail, University of Washington Open Space, East Montlake and McCurdy parks, the Arboretum Waterfront Trail, and the Washington Park Arboretum. The 12 historic properties used are Fire Station #22, NOAA Northwest Fisheries Science Center, Montlake Historic District, 2220 East Louisa Street residence, Montlake Cut, Canoe House, Pavilion Pedestrian Bridge, North and South Pedestrian Bridges, Washington Park Arboretum, Foster Island, and Evergreen Point Bridge.



Exhibit 52. Summary of Affected Acreage by Option

Alternative	Number of Section 4(f) Properties Used		Total Section 4(f) Land Incorporated (acres)
	Recreation	Historic	
Option A	6	5	6.39
Option A with Lake Washington ramps suboption	6	4	6.51
Option K	5	3	9.21
Option L	6	4	8.36
Option L with suboption	6	6	9.01

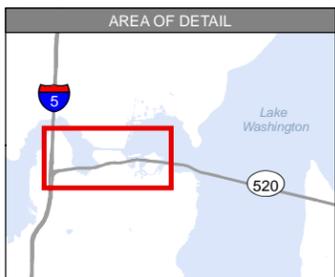
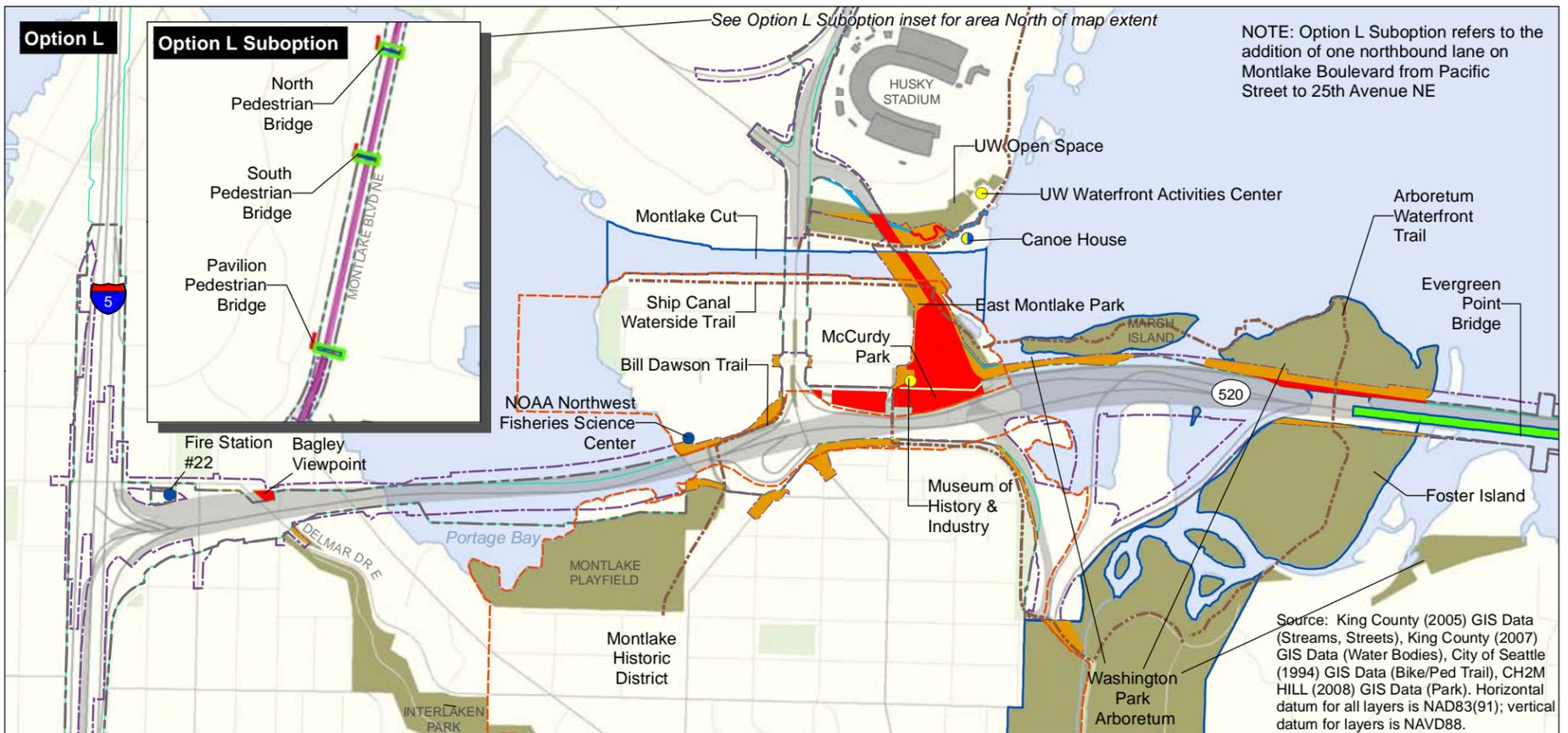
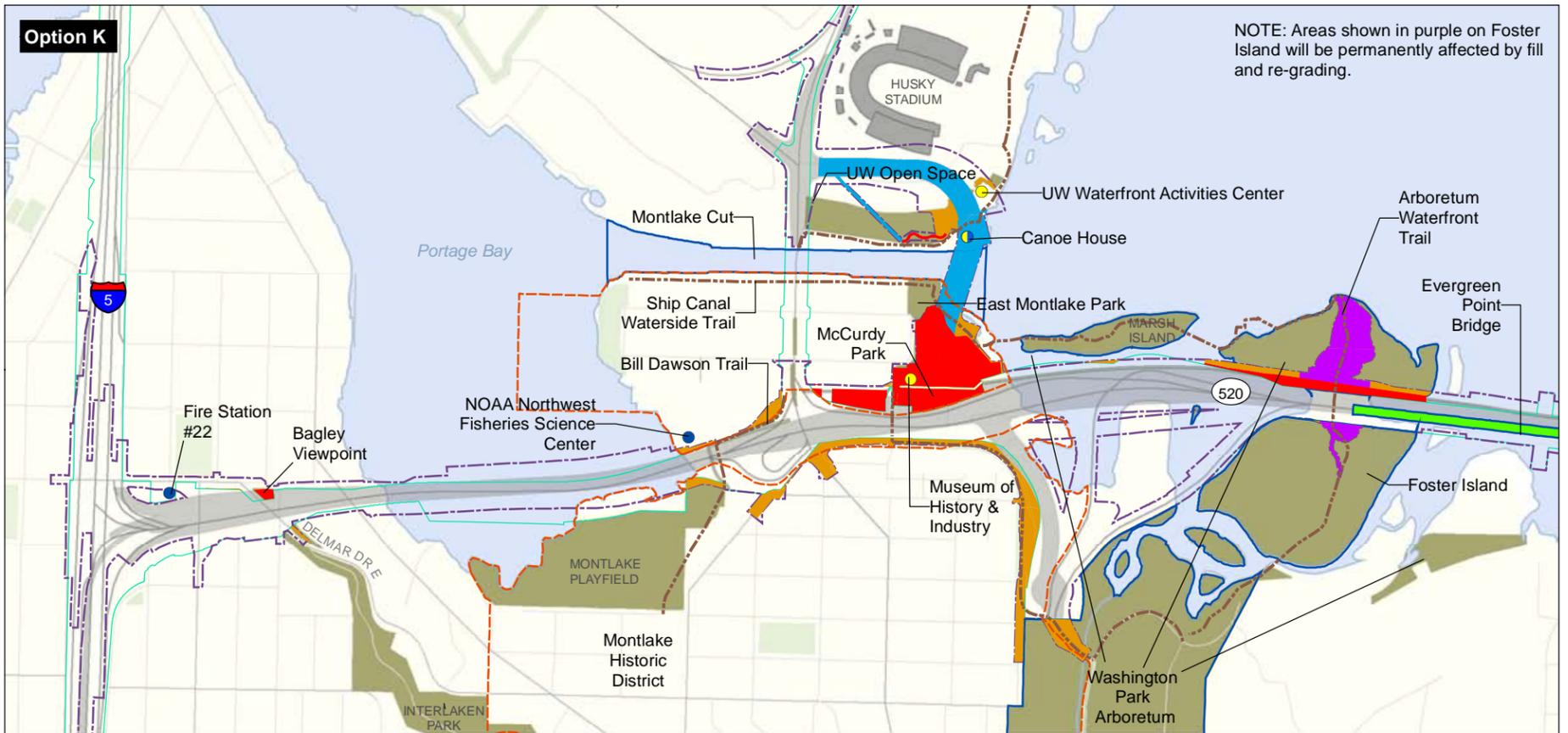
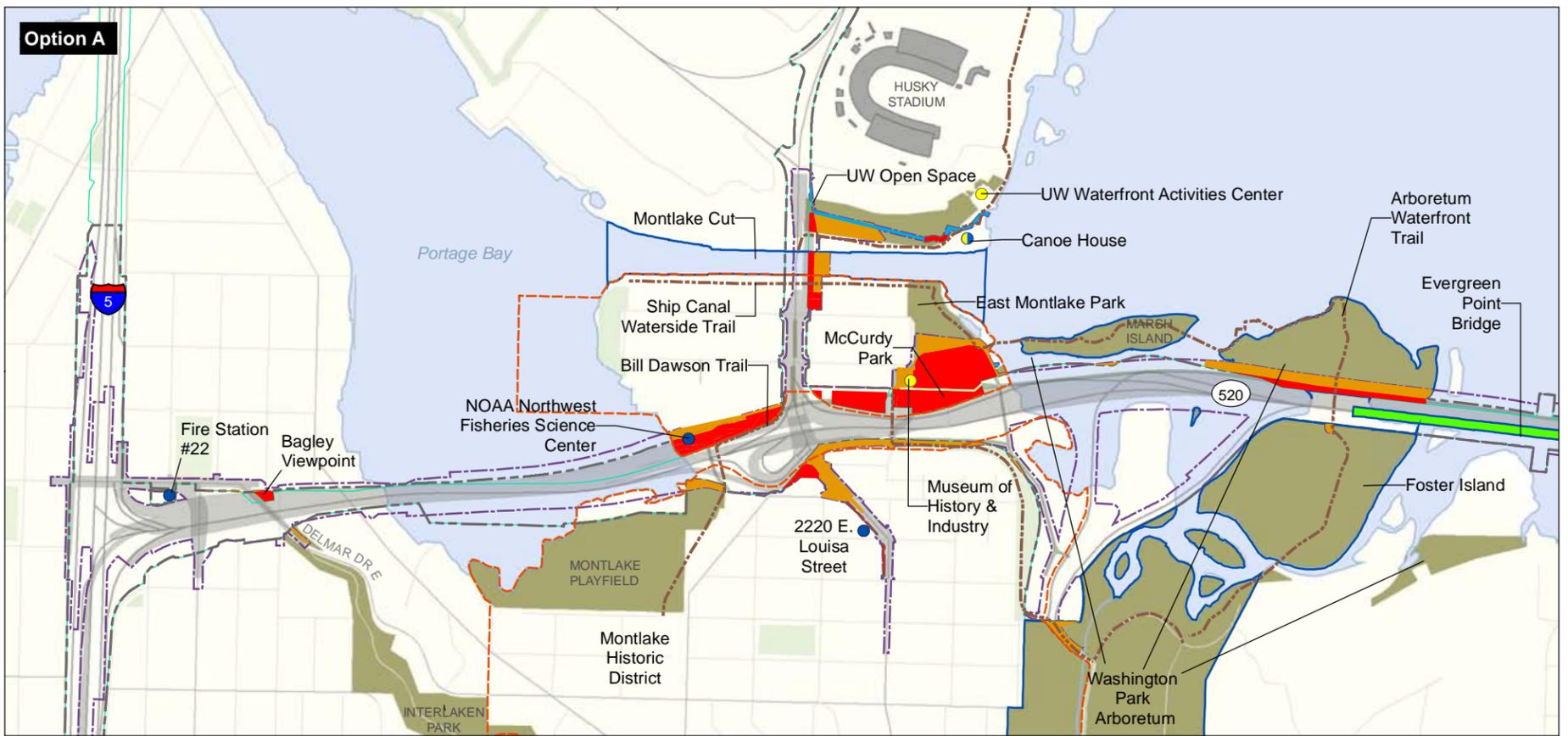
The narrative analysis provided thus far (project effects) provides the substantive information needed to preliminarily address the 23 CFR 774.3(c)(3) “least harm analysis factors” provided in the modified Section 4(f) statute published in 2008. Exhibit 53 shows a graphic comparison of Section 4(f) use for each option. Exhibit 54 summarizes the preliminary least harm analysis by Section 4(f) property and Exhibit 55 summarizes the preliminary least harm analysis by 23 CFR 774 factors.

The Final Section 4(f) Evaluation, to be prepared in conjunction with the SR 520, I-5 to Medina project Final EIS, will include a more detailed evaluation of the Section 4(f) properties associated with the preferred alternative. The detailed evaluation will include the following:

- Specifically discuss measures proposed to minimize harm to each Section 4(f) resource; and
- As noted, discuss the rationale used to decide that the preferred alternative is the alternative that would result in the least overall harm according to the seven factors listed in 23 CFR 774.3(c)(1); and
- Involve further coordination with officials with jurisdiction over the affected properties; and
- Make a determination that the action chosen includes “all possible planning” to minimize harm to Section 4(f) properties, in accordance with Sections 774.3(a)(2) and (c)(2).

Based on the analysis done to date on the current design options of the 6-Lane Alternative, Option A appears to result in the least net harm to Section 4(f) properties overall. The Final Section 4(f) Evaluation will determine the option of least net harm.





Section 4(f) Effect

- Converted to Right-of-Way
- Underground Easement
- Construction Easement
- Construction Easement (Re-grading)
- Bridge Removal
- Montlake Historic District

- Proposed Right-of-Way
- Existing Right-of-Way
- Limits of Construction
- Pavement
- Option L Suboption Additional Travel Lanes
- Seattle Park
- Affected Park/Open Space

- Existing Regional Bicycle/Pedestrian Path
- Proposed Bicycle/Pedestrian Path
- Historic Property

- Historic Building
- Parks/Recreation Related Building
- Parks/Recreation Related and Historic Building

0 250 500 1,000 Feet



Exhibit 53. Section 4(f) Effects for Options A, K and L

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Exhibit 54. Preliminary Least Harm Analysis by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Relative Net Harm to Section 4(f) Property after Measures to Minimize Harm ^a
Park and Recreation Resources			
Bagley Viewpoint	A	Yes	All options equal
	K	Yes	All options equal
	L	Yes	All options equal
Interlaken Park	A	No	No Section 4(f) use
	K	No	No Section 4(f) use
	L	No	No Section 4(f) use
Montlake Playfield	A	No	No Section 4(f) use – 0.3 acre temporary occupancy
	K	No	No Section 4(f) use – 0.2 acre temporary occupancy
	L	No	No Section 4(f) use - 0.2 acre temporary occupancy
Bill Dawson Trail ^a	A	No	No Section 4(f) use
	K	No	No Section 4(f) use
	L	No	No Section 4(f) use
East Montlake and McCurdy Parks	A	Yes	Less than the other design options
	K	Yes	Greater than the other design options
	L	Yes	Greater than Option A, but less than Option K.
Ship Canal Waterside Trail	A	Yes	Overall effects less than Option L
	K	No	No Section 4(f) use
	L	Yes	Greater than the other design options
University of Washington Open Space	A	Yes	Overall less harm than the other options
	K	Yes	Greater than the other design options
	L	Yes	Greater than Option A but less than Option K
Washington Park Arboretum	A	Yes	Similar to Option L, less than Option K
	K	Yes	Greater than the other design options
	L	Yes	Overall less than the other options
Arboretum Waterfront Trail	A	Yes	Less than the other design options
	K	Yes	Greater than other design options
	L	Yes	Greater than Option A but less than Option K
Historic Properties			
Fire Station #22	A	Yes	All options equal - <i>de minimis</i>
	K	Yes	All options equal - <i>de minimis</i>



Exhibit 54. Preliminary Least Harm Analysis by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Relative Net Harm to Section 4(f) Property after Measures to Minimize Harm ^a
NOAA Northwest Fisheries Science Center	L	Yes	All options equal - <i>de minimis</i>
	A	Yes	Greater than the other design options
	K	Yes	Overall less than the other options.
	L	Yes	Less than A but greater than K
Montlake Historic District and contributing properties	A	Yes	Less than Option L, but more than Option K and the suboption for Option A
	Option A with Lake Washington Ramps Suboption	Yes	Less than Options A and L but more than Option K
	K	Yes	Overall less than the other options.
	L	Yes	Greater than the other design options
2220 E. Louisa Street residence	A	Yes	Greater than the other design options - <i>de minimis</i>
	Option A with Lake Washington Ramps Suboption	No	No Section 4(f) use
	K	No	No Section 4(f) use
	L	No	No Section 4(f) use
Montlake Cut	A	Yes	Greater than Option L, but less than Option K - <i>de minimis</i>
	K	Yes	Overall less than the other options - <i>de minimis</i>
	L	Yes	Greater than the other design options - <i>de minimis</i>
Canoe House	A	Yes	Similar to Option L - <i>de minimis</i>
	K	Yes	Greater than the other design options - <i>de minimis</i>
	L	Yes	Similar to Option A - <i>de minimis</i>
Pavilion Pedestrian Bridge	A	No	No Section 4(f) use
	K	No	No Section 4(f) use
	L	No	No Section 4(f) use
	Option L with Suboption	Yes	Greater than all other options



Exhibit 54. Preliminary Least Harm Analysis by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Relative Net Harm to Section 4(f) Property after Measures to Minimize Harm ^a
North and South Pedestrian Bridges	A	No	No Section 4(f) use
	K	No	No Section 4(f) use
	L	No	No Section 4(f) use
	Option L with Suboption	Yes	Greater than all other options
Washington Park Arboretum	A	Yes	Greater than Option L, but less than Option K
	Option A with Lake Washington Ramps Suboption	Yes	Greater than Option A, but less than Options K and L
	K	Yes	Greater than the other design options
	L	Yes	Less than the other design options
Foster Island	A	Yes	Greater than Option L but less than Option K
	K	Yes	Greater than the other design options
	L	Yes	Less than the other design options
Governor Albert D. Rosellini Bridge/ Evergreen Point Bridge	A	Yes	All options equal
	K	Yes	All options equal
	L	Yes	All options equal

^a Because all 6-Lane Alternative options use Section 4(f) properties, there are no prudent and feasible avoidance alternatives, and only the option that causes the least overall harm in light of the statute’s preservation purpose may be approved.

Exhibit 55. Preliminary Least Harm Analysis by 23 CFR 774.3(c)(1) Factors^a

Factor 1: “The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)”; and

Factor 2: “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”

Discussion:

There is no differentiation between options in regard to Factors 1 and 2 for **Bagley Viewpoint**.

At the **Ship Canal Waterside Trail**, Option K would cause the least overall harm because it would allow bicyclists and pedestrians to continue to use the existing trail between East Montlake Park and West Montlake Park with no detours. However, during construction within East Montlake Park to the east, trail users would be required to turn around at East Montlake Park. The connection to the park and the Arboretum Waterfront Trail would be closed. Option A would close the trail near Montlake Boulevard NE, where detours are available, but would acquire trail acreage. Option L would close the trailhead at East Montlake Park and also would acquire trail acreage.



Exhibit 55. Preliminary Least Harm Analysis by 23 CFR 774.3(c)(1) Factors^a

At **East Montlake and McCurdy parks**, Option A would have the least overall harm with respect to Factors 1 and 2 because it would require the least park acquisition. Options L and K would acquire these parks for connections to Pacific Street, thereby converting 2.3 and 2.0 acres (respectively) more than Option A. (Acquisition in East Montlake and McCurdy parks combined would be 3.7 acres for Option A, 6.0 acres for Option K, and 5.7 acres for Option L.) For each of the options, this includes 1.5 acres of McCurdy Park. Therefore, acquisition in East Montlake Park without the McCurdy Park impacts would be 2.2 acres for Option A, 4.5 acres for Option K, and 4.2 acres for Option L.) During construction, these parks would be closed for 2 to 3 years longer than under Option A. All options provide the same benefits of lid structures and connectivity to the regional bicycle pathways.

At the **Washington Park Arboretum and the Arboretum Waterfront Trail**, Option A would have the least overall harm with respect to Factors 1 and 2 because it would require less construction time to complete. Options K and L would require 2 to 4 years of construction time within East Montlake Park that would close the access to the Arboretum Waterfront Trail and the park, while Option A would not. Option A would convert 0.3 acre more of the park than Option L, but other construction effects are similar. Both Options A and L would widen SR 520 to the north on a similar structure for 1,100 feet across Foster Island; therefore, impacts from Option A are only between 3 and 5 feet more intrusive into Foster Island. There is a minor difference in acreage (less than 0.2 percent of the park), as the measures to minimize harm are the same for both Options A and L, which use piers and bridges to cross Foster Island. Option K with the land bridge design would change the character of Foster Island from a natural state to a manicured park setting. The Arboretum Waterfront Trail would also be relocated from under a bridge to being placed over SR 520 on the land bridge for Option K, but would change the experience of the trail user by replacing wetlands and forested vegetation with a berm.

At the **University of Washington Open Space**, Option A would have the least overall harm with respect to construction duration, impact on recreational features of the Open Space, and attributes that qualify the area for protection. Option A would acquire 0.2 acre of land at the west end of the open space; this area is in passive use. Option K would acquire 0.1 acre of land from the University of Washington Open Space. For the 4-year tunnel construction, the Canoe House and the climbing wall would be closed and the Waterfront Activities Center would be relocated. The Waterfront Activities Center would be mitigated for by providing similar waterfront recreation services in another location. Option L would acquire 0.05 acre of the open space. For the 3-year bridge construction, the Canoe House, climbing wall, and Waterfront Activities Center would experience closures.

There is no differentiation between options with respect to Factors 1 and 2 for **Fire Station #22** or the **Evergreen Point Bridge**.

For the **NOAA Northwest Fisheries Science Center**, Option K would have the least harm, as it would acquire no permanent property and would use the least amount of property for construction staging. Option L would also acquire no permanent property, but would require slightly more property for construction staging. Option A would permanently acquire 0.51 acre of property, resulting in an adverse effect on the historic property under Section 106, and also would use an additional 0.2 acre of property for construction staging. Option A is the only option that would require mitigation through the Section 106 consultation process specifically for the NOAA Northwest Fisheries Science Center property. The severity of the remaining harm after mitigation would be determined after the mitigation is agreed on through the Section 106 process.

Option K would have the least harm to the **Montlake Historic District**, even though it would permanently acquire the largest amount of property from the district (6.98 acres), which is 0.86 acre more than Option A and 0.36 acre more than Option L. The difference in land acquired between Options K and L is in the East Montlake Park area (to accommodate a constructed wetland and venting and pumping equipment for the tunnel). Option L would have an adverse effect on the setting and feeling of the northeast part of the historic district, as well as an adverse effect on the setting and feeling of individually eligible properties at the east end of East Shelby Street. Option K has no adverse effect on the setting of the district or any individually eligible properties. Considering the relative quality and significance of the property acquired, taking a greater piece of the park, as under Option K, would be preferable to taking contributing properties, as under Option A. Minimization efforts under Option K would include landscape features resembling a lid and a partial lid to be constructed over portions of the new roadway in the Arboretum adjacent to the historic district, and providing pedestrian and bicyclist connections between the historic district and the Arboretum. Because Option K would not have an adverse effect on the historic district, it is being treated as a *de minimis* finding, and no mitigation would be necessary. Option A would use the least amount of property from the Montlake Historic District at 6.28 acres. However, beyond what the other options acquire, Option A would acquire two houses that are contributing



Exhibit 55. Preliminary Least Harm Analysis by 23 CFR 774.3(c)(1) Factors^a

elements to the district (for the construction of the new bascule bridge); acquire 0.12 acre from along Montlake Place and 24th Avenue East, affecting the parcels of four contributing properties, including the individually eligible house at **2220 East Louisa Street**; and acquire 0.51 acre from the NOAA Northwest Fisheries Science Center property noted above. Both Options A and L would have an adverse effect on the historic district. The relative severity of the remaining harm after mitigation from these two options would depend on the mitigation agreed on through the Section 106 process.

Option A is the only option that uses any portion of the property at **2220 East Louisa Street**. Option A with the Lake Washington ramps suboption would not acquire the 0.12-acre section from along Montlake Place and 24th Avenue East and thus would not use the property at **2220 East Louisa Street**. Options K and L do not use any property from 2220 East Louisa Street.

Viewing the **Washington Park Arboretum** as a historic property, none of the options would have an adverse effect under Section 106. Option K requires the greatest amount of property from the Arboretum.

Option K has the greatest effect on **Foster Island**, both from construction and change to setting after construction.

The Canoe House experiences a *de minimis* impact under all three options, all of which require an underground easement.

The Montlake Cut also experiences a *de minimis* impact under all three options, but Options A and L have the greatest impact and permanently acquire land from the shores of the Cut, where Option K only requires an underground easement.

For the **Pavilion Pedestrian Bridge and the North and South Pedestrian Bridges**, there would be no use under any option except for the suboption to Option L. Because the historic bridges must be removed to accommodate the road widening under this suboption to Option L, no minimization efforts are possible. Mitigation measures would be determined through the Section 106 consultation process.

Conclusion:

The preceding discussion suggests that, for **park and recreation resources**, Option A would have the least overall harm on four of the five resources (Ship Canal Waterside Trail, East Montlake and McCurdy parks, Washington Park Arboretum, and Arboretum Waterfront Trail) as it relates to Factors 1 and 2. In addition, Option A would require the least acquisition of park and recreation resource property (4.95 acres). Construction durations would be less than the other options.

Option K is the only option for which there would be no Section 4(f) use of the Ship Canal Waterside Trail. However, it would have the greatest harm on the University of Washington Open Space and the Washington Park Arboretum. It also would require the most acquisition of park and recreation property (7.65 acres).

Option L would require acquisition of 6.95 acres of park and recreation resource property.

Both Options K and L would require longer construction durations than Option A; Option A would have the shortest construction timeline.

Both Options K and L would allow for similar mitigation at **East Montlake Park** and the **University of Washington Open Space**, although Option K would require relocation of the Waterfront Activities Center. Option A would cause the least harm to the University of Washington Open Space and East Montlake Park because the duration of construction and land converted from recreation to transportation uses would be less (where a use of a Section 4(f) resource would be taking place), and there would be no closures of the Waterfront Activities Center and the Canoe House during construction.

Of the ten Section 4(f) **historic properties** where a least harm differentiation comparison can be made, Option K would cause the least overall harm at five properties. Option A would use the most acreage from the historic district and would have an adverse effect on both the NOAA Northwest Fisheries Science property and the Montlake Historic District. Option A is the only option that would use any property from 2220 East Louisa Street.

Factor 3: “The relative significance of each Section 4(f) property”; and

Factor 4: “The views of the official(s) with jurisdiction over each Section 4(f) property”



Exhibit 55. Preliminary Least Harm Analysis by 23 CFR 774.3(c)(1) Factors^a**Discussion:**

There is no differentiation between options in regard to **Bagley Viewpoint**.

Of the five Section 4(f) **recreation resources** where a least harm differentiation comparison can be made, the following categorization can be made with respect to the “significance” of those resources based on the views of agency officials with jurisdiction over the respective Section 4(f) properties. This categorization is based on discussions with jurisdictional agency officials while conducting coordination activities over the course of the SR 520, I-5 to Medina project, not on explicit responses made by agency officials related to Factors 3 and 4:

- **Washington Park Arboretum** and the **Arboretum Waterfront Trail**. These resources receive a very high number of visitors and the park is the site of various educational, natural, and community events. The Arboretum collection is nationally and internationally renowned. The trail provides an opportunity for viewing wetlands and wildlife that is unusual in the Seattle urban environment
- **Ship Canal Waterside Trail**. The trail is a link in the City of Seattle’s bicycle recreational trail system and provides public access to the Montlake Cut.
- **University of Washington Open Space**. With all the resources (open space, the Waterfront Activities Center, and the Canoe House), under one master campus plan, with the high numbers of visitors, and with high visibility within the campus, the University of Washington Open Space and its recreation facilities are a significant feature within the study area.
- **East Montlake Park and McCurdy Park**. These parks are the only parks evaluated that do not have master park plans. While they are recognized as significant resources, they lack the high number of users of the resources detailed above. Because of their neighborhood orientation, they do not have the greater recognition that the Arboretum or the University of Washington has. While the Ship Canal Waterside Trail and the Arboretum Waterfront Trail are located within these parks, they have been evaluated independently from these resources.

Fire Station #22 and the Evergreen Point Bridge experience the same use regardless of option. Of the ten Section 4(f) **historic properties** where a least harm differentiation comparison can be made, the following categorization can be made with respect to the “significance” of those properties. The SHPO has confirmed the significance of these properties.

- **NOAA Northwest Fisheries Science Center**. The parcel that contains the NOAA Northwest Fisheries Science Center has multiple buildings, but only three of them are eligible for the NRHP, and only one is a contributing element to the Montlake Historic District. They are eligible under Criteria A and C.
- **Montlake Historic District**. This historic district is eligible for the NRHP under Criterion C and contains 109 properties within the APE that are eligible for the NRHP as contributing elements, including one that is individually listed. Thirty-five of these contributing properties are also individually eligible for the NRHP, including the house at **2220 East Louisa Street**. This is a large and highly intact district, and the only historic district that experiences a use by the project.
- **2220 East Louisa Street**. The residence at 2220 East Louisa Street has been determined individually eligible for the NRHP under Criterion C for its distinctive characteristics of 1930s Tudor style architecture. It is also a contributing element to the Montlake Historic District.
- **Montlake Cut**. This section of the Lake Washington Ship Channel is listed in the NRHP as part of the “Hiram M. Chittenden Locks and Related Features of the Lake Washington Ship Canal,” which is eligible under Criteria A and C for its significant contribution to the development of the Puget Sound region and as an outstanding engineering accomplishment.
- **Canoe House**. The Canoe House is listed in the NRHP under Criterion C as a rare example of an architectural type developed in the early years of aviation.
- **Pavilion Pedestrian Bridge**. The Pavilion Pedestrian Bridge has been determined individually eligible for the NRHP under Criterion C for its WPA-influenced design.



Exhibit 55. Preliminary Least Harm Analysis by 23 CFR 774.3(c)(1) Factors^a

- **North and South Pedestrian Bridges.** The North and South Pedestrian Bridges have been determined eligible for the NRHP under Criterion C for their outstanding engineering and their design by a master structural engineer.
- **Washington Park Arboretum.** The Arboretum is eligible for the NRHP under Criteria A and C as a planned landscape associated with the Olmsted Brothers and other master designers.
- **Foster Island.** Foster Island is presumed eligible for the NRHP as a TCP under Criteria A and D. It is culturally significant to Native American tribes of the area. TCPs are relatively rare, and this is the only location acknowledged or presumed as a TCP in the study area.

Conclusion:

The preceding discussion suggests that Option A would have the “least harm” as it relates to Factors 3 and 4 for **recreation resources**.

Option K would have no Section 4(f) use at the **Ship Canal Waterside Trail**.

All options affect the **Washington Park Arboretum**. Option K would substantially alter the current features of the park on Foster Island by removing the natural vegetation and replacing it with a landscaped berm. Option A would affect the Arboretum Waterfront Trail for the shortest construction duration. Options K and L would affect the Arboretum Waterfront Trail for 3 to 4 years longer.

Option A would not affect the relative significance of the **University of Washington Open Space** recreation facilities. Options K and L would affect multiple facilities that contribute to the significance of the open space as a recreational resource eligible for protection under Section 4(f).

At **East Montlake and McCurdy parks**, Option A would have the least overall harm because it would require the least park acquisition.

For **historic properties**, all ten are either listed in or determined eligible for the NRHP, which necessitates equal treatment under the regulations of Section 4(f) and Section 106.

The **NOAA Northwest Fisheries Science Center** would experience a use under each option, but under Options K and L, it would be *de minimis*.

The **Montlake Historic District** would experience a use under each option, but under Option K it would be *de minimis*. Option A is the only option that would remove contributing properties, but Option L would require more property than Option A and would have a more severe adverse effect on a larger section of the district.

2220 E. Louisa Street would only experience a use under Option A and it would be *de minimis*.

The **Montlake Cut** and the **Canoe House** experience a use under every option, but all uses are *de minimis*. For the **Montlake Cut**, Option K would have the least use as it would only use an underground easement. For the **Canoe House**, Options A and L would have the least use, as they require a much smaller underground easement than Option K.

The three **pedestrian bridges** only experience a use under Option L, sub option that adds capacity to Montlake Boulevard NE.

The **Arboretum** and **Foster Island** experience a use under each option, but Option K would substantially alter the current features of **Foster Island** by removing the natural vegetation and replacing it with a landscaped berm, having a potentially adverse effect on the presumed TCP.

The preceding discussion suggests that although each historic property would be affected differently by the options, Option A would have the “least overall harm” as it relates to Factors 3 and 4 for **historic properties** as a whole.



Exhibit 55. Preliminary Least Harm Analysis by 23 CFR 774.3(c)(1) Factors^a**Factor 5: “The degree to which each alternative meets the purpose and need for the project”****Discussion:**

Like its predecessor, the SR 520 Bridge Replacement and HOV Project, the SR 520, I-5 to Medina project purpose is to improve mobility for people and goods across Lake Washington within the SR 520 corridor from Seattle to Redmond in a manner that would be safe, reliable, and cost-effective, while avoiding, minimizing, and/or mitigating effects on affected neighborhoods and the environment. The No Build Alternative does not meet this purpose and need. Three design options for the 6-Lane Alternative are being evaluated.

Conclusion:

WSDOT, in cooperation with FHWA, will need to incorporate their determination on which design option best meets the purpose and need for the SDEIS as a whole (after considering all resource discipline reports) and apply it to Factor 5 in concert with the analysis of options provided in this Draft Section 4(f) Evaluation.

Factor 6: “After reasonable mitigation, the magnitude of any adverse impacts to resources not protected by Section 4(f)”**Discussion:**

Of the 6-Lane Alternative design options, Option A has the least use of park properties protected by Section 4(f), and the least overall harm to historic properties as a whole. In terms of resources not protected by Section 4(f), Option A has the fewest impacts of the design options on wetlands and in-water fill, as well as on aquatic resources and endangered species. If noise walls were included in the project, it would reduce noise considerably throughout the corridor. It would involve the least construction disruption of the design options. It would also have the least potential for disturbance of cultural resources on Foster Island.

Option K would have the greatest use of park properties of the design options and the highest potential to affect the presumed TCP of Foster Island, due to the extent of excavation and change in setting in this area. It would require approximately 2.5 acres of aquatic fill, which may make it unpermissible under Section 404(b)1 of the Clean Water Act. The large aquatic fill would also create the greatest impact of the design options on endangered species. Although noise mitigation would be determined by FHWA and WSDOT, the mediation proposal of quieter pavement and no noise walls would maintain or increase noise levels in violation of the NAC throughout the corridor.

Option L lies between Options A and K in terms of its use of 4(f) parks and historic properties. It would involve the greatest shading of wetlands and aquatic resources, and would require more in-water fill than Option A, but less than Option K. It would cause substantial construction disruption in the Montlake community. Its profile along the west approach bridge would optimize stormwater drainage and could allow for treatment of runoff to a higher quality; however, the height of this profile would create greater visual impacts for residents on the Madison Park shoreline than the profiles proposed for other options.

Conclusion:

Decision-makers will need to incorporate the overall SR 520, I-5 to Medina project SDEIS determination regarding the respective post-mitigation impacts of all design options and apply it to this consideration of least harm. In this way, impacts to non-Section 4(f) resources will play a substantial part (alongside impacts on properties protected by Section 4(f) that have been discussed in this evaluation) in identifying the option that has the “least overall harm” in light of the Section 4(f) statute.

Factor 7: “Substantial differences in costs among the alternatives”**Discussion:**

The following are design option construction cost estimates (including right-of-way acquisition costs) for the SR 520, I-5 to Medina project study area. WSDOT and a team of independent experts developed these estimates using the Cost Estimate Validation Process® (CEVP) approach. The estimates consider cost, schedule, risks, opportunities, and uncertainties. All cost estimates have been adjusted to account for risk and inflation and are shown in year of expenditure dollars (WSDOT 2009h).



Exhibit 55. Preliminary Least Harm Analysis by 23 CFR 774.3(c)(1) Factors^a

- Option A: \$3,392–\$3,668 million
- Option K: \$5,440–\$5,538 million
- Option L: \$3,932–\$4,012 million

Conclusion:

Option A would be the least costly design option. Option L would be slightly higher in cost than Option A. Option K would be the most costly design option.

^aThe seven factors listed in this table correspond with 23 CFR 774.3(c)(1)(i) through (vii).

What measures have been included in the project to minimize harm to the Section 4(f) properties?

Measures to minimize harm include those measures developed during the SR 520, I-5 to Medina project to reduce proposed impacts on Section 4(f) properties, as well as mitigation efforts proposed to offset the impacts on Section 4(f) properties from the project options. Such mitigation includes replacing land or facilities either with elements that are comparable in value and function or with monetary compensation that can be used to enhance the remaining Section 4(f) resource land.

The next step in alternatives development is to coordinate with officials with jurisdiction to identify all reasonable measures to minimize harm or mitigate for properties that have been identified as having impacts and adverse effects. The following direction is provided under 23 CFR 774.3(c):

If the analysis ... concludes that there is no feasible and prudent avoidance alternative, then the Administration may approve only the alternative that:

(1) Causes the least overall harm in light of the statute's preservation purpose. The least overall harm is determined by balancing the following factors:

- 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.*

(2) The alternative selected must include all possible planning, as defined in Part 774.17, to minimize harm to Section 4(f) property.

Reasonable measures carried forward for consideration to minimize harm or mitigate for adverse impacts and effects in compliance with 23 CFR 774.17 are discussed below. This section discusses measures to minimize harm for all Section 4(f) properties where it has been determined that a use would occur.

General Measures to Minimize Harm

In addition to alignment changes, WSDOT has made efforts wherever feasible to change the corridor design in ways that reduce effects on Section 4(f) properties. For example, efforts to narrow the highway footprint through Montlake have reduced effects on East Montlake and McCurdy parks; the current design options for SR 520 range from approximately 170 to 270 feet wide in this area, compared to between 300 and 350 feet for the Draft EIS design options. Option A has a footprint of 162 feet across Foster Island in the Washington Park Arboretum, compared to a width of up to 430 feet for the Pacific Street Interchange in the Draft EIS. However, the high concentration of parks and historic properties in the immediate project area makes it infeasible to achieve the project purpose of improving mobility without some use of Section 4(f) properties. Because of the density of development and the proximity of other sensitive features within the study area, effects on Section 4(f) properties could not be avoided. Effects have been minimized by incorporating the following measures and features into the design of the project:

- The new Lake Washington Boulevard west-to-south off-ramp and north-to-east on-ramp were located close together within the



existing WSDOT right-of-way to minimize visual effects on the park.

- The new ramps and mainline structures near the Washington Park Arboretum, while elevated, were designed to be below the existing tree line to minimize adverse visual effects. In addition, these structures would be designed to reduce their visual bulk.
- Depending on the option, sound walls would substantially reduce noise levels at sensitive receptors adjacent to the highway, including most parks, recreation facilities, and historic properties.
- Under Option A, removing the Montlake freeway transit stop would reduce the width of the SR 520 footprint and minimize property acquisition in the Montlake Historic District.
- Under all options, new lids have been designed to cover the following locations: I-5 at the East Roanoke Street crossing; SR 520 at 10th Avenue East and Delmar Drive East; SR 520 at Montlake Boulevard and 24th Avenue East; and, depending on the option, SR 520 at Foster Island and the new intersection of Montlake Boulevard NE and NE Pacific Street. Landscape features that resemble lids would go over the proposed turnaround ramp at Lake Washington Boulevard East. These lids would be landscaped and would have pedestrian crossings, providing a new green space in each area and reuniting the communities on either side of the roadway. The landscaped lids would also help minimize the visual and audible effects of SR 520, I-5, and the turnaround ramp to SR 520.
- Under all options, a narrower footprint with 4-foot inside shoulders and 11-foot general-purpose lanes has been used in an effort to limit the footprint effect of the project.

General efforts that could minimize effects on historic properties include the following:

- Monitoring and ensuring compliance with local noise regulations for construction and equipment operation
- Installing landscaping or landscaped buffers to compensate in those areas where buffer zones would be removed or reduced, and where new or relocated traffic lanes would intrude on the character of a historic district or the settings of individual historic properties



- Protecting façades of affected historic buildings from an accumulation of excessive dirt and dust during construction, and/or cleaning them in an appropriate manner at the conclusion of construction. WSDOT would consult with the SHPO and/or the Seattle Historic Preservation Officer before implementing any protection or cleaning methods.
- Maintaining access to historic properties, except for unavoidable short periods during construction
- Locating any construction sheds, barricades, or material storage away from historic properties, and avoiding obscuring views of historic properties.

Efforts that could minimize effects on specific Section 4(f) properties include the following:

Bagley Viewpoint

To minimize harm, WSDOT would reconstruct Bagley Viewpoint after construction of the 10th Avenue East/Delmar Drive East lid. This incorporation into the lid would provide users the views of Portage Bay that once existed. The viewpoint would now benefit from long-term protection, as the viewpoint location on the lid over SR 520 would not be subject to invasive growth that could block the view.

Interlaken Park

Because of the lack of long-term or permanent use of Interlaken Park, WSDOT does not propose any additional measures to minimize harm, other than the use of best management practices (BMPs) during construction.

Bill Dawson Trail and Montlake Playfield

To minimize harm, WSDOT would implement the following measures:

- Prepare a detour plan in coordination with Seattle Parks and Recreation to address the manner in which the Bill Dawson Trail and users of Montlake Playfield would be rerouted during times of trail closure.
- Provide a plan for trail closure of the Bill Dawson Trail, including the following elements, as necessary:
 - Surfacing
 - Signage



- Pavement markings
- Assist Seattle Parks and Recreation in developing a planting plan for and revegetating the Portage Bay shoreline with appropriate species on land required for construction.
- Reconstruct the Bill Dawson Trail along a modified alignment within WSDOT right-of-way.

East Montlake and McCurdy Parks

To minimize harm, WSDOT would implement the following measures:

- Assist the City of Seattle in revegetating the Union Bay shoreline with appropriate species and developing a planting plan.
- Coordinate with Seattle Parks and Recreation to determine property needs and just compensation based on the fair market value.
- Prepare a detour plan (if available) in coordination with Seattle Parks and Recreation to address the manner in which on-street bicycle traffic and the Ship Canal Waterside Trail would be rerouted during times of trail closure.
- Replace parking spaces in the immediate vicinity of the parks upon completion of construction.

Washington Park Arboretum and Arboretum Waterfront Trail

To minimize harm, WSDOT would implement the following measures:

- Prepare a detour plan (if available) in coordination with the University of Washington and the City of Seattle to address the manner in which Arboretum Waterfront Trail users and users of Foster Island would be rerouted during times of trail closure.
- Provide a plan for trail closure of the Arboretum Waterfront Trail, including the following elements, as necessary:
 - Surfacing
 - Signage
 - Pavement markings
- Assist the University of Washington and the City of Seattle in revegetating Foster Island with appropriate species and developing a planting plan.



- Coordinate with the University of Washington and the City of Seattle to determine property needs and just compensation based on the fair market value to replace lost value from acquisitions on Foster Island.
- Reconstruct portions of the trail disturbed during project construction.

University of Washington Open Space

To minimize harm, WSDOT would implement the following measures:

- Assist the University of Washington in revegetating the open space along the Montlake Cut shoreline with appropriate species and developing a planting plan.
- Coordinate with the University of Washington to determine property needs and just compensation based on the fair market value.
- Coordinate with the University of Washington for replacement of parking spaces in the immediate vicinity of the recreation facilities upon completion of construction.

For Options K and L only, to minimize harm, WSDOT would:

- Assist the University of Washington in the relocation of the Waterfront Activities Center.
- Identify a location for replacing the climbing wall, the East Campus Bicycle Route, and associated pedestrian amenities.

Governor Albert D. Rosellini Bridge/Evergreen Point Bridge

The Evergreen Point Bridge would be removed under all options of the 6-Lane Alternative. No minimization efforts are recommended.

Montlake Historic District

As noted above, there are no feasible and prudent avoidance alternatives for the Montlake Historic District. To minimize harm to the district, a new landscaped lid has been designed to cover SR 520 from Montlake Boulevard to 24th Avenue East. Under Option K, landscape features that resemble lids would go over the proposed turnaround ramp at Lake Washington Boulevard East. All of these lids would be landscaped and have pedestrian crossings, providing a new open space in each area. The lid over SR 520 would also visually shield the area of



the district and those individually eligible properties that are adjacent to SR 520 from the roadway and would help to decrease noise. In addition, the lid over SR 520, as a green space with pedestrian crossings, would serve to partially reunite the north and south sections of the Montlake community currently separated by SR 520.

NOAA Northwest Fisheries Science Center

Under Option A, the project would only remove those buildings on the property that have been determined not eligible for the NRHP. The historic buildings, their access, and the land immediately surrounding them would not be removed. Options K and L would not permanently acquire any property from this site. Under all options, the portion of the property that will be used for construction easement will be restored once construction is completed. The construction easement will not encroach on the area of the property where the historic buildings stand. WSDOT would work with the NOAA to assist them in adapting the facility so that they could continue using it to fulfill their mission if possible.

Pavilion Pedestrian Bridge

The Pavilion Pedestrian Bridge would be removed under the suboption to Option L to accommodate widening of the roadway for increased traffic capacity. Due to the location of the bridge, it cannot be avoided if this suboption is selected; no minimization measures are possible. Mitigation would be provided as determined appropriate through the Section 106 consultation process.

North and South Pedestrian Bridges

The North and South Pedestrian bridges would be removed under the suboption to Option L to accommodate widening of the roadway for increased traffic capacity. Due to the location of the bridges, they cannot be avoided if this suboption is selected; no minimization measures are possible. Mitigation would be provided as determined appropriate through the Section 106 consultation process.



What measures are proposed to mitigate for unavoidable use of Section 4(f) properties?

Throughout the design process for the proposed project, care has been taken to avoid and minimize adverse effects on park and recreation resources and on historic properties, where possible. Because of the density of development in the project vicinity, the narrow existing highway right-of-way, and the fact that the original highway bisected several parklands and the neighborhood that would become the Montlake Historic District, effects on park and recreation resources and on historic properties could not be avoided in many cases. All 6-Lane Alternative options consider measures to reduce noise levels at sensitive receptors adjacent to the highway, including at most park and recreation properties and at many historic properties. (See Section 5.7 of the SDEIS for further discussion of noise mitigation.)

Although they are not considered mitigation measures, the lids included in all project options would have beneficial effects in connecting existing parks and historic neighborhoods. In addition, they would provide additional passive open space for community use and would help visually screen the highway from historic properties.

Following are possible mitigation measures for the identified project construction effects:

- BMPs, including those already developed in WSDOT construction manuals, would be implemented to protect recreation resources and historic properties from construction-related effects such as dust, vibration, lighting glare, and accidental damage from construction equipment.
- Trails and bicycle routes would be temporarily routed around construction sites to minimize trail closures. Trails would be kept open as often as safely possible.
- Construction would require periodic closures of the Arboretum Waterfront Trail and the Bill Dawson Trail beneath SR 520 and the Arboretum Waterfront Trail access at East Montlake Park. Construction would be coordinated to avoid simultaneous closures of these two locations and to maintain trail access from at least one direction.



- Under Option K, the Waterfront Activities Center would be dismantled. Replacement facilities would be provided for boat rentals until the Waterfront Activities Center was replaced. A new center would be built at the location of the original facility upon completion of construction.
- Detour routes and traffic control measures would be implemented to provide access to University of Washington recreational activities. Construction closures would be timed to minimize effects on large events.
- During construction at East Montlake Park, an alternate canoe/kayak launch point and associated parking would be identified.
- WSDOT, the City of Seattle, the University of Washington, and other appropriate regulatory agencies will evaluate the potential for determining the best methods for protecting specimen trees and important vegetation in the Arboretum.
- Planting strips along Lake Washington Boulevard and Montlake Boulevard would be restored.
- Construction areas within parks would be regraded and landscaped (although the vegetation would not be as mature as what previously existed).

Mitigation may also include replacement of park lands, and enhancement of existing park and recreation properties in accordance with applicable plans. The process to identify the types of properties that could work for mitigation of park lands as well the specifics of how the mitigation would be achieved are detailed in Attachment 2, Parks Mitigation Technical Memorandum.

The remainder of this section provides more detailed suggested mitigation measures related to specific properties.

What mitigation is proposed for parks and recreation resources?

Bagley Viewpoint

- A new viewpoint would be designed and constructed on the 10th Avenue East/Delmar Drive East lid to recreate the original intended panoramic views of Portage Bay and the Cascade Mountains.



East Montlake and McCurdy Parks

- If MOHAI has not moved to another site before construction, WSDOT would assist MOHAI in moving to suitable replacement facilities. WSDOT would also compensate Seattle Parks and Recreation and the Seattle-King County Historical Society for the loss of the MOHAI facilities in accordance with applicable WSDOT policies and regulations for right-of-way acquisition.
- WSDOT would coordinate with the City of Seattle and the University of Washington to investigate opportunities to restore and enhance the shoreline wetlands and/or protect the wetland buffer area.

Washington Park Arboretum

- Affected park property used for construction easements would be replaced and restored to park use when construction was completed. WSDOT is working with the City of Seattle and the University of Washington to identify additional appropriate replacement land for permanently acquired park property.
- Trees and other vegetation would be moved and saved, or replanted, to mitigate effects on vegetation that was removed during construction.
- WSDOT, the City of Seattle, the University of Washington, and other appropriate regulatory agencies will evaluate the potential for shoreline and wetland restoration on both sides of SR 520 on Foster Island, consistent with the Washington Park Arboretum Master Plan. WSDOT has developed initial wetland and aquatic mitigation reports that identify potential mitigation projects for shoreline, wetland, and aquatic mitigation. WSDOT will continue to work with the City of Seattle, the University of Washington, and other appropriate regulatory agencies to develop concepts for some of the top proposals for the Union Bay and Arboretum areas. For example, potential mitigation could include riparian restoration along Arboretum Creek, riverine wetland enhancement in the Arboretum area, palustrine wetland restoration and lake-fringe wetland enhancement in the Union Bay area, and shoreline restoration in both the Arboretum and Union Bay areas.



University of Washington Open Space

- WSDOT would work with the University of Washington to replace lost functions of property acquired at the University of Washington Open Space and lost parking.

What mitigation is proposed for historic properties?

According to 23 CFR 774.17(2), when considering all reasonable measures to minimize harm or mitigate for adverse impacts and effects, historic properties must be addressed in compliance with 36 CFR Part 800:

With regard to historic sites, the measures normally serve to preserve the historic activities, features, or attributes of the site as agreed by the Administration and the official(s) with jurisdiction over the Section 4(f) resource in accordance with the consultation process under 36 CFR Part 800.

Under 36 CFR Part 800, if there are any adverse effects on historic properties, the public must be involved in the resolution of these adverse effects during the Section 106 consultation. Agency officials must provide the public with information about the project and its effects on historic properties, and seek public comment and input. At the conclusion of the process, a MOA is executed. This document records the terms and conditions agreed upon to resolve the adverse effects of the project on historic properties. The agency, the SHPO, and other consulting parties, as appropriate, sign the MOA. For this project, FHWA and WSDOT would coordinate with the SHPO and any other interested consulting parties on any mitigation measures proposed for historic properties. In addition, FHWA and WSDOT would include coordination with the City of Seattle Historic Preservation Officer on any mitigation measures proposed for historic properties within Seattle. Section 106 consultation is ongoing, and decisions on specific measures to resolve adverse effects will involve FHWA, WSDOT, SHPO, and any interested consulting parties. Typical measures to resolve adverse effects on built environment properties can include:

- Documentation of a building or structure to Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) standards which can include photographs, measured drawings, and a written history component;



- Salvage and re-use of historic elements;
- Survey and documentation of properties on Historic Property Inventory Forms;
- Completion of National Register of Historic Places Inventory Nomination form;
- Installation of fencing or landscape screening
- Installation of historic markers
- Design of new project elements that is compatible with the historic property



Section 6(f) Resources

In addition to Section 4(f) regulations and the protection provided by them, parks and other recreation facilities acquired and/or developed using funds from the LWCF Act of 1965 (Title 16, USC, Section 460l) are protected from conversion to uses other than public recreation.

Section 6(f)(3) of that act prohibits grant-assisted resources from being converted without the approval of the NPS. That approval depends on mitigation through replacement with property of at least fair market value and of reasonably equivalent usefulness and location. The State of Washington RCO is the state agency that administers the LWCF.

In accordance with the LWCF policy manual (NPS 2008a), followed by the NPS and the RCO, a conversion results when the use or function of the recreation facility changes to uses or functions other than those for which the funding is approved, or when temporary closure of the facility is greater than 6 months.

What are the key elements of the Section 6(f) coordination plan?

Coordination for Section 6(f) has occurred concurrently with coordination on Section 4(f) properties because the agencies with jurisdiction or interest are essentially the same and because Section 6(f) also applies to some of the Section 4(f) properties. The entities involved include Seattle Parks and Recreation, the State of Washington Resource Conservation Office [RCO], the Arboretum Foundation, the U.S. Department of the Interior National Park Service [NPS], and the University of Washington. The following list summarizes coordination efforts conducted during the Draft EIS and SDEIS processes and future coordination:

- WSDOT conducts a technical work group as a forum for the agencies with jurisdiction or interest to identify the Section 6(f) properties to be affected by the proposed project and determine appropriate replacement properties. A draft memorandum outlining the tasks and progress of this work group is located in Attachment 1.



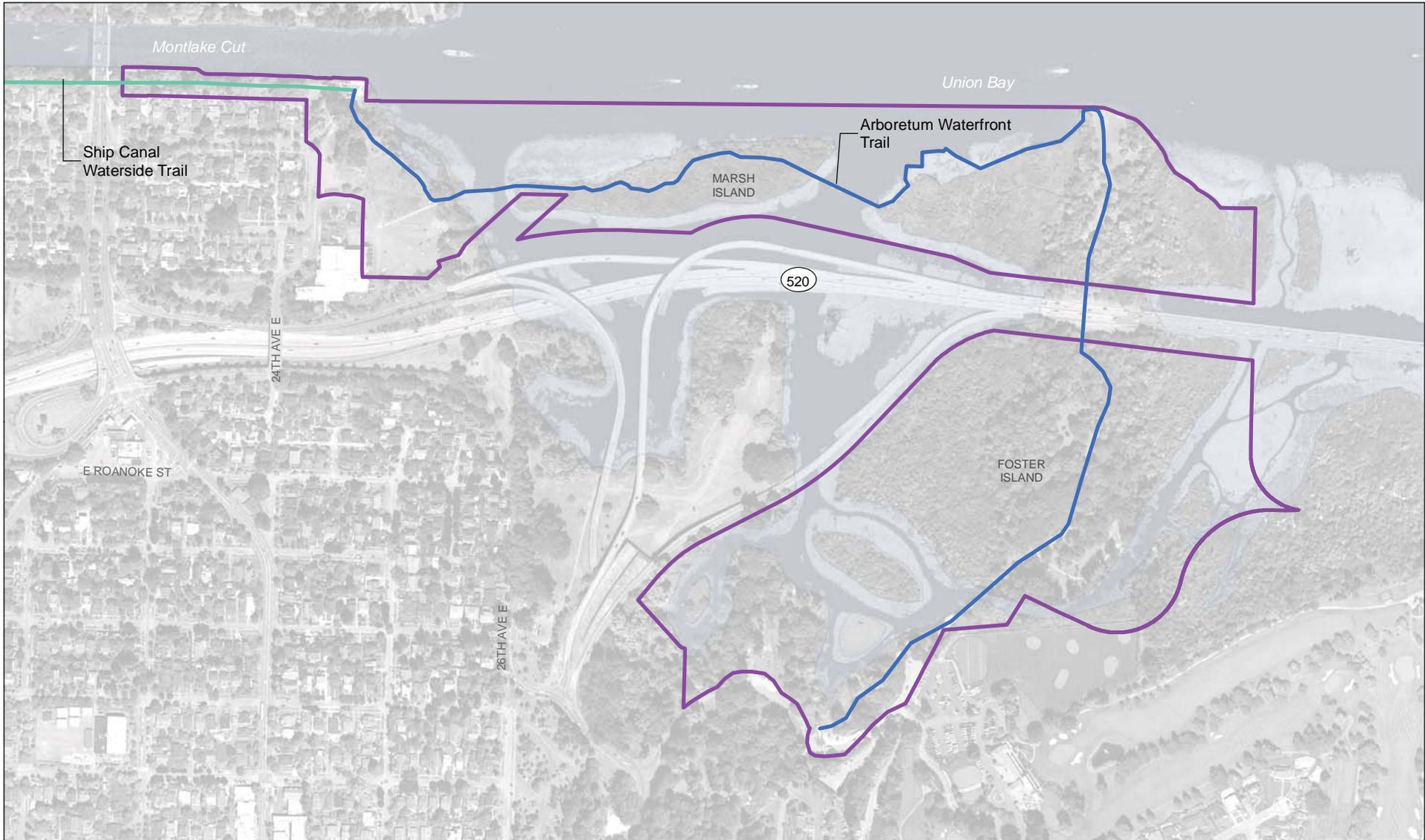
- WSDOT held meetings with individual agencies to coordinate on property ownership, policies, and roles and responsibilities specific to each agency involved.
- WSDOT will continue to coordinate with the Seattle Parks and Recreation, the Arboretum Foundation, the University of Washington, and other property owners, including the Washington Department of Natural Resources and the Port of Seattle to define and account for the effects.
- WSDOT will continue to coordinate with the RCO and NPS to conduct evaluation of the Section 6(f) properties affected and the proposed replacement properties. This will include conducting a public outreach opportunity for review and comment on the proposed replacement property.

What Section 6(f) resources occur in the study area?

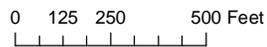
There are two LWCF-assisted resources protected by Section 6(f) in the study area – the Ship Canal Waterside Trail and the Arboretum Waterfront Trail. Section 6(f)-protected property includes these two trails, as well as the property upon which they are located. Various portions of the Section 6(f) property are owned by the City of Seattle, the University of Washington, and the Arboretum Foundation. Exhibit 56 shows the boundary of the Section 6(f) property. This map is based on a Section 6(f) boundary map dated August 12, 2009, which was developed by the City of Seattle in consultation with the RCO, NPS, and the University of Washington.

The Ship Canal Waterside Trail is 1,200 feet long and runs along the south side of the Montlake Cut. It is a pedestrian trail that extends from the City's West Montlake Park, passes beneath the Montlake Bridge, and ends at a viewing platform in East Montlake Park, where it connects to the Arboretum Waterfront Trail. Designed by the U.S. Army Corps of Engineers and the Seattle Garden Club, the trail was constructed in 1970 and designated as a National Recreation Trail a year later. Seattle Parks and Recreation maintains the trail. This trail provides views of the water and is used for sightseeing, picnicking, and fishing.





- Ship Canal Waterside Trail
- Arboretum Waterfront Trail
- Section 6(f) Boundary
- Waterbody



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 56. Section 6(f) Property Map

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The 0.5-mile-long Arboretum Waterfront Trail extends south from the Ship Canal, through East Montlake Park, then Marsh and Foster islands in the Washington Park Arboretum, to its southern terminus in the main area of the Arboretum. The existing trail passes under SR 520 in the middle of Foster Island. The trail was constructed in 1966 using a LWCF grant. In 1985, the boardwalk and trail around the Arboretum, overwater, and on Foster Island were redeveloped using a Washington State ALEA grant (Cottingham 2008). The trail is a pedestrian-use trail that provides access to the waterfront on Foster Island, McCurdy Park, and East Montlake Park; it is also used for viewing the wetlands systems on Marsh and Foster islands and for viewing wildlife.

WSDOT coordinated with the RCO, the NPS, Seattle Parks and Recreation, and the University of Washington to determine the effects on Section 6(f) resources. This analysis was prepared in accordance with *LWCF Federal Financial Assistance Program Manual 67* (NPS 2008b).

How will the project affect Section 6(f) resources?

Construction of each of the 6-Lane Alternative options would result in conversion of Section 6(f) property through permanent right-of-way acquisition, permanent easements, and temporary closure of portions of the property for more than 6 months during project construction.

Option A

Option A would result in conversion of 5.59 acres of Section 6(f) property: 3.05 acres of permanent acquisition, 0.03 acre of permanent easement, and 2.51 acres of construction easement that would be used for more than 6 months. Exhibit 57 summarizes the effects on Section 6(f) properties, and Exhibit 58 shows the location of the effects.

Option A would result in conversion of 0.22 acre of Section 6(f) property along the Ship Canal Waterside Trail for construction of the new bascule bridge across the Montlake Cut. Of this, 0.09 acre would be permanent acquisition. An additional 0.13 acre would be used as a construction easement for trail reconstruction and construction staging for up to 32 consecutive months. Trail users would be able to use the remainder of the trail outside the construction area via the trailhead at East Montlake Park to the east and via the trailhead in West Montlake



Park to the west. After construction, the affected section under the new bridge would be reopened for use.

Exhibit 57. Summary of Effects on Section 6(f) Property: Option A

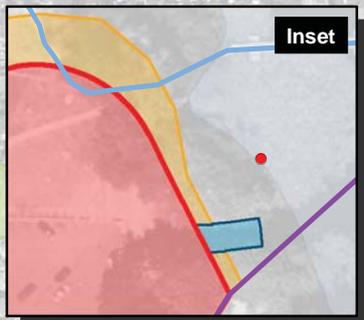
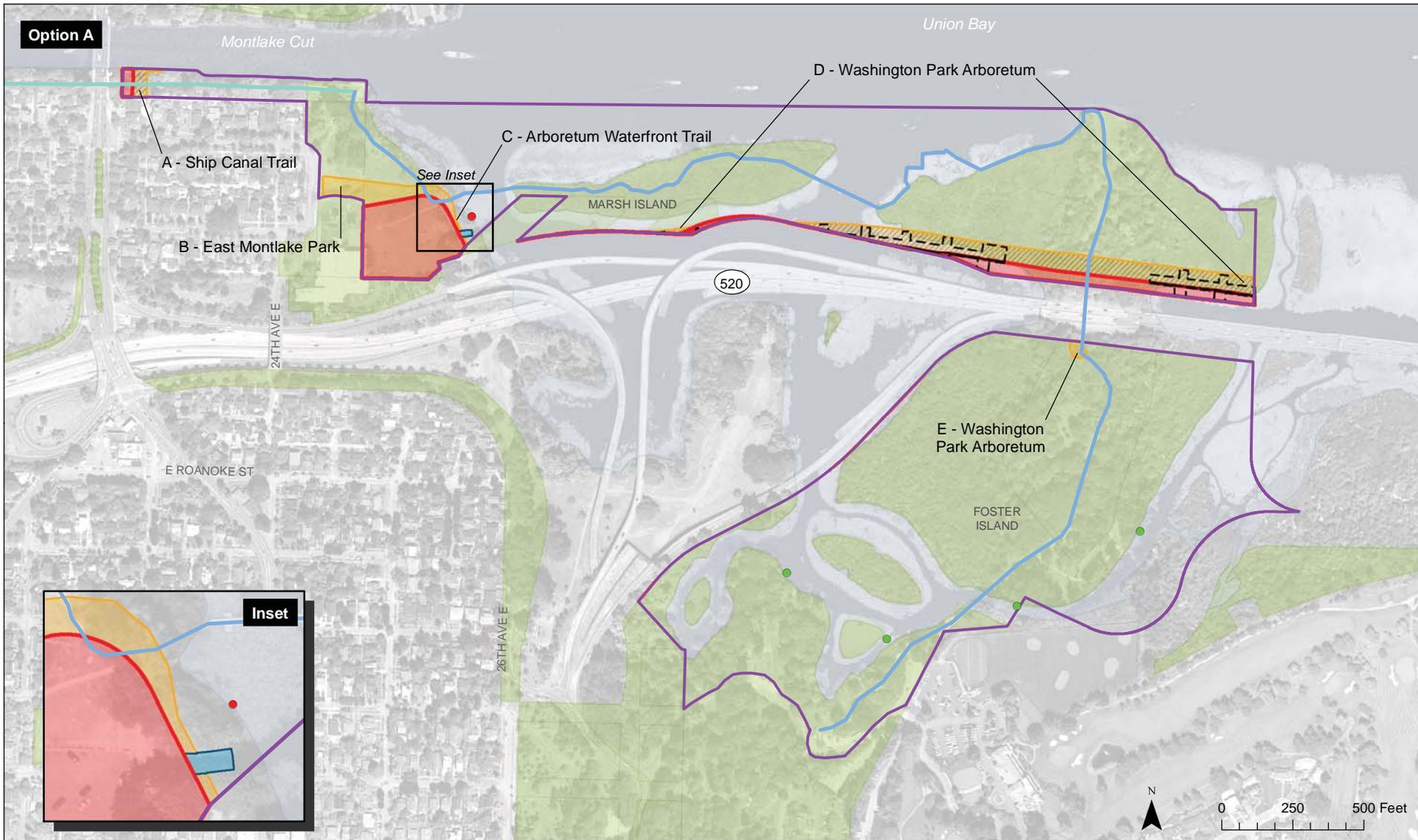
Location	Permanent Acquisition (acres)	Permanent Easement (acres)	Construction Easement ^a			Total Conversion (acres)
			Area (acres)	Construction Duration (months)	Section 6(f) Conversion?	
A – Ship Canal Waterside Trail	0.09	0	0.13	32	Yes	0.22
B – East Montlake Park	1.96	0.03	0.21	32	Yes	2.20
			0.43	5	No	
D – Washington Park Arboretum	1.0	0	2.17	32	Yes	3.17
With Lake Washington ramps suboption	1.06	0	2.57	32	Yes	3.63
E – Washington Park Arboretum	0	0	0.06	3	No	0
Totals	3.05	0.03	3.00	--	Yes – 2.51 acres	5.59
With Lake Washington ramps suboption	3.11	0.03	3.40	--	Yes – 2.91 acres	6.05

^a A construction easement would be considered a conversion if construction duration were more than 6 months.

Option A would result in conversion of 2.20 acres of Section 6(f) property in East Montlake Park to construct a stormwater facility and outfall. In East Montlake Park, 1.90 acres would be permanently acquired for bridge and roadway construction, and 0.21 acre of the property would be used as a construction easement for up to 32 consecutive months. An additional 0.06 acre would be permanently acquired for the stormwater facility, and a 0.03-acre permanent easement would be acquired for a stormwater outfall. An additional 0.43 acre would be used as a construction easement for up to 5 months and, therefore, would not be a conversion.

During construction, trail users would be able to use the Arboretum Waterfront Trail within East Montlake Park. After construction, the trail would be restored and vegetation in disturbed areas would be re-established. The trail would continue to provide views of the water and opportunities for viewing wildlife. The stormwater facility could become an amenity to the remaining East Montlake Park and provide a positive visual effect for trail users by replacing the existing parking lot





- Ship Canal Waterside Trail
 - Arboretum Waterfront Trail
 - Section 6(f) Boundary
 - Work Bridge within Section 6(f) Boundary
 - Waterbody
 - Park
 - Canoe/Kayak Landing Site
 - Canoe/Kayak Landing Site (closed during construction)
- Effects**
- Permanent Acquisition
 - Permanent Easement
 - Temporary Construction Easement
 - Temporary Construction Easement (Longer Than 6 Months)

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 58. Section 6(f) Affected Property: Option A

SR 520, I-5 to Medina Bridge Replacement and HOV Project

with a more natural-appearing landscape that would blend in with the adjacent shoreline. Unlike conventional stormwater retention/detention ponds, this treatment facility would not be contained within a fence or constructed of concrete materials.

Within the Washington Park Arboretum north of SR 520, Option A would cross Foster Island with a pier and span bridge. Construction would include access work bridges on and adjacent to Foster and Marsh islands that would be in place for about 32 consecutive months. This would result in conversion of 1.0 acre for permanent acquisition and 2.17 acres for continuous construction exceeding 6 months. The work bridges would be removed after completion of the permanent structure. On the south side of SR 520, a 0.06-acre construction easement would be used for trail construction for a period of approximately 3 months and, therefore, would not be a Section 6(f) conversion. After construction, the construction easement would be returned to park use.

During construction on Foster Island, the section of the Arboretum Waterfront Trail within construction areas would be closed. However, project construction would be staged so that the trail closure on Foster Island and the closure of the trail access from McCurdy Park would not occur at the same time, or would overlap for a period of less than 6 months. The remainder of the trail could be used via access from the trailhead near the Graham Visitors Center or the trailhead in McCurdy Park. Therefore, complete closure of the section of the trail between McCurdy Park and the SR 520 crossing on Foster Island would not occur, or would be less than 6 months. Any temporary closure of this section of the trail would not be a Section 6(f) property conversion. After construction, SR 520 would provide approximately 15 to 18 feet of clearance above the trail, which is higher than existing conditions.

Option A with the Lake Washington ramps suboption would result in conversion of up to 6.05 acres of Section 6(f) property: 3.11 acres of permanent acquisition, 0.03 acre of permanent easement, and 2.91 acres of construction easement that would be used for more than 6 months. The conversion of Section 6(f) property would be the same as described for Option A except within the Washington Park Arboretum on the north side of SR 520. At this location, there would be 1.06 acres of permanent acquisition and 2.57 acres of construction easement that would be used for up to 32 consecutive months.



Option K

Option K would result in conversion of 9.31 acres of Section 6(f) property: 7.48 acres of permanent acquisition, 0.43 acres of permanent easement, and 1.4 acres of construction easement that would be used for more than 6 months. Exhibit 59 summarizes the effects on Section 6(f) properties, and Exhibit 60 shows the location of the effects.

Exhibit 59. Summary of Effects on Section 6(f) Property: Option K

Location	Permanent Acquisition (acres)	Permanent Easement (acres)	Construction Easement ^a		Section 6(f) Conversion?	Total Conversion (acres)
			Area (acres)	Construction Duration (months)		
A – East Montlake Park	6	0.43	0.10	50	Yes	6.53
B – Washington Park Arboretum	1.48	0	1.30	32	Yes	2.78
			2.92	5	No	
C – Washington Park Arboretum	0	0	0.60	5	No	0
Totals	7.48	0.43	4.92	-	Yes –1.4 acres	9.31

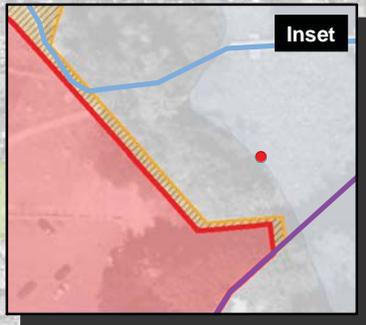
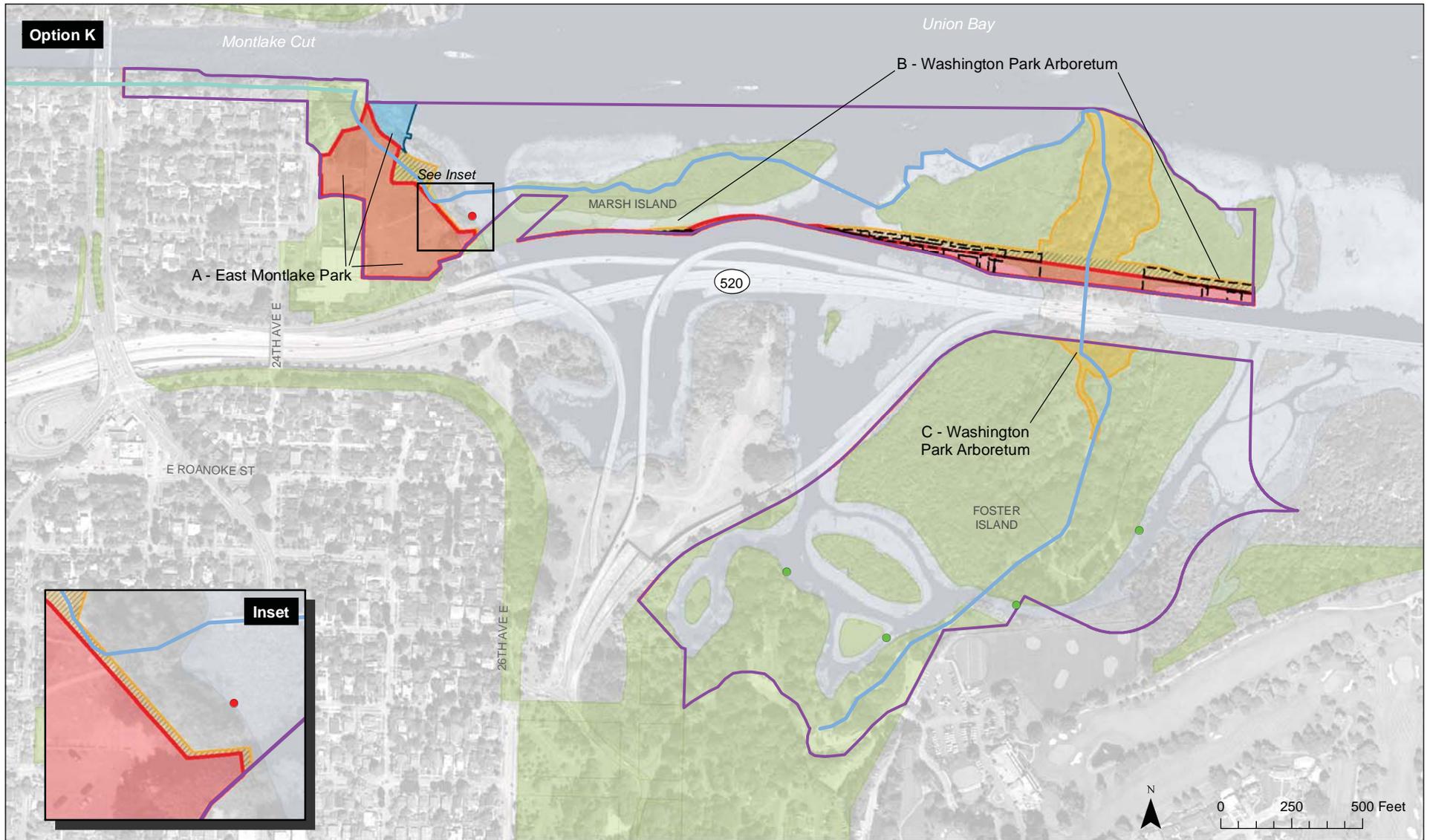
^a The construction easement would be considered a conversion if construction duration were more than 6 months.

There would be no conversion of Section 6(f) property along the Ship Canal Waterside Trail. Tunnel construction would make the trailhead within East Montlake Park inaccessible for about 50 months (about 4 years). However, the entire trail could be accessed from the trailhead in West Montlake Park.

In East Montlake Park, the conversion of Section 6(f) property would occur with 6 acres of Section 6(f) property permanently acquired for roadway and a stormwater facility and 0.10 acre of construction easement needed for the 50 months of construction. There would be a 0.43-acre permanent easement over the proposed tunnel beneath the Montlake Cut. Tunnel boring within this easement, occurring entirely below ground with no ground surface disturbance during construction.

During construction, trail users would be able to use the Arboretum Waterfront Trail within East Montlake Park. After construction, vegetation in disturbed areas of East Montlake Park would be re-established. The trail would continue to provide views of the water and opportunities for viewing wildlife. As described for Option A, the stormwater facility could provide a positive visual effect for trail users





- Ship Canal Waterside Trail
 - Arboretum Waterfront Trail
 - Section 6(f) Boundary
 - Work Bridge within Section 6(f) Boundary
 - Waterbody
 - Park
 - Canoe/Kayak Landing Site
 - Canoe/Kayak Landing Site (closed during construction)
- Effects**
- Permanent Acquisition
 - Permanent Easement
 - Temporary Construction Easement
 - Temporary Construction Easement (Longer Than 6 Months)

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 60. Section 6(f) Affected Property: Option K

SR 520, I-5 to Medina Bridge Replacement and HOV Project

by replacing the existing parking lot with a more natural-appearing landscape that would blend in with the adjacent shoreline.

Within the Washington Park Arboretum, SR 520 would cross Foster Island beneath a land bridge. The roadway would be at or slightly below the existing grade, but would be lidded by a large berm. The Arboretum Waterfront Trail would be reconstructed to pass over the land bridge. This design option would result in 2.78 acres of conversion within the Washington Park Arboretum: 1.48 acres of permanent acquisition and 1.30 acres of construction easement. There are three construction easements needed in this area. The one on the north side of SR 520 for placement of temporary work bridges would be in place for about 32 consecutive months and would be a conversion. In addition, a 2.92-acre construction easement would be needed north of the work bridges for construction of the berm and reconstructed trail, and a 0.6-acre construction easement would be needed south of SR 520. Construction in these two areas would occur for up to 5 months, and the easements would return to park use. Therefore, these areas do not constitute a Section 6(f) conversion.

Project construction would be staged so that trail closure on Foster Island and closure of the trail access from McCurdy Park would not occur at the same time, or would overlap for a period of less than 6 months. Therefore, the remainder of the trail outside construction areas could be accessed either from the trailhead near the Graham Visitors Center or from the trailhead in McCurdy Park.

Option L

Option L would result in conversion of 7.91 acres of Section 6(f) property: 3.88 acres of permanent acquisition, 0.09 of permanent easement, and 3.94 acres of construction easement that would be used for more than 6 months. Exhibit 61 summarizes the effects on Section 6(f) properties, and Exhibit 62 shows the location of the effects.

In East Montlake Park, there would be conversion of Section 6(f) property as a result of 3.14 acres of permanent acquisition (for a stormwater facility), a 0.09-acre permanent easement for a stormwater outfall, and a 0.73-acre construction easement (needed for construction equipment and staging for a period of 34 months). An additional 0.34 acre construction easement would be needed for construction of the stormwater facility but this would be for a period of up to three months and would not be a conversion. A portion of the conversion



located at the end of the Ship Canal Waterside Trail would close trail access from this location. However, the remainder of the trail could be accessed from the trailhead in West Montlake Park during project construction. After construction, trail access would be restored.

Exhibit 61. Summary of Effects on Section 6(f) Property: Option L

Location	Permanent Acquisition (acres)	Permanent Easement (acres)	Construction Easement ^a			Total Conversion (acres)
			Area (acres)	Construction Duration (months)	Section 6(f) Conversion?	
A – East Montlake Park	3.14	0.09	0.73	34	Yes	3.96
			0.34	3	No	
With suboption			1.02	34	Yes	4.23
C – Washington Park Arboretum	0.74	0	2.87	32	Yes	3.61
With suboption	0	0	2.87	31	Yes	3.61
D – Washington Park Arboretum			0.34	38	Yes	0.34
Totals	3.88	0.09	4.28	-	Yes – 3.94 acres	7.91
With suboption	3.88	0.09	4.28	-	Yes – 4.23 acres	8.20

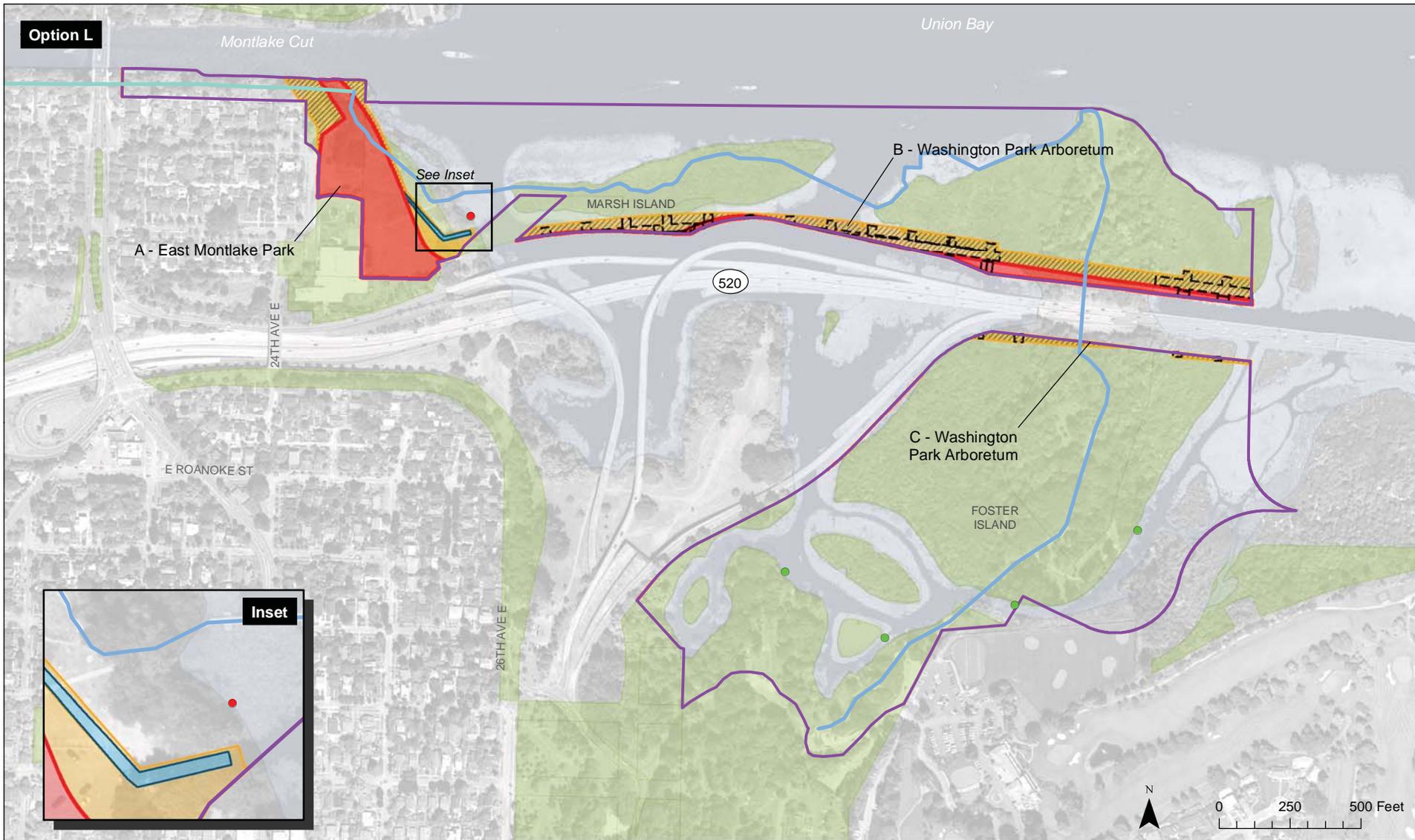
^a The construction easement would be considered a conversion if construction duration were more than 6 months.

During construction, detours would be provided for portions of the Arboretum Waterfront Trail within East Montlake Park.

After construction, vegetation in disturbed areas of East Montlake Park would be re-established. The trail would continue to provide views of the water and opportunities for viewing wildlife. As described for Option A, the stormwater facility could provide a positive visual effect for trail users by replacing the existing parking lot with a more natural-appearing landscape that would blend in with the adjacent shoreline.

Similar to Option A, SR 520 would cross Foster Island on a bridge. Option L would result in 3.95 acres of conversion within the Washington Park Arboretum: 0.74 acre of permanent acquisition and 3.21 acres of construction easement for temporary work bridges that would be in place for up to 38 months. Project construction would be staged so that closure of the Arboretum Waterfront Trail on Foster Island and closure of the trail access from McCurdy Park would not





- Ship Canal Waterside Trail
 - Arboretum Waterfront Trail
 - Section 6(f) Boundary
 - Work Bridge within Section 6(f) Boundary
 - Waterbody
 - Park
 - Canoe/Kayak Landing Site
 - Canoe/Kayak Landing Site (closed during construction)
- Effects**
- Permanent Acquisition
 - Permanent Easement
 - Temporary Construction Easement
 - Temporary Construction Easement (Longer Than 6 Months)

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 62. Section 6(f) Affected Property: Option L

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occur at the same time, or if they did occur at the same time, their construction periods would overlap for less than 6 months. Therefore, the remainder of the trail outside construction areas could be accessed either from the trailhead near the Graham Visitors Center or from the trailhead in McCurdy Park. After construction, SR 520 would provide approximately 10 to 12 feet of clearance above the trail, which is higher than existing conditions.

How will effects on Section 6(f) resources be mitigated?

The Section 6(f) statute (Title 16, USC, Section 460l) requires that lands acquired and/or developed using funds from the LWCF that are converted to uses or functions other than those for which the funding was approved must be replaced with other property. The replacement property must be of at least equal fair market value as the converted property, and of reasonably equivalent usefulness and location. Each 6-Lane Alternative option would result in conversion of Section 6(f)-protected property along waterfront trails in the Washington Park Arboretum, in East Montlake and McCurdy parks, and along the Montlake Cut.

Portions of the Arboretum Waterfront Trail were redeveloped using ALEA funds. WAC 286-42-050, which governs the ALEA program, was modeled on the federal LWCF Act. It has similar requirements for conversion of recreational lands developed using these funds. The replacement property must be of at least equal market value, reasonably equivalent or greater recreational usefulness and location, and must be administered by the same political jurisdiction as the converted property.

WSDOT and FHWA are coordinating with the RCO, the NPS, the City of Seattle, and the University of Washington to provide a replacement property mitigation package that meets the requirements of both Section 6(f) of the LWCF Act and the ALEA program. One mitigation package is being developed to satisfy both LWCF and ALEA. The process to identify the types of properties that could work, as well the specifics of how the mitigation would be achieved, are detailed in Attachment 2, Parks Mitigation Technical Memorandum.

After FHWA and WSDOT have identified a preferred alternative for the SR 520, I-5 to Medina: Bridge Replacement and HOV Project, and prior



to issuing the Final EIS, WSDOT will undertake a process to identify the specific parcels that will replace the converted Section 6(f) properties. The process will include environmental analysis associated with the development of the replacement properties, an opportunity for public comment on the analysis, and identification of the preferred property replacement. The results of this environmental review will be incorporated into the Final EIS.



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Attachment 1

Parks Mitigation Technical Memorandum

I-5 to Medina: Bridge Replacement and HOV Project

Draft Parks Mitigation Technical Memorandum



Prepared for

Washington State Department of Transportation
Federal Highway Administration

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December 2009

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- 1 Geographic Areas along SR 520 and Project Phasing
- 2 Summary Use by Section 4(f) Property
- 3 Section 6(f) Property Map
- 4 Summary of Effects on Section 6(f) Property: Option A
- 5 Section 6(f) Affected Property: Option A
- 6 Summary of Effects on Section 6(f) Property: Option K
- 7 Section 6(f) Affected Property: Option K
- 8 Summary of Effects on Section 6(f) Property: Option L
- 9 Section 6(f) Affected Property: Option L



Acronyms and Abbreviations

ALEA	Aquatic Lands Enhancement Account
CFR	Code of Federal Regulations
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
HOV	High-Occupancy Vehicle
I-5	Interstate 5
LWCF	Land and Water Conservation Fund
NOAA	National Oceanic and Atmospheric Administration
NPS	National Park Service
NRHP	National Register of Historic Places
RCO	Recreation and Conservation Office
RACp	Regulatory Agency Coordination process
SDEIS	Supplemental Draft Environmental Impact Statement
SR	State Route
TWG	technical working group
USC	United States Code
USDOT	U.S. Department of Transportation
UW	University of Washington
WSDOT	Washington State Department of Transportation



Introduction

The Washington State Department of Transportation (WSDOT) proposes to construct the Interstate 5 (I-5) to Medina: Bridge Replacement and High-Occupancy Vehicle (HOV) Project to replace the existing State Route (SR) 520 bridges, approaches, and portions of the highway leading to the bridges. The study area for this project (see Exhibit 1) contains parks, recreation areas, wildlife and waterfowl refuges, and historic sites that are considered of value as important resources under Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966 (49 USC 303[c]); Section 6(f) of the Land and Water Conservation Fund (LWCF) Act of 1965; and the Aquatic Lands Enhancement Account (ALEA). Project construction would result in both temporary and permanent effects on identified Section 4(f) and Section 6(f) resources in the study area. Federal, state, and local regulations, as well as WSDOT policy, require that WSDOT provide mitigation for effects to these resources.

What is Section 4(f)?

Section 4(f) refers to a special section of the Department of Transportation Act of 1966, which stipulates U.S. Department of Transportation (USDOT) agencies cannot approve the use of land for transportation projects from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply:

- There is no feasible and prudent alternative to the use of land, and
- The action includes all possible planning to minimize harm to the property resulting from such use.

Section 4(f) of the USDOT Act of 1966, applicable to all USDOT agencies, was set forth in Title 49 United States Code (USC), Section 1653(f). A similar provision was added to Title 23 USC Section 138, which applies only to the Federal-Aid Highway Program. Title 49 USC § 1653(f) was moved to 49 USC § 303 due to subsequent recodification of Title 49 USC in 1983. Both statutes are commonly referred to as Section 4(f).

Since 1966, Section 4(f) has undergone several changes. The most recent Final Rule on April 11, 2008, clarifies the 4(f) approval process and simplifies its regulatory requirements. In addition, the Final Rule moves the Section 4(f) regulation to Title 23 Code of Federal Regulations (CFR) Part 774.

What is Section 6(f)?

According to Section 6(f) of 16 USC § 460l-4, lands protected by the Land and Water Conservation Fund Act direct the Department of the Interior (National Park Service) to ensure replacement at equal value, location, and usefulness (known as the Section 6(f) land conversion). The easements impacted by the former project proposal required replacement of the property as mitigation to at least equal fair market value and of reasonable equivalent usefulness and location.

What is ALEA?

The Aquatic Lands Enhancement Account (ALEA) was established in 1984 with the passage of Revised Code of Washington Chapter 79.105 as a mechanism for income from 2.4 million acres of state-owned aquatic lands dedicated for the purpose of maritime trade, transportation, agriculture, and commerce, and are vital to the state's economy. ALEA is used to provide grant support for the purchase, improvement, or protection of aquatic lands for public purposes, and for providing and improving access to such lands.



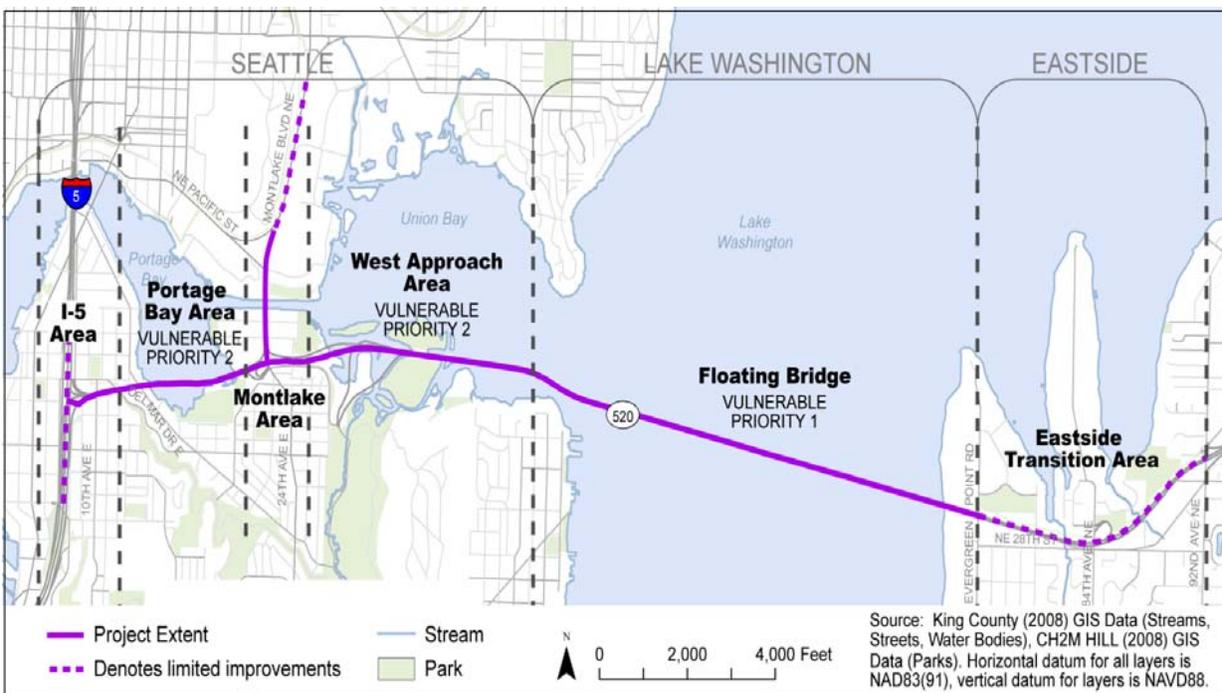


Exhibit 1. Geographic Areas along SR 520 and Project Phasing

Purpose

This memorandum is intended to supplement the draft Section 4(f)/6(f) analysis for the SR 520 Bridge Replacement and HOV Project, published in the I-5 to Medina: Bridge Replacement and HOV Project Supplemental Draft Environmental Impact Statement (SDEIS) for the project. It documents the background, processes, and results of planning from 2008 to the present for mitigation of project effects on Section 4(f) and Section 6(f) resources. This planning has taken place in cooperation with the agencies with jurisdiction over these resources and those that administer the 4(f) and 6(f) regulations.

In late 2011, a supplemental environmental document to disclose the preferred mitigation plan and conceptual design will be issued for public comment according to Section 6(f) regulations. This documentation will be part of the draft Section 6(f) evaluation, of which the draft Section 4(f)/6(f) analysis as mentioned above is the first component.

The SR 520 Parks Technical Working Group (TWG), convened in 2008, developed the mitigation opportunities identified in this document.



Other possible mitigation opportunities are described in the Draft Section 4(f)/6(f) Evaluation, to which this memo is an attachment. A primary focus of the Parks Technical Working Group has been to develop a preliminary pool of potential mitigation sites, which will serve as the foundation from which WSDOT will create a final mitigation plan. Ultimately, the information in this memorandum will support the development of mitigation agreements and the issuance of a final Section 4(f) evaluation and a Section 6(f) evaluation, known as an Environmental Impact Statement. As part of the development of the Section 6(f) Environmental Impact Statement (EIS), WSDOT will disclose for public review and comment the preferred mitigation plan in a supplemental document in late 2010.

Mitigation assumptions identified herein are based on the 6-Lane Alternative design options currently under consideration and the analysis in discipline reports prepared for the SDEIS, and reflect feedback provided by the agencies with jurisdiction. The extent and magnitude of the project's effects, and hence the specific mitigation requirements, will vary depending upon the alternative chosen. Identification of the preferred design option is expected to occur in early 2010. This decision, along with the associated mitigation commitments, will be documented in the Final EIS for the I-5 to Medina: Bridge Replacement and HOV Project.

The following sections of this memorandum identify the agencies with jurisdiction; summarize background information on parks mitigation planning for SR 520; identify the mitigation requirements for Section 4(f) and Section 6(f) resources; and describe the screening process for candidate mitigation sites and its preliminary results. The memorandum concludes with a discussion of the next steps in parks mitigation.

Agencies with Jurisdiction

Mitigation requirements under Section 4(f), Section 6(f), and ALEA are administered by the federal and state agencies responsible for enforcing these regulations. However, in reaching their determinations as to whether mitigation is satisfactory, these agencies give substantial weight to the opinions of the local agencies that own and manage park and recreational properties. Agencies responsible for administering Section 4(f), Section 6(f), and/or ALEA requirements include:



- Federal Highway Administration (FHWA)
- National Park Service (NPS)
- Washington State Recreation and Conservation Office (RCO)

Agencies with jurisdiction over the affected parks and recreational properties are:

- City of Seattle – Seattle Parks and Recreation
- University of Washington (UW)
- Washington State Department of Natural Resources

Recreation property purchased or developed with state ALEA grants has requirements similar to Section 6(f). Conversion of ALEA-funded recreation facilities to other uses requires replacement with lands of equivalent market value and recreation function within the same political jurisdiction of the converted property. The ALEA program is administered by the RCO, and ALEA and Section 6(f) requirements are being addressed simultaneously through the consideration of project impacts to Section 6(f) resources.

Background of SR 520 Park Mitigation Planning

Planning Prior to the Draft EIS

Analysis of the impacts of the SR 520 Bridge Replacement and HOV Project began in 2001. At that time, the alternatives under consideration were the 4-Lane Alternative and the 6-Lane Alternative (also referred to as the “6-Lane base”). WSDOT coordinated with the agencies with jurisdiction as part of SR 520’s Technical Committee. In 2005, WSDOT held a series of workshops with Seattle Parks and Recreation, the UW, and the Arboretum Foundation to discuss the possible impacts of the project on parks and recreational resources. These workshops included discussion of the Arboretum Master Plan and how it may relate to the project. Although some draft mitigation concepts were identified, no formal commitments resulted from the workshops.

Later in 2005, WSDOT began considering a group of design options to the 6-Lane Alternative, some of which had substantially different impacts from those of the 6-Lane base. One, the Pacific Interchange



option, had a larger footprint and more structures in the Arboretum. In 2006, WSDOT held a series of workshops with the UW (including Arboretum representatives) specifically related to the Pacific Interchange design option that assessed operations-level impacts on UW hospitals, UW stadium, and the Arboretum. These workshops also did not result in agreement on mitigation commitments. The SR 520 Bridge Replacement and HOV Project Draft EIS, published in August 2006, documented the effects of the 4-Lane and 6-Lane Alternatives and the 6-Lane design options, but deferred mitigation until a decision was made on a preferred alternative.

Agency Coordination Following the Draft EIS

To facilitate interagency coordination and environmental analysis for the I-5 to Medina: Bridge Replacement and HOV Project, WSDOT initiated the Regulatory Agency Coordination process (RACp) in 2007. The RACp agencies meet bimonthly as a group, while a series of smaller technical working groups (TWGs) meets separately to address specific issues. The Parks TWG was convened in November 2008 to specifically address impacts and mitigation of parks and recreation resources.

The Parks TWG was designed to establish an overall approach to addressing impacts to parks and recreation resources, and to provide a high-level review of how design options A, K, and L related to the regulatory framework. This review focused on consideration of impacts to Section 4(f) and Section 6(f) resources. The Parks TWG provided the first opportunity for discussion of parks and recreation impacts since the completion of the Draft EIS in 2006.

The purpose of the Parks TWG is to:

- Share information on the project's potential effects on parks and recreational facilities
- Generate and collectively address a key list of topics of concern
- Identify potential mitigation opportunities
- Review parks-related discipline reports
- Provide guidance on making design choices and evaluating impacts



- Provide updates on project progress, evaluation of impacts, and proposed mitigation

Members of the Parks TWG included representatives of FHWA, the UW, Seattle Parks and Recreation, the Washington RCO, and the NPS. WSDOT has met regularly with the Parks TWG to discuss progress and maintain a shared understanding of park issues.

Working in cooperation with the Parks TWG, WSDOT began consideration of possible mitigation for the use of Section 4(f) and Section 6(f) resources in November 2008. The mitigation process carried out by WSDOT and the Parks TWG is described in the “Mitigation Process Overview” section of this report.

Project Effects and Mitigation Requirements

Identified Section 4(f) and Section 6(f) Resources

A number of properties in the study area are protected resources under Section 4(f) and 6(f). The City of Seattle, the University of Washington, and the Washington Department of Natural Resources own various portions of these resources. These properties are described in detail in the Draft Section 4(f)/(6) Evaluation and depicted in Exhibits 2 and 3.

Use of Section 4(f) Properties

Each of the 6-Lane Alternative options forwarded for consideration in the SDEIS would result in a “use” of at least one property protected under Section 4(f). Exhibit 2 summarizes the use by Section 4(f) park and recreation property, as described in the Draft Section 4(f)/(6) Evaluation. Only those Section 4(f) properties that would experience a use are shown in Exhibit 2.



Exhibit 2. Summary Use by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Specific Section 4(f) Property Use after Measures to Minimize Harm ^a
Park and Recreation Resources			
Bagley Viewpoint	A	Yes	Permanent acquisition of entire Bagley Viewpoint (0.15 acre).
	K	Yes	Permanent acquisition of entire Bagley Viewpoint (0.15 acre).
	L	Yes	Permanent acquisition of entire Bagley Viewpoint (0.15 acre).
Interlaken Park	A	No	No permanent acquisition. Construction easement needed to reconstruct Delmar Drive East curbs and sidewalks; meets criteria for temporary occupancy exception.
	K	No	No permanent acquisition. Construction easement needed to reconstruct Delmar Drive East; meets criteria for temporary occupancy exception.
	L	No	No permanent acquisition. Construction easement needed to reconstruct Delmar Drive East; meets criteria for temporary occupancy exception.
Montlake Playfield	A	No	No permanent acquisition. Construction easement needed for temporary work bridge structure; meets criteria for temporary occupancy exception.
	K	No	No permanent acquisition. Construction easement needed for temporary work bridge structure; meets criteria for temporary occupancy exception.
	L	No	No permanent acquisition. Construction easement needed for temporary work bridge structure; meets criteria for temporary occupancy exception.
Bill Dawson Trail	A	No	No permanent acquisition. Detour provided for segment of trail closed and relocated during construction; meets criteria for temporary occupancy exception.
	K	No	No permanent acquisition. Detour provided for segment of trail closed and relocated during construction; meets criteria for temporary occupancy exception.
	L	No	No permanent acquisition. Detour provided for segment of trail closed and relocated during construction; meets criteria for temporary occupancy exception.
East Montlake and McCurdy Parks	A	Yes	Permanent acquisition of 3.7 acres of park property.
	K	Yes	Permanent acquisition of 6.0 acres of park property, and 0.43 acre of permanent underground easement.
	L	Yes	Permanent acquisition of 5.7 acres of park property.



Exhibit 2. Summary Use by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Specific Section 4(f) Property Use after Measures to Minimize Harm ^a
Ship Canal Waterside Trail	A	Yes	Permanent acquisition of 0.08 acre of the trail. Trail closure in construction area would disrupt trail connectivity.
	K	No	No permanent acquisition or construction easement. Temporary closure of trail access from East Montlake Park during construction; entire trail accessible from West Montlake Park and Montlake Boulevard.
	L	Yes	Permanent acquisition of 0.15 acre of the trail.
University of Washington Open Space	A	Yes	Permanent acquisition of 0.2 acre of University of Washington Open Space.
	K	Yes	Permanent acquisition of 0.1 acre of University of Washington Open Space, relocation of the Waterfront Activities Center, and permanent underground easement for tunnel.
	L	Yes	Permanent acquisition of 0.5 acre of University of Washington Open Space. Temporary closures of the Waterfront Activities Center and Canoe House and relocation of the climbing wall during construction.
Washington Park Arboretum	A	Yes	Permanent acquisition of 0.9 acre of park property.
	K	Yes	Permanent acquisition of 1.4 acres of park property.
	L	Yes	Permanent acquisition of 0.6 acre of park property.
Arboretum Waterfront Trail	A	Yes	Closure of the trail in the construction area on Foster Island. No detour route would be provided to maintain trail connectivity during construction. Does not meet criteria for temporary occupancy exception.
	K	Yes	Closure of the trail in the construction area on Foster Island. No detour route would be provided to maintain trail connectivity during construction. Does not meet criteria for temporary occupancy exception.
	L	Yes	Closure of the trail in the construction area on Foster Island. No detour route would be provided to maintain trail connectivity during construction. Does not meet criteria for temporary occupancy exception.
Historic Properties			
Governor Albert D. Rosellini Bridge/Evergreen Point Bridge	A	Yes	Removal of bridge. Adverse effect on historic property.
	K	Yes	Removal of bridge. Adverse effect on historic property.
	L	Yes	Removal of bridge. Adverse effect on historic property.



Exhibit 2. Summary Use by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Specific Section 4(f) Property Use after Measures to Minimize Harm ^a
National Oceanic and Atmospheric Administration (NOAA) Northwest Fisheries Science Center	A	Yes	Permanent acquisition of 0.51 acre of the parcel. Adverse effect on historic property under Section 106. ^b In addition, use of 0.20 acre for construction staging.
	K	Yes	Use of 0.17 acre for construction staging. Does not meet criteria for temporary occupancy exception. No adverse effect on historic property. ^b
	L	Yes	Use of 0.21 acre for construction staging. Does not meet criteria for temporary occupancy exception. No adverse effect on historic property. ^b
Montlake Historic District	A	Yes	Permanent acquisition of 6.08 acres of historic district (including two contributing properties). Adverse effect on historic district. ^b In addition, use of 0.20 acre of NOAA property for construction staging.
	Option A with Lake Washington ramps suboption	Yes	No acquisitions from the properties along East Montlake Place East and 24th Avenue East. Permanent acquisition of 6.2 acres of historic district, which is 0.12 acre less than Option A without the suboption. Adverse effect on historic district. ^a
	K	Yes	<i>De minimis</i> impact finding. No adverse effect on historic district. ^b See Attachment 1 for <i>de minimis</i> discussion.
	L	Yes	Permanent acquisition of 6.83 acres. Adverse effect on historic district. ^b
Washington Park Arboretum	A	Yes	Permanent acquisition of 0.9 acre of park property. No acquisition of significant historic elements. No adverse effect on historic property. ^b
	Option A with Lake Washington ramps suboption	Yes	Permanent acquisition of 0.9 acre of park property. No acquisition of significant historic elements. No adverse effect on historic property. ^b
	K	Yes	Permanent acquisition of 1.4 acres of park property. No acquisition of significant historic elements. No adverse effect on historic property. ^b
	L	Yes	Permanent acquisition of 0.6 acre of park property. No acquisition of significant historic elements. No adverse effect on historic property. ^b
Pavilion Pedestrian Bridge	A	No	No use.
	K	No	No use.
	L	No	No use.
	Option L with suboption	Yes	Removal of bridge to allow for widened roadway along Montlake Boulevard NE. Permanent acquisition of 0.6 acre of land. Adverse effect on historic property. ^b



Exhibit 2. Summary Use by Section 4(f) Property

Section 4(f) Property	Design Option	Section 4(f) Use?	Specific Section 4(f) Property Use after Measures to Minimize Harm ^a
North and South Pedestrian Bridges	A	No	No use.
	K	No	No use.
	L	No	No use.
	Option L with suboption	Yes	Removal of bridge to allow for widened roadway along Montlake Boulevard NE. Permanent acquisition of 0.024 acre of land for the North Bridge, and 0.031 for the South Bridge. Adverse effect on historic properties. ^b

^a Because all 6-Lane Alternative options use Section 4(f) properties, there are no prudent and feasible avoidance alternatives, and only the option that causes the least overall harm in light of the statute's preservation purpose may be approved.

^b All effects determinations to historic properties are preliminary and may change, subject to State Historic Preservation Officer concurrence.

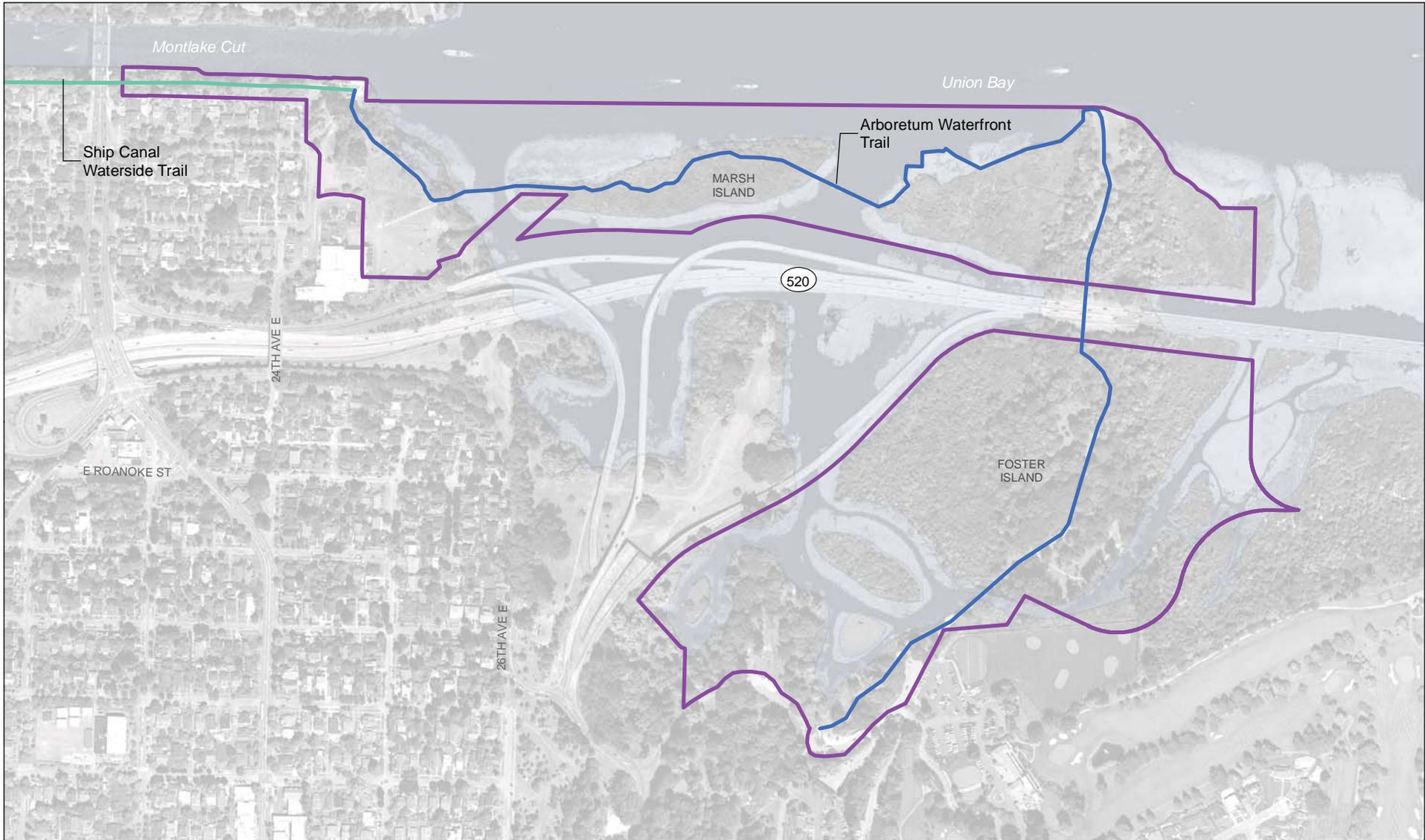
Conversion of Section 6(f) Resources

Construction of each of the 6-Lane Alternative options would result in conversion of Section 6(f) resources to non-recreational use through permanent right-of-way acquisition, permanent easements, or temporary closure of portions of the property for more than 6 months during project construction.

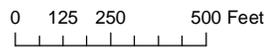
Option A

Option A would result in conversion of 5.59 acres of Section 6(f) property: 3.05 acres of permanent acquisition, 0.03 acre of permanent easement, and 2.51 acres of construction easement that would be used for more than 180 days. Exhibit 4 summarizes the effects on Section 6(f) resources, and Exhibit 5 shows the location of the effects.





- Ship Canal Waterside Trail
- Arboretum Waterfront Trail
- Section 6(f) Boundary
- Waterbody



Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.

Exhibit 3. Section 6(f) Property Map

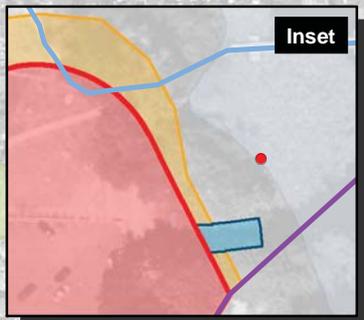
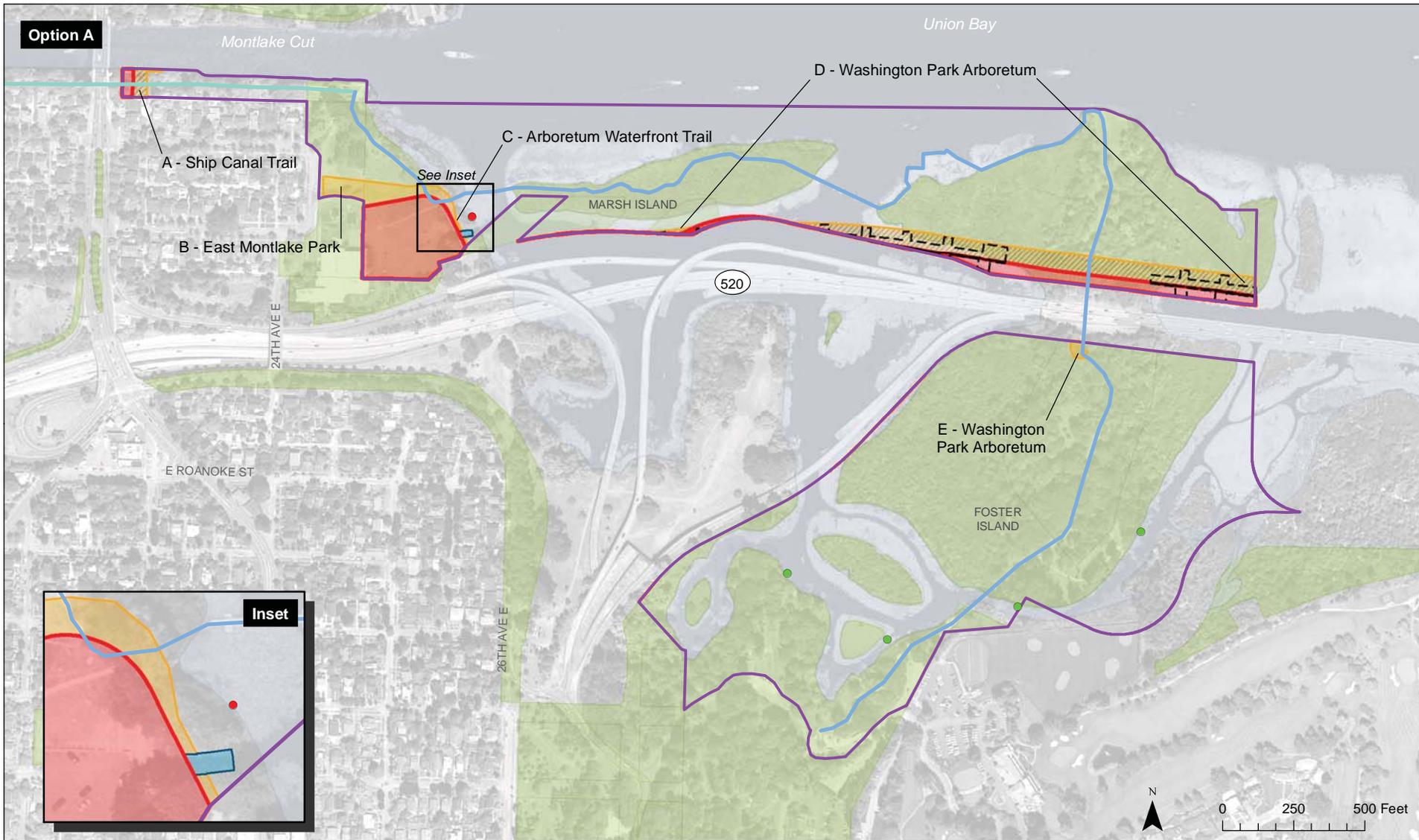
SR 520, I-5 to Medina Bridge Replacement and HOV Project

Exhibit 4. Summary of Effects on Section 6(f) Property: Option A

Location	Permanent Acquisition (acres)	Permanent Easement (acres)	Construction Easement ^a			Total Conversion (acres)
			Area (acres)	Construction Duration (months)	Section 6(f) Conversion?	
A – Ship Canal Waterside Trail	0.09	0	0.13	32	Yes	0.22
B – East Montlake Park	1.90	0	0.21	32	Yes	2.11
			0.32	5	No	
C – McCurdy Park	0.06	0.03	0.11	3	No	0.09
D – Washington Park Arboretum	1.0	0	2.17	32	Yes	3.17
With Lake Washington ramps suboption	1.06	0	2.57	32	Yes	3.63
E – Washington Park Arboretum	0	0	0.06	3	No	0
Totals	3.05	0.03	3.00	--	Yes – 2.51 acres	5.59
With Lake Washington ramps suboption	3.11	0.03	3.40	--	Yes – 2.91 acres	6.05

^a A construction easement would be considered a conversion if construction duration were more than 6 months.





- Ship Canal Waterside Trail
 - Arboretum Waterfront Trail
 - Section 6(f) Boundary
 - Work Bridge within Section 6(f) Boundary
 - Waterbody
 - Park
 - Canoe/Kayak Landing Site
 - Canoe/Kayak Landing Site (closed during construction)
- Effects**
- Permanent Acquisition
 - Permanent Easement
 - Temporary Construction Easement
 - Temporary Construction Easement (Longer Than 6 Months)

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 5. Section 6(f) Affected Property: Option A

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Option K

Option K would result in conversion of 3.68 acres of Section 6(f) property: 2.28 acres of permanent acquisition and 1.4 acres of construction easement that would be used for more than 180 days.

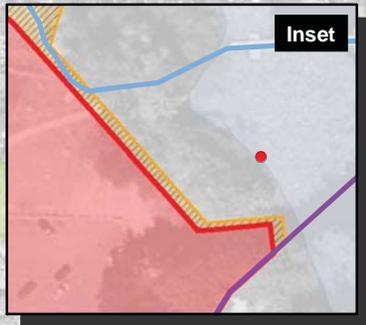
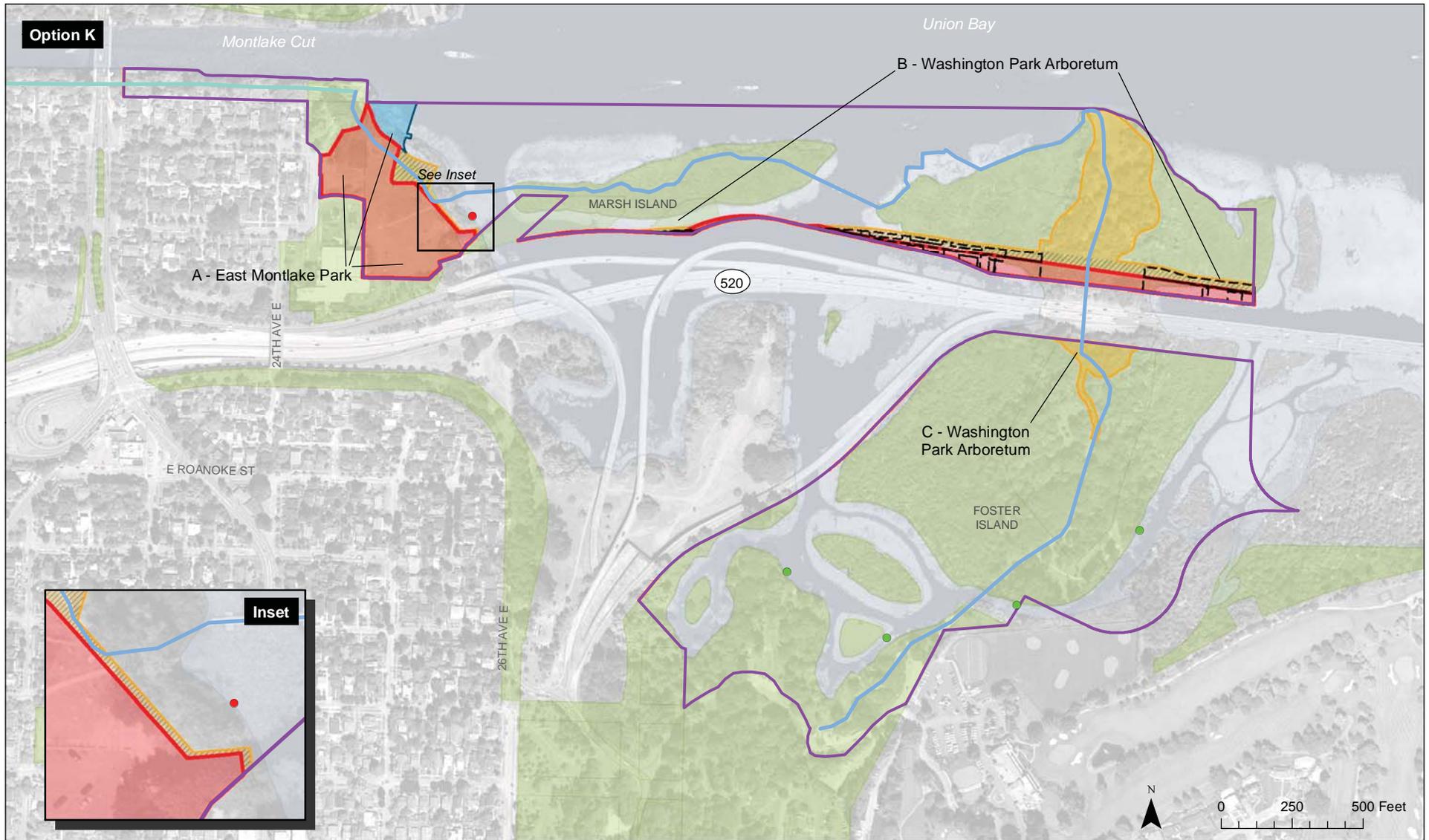
Exhibit 6 summarizes the effects on Section 6(f) resources, and Exhibit 7 shows the location of the effects.

Exhibit 6. Summary of Effects on Section 6(f) Property: Option K

Location	Permanent Acquisition (acres)	Permanent Easement (acres)	Construction Easement ^a		Section 6(f) Conversion?	Total Conversion (acres)
			Area (acres)	Construction Duration (months)		
A – East Montlake Park	4.5	0.43	0.07	50	Yes	5.0
B - McCurdy Park	1.5	0	0.03	50	Yes	1.53
B – Washington Park Arboretum	1.48	0	1.30	32	Yes	2.78
			2.92	5	No	
C – Washington Park Arboretum	0	0	0.60	5	No	0
Totals	7.48	0.43	4.92	--	Yes –1.4 acres	9.31

^a The construction easement would be considered a conversion if construction duration were more than 6 months.





- Ship Canal Waterside Trail
 - Arboretum Waterfront Trail
 - Section 6(f) Boundary
 - Work Bridge within Section 6(f) Boundary
 - Waterbody
 - Park
 - Canoe/Kayak Landing Site
 - Canoe/Kayak Landing Site (closed during construction)
- Effects**
- Permanent Acquisition
 - Permanent Easement
 - Temporary Construction Easement
 - Temporary Construction Easement (Longer Than 6 Months)

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 7. Section 6(f) Affected Property: Option K
 SR 520, I-5 to Medina Bridge Replacement and HOV Project

Option L

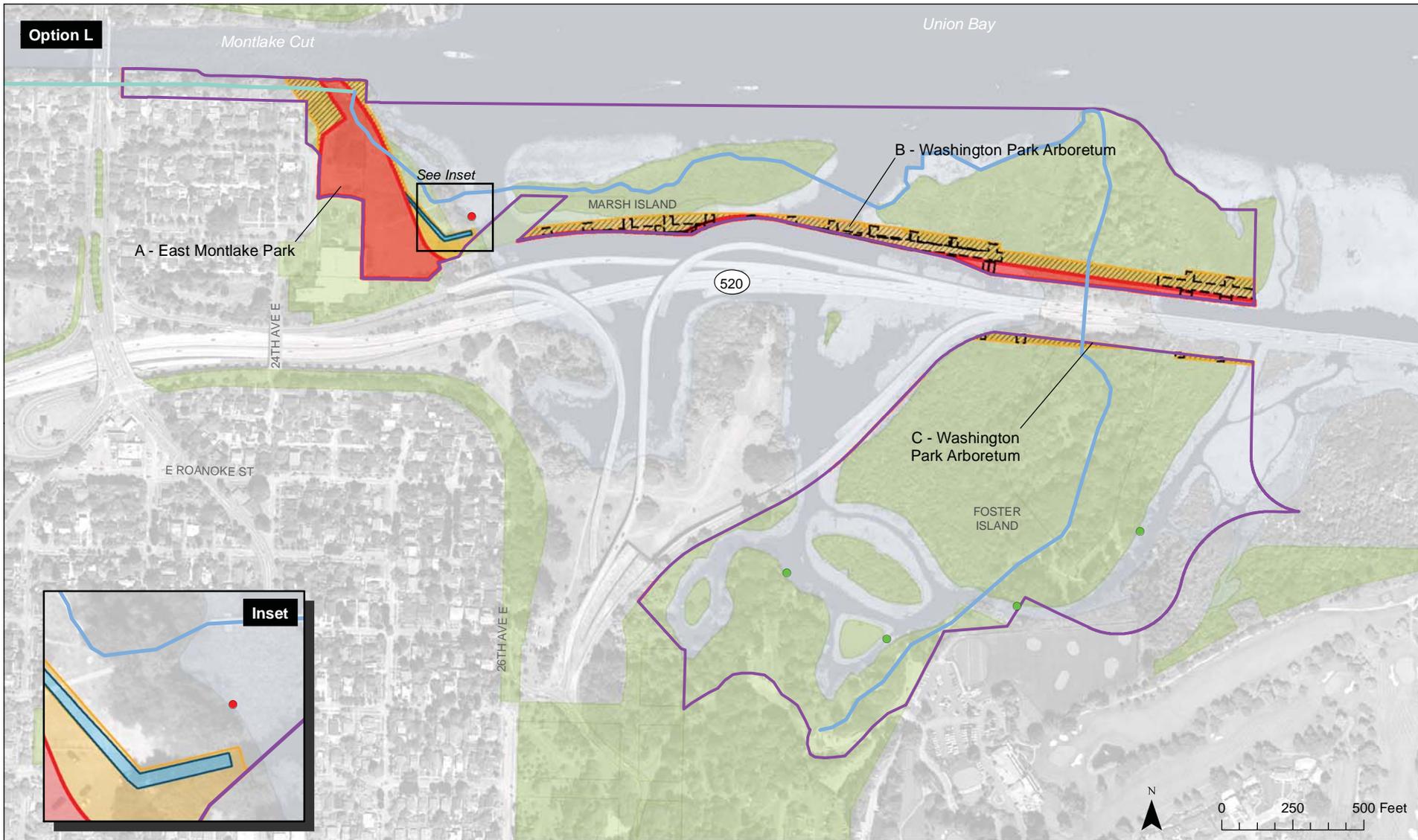
Option L would result in conversion of 7.91 acres of Section 6(f) resources: 3.88 acres of permanent acquisition, 0.09 of permanent easement, and 3.94 acres of construction easement that would be used for more than 180 days. Exhibit 8 summarizes the effects on Section 6(f) resources, and Exhibit 9 shows the location of the effects.

Exhibit 8. Summary of Effects on Section 6(f) Property: Option L

Location	Permanent Acquisition (acres)	Permanent Easement (acres)	Construction Easement ^a			Total Conversion (acres)
			Area (acres)	Construction Duration (months)	Section 6(f) Conversion?	
A – East Montlake Park	3.14	0.07	0.73	34	Yes	3.94
			0.29	3	No	
With suboption			1.02	34	Yes	4.23
B – McCurdy Park	0	0.02	0.05	3	No	0.02
C – Washington Park Arboretum	0.74	0	2.87	32	Yes	3.61
			2.87	31	Yes	
D – Washington Park Arboretum	0	0	0.34	38	Yes	0.34
Totals	3.88	0.09	4.28	--	Yes – 3.94 acres	7.91
With suboption	3.88	0.09	4.28	--	Yes – 4.23 acres	8.20

^a The construction easement would be considered a conversion if construction duration were more than 6 months.





- Ship Canal Waterside Trail
 - Arboretum Waterfront Trail
 - Section 6(f) Boundary
 - Work Bridge within Section 6(f) Boundary
 - Waterbody
 - Park
 - Canoe/Kayak Landing Site
 - Canoe/Kayak Landing Site (closed during construction)
- Effects**
- Permanent Acquisition
 - Permanent Easement
 - Temporary Construction Easement
 - Temporary Construction Easement (Longer Than 6 Months)

Source: King County (2006) Aerial Photo, CH2M HILL (2008) GIS Data (Park and Trails), City of Seattle (2009) GIS Data (Section 6(f) Boundary). Horizontal datum for all layers is NAD83(91); vertical datum for layers is NAVD88.



Exhibit 9. Section 6(f) Affected Property: Option L

SR 520, I-5 to Medina Bridge Replacement and HOV Project

Property Ownership and Mitigation Requirements

Property ownership of parks and recreation, and wildlife areas along the shorelands of the Montlake/east Portage Bay are complex. Title research underway will eventually assist WSDOT and Parks TWG members with identification of the appropriate Section 4(f) and Section 6(f) acreages requiring mitigation. While there is an apparent overlap between Section 4(f), Section 6(f) and ALEA properties, the mitigation requirements under each regulation are distinct. WSDOT will coordinate with the involved agencies to account for and implement appropriate mitigation needs for each applicable regulation.



Mitigation Process Overview

Avoidance and Minimization of Harm

As noted earlier, the Section 4(f) statute requires the selection of an alternative that avoids the use of Section 4(f) properties if that alternative is deemed feasible and prudent. The analysis conducted for the Draft Section 4(f)/(6) Evaluation concluded that each design option of the 6-Lane Alternative (Options A, K, and L) would result in a use of Section 4(f) properties. Although the No Build Alternative would not use Section 4(f) properties, it does not appear to meet the project purpose and need.

The following avoidance concepts were examined in the Draft Section 4(f)/6(f) Evaluation for the SDEIS and are discussed in further detail in that document:

- New corridors
- Operational changes
- New travel modes
- No Build Alternative
- Design-specific avoidance measures

Mitigation Considered by Parks Technical Working Group

Working Group Objectives and Milestones

As described earlier in this memo, discussions of parks mitigation prior to publication of the Draft EIS focused on the alternatives and design options under consideration at that time. In the development of 6-Lane Alternative Options A, K, and L, WSDOT changed the area of potential effect that necessitated a new coordination effort with the agencies with jurisdiction. WSDOT began this coordination in November 2008 with the initial meeting of the Parks TWG. At this meeting, WSDOT presented a draft work plan for the Parks TWG and worked with the participating agencies to establish a process and schedule for identifying potential mitigation.



Milestones identified for the planning process included the following:

1. Define Draft Approach to Parks Regulatory Compliance
 - Identify affected resources and potential impacts.
 - Identify agencies with jurisdiction.
 - Outline agency coordination protocols.
2. Review Approach with Agencies
3. Perform Analysis
 - Determine possible impacts.
 - Develop preliminary mitigation concepts.
4. Review Results/Develop Mitigation Agreements
 - Review results and mitigation concepts with participating agencies.
 - Develop draft mitigation agreements.
5. Formal Mitigation Agreements
 - Complete the Section 4(f) and Section 6(f) reviews for the preferred alternative.
 - Work within the established framework for each agency to develop formal mitigation agreements and commitments.

The Parks TWG established a schedule with WSDOT to work through these milestones, discuss progress, and maintain a collective understanding of park issues. The Parks TWG formally met as a group on the following dates:

- November 6, 2008
- January 8, 2009
- February 5, 2009
- July 9, 2009
- September 10, 2009
- November 10, 2009



Initial Activities

The Parks TWG held its initial meeting on November 6, 2008. At this meeting, WSDOT presented the participants with a formal work plan (described above), and made several specific requests for feedback. The requests included:

- Reviewing the history of parks coordination
- Discussing the work plan and expected outcomes for the working group
- Reviewing the current status of the project design in relation to park resources
- Developing a list of key topics for further discussion

During the initial Parks TWG meeting, the participants discussed the group work plan, the then-current status of the project design, and applicable mitigation requirements, such as Section 6(f). The participants identified a number of issues that would need to be addressed during the review process. Issues raised by the Parks TWG included:

- How “permanent” and “temporary” construction impacts were being defined in the SDEIS analysis for the conversion of a Section 6(f) resource, in the context of construction durations exceeding a period of 6 months.
- Whether WSDOT must acquire a property when construction impacts trigger the threshold for a Section 6(f) conversion.
- The status of the Canal Reserve property as a Section 4(f) resource.
- The identification of potential impacts on Roanoke Park and the Bill Dawson Trail.
- The recreational value of Section 6(f) resources on Foster Island, particularly those related to access to water and wetland environments for recreational use, and the possible effects that fill materials would have on these resources.
- Coordination of mitigation for wetlands and parks resources.
- Compliance with Seattle Ordinance #118477.
- The need to discuss security considerations and requirements for low-profile bridge structures with the U. S. Department of



Homeland Security, due to the differing impacts that high vs. low bridge design elements might have on park resources.

Resource-By-Resource Analysis

To facilitate the process of identifying affected resources and discussing potential mitigation, WSDOT next prepared a matrix of parks and recreation resources potentially affected by the I-5 to Medina: Bridge Replacement and HOV Project. WSDOT identified affected park and recreation resources and potential impacts through this process, as well as the agencies with jurisdiction. During this time, WSDOT also scheduled individual consultation meetings with Seattle Parks and Recreation and the UW to discuss resources within their individual jurisdictions.

WSDOT and the Parks TWG used the collaboratively developed matrix of park and recreation facility resources as the basis of discussions about the possible Section 4(f) and Section 6(f) uses. The matrix was maintained and updated as discussions progressed, and was augmented by maps, photographic simulations, and other graphics depicting potential impacts to parks and recreation facilities in the study area for each design option. The graphics included tables of impacts, which contained preliminary data on temporary and permanent impacts.

WSDOT led a resource-by-resource qualitative discussion with the Parks TWG at their January 8, 2009, and February 5, 2009, meetings. The Parks TWG offered feedback about the features and attributes, potential impacts, and mitigation possibilities associated with each resource.

Identification of Agency Process Requirements

At the February 5, 2009, meeting, the Parks TWG discussed how agency processes for parks and recreation facility replacement and mitigation would integrate with WSDOT processes for the SR 520 Bridge Replacement and HOV Project. The review processes for Seattle Parks and Recreation and those for the UW were presented by staff from each agency. Additional information on these processes will be provided in the Final Section 4(f)/6(f) Evaluation.

Following the February 2009 Parks TWG meeting, WSDOT met twice with the UW and once with the City of Seattle to further discuss the agency review processes; ensure that the parks, recreation facilities, and



natural environment areas listed in the matrix were adequately characterized; and discuss anticipated effects and potential mitigation related to these resources. The meetings were held with the UW on May 28, 2009 and April 22, 2009 and with Seattle Parks and Recreation on May 13, 2009. They provided an opportunity for WSDOT to identify the processes and protocols that each entity followed in the review and establishment of mitigation, including property replacement and conversion. WSDOT provided tables and lists containing data for anticipated impacts to parks and recreation facilities associated with each jurisdiction. In addition to Section 4(f), Section 6(f), and ALEA resources, the meetings also included discussion of effects related to wetlands and aquatic resources not protected by a specific grant.

Parks Mitigation Property Guidelines

Based upon the meetings with the Parks TWG, the City of Seattle, and the University of Washington, WSDOT prepared a set of draft guidelines for evaluating parks mitigation property. The guidelines, which were distributed in draft form at the Parks TWG's July 9, 2009 meeting, were based primarily on discussion with the agencies on important aspects of the affected resources. The guidelines were intended to provide a starting point for WSDOT's real estate search for replacement park property. WSDOT requested feedback from the Parks TWG on the draft guidelines.

The parks mitigation property guidelines employed replacement property value criteria consistent with the requirements of Sections 4(f) and 6(f). They proposed search parameters for replacement properties on the basis of features and attributes of existing parks that could be affected, as identified by WSDOT, City of Seattle, the UW, the RCO, and the NPS. They also took into consideration the potential of sites for multipurpose (e.g., park and wetland) enhancements, but placed primary emphasis on 4(f) and Section 6(f) requirements. At the July 9 meeting, the NPS indicated that wetland enhancements in addition to recreational improvements could satisfy Section 6(f) mitigation requirements for recreation utility if all other 6(f) criteria were met. Improvements to a "prioritized" wetland could be considered for recreational mitigation if the state or local jurisdiction had an adopted wetland priority list. Washington State currently does not have an adopted wetlands priority list, but local jurisdictions could have an adopted list.



The search criteria established in the draft guidelines consisted of the following:

Value

- Replacement property must be equal to or greater in value, based on the fair market value of the land alone.
- Replacement property must be equal to or greater in value, based on the fair market value of the land plus improvements (per approval from Seattle and/or UW).

Search Parameters

- Vacant parcels or parcels with structures that would be demolished or could be used for recreational purposes
- Parcels in Seattle with Lake Washington, Union Bay, Portage Bay, or Lake Union waterfront or with access to a navigable waterway.
- Parcels adjacent to the Washington Park Arboretum
- Parcels adjacent to the University of Washington
- Parcels adjacent to City of Seattle parks in the University District, Roanoke, Laurelhurst, Montlake, North Capitol Hill, and Madison Park neighborhoods
- Parcels adjacent to other Seattle parks

Based on feedback from agencies, WSDOT distributed a revised version of the Parks Mitigation Property Guidelines at the Parks TWG meeting on September 10, 2009.

Mitigation Property Real Estate Search

Using the draft Parks Mitigation Property Guidelines, WSDOT real estate staff conducted a broad-ranging search for suitable mitigation properties, spanning from Renton to Kenmore, Carkeek Park through the Lake Washington Ship Canal to Lake Union, and south to West Seattle. The results of the search were distributed and discussed at the Parks TWG's September 10, 2009, meeting.

Based on the range of Section 6(f) conversion acreage by option, six to eight acres was the minimum total land area assumed to be needed for mitigation, although this total could be achieved by mitigating at more



than one site. About 86 parcels were identified using the search parameters described above. In many cases, several parcels were combined to form one site for consideration. The search comprised parcels owned by both individuals and public agencies. WSDOT's real estate group was asked to provide a planning-level look at the costs of potential properties, but a formal appraisal will be completed only for those properties included in the final mitigation agreement.

WSDOT completed a preliminary ranking of the parcels identified in the search, and established an initial list of the 11 most promising potential properties. Information about each of these properties was presented to the Parks TWG in a matrix, which included the following attributes of each property:

- Ownership
- Acreage
- Presence or absence of structures
- Nearest park or trail and whether it abuts the parcel

In general, the rating process was based on how fully the sites met Section 6(f) criteria. Potential Section 6(f) mitigation sites were also compared to potential wetland and aquatic habitat mitigation sites, which had been identified through a separate process in coordination with natural resource agencies. Ten parcels overlapped both lists. Although the same acreage cannot be counted toward park mitigation and wetland or aquatic mitigation, these sites provide potential for both types of mitigation to occur side by side.

After a review of the list, the Parks TWG agreed that 9 of the 11 highly ranked properties on the initial list were eligible for further consideration as potential mitigation sites. However, it was noted that several of the properties were questionable candidates and would require further investigation. Three sites were called out as having the greatest potential:

- A parcel of the NOAA (Department of Commerce) campus in the Montlake District
- Sacred Heart Villa/Sacred Monastery in the University District
- University of Washington/King Broadcasting site in the University District



Eight sites were added to the list for consideration by the Seattle Parks and Recreation in a letter to WSDOT dated November 24, 2009.

- Pier 48 parcel located on the Elliot Bay waterfront near Pioneer Square
- Discovery Park inholdings currently managed for military housing.
- Lake Union/North Lake parcel located west of Gas Works Park on Lake Union
- Mathews Beach area parcels located at the mouth of Thornton Creek
- A parcel at 1st Avenue South along the south side of the Duwamish Waterway.
- NOAA parcel (Department of Commerce) on Lake Union.

Other Proposed Mitigation for Section 4(f) Properties

In addition to the mitigation opportunities discussed in this memorandum, WSDOT has identified a number of potential mitigation measures in the Draft Section 4(f)/6(f) Evaluation and the Recreation Discipline Report. Those reports also document measures taken during design to avoid and minimize adverse effects on park and recreation resources where possible. When all mitigation measures have been agreed upon by WSDOT, FHWA, and the agencies with jurisdiction, they will be included in this memorandum to memorialize WSDOT's mitigation commitments.



Next Steps

This memorandum is intended to be a living document, which will be updated as the project progresses. In early 2010, WSDOT and the Parks TWG expect to concur on a short list of the best sites for potential project implementation and/or site acquisition. Parks TWG members will continue with WSDOT to identify a preferred mitigation site and develop a conceptual plan for public disclosure and comment in a supplemental environmental document before the end of 2010.

Once a preferred 6-Lane Alternative design option is chosen (anticipated to occur in spring 2010), WSDOT will work with the Parks TWG to finalize mitigation requirements and develop formal agreements on mitigation commitments. Informed by public comment, WSDOT will continue to coordinate to obtain substantial agreement among the involved parties on a specific mitigation project by fall 2010. WSDOT will complete Section 6(f) environmental documentation after a Record of Decision, expected in early 2011, for the I-5 to Medina: Bridge Replacement and HOV Project and all approval of federal compliances for the project are complete. During this time period, in coordination with the RCO and NPS, WSDOT will develop a more detailed plan for the mitigation design. A final Section 6(f) environmental evaluation compliant with the National Environmental Policy Act and Section 106 will be issued to demonstrate the conversion of properties for transportation use, and the replacement of properties LWCF use.



Attachment 2

Agency Correspondence

Seattle Board of Park Commissioners Q & A WSDOT Response

On January 12, 2006, the Seattle Board of Park Commissioners requested a briefing from WSDOT staff on the Washington State Department of Transportation (WSDOT) SR520 widening project and its possible impacts to the Washington Park Arboretum. The briefing was immediately followed by a public hearing. At the conclusion of the public hearing, the Commissioners agreed to compile their questions and send to WSDOT for a response. Once WSDOT has responded to the questions, both the questions and answers will be forwarded to the public who attended the hearing and will be posted to the Board's website at <http://www.cityofseattle.net/parks/parkboard/>.

Comments:

As a forward, I am very concerned about any design that will increase traffic on Lake Washington Boulevard, through the Arboretum. This is one of the most special places in Washington State and we all owe it to present and future citizens to get this one right. If there is a choice, I would prefer to put the burden of more traffic on the neighborhood in the form of developing a new arterial, rather than allowing the traffic in the Arboretum to increase. Any design which may diminish Arboretum traffic should be given the greatest emphasis.

WSDOT agrees that the Arboretum is a special place and aims to minimize, as much as possible, any negative effects to the park that would occur as part of the SR 520 bridge project. Our traffic analysis, conducted as part of the EIS process, shows that traffic between the Lake Washington Boulevard ramps and Boyer Avenue grows regardless of whether the project takes place or not. It also shows that with either the 4-Lane or 6-Lane alternatives, traffic will not increase through the entire Arboretum. None of the alternatives would diminish traffic through the Arboretum. We look forward to working with the City of Seattle to balance traffic movements through the more heavily traveled area between Boyer and the SR 520 ramps.

Questions:

1. During the January 12 briefing, WSDOT staff presented a table, "Seattle Parks Effects", Exhibit 23, showing Net Gains and Losses. In the briefing, Commissioners were told there would be a net gain for the parks of eight acres. This is not shown in this exhibit. Please explain. Where are the gains not shown, and for which design alternative?

The potential gain is located in the WSDOT right-of-way area near the Lake Washington Boulevard on- and off-ramps. WSDOT proposes to exchange this property with the Seattle Department of Parks and Recreation as part of the mitigation for both project alternatives.

2. Where does the State's responsibility end for traffic impacts of new or redesigned exits and entrances? For example, what role does this project assume in improving local streets in the vicinity of an interchange?

WSDOT must ensure that local streets affected by the project operate at least the same as with the No Build Alternative. In other words, they must operate at least the same as they would operate in 2030 if the bridge were not rebuilt. We are proposing improvements to local streets to meet or exceed that threshold.

3. What role does Seattle Department of Transportation (SDOT) play in resolving problems generated by new interchanges? How does SDOT typically fund such projects?

It is WSDOT's responsibility to ensure that local streets operate at least the same as with the No Build Alternative. If an alternative would cause traffic to worsen on local streets, we would work with the local jurisdiction to develop appropriate solutions. In this case, we look to SDOT for review and approval of these solutions. Changes to local streets that are required to address issues caused by the project would be funded as part of the project budget. Additional changes beyond what is required would typically be paid for by the local jurisdiction or other sources. SDOT would best be able to tell you how they would fund such projects.

4. Boyer Avenue was mentioned as a route from 24th Avenue East to Lake Washington Boulevard. Who believes this road is capable of handling arterial traffic, and how many more cars can it handle than it now carries?

Our traffic modeling, which shows Boyer as a route that can handle arterial traffic, may not take certain traffic issues, such as on-street parking, into account. The project team is aware that local residents currently use Boyer to travel to and from the Lake Washington Boulevard ramps and as a result, does not believe Boyer can handle much additional traffic. The street configuration generally allows only one vehicle to travel the street at a time. WSDOT will take this into account as part of planning and looks forward to working with SDOT to avoid or minimize the effects to Boyer from the project.

5. One of WSDOT's staff commented that they would work with SDOT on traffic-calming devices on Boyer. I'm not quite sure what this would accomplish, as it is my understanding that the existing configuration of Boyer and its on-street parking is enough of a calming/deterrent. With Boyer as a less-than-convenient connector to 24th Avenue East, wouldn't that effectively encourage the additional peak hour trips through the Arboretum to the Lake Washington Boulevard-Madison intersection, for which WSDOT staff said there would be no increase in peak trips?

The potential additional trips that would use Boyer to get to or from SR 520 are associated with North Capitol Hill. As an alternate route when exiting the bridge, these drivers from North Capitol Hill would likely use Lake Washington Boulevard between SR 520 and 24th Avenue East, rather than travel south through the Arboretum to Madison and then north to North Capitol Hill. When accessing the bridge, these drivers would use the on-ramps at either the Montlake interchange or Pacific Street interchange depending on the alternative and options chosen. This is because traveling through the Arboretum would take these drivers out of their way and add time to their trip.

6. In the event there is an entry and exit at Lake Washington Boulevard in any of the designs (especially if the Pacific Interchange is pursued), can neighborhood streets be redeveloped to direct the southbound traffic west to 24th Avenue, discouraging traffic through the Arboretum? For example, two blocks of West Calhoun Street or East Miller Street, or northbound turning eastbound on Lake Washington Boulevard. Can WSDOT incorporate any of these alternatives in conjunction with discouraging more cars southbound on Lake Washington Boulevard through the Arboretum by means of traffic calming designs?

These choices would need to be made in cooperation with SDOT. On city streets, WSDOT follows the street classifications set by SDOT. Many of the streets mentioned are classified as residential streets and the changes mentioned would likely require a change in classification. We would need to follow the city's decision on whether the classification could be changed.

7. During the public hearing, a citizen testified that the State would include a no exit/entry alternative for Lake Washington Boulevard. Is this correct?

WSDOT analyzed closing the Lake Washington Boulevard ramps but the effects to 24th Avenue were considered too great by both WSDOT and SDOT. The adjacent streets would not be able to handle the amount of traffic that would drive there. Because of this, none of the alternatives being evaluated in the EIS include full closure of these ramps. However, these ramps would be closed for a period during construction.

8. If the Pacific Interchange alternative is included in the study, will there be a no exit/entry for Lake Washington Boulevard alternative?

No, the Pacific Street Interchange design option includes the on/off ramps at Lake Washington Boulevard. WSDOT considered removing these ramps but our analysis showed that this created too great of an effect on 24th Avenue.

9. A citizen group is promoting a tube alternative. Is WSDOT considering this proposal and, if so, how seriously is it being taken? Should serious consideration be given to a tube or a tunnel or a Millau-type beautiful bridge (http://news.bbc.co.uk/2/hi/in_pictures/4095037.stm)?

WSDOT conducted a study of the tunnel concept and determined that it should not be studied further for a number of reasons:

- There are net increases in environmental effects due to dredging in the Arboretum, including along Marsh and Foster islands, and the need to build an artificial island. This would mean that species protected under the Endangered Species Act would be disturbed. These issues are likely to create difficulties in acquiring the necessary permits to build a tunnel.
- The concept includes constructing interchanges in tunnels, which is extremely difficult to build due to structural stability limitations, the size of the interchanges, safety issues, and complex connections.
- The concept involves constructing multiple different types of tunnels (bored, immersed, cut-and-cover), adding additional engineering, construction, and cost complexities.
- The soil through the Union Bay area is unstable and considerable fill would be required to provide an adequate foundation for the tunnel. In addition, extremely invasive procedures would need to be conducted to create seismic stability in this area.
- This concept would cost billions of dollars more than any of the current plans.

The Millau bridge is a cable-stay bridge, and both cable-stay and suspension bridges were evaluated during analysis of the 6-Lane Design Options. WSDOT determined that neither type of bridge is well-suited in this area due to issues with alignment, interchange design, and noise effects.

10. Why should the people in the city and the region who use, live, work near, and walk under the SR520 bridge and its ramps get a huge, ugly, above-ground structure and the people who use, live, etc., the downtown viaduct get, or at least get serious consideration of, a wonderful tunnel, lid, etc.?

These two projects (Alaskan Way Viaduct and SR 520) are located in areas that have different conditions. The tunnel option for the Alaskan Way Viaduct requires excavation of city streets, including the weak soil fill underneath, and there is a net decrease in environmental effects. The alignment is straight and it does not include any interchanges. The community-developed tube proposal for SR 520 would include dredging through the Arboretum, including Marsh and Foster islands, and would require an artificial island built in the lake near the Arboretum. This would create a net increase in environmental effects. In addition, the alignment is curved and includes interchanges.

The proposed SR 520 alternatives include a number of features that will improve the connectivity and livability of the adjacent neighborhoods, such as sound walls, lids (with the 6-Lane Alternative), and a bicycle/pedestrian path. We are also starting a community-based process to develop aesthetic guidelines for the corridor to ensure that the project is designed to fit well within the community. The new SR 520 will be developed keeping context sensitive solutions in mind.

11. Is there a way to measure, as part of the Environmental Impact Statement, the social costs of the negative impact of the Pacific Street Interchange on the Washington Park Arboretum and the Japanese Garden?

WSDOT is studying a broad range of potential effects for all the alternatives and design options as part of the EIS process, including transportation, environment, land use, recreation and more. All effects are measured in comparison to the No Build Alternative. While there is no clear way to quantify social costs, we are communicating both the potential negative effects of choices and the possible opportunities so that individuals can weigh these alternatives and options and make informed choices. We recognize that each person uses their own personal values when evaluating the project and those personal values can be difficult to assess.

12. Has consideration been given to the delays and other consequences of a ballot initiative in opposition to the preferred alternative or all alternatives supported by the city's large, active, and well-financed city-wide parks and recreation constituencies?

A project of this scale will require decision makers to evaluate and determine the best overall plan for the region. WSDOT is working to prepare the best technical analysis of the effects and present that information clearly so people can make an informed decision about supporting or opposing the individual alternatives and accompanying mitigation.

Currently we are working toward the release of the Draft EIS this summer, which will present the results of our analysis. Once the Draft EIS is released, there will be a 60-day public comment period during which we will host public hearings. We encourage everyone interested to submit comments on the Draft EIS at this time. Both public comments on the Draft EIS and ongoing discussions with jurisdictions in the project area will assist us in making a decision on the preferred alternative. In addition, the state legislature has required that WSDOT have consensus from all jurisdictions in the project area in order for the project to move forward. We anticipate a decision on a preferred alternative will be made by the end of 2006.

13. Does WSDOT think that dollars for mitigation, even enough dollars to finish the \$20 million Master Plan for the Arboretum, would make up for the loss of the current experience for generations of people from around the world? Are the losses of

opportunities for education, research, recreation, and pure joy calculable?

It will be important for project decision makers to evaluate and determine the best plan for the region based on the analysis conducted. We also recognize that people will use their own personal values to determine the best alternative, options, and mitigation. With this project, we envision opportunities to improve the park experience.

- Noise levels would be dramatically reduced adjacent to the freeway.
- Stormwater flowing off the bridge would be cleaner.
- The low, muddy tunnel under the freeway on Foster Island would be replaced by a structure allowing more vertical clearance and light.
- The “ramps to nowhere” would be removed.
- There is an opportunity to integrate the WSDOT right-of-way adjacent to the Arboretum into the park.
- There is an opportunity to reconnect East Montlake Park to the Arboretum.
- Pedestrian connections between the Arboretum and East Montlake Park would be enhanced.

Ultimately, any mitigation package to address the effects on the Arboretum will be negotiated with Seattle, the University of Washington, and the Arboretum Foundation. We have already started this conversation and look forward to further developing mitigation for the plan.

14. Why can't drivers connect to the Pacific Interchange overpass off 23rd before it turns into Lake Washington Boulevard and avoid the Arboretum altogether?

The only access from 23rd Avenue East to the Pacific Interchange is via Lake Washington Boulevard. The project team has worked with the local community to maintain an eastbound left turn restriction that prohibits people from turning onto the eastbound SR 520 on-ramp from Lake Washington Boulevard. As the project moves forward and a preferred alternative is selected, the project team will work closely with the SDOT in evaluating various options for traffic management.

Cost Issues

1. Based on the budgets shown, all schemes are under funded at this time. When the time comes to build the freeway, there will be bid alternates. How vulnerable to budget cuts are proposed lids? What other amenities, especially parks related, could be vulnerable to cost cutting?

The project definition, as agreed upon in the Final EIS and then the Record of Decision, will list out items that must be included as part of the project. WSDOT is working to ensure full funding for the project. Part of this includes working closely with RTID for the 2007 ballot measure. In accordance with the 2006 legislation, this ballot measure must provide for full project funding.

2. What, if any, precedent is there for (as some have suggested) using tolls to benefit the Arboretum. Would this be legal under current State law for highway funding/tolls?

This is a decision for the City of Seattle to make. The city could institute tolls through the Arboretum, but it would not be done by WSDOT as part of the SR 520 bridge project. The state cannot institute tolls on a city road.

3. The brochures distributed by WSDOT staff at the briefing emphasize the poor condition of the floating bridge and immediate high-rise approaches to it. Is there any possibility, for budgetary reasons, of constructing the project in phases, with these items being addressed as the immediate urgent problem, and the remaining highway connecting through Montlake to I-5 as a later consideration?

Construction phasing for the project is a possibility. It has not been determined at this point. Due to its high vulnerability, the floating bridge and approaches would likely be constructed as part of a first phase.

#

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July 28, 2008

Paula Hammond
Secretary
Washington State Department of Transportation
PO Box 47300
Olympia, WA 98504-7300

Re: State Route 520 Expansion and Impacts to Parks

Dear Secretary *Paula* Hammond:

This correspondence is follow-up to our recent meeting with the Governor's Office regarding the natural resource impacts of the expansion of State Route 520. I appreciate your staff's efforts to involve my staff on the SR 520 Resource Advisory Committee process. However, at our meeting, you and your staff expressed some confusion about the role of my agency and the park related impacts that would arise with the expansion of the bridge over Lake Washington. This letter is just a follow-up to that meeting.

There are two projects funded through the Recreation and Conservation Office (RCO) at the Arboretum that will likely be impacted by the expansion of SR 520. The first project was funded in 1966 through a grant from the Land and Water Conservation Fund (LWCF). The project was co-sponsored by the University of Washington and the City of Seattle. The funding provided by this grant was used to develop the original waterfront trail system through the Arboretum. The LWCF program is a federal grant program administered by the RCO with oversight by the National Park Service.

The second project was funded in 1985 through a grant from the Aquatic Lands Enhancement Account (ALEA) for re-development of the boardwalk and trail system around the Arboretum, overwater, and on Foster Island. This grant was awarded solely to the City of Seattle. The ALEA program is a state grant program administered by the RCO.

Both grants require that the facilities constructed with grant funds and the property where the facilities are located be maintained and available to the public in perpetuity. The proposed expansion of SR 520 has the potential to change, modify, close or move all or parts of these facilities. The term we use for such a change is "conversion."



Conversions of facilities or properties have very specific requirements for appraisals and replacement of facilities or properties converted. These requirements are based on both law and contract. We are working with Seattle, the University, the National Park Service and the Department of Natural Resources to coordinate protection efforts for these facilities and to streamline the potential mitigation measures that would be required for the two grants should a conversion of park facilities occur.

The scope of mitigation for each grant program is slightly different based upon the grant program goals, laws or policies. The LWCF program requires an equal replacement of similar park facilities within the management area of the project sponsor. This means that a new waterfront park must be created within the Seattle/University area. The ALEA program requires equal replacement of similar park facilities adjacent to a navigable water body within the management area of the project sponsor. This means that a new park must be created along Lake Washington, Puget Sound, or a major river within the city limits of Seattle. Additional details about mitigation requirements are discussed below.

Mitigation requirements for converted park land and facilities are established in federal and state law, regulation and policy, as well as the specific grant contracts between RCO and Seattle and the University. The WAC governing the ALEA program and board-adopted policy was modeled on the federal LWCF law; therefore, the requirements are similar. The applicable requirements are found in federal law¹, state regulations (WAC)², or agency policy^{3, 4} on conversions of parks and are summarized in Attachment A.

As previously mentioned, we are working with the grant sponsors (Seattle and the University) to streamline the appropriate mitigation requirements. We have tentatively agreed to request one mitigation package that satisfies both grant program requirements. This would mean creation of one new park along a navigable water body within the Seattle/University management area. Ultimately, WSDOT will need to work with Seattle and the University to propose an acceptable mitigation package to RCO and the National Park Service.

While the mitigation requirements for both grant programs are similar; the approval authority is different. Once we receive an acceptable replacement proposal that meets all the state and federal requirements, we will present it to the Recreation and Conservation Funding Board. The Board has final approval authority for the ALEA grant mitigation proposal. The Board makes recommendations to the National Park Service, which has final approval authority for the mitigation proposal for the LWCF funded grant.

¹ Section 6(f)(3) of the LWCF Act and 36 CFR Part 59

² WAC 286-42-050

³ RCO Manual #21: *Aquatic Lands Enhancement Account Program: Policies and Project Selection*

⁴ RCO Manual #7: *Funded Projects: Policies and the Project Agreement*

Secretary Hammond
July 10, 2008
Page 3

My staff will continue to participate in the Resource Advisory Committee process and continue to respond to the evolving alternatives from the mediation process. We are committed to providing information to the Department of Transportation and the Governor's Office in a timely manner so that the legislative requirements for the mediation can be successfully achieved. I just wanted you to be aware of the essential steps in our process so that they can be built into your process. Please let me know if we can be of further assistance.

Sincerely,



Kaleen Cottingham
Director

Cc: Julie Meredith, Department of Transportation
Heather Ramsay, National Park Service
David Graves, City of Seattle, Parks and Recreation
Carol Haire, University of Washington, Real Estate Office
Rebecca McIntyre, University of Washington, Real Estate Office

ATTACHMENT A

Mitigation requirements for converted park land and facilities are established in federal and state law, regulation and policy, as well as the specific grant contracts between RCO and Seattle and the University. The WAC governing the ALEA program and board-adopted policy was modeled on the federal LWCF law; therefore, the requirements are similar. The applicable requirements found in federal law⁵, state regulations (WAC)⁶, or agency policy^{7, 8} on conversions of parks include the following:

- All practical alternatives to avoiding a conversion and for replacement have been evaluated.
- Replacement property must be
 - Of at least equal market value.
 - Of reasonably equivalent or greater recreational usefulness and location. Specifically, the replacement park must meet recreation needs currently provided at the existing park.
- Replacement property may include only elements eligible under the applicable program.
- Replacement facilities must satisfy recreational needs identified in a planning effort conducted by RCO or the project sponsor.
- Land currently owned by another public entity can not be used as replacement property unless the property was not originally acquired or previously managed for public recreational use.
- For partial take of a park, the impacts to the remainder park must be considered and remain viable for recreational use.
- Coordination with other federal agencies must be accomplished.
- Environmental and cultural resources review requirements for the converted as well as replacement properties is completed.
- Intergovernmental review per President's Executive Order 12372 is completed.
- The park facility must be administered by the same political jurisdiction as the original project.
- Evidence that the public has been given an opportunity to participate in the identification, evaluation, and development of alternatives

⁵ Section 6(f)(3) of the LWCF Act and 36 CFR Part 59

⁶ WAC 286-42-050

⁷ RCO Manual #21: *Aquatic Lands Enhancement Account Program: Policies and Project Selection*

⁸ RCO Manual #7: *Funded Projects: Policies and the Project Agreement*

Analysis

The proposed conversion is complicated by several factors.

First, the state has funded the boardwalk trail twice, and the two grant programs have different eligibility criteria. The first grant, made by the board, was awarded through LWCF, which has a set of criteria that must be met per the federal requirements. The second grant, made by the Washington Department of Natural Resources (DNR)¹, was awarded through ALEA for recreational facilities associated with a navigable waterway.

This situation essentially creates two conversions on the same property, so RCO staff is approaching them simultaneously and encouraging the projects' sponsors to find replacement property that will satisfy both grant programs' requirements. Therefore, any replacement property will need to be located on a navigable waterway and meet the recreational needs for both the City of Seattle and University of Washington.

A second complicating factor with this proposed conversion is that the first grant was awarded to Seattle and the University of Washington as co-sponsors, and the second grant was awarded only to the City of Seattle. Therefore, Seattle is obligated to resolve both conversions, but the University is only obligated to satisfy the LWCF conversion. Both project sponsors have agreed to move forward to address the two conversions simultaneously in hopes it will satisfy each entity's needs as well as both funding program requirements.

The final complicating factor is the issue of property ownership within the Arboretum Park. Seattle, the University of Washington, and DNR all own property within the Park. Seattle maintains the park, and the University manages the Arboretum collection. However, neither party has complete control over the entire park, including portions of the park that were improved with grant funding and that are located on DNR property. RCO staff is working with all parties to clarify the control and tenure issues. DNR staff has been very cooperative in helping identify property ownership boundaries and offering a no-fee lease option to protect the previously funded grant investments. All parties are operating under the premise that since DNR awarded the ALEA grant to the City of Seattle to construct facilities over state land, that a no-fee recreational lease would be an appropriate way to guarantee Seattle's ability to maintain the park in perpetuity and protect the state's previous investment.

WSDOT is working on an expedited timeline for design, review, permitting, and construction of the SR 520 project. The Governor expects construction on the new bridge to begin in 2014. In order to meet this aggressive timeline, all state agencies must assist WSDOT with providing information into the environmental review process as soon as possible.

At this stage, WSDOT is developing a supplemental draft environmental impact statement to evaluate three main design alternatives. RCO staff is participating on WSDOT's Regulatory Agency Coordination Process workgroup to help identify conversion impacts and replacement requirements. The conversion package will be addressed in the environmental review materials, which should be made available for public comment by the end of this year. In addition, the RCO Director, along with other applicable state

¹ The ALEA grant was managed jointly by DNR and the Interagency Committee for Outdoor Recreation when the original grant was awarded. The ALEA grant program was subsequently transferred to RCO for administration in 2004.

agency directors, participates in quarterly meetings with the Governor's Office to discuss roadblocks and red flags to meeting the Governor's timeline.

Next Steps

The RCO Director will continue to brief the Governor's Office on park-related impacts that must be addressed by the board as part of the SR 520 project approval process.

RCO staff will continue to work with the City of Seattle, University of Washington, DNR, WSDOT, and the National Park Service to identify conversion impacts and potential replacement scenarios. WSDOT's proposed schedule for environmental review is as follows:

Activity	Target Date
Draft Supplemental Environmental Impact Statement	December 2009
Final Draft Environmental Impact Statement	February 2010
Final Environmental Impact Statement	November 2010
Record of Decision	January 2011

RCO staff will continue to brief the board on the status of the Arboretum Park conversion at key points in the process. One such milestone will be after the preferred bridge construction alternative is selected and conversion impacts are quantified. Based upon the proposed schedule, this likely will take place at the board's June or September meeting in 2010. The board should make its interim approval on the conversion after all public comment and review has been completed. The first opportunity for an interim decision would be at the board's January 2011 meeting. Once the board has granted interim approval, the conversion package can be forwarded to the National Park Service for consideration.

Attachments : Arboretum Park draft boundary map

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