

5.3 Social Elements

Highways and transit lines connect people with their homes and daily destinations, while local streets and paths provide circulation for commuters, bicyclists, and pedestrians within their neighborhoods. Modifying or building new transportation infrastructure can improve these connections, but can also change the character of communities. Consideration of low-income and minority populations is particularly important to ensure that these communities are not disproportionately affected by adverse effects on human health or the environment. This section evaluates the project's potential benefits to and effects on neighborhoods and populations.

How would the project affect neighborhoods?

Community Cohesion

The Preferred Alternative, like all the SDEIS design options, would result in several long-term benefits that would improve community cohesion for the neighborhoods in the study area. A primary benefit integral to the SR 520, I-5 to Medina project is the addition of landscaped lids in the project area. The lids would benefit community cohesion by reconnecting neighborhoods originally bisected by SR 520 and I-5. These lids would provide linkages between adjacent and nearby parks, improve views toward the highway from nearby residences, and provide safe passage across I-5 and SR 520 at these locations. Lids are discussed further below.

Lid Design

Two lids are included in the Preferred Alternative and all SDEIS design options. The first is the 10th Avenue East/Delmar Drive East lid, which would help reconnect the Portage Bay/Roanoke and north Capitol Hill neighborhoods, which were separated by SR 520's construction. This lid would be designed with involvement by the community to reflect the historic character of the Roanoke Park Historic District to the north, and it would include open space and pathways, as well as the relocated Bagley Viewpoint.

The second, a lid over SR 520 at Montlake Boulevard included with different configurations in the Preferred Alternative and the SDEIS options, would be an important neighborhood benefit. Exhibit 5.3-1 shows the conceptual lid configurations at the Montlake interchange for the Preferred Alternative and the SDEIS options. As shown in the exhibit, the Preferred Alternative's 1,400-foot lid—larger than the lids included in the SDEIS options—would extend from west of Montlake Boulevard to east of 24th Avenue NE and would terminate near the Union Bay shoreline.

KEY POINT

The Preferred Alternative, like the SDEIS design options, includes lids that would benefit community cohesion by reconnecting neighborhoods originally bisected by SR 520 and I-5, providing linkages between adjacent and nearby parks, improving views toward the highway from nearby residences, and providing safe passage across I-5 and SR 520.

SR 520 Health Impact Assessment

As described in Chapter 1, the legislation that established the SR 520 mediation group also called for King County Public Health and the Puget Sound Clean Air Agency to prepare a health impact assessment (HIA) for the project. An HIA is a tool to help decision-makers recognize the health consequences of the decisions they make and provide a healthier living environment. It focuses on the potential effects of a decision on the health of the population and the distribution of those effects within the population.

The SR 520 HIA (September 2008) recommends elements for creating healthy communities in the SR 520 corridor, including landscaped lids and green spaces, transit improvements, pedestrian and bicycling amenities, design improvements, and noise reduction strategies. Because the health impact differences among the options are difficult to estimate until the specific designs are developed, the SR 520 HIA focused on a broad view of the project's design features, including the options' common elements.

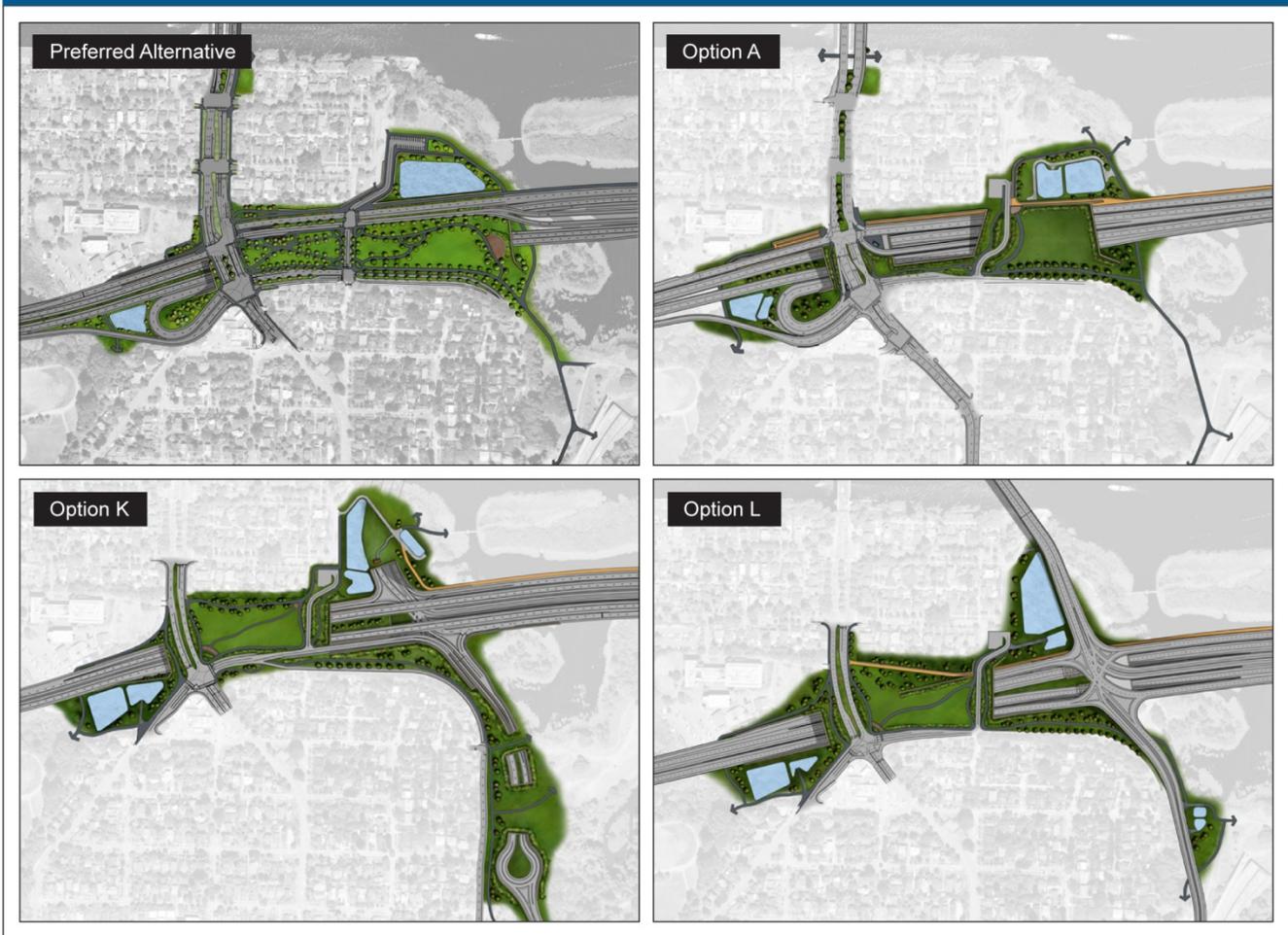
Landscaped lids across SR 520 would provide multiple health benefits by allowing people to connect in easily accessible and safe areas. Green space can enhance people's ability to cope with and recover from stress. The HIA describes how the green space on the lids can bring diverse groups together and how people in neighborhoods with green space are more likely to enjoy stronger social ties than those who live in areas surrounded by concrete.

A regional bicycle/pedestrian path linking to local trails and neighborhood routes would likely lead to an increase in pedestrian and bicycle activity, which would promote healthier neighborhoods.

In all options, the lid would function as a vehicle and pedestrian crossing, a landscaped area connecting the northern and southern portions of the Montlake community, and public open space.

Design and aesthetic treatment for the Montlake lid were developed through the Engrossed Substitute Senate Bill (ESSB) 6392 workgroup process (described in Chapter 2). The increased size of this lid under the Preferred Alternative would provide greater benefit to community cohesion with a larger landscaped area and more opportunities to make connections. New pathways on the lid would be designed such that they:

Exhibit 5.3-1. Potential Lids in Montlake Boulevard Area



- Are in scale and style with the surrounding Montlake neighborhood, the Arboretum, and the Olmsted-designed boulevards.
- Are safe and easy to navigate without confusion (wayfinding).
- Accommodate diverse users and modes (such as cyclists, pedestrians, and elderly users).
- Buffer users from the street edge (e.g., with planting strips and other aesthetic physical buffers).

- Connect users to locations both on the lid (e.g., transit stops, bicycle lockers, comfort stations, view points, plazas) and to the existing network of local and regional open spaces and paths/trails, including the Arboretum Waterfront Trail, the Lake Washington Loop Trail, East Montlake Park, University of Washington (UW) Open Space, UW main campus, and Sound Transit’s University Link light rail station.

As described in Chapter 2, several lids that were features of SDEIS design options are not included in the Preferred Alternative. They are as follows:

- I-5/East Roanoke Street. This lid would be included with Options A, K, and L. A bicycle pedestrian crossing over I-5 at the same location is still proposed as part of the Preferred Alternative.
- Montlake Boulevard NE and NE Pacific Street (Options K and L only). Because the Preferred Alternative would not affect this intersection, no lid is proposed.
- Foster Island “land bridge.” This structure, similar to a lid, would be included in Option K only.

Aesthetics

Under the Preferred Alternative and the SDEIS options, widening the highway would bring some homes closer to the project footprint, which would create negative effects related to visual quality and aesthetics. Like lid design, overall aesthetic design for the SR 520 corridor is also being developed with consideration of community needs. Collaboration is ongoing among WSDOT, the Seattle Design Commission (SDC), City of Seattle, UW Architectural Commission, Arboretum and Botanical Garden Committee (ABGC), Seattle Bicycle Advisory Board, Seattle Pedestrian Advisory Board, and Seattle neighborhoods to expand and refine an aesthetic vision, establish goals, and suggest design treatments for urban design and streetscapes within the project area. This collaboration will ultimately result in a set of urban design guidelines that will inform and direct final design and construction of SR 520. Development of the urban design guidelines for SR 520 began in winter 2010/2011 and is expected to be complete in early 2012.

Noise

The Preferred Alternative and the SDEIS options would reduce noise levels throughout the corridor compared to both existing conditions and the No Build Alternative. Noise levels in the corridor would be further reduced if noise walls recommended for the Preferred Alternative and Options A, K, and L were approved by the affected communities and delivered as part of the project. With noise mitigation, Options A, K, and L would have fewer remaining noise effects than the Preferred Alternative. Public comments received on the SDEIS generally requested that noise in the corridor be reduced using methods other than noise walls. Section 5.7 describes the noise impacts for the Preferred Alternative and SDEIS options, and

discusses where and why noise walls are recommended along the corridor. Section 5.5 discusses visual quality issues that would be associated with use of the noise walls.

Relocations

For the Preferred Alternative and all SDEIS design options, relocations of residents associated with the project would be relatively few and would not be expected to cause an adverse effect on community cohesion (see Section 5.2, Land Use).

The Preferred Alternative and all options would displace the Museum of History and Industry (MOHAI) facility, which is a resource that serves the region's population and visitors to Seattle. However, the museum has plans to relocate its facilities from its current location in the Montlake neighborhood. Because MOHAI is somewhat isolated and access is limited (primarily via 24th Avenue East), relocation to an area with more accessibility and visibility could also benefit this valuable community resource.

Pedestrians, Bicyclists, and Transit

Under the Preferred Alternative and all SDEIS design options, the project would include a regional bicycle/pedestrian path extending from the Montlake interchange area across the Evergreen Point Bridge and connecting to the regional path on the Eastside. This regional trail would function both as a travel option across the lake and as a link to local trails through the Arboretum and bike routes in the Montlake neighborhood that connect to the University District and the Portage Bay/Roanoke neighborhoods. The trail would improve connectivity between neighborhoods, their business districts, and community resources; the trail also would support non-motorized commutes.

Improved transit service and reliability afforded by the new high-occupancy vehicle (HOV) lanes of all options would benefit local communities. All SR 520 users would benefit from a safer bridge that is less vulnerable to catastrophic failure. In addition, all SR 520 users would benefit from a faster, more reliable trip across SR 520, which the project would provide.

Overall, travel times for transit, carpools, and vanpools along SR 520 would decrease, and access between the urban centers east and west of Lake Washington would improve for all options. Better regional connectivity would lead to potential for social interactions and integrations. No neighborhoods that are now connected via bus service would lose connections because of the project, although different routes and interconnections would be required for some trips. All options would close the Montlake Freeway Transit Station. Closure of the station would not affect social resources since alternate connection points and routes would be available.

KEY POINT

The Preferred Alternative and all options would close the Montlake Freeway Transit Station. Closure of the station would not affect social resources since alternate connection points and routes would be available.

As described in Section 5.1, during off-peak hours, the function of the freeway transit station would be replaced by new eastbound and westbound bus stops on the Montlake lid. These stops would continue to be accessible to pedestrians, bicyclists, and other transit riders, and would allow transit agencies to maintain SR 520 bus service to the Montlake interchange area via Eastside-downtown Seattle bus routes during off-peak periods. During morning and evening peak periods, when downtown Seattle-Eastside bus routes would not serve the Montlake lid stops, some bus riders traveling between the Eastside and University District would be required to transfer at the Evergreen Point Freeway Transit Station to reach their final destination, and some bus riders traveling between the University District and downtown Seattle would be required to change their transit route from SR 520 buses to light rail or other local bus routes.

Recreation

As discussed in Section 5.4 and Chapter 9, WSDOT has made every effort to avoid permanent effects on parks, and the Preferred Alternative has fewer effects than the SDEIS design options. The acreage of parkland to be permanently acquired would be 6.7 acres under the Preferred Alternative, 7.5 acres under Option A, 9.1 acres with Option K, and 7.6 acres with Option L.

All loss of park acreage would be mitigated. Public parks and recreation facilities in the project area would remain open and available for all. Section 5.4 provides more information on the recreation effects of the project. Chapters 9 and 10 discuss the mitigation measures proposed for the park losses.

Public Services and Utilities

The Preferred Alternative, like Options A, K, and L, would result in improved response and travel times for public service providers along the SR 520 corridor. These benefits would be due to new HOV lanes and full shoulders where provided, which would allow public service vehicles to bypass traffic and reach incidents faster. The shift in mode from single-occupant vehicle to transit, vanpool, and carpool (as indicated by the project's transportation modeling) would reduce congestion in the corridor. There would be no changes in service areas for any of the providers. There would be no operational effects on utilities or utility providers.

Community Demographics

The project would not affect the overall housing or population characteristics of the project neighborhoods, nor would it displace affordable housing or community facilities. Acquisition of new right-of-way for SR 520 would not affect the ability of the cities and neighborhoods around the project to plan for changes in density that may occur as the region grows.

KEY POINT

The project would enhance the provision of public services like police, fire, and emergency medical by reducing traffic congestion.

Many utilities would need to be protected or relocated during construction, but the extent of relocation has not yet been determined.

How did we evaluate potential effects on low-income or minority populations?

Effects on low-income and minority populations are considered as part of the environmental justice analysis. WSDOT conducted its environmental justice evaluation by analyzing census data, conducting geographic information system (GIS) mapping to compare the poverty and minority status of those who would and would not be affected by the project, and reviewing project discipline reports to identify the types of effects by census block group. In addition, findings were verified with the National Center for Education Statistics (NCES) demographic data on students enrolled in schools in the study area for the 2006 to 2007 school year. The analysis also relied on outcomes from public involvement, particularly outreach, that was directed at low-income and minority populations living in neighborhoods that could be affected by the project.

An extensive research effort was also conducted that included a random-sample telephone survey, focus groups, and a transit intercept survey. This survey was conducted to understand how tolling might affect low-income and minority populations. Outreach efforts and outcomes are documented in detail in the Environmental Justice Discipline Report Addendum and Errata, Attachment 7.

These methods were used to determine what types of effects could affect low-income and minority populations and whether low-income or minority populations would experience "disproportionately high and adverse effects" from the project. Examples of adverse effects on these populations could include displaced residents, increased pollution, or loss of services at a substantially higher level than the rest of the population. Both the U.S. Department of Transportation (USDOT) order (5610.2) and the FHWA order (6640.23) require that WSDOT apply two criteria to determine whether low-income or minority populations would experience "disproportionately high and adverse effects."

- Low-income or minority populations would predominantly bear the effect; or
- Low-income or minority populations would suffer the effect, and the effect would be considerably more severe or greater in magnitude than the adverse effect suffered by the general population.

Two study areas were evaluated for project effects: 1) an area of census block groups within an approximately half-mile radius of the construction limits, and 2) the Evergreen Point Bridge "travelshed," which is the geographic area where bridge traffic originates. Exhibit 4.3-2 in Chapter 4 shows the distribution of low-income and minority populations within the first study area. As described in Section 4.3, just over 5 percent of the population within the half-mile study area overall has household incomes at or below the federal poverty level. Concentrations of low-income residents

What is environmental justice and why do we evaluate it?

The concept of "environmental justice" acknowledges that the quality of our environment affects the quality of our lives and that minority and low-income populations should not suffer disproportionately high and adverse effects from federal projects. Executive Order 12898 directs each federal agency to make environmental justice part of its mission. The U.S. Department of Transportation (USDOT) Order 5610.2, directs federal agencies to:

Explicitly consider human health and environmental effects related to transportation projects that may have a disproportionately high and adverse effect on low-income or minority populations; and

Implement procedures to provide "meaningful opportunities for public involvement" by members of those populations during project planning and development.

along the SR 520 corridor are less than 10 percent except in the area around the I-5 interchange, which has a concentration of between 10 and 20 percent. The University District has the highest concentration of minority populations (between 40 and 50 percent). Less than 1 percent of residents in the project study area are limited-English-proficient (LEP). WSDOT determined the SR 520 travelshed limits (Exhibit 5.3-2) by placing video cameras at SR 520 on- and off-ramps and on the main line during the morning and evening peak periods, as well as midday and weekends. The Washington State Department of Licensing provided WSDOT with the addresses associated with the registered owners of each videotaped vehicle (no other identifying information—such as the vehicle owner’s name—was released to WSDOT).

For the analysis, the Evergreen Point Bridge travelshed study area map was overlaid with U.S. Census data. The Environmental Justice Discipline Report Addendum and Errata (in Attachment 7) contains additional detail and discussion on the results of the analysis.

Potential Effects on Low-Income and Minority Populations

Community Cohesion

As described earlier in this section, community cohesion would improve with the project in place because the lids would reconnect the neighborhoods bisected by SR 520 in the 1960s. This would benefit all residents, including low-income and minority residents along the corridor. The addition of bicycle and pedestrian paths would also contribute to improved community cohesion by enhancing pedestrian and bike travel within and between neighborhoods in the project area. In general, the project study area would be quieter than it is today.

The Preferred Alternative would require relocation of the residents of two single-family houses in the project area, for whom relocation assistance would be provided. (WSDOT has already provided relocation assistance for residents of the two houses in Medina acquired for the project, and the houses that have been acquired south of Portage Bay are vacant.) No low-income, minority, or LEP households would be relocated because of the project. Option A would remove five residential structures. Options K and L would remove three residences.

Tolling

Enrolling in electronic tolling would be more challenging for LEP bridge users, who might have difficulty understanding how to use the system. To help alleviate some of those potential problems, WSDOT is conducting widespread outreach to social service agencies that serve LEP populations to explain how the tolling works. Based on the demographic profile of the study area, WSDOT is also translating information about electronic tolling

Limited-English-Proficient Populations

Title VI of the Civil Rights Act of 1964 prohibits discrimination based on national origin. As a recipient of Federal financial assistance, WSDOT must ensure that persons who are limited-English proficient (LEP) are provided meaningful access to all of its programs and activities. The USDOT and FHWA implementing orders that address environmental justice do not address LEP populations, and effects to that segment of the general population are usually addressed in the social effects discussion. However, within this project’s study area, due to the overlap between effects of tolling on low-income populations and LEP populations, both are addressed in this environmental justice discussion.

Exhibit 5.3-2. Travelshed Study Area



into multiple languages, as described in the Environmental Justice Discipline Report Addendum and Errata (in Attachment 7).

WSDOT found that tolls would affect the ability of social service agencies to provide services to low-income, minority, and LEP populations. Many of those agencies operate under very tight budgets, and the tolls would add to the cost of delivering services to their clients. Although public paratransit services such as King County Metro Access and Community Transit Dial-A-Ride-Transportation (DART) would be classified as transit and would not be charged a toll, private providers such as Hopelink would be charged the same as other private vehicles, which would increase the cost of service delivery.

All options, including the Preferred Alternative, would require electronic tolling for motorists who use the floating bridge. The toll would be the same amount for all users regardless of income, so low-income users would have to spend a higher proportion of their income on the toll. There would also be processes associated with tolling that might make it more difficult for low-income and minority populations. For drivers of personal vehicles, WSDOT investigated whether there would be any alternative to that mode of travel and paying the toll. The findings of surveys and focus groups conducted with low-income SR 520 users in 2008 were that transit would not provide a reasonable, affordable alternative to paying the toll. Low-income SR 520 users who participated in the study indicated that current transit service was too infrequent or too far from where they live or work. The study also found that low-income users do not use transit service on SR 520 at a higher rate than the general population.

Pre-paying for a transponder account would be more challenging for low-income bridge users, as they are more likely to lack a credit or debit card or to have enough money to make the initial deposit in a cash account. As described in the 2009 Environmental Justice Discipline Report, WSDOT found that recipients of public benefits might use their Electronic Benefits Transfer (EBT) card to pre-pay their transponder account. Evergreen Point Bridge users who do not have a credit or debit card could use the new Pay by Mail option; however, the Pay by Mail option costs an additional \$1.50, which would present an additional burden to low-income users.

Following the analysis done for the SDEIS, WSDOT and FHWA evaluated new information that had become available on alternatives to paying a toll, as well as updated information regarding the project's overall transportation benefits. The following information was considered in the Final EIS analysis:

- One of the important concepts in evaluating the impacts of tolls on low-income populations is whether those populations have an affordable alternative to the toll. Since publication of the SDEIS, WSDOT and King County Metro have taken actions to provide

KEY POINT

Because there are affordable alternatives to paying the SR 520 toll, such as transit improvements, and the project would have benefits such as increased predictability and travel time savings, WSDOT concludes that there is no disproportionately high and adverse effect on low-income or LEP populations as a result of the toll.

affordable alternatives to paying the toll. These include expanding transit service and ridesharing service on a number of routes in and near the SR 520 corridor; working with community-based agencies that serve low-income users of the SR 520 travelshed to train them on helping their clients find affordable alternatives to paying a toll, including vanpools and ridesharing; and offering free crossing of the Evergreen Point Bridge between 11 p.m. and 5 a.m.

- FHWA has provided guidance that overall project benefits—including those that apply broadly to all users—should be considered in determining whether there is a disproportionately high and adverse effect on low-income or minority populations. According to research conducted for this project, many low-income drivers consider a faster, more reliable trip across Lake Washington to be worth the cost of a toll. The transportation analysis shows that commutes between Seattle and Bellevue could be shortened by as much as 33 minutes during the morning peak period and as much as 33 minutes during the evening peak period (see Exhibit 5.1-7). Furthermore, all SR 520 users would benefit from a safer facility that is less vulnerable to catastrophic failure.

After considering this information, WSDOT and FHWA determined that the actions taken to provide more affordable alternatives to paying the toll, coupled with the benefits of the project, would offset the adverse effects of the toll on low-income populations. The section below titled *What has been done to avoid or minimize negative social effects?* and the Environmental Justice Discipline Report Addendum and Errata in Attachment 7 include additional information on analysis that has been completed since the SDEIS.

Tribal Cultural Resources

As discussed in Section 4.6, Foster Island is significant to Native American people of Lakes Duwamish descent. The Muckleshoot Indian Tribe, Snoqualmie Tribe, Suquamish Tribe, and Confederated Tribes and Bands of the Yakama Nation have indicated interest in Foster Island because many tribal members are descended from families who lived in the project area. WSDOT has documented the status of Foster Island as a Traditional Cultural Property (TCP) through work with the tribes under Section 106 of the National Historic Preservation Act.

The 6-lane section design of the new roadway would require acquisition of between 0.3 and 0.7 acres of land on Foster Island (depending on option), as well as expansion of the right-of-way around the existing alignment. The Preferred Alternative and SDEIS Option A would have very similar footprints – less than Options K or L. The Preferred Alternative would provide approximately 16 to 20 feet of clearance above Foster Island. This would minimize disturbance to the island and improve the walk along the Arboretum Waterfront Trail by opening views at ground level while still maintaining a relatively low profile. Option A would provide 12 to 18 feet

KEY POINT

The Preferred Alternative has been designed to minimize effects on Foster Island – a Traditional Cultural Property.

Foster Island retains significance to people of Lakes Duwamish descent. The Muckleshoot Indian Tribe, Snoqualmie Tribe, Suquamish Tribe, and Confederated Tribes and Bands of the Yakama Nation have indicated interest in Foster Island because many tribal members are descended from families who lived in the project area.

of clearance, Option L would provide 10 to 12 feet of clearance, and Option K would be at grade or depressed across Foster Island.

The Preferred Alternative's area of acquisition and ground disturbance would be similar to that of Options A, K, and L, but Option K would have the greatest overall effects on Foster Island with the land bridge and fill around it. Options K, and L would also include stormwater treatment on Foster Island, further disrupting the area. See Chapter 2 for more information on the different design elements of each option on Foster Island.

WSDOT has coordinated closely with the tribes on avoidance and minimization of impacts on Foster Island through the Section 106 process (see Section 5.6, Cultural Resources). WSDOT has conducted archaeological investigation of the areas where ground disturbance would occur during construction of the project, and has found no archeological resources in these locations. If previously unidentified archaeological sites were discovered during construction, tribes would be consulted to determine the appropriate mitigation measures. However, based on the information available at this time, no disproportionately high and adverse effects on tribal members are anticipated in relation to cultural resources.

Section 5.6 provides more information on cultural resources and Foster Island. WSDOT is continuing to coordinate with the affected tribes during project design to ensure that new facilities on Foster Island are respectful of its cultural status.

Tribal Fishing

Project effects on tribal fishing are of serious concern to the Muckleshoot Indian Tribe, which has treaty fishing rights in all of Lake Washington, the Ship Canal, and some of the other areas where pontoons may be outfitted and transported (see Section 6.15). WSDOT will continue to work through government-to-government consultation with the Muckleshoot Indian Tribe on an agreement to resolve fully and fairly issues associated with the impacts of the project on treaty rights. Therefore, there would not be a disproportionately high and adverse effect to tribal fishing because of the project, regardless of build option..

The issues that WSDOT investigated with regard to treaty fishing rights involved the effects of the different design options to the fishery and aquatic habitat, as well as the ability to access areas for fishing. The technical aspects involved with these issues are also addressed in Section 5.11 The following provides an overview of some of the issues.

Portage Bay Bridge

Under the Preferred Alternative and all SDEIS design options, the new Portage Bay Bridge would approximately double the amount of over-water and in-water shading compared to the existing bridge. However, the middle

KEY POINT

WSDOT anticipates executing an agreement with the Muckleshoot Indian Tribe to mitigate for the project's adverse effects on tribal treaty rights. If the agreement is executed, WSDOT expects that there would not be a disproportionately high and adverse effect on tribal fishing as a result of the project. WSDOT will continue to work through government-to-government consultation with the Muckleshoot Indian Tribe to fully and fairly resolve issues associated with the impacts of the project on tribal treaty rights.

and eastern sections of the Preferred Alternative would be more than twice as high as the existing bridge thereby off-setting the shading effects on fish habitat. The Preferred Alternative would be 5 feet narrower at the midpoint of the Portage Bay Bridge than Option A and 3 feet wider than Options K or L, which is a negligible difference between alternatives. The project-related changes to the Portage Bay Bridge are not expected to affect tribal fishing. The effects of any of the options would be essentially the same as the No Build Alternative.

West Approach Area

The Preferred Alternative and all SDEIS options would reduce fish habitat functions, primarily because of increased shading by the larger over-water structures. Compared to the existing structures, the proposed over-water structures are about twice as wide for all alternatives. The Preferred Alternative is within the range of over-water shading identified for the SDEIS options. The most likely area that increased shade could affect salmonids is in the west approach area, where the shadow of the bridge may delay, but not prohibit, outmigration of juvenile salmonids. The influence of in-water shading on fish behavior is complex and it varies by width and height of the structures, species, time of year, and other factors. The Ecosystems Discipline Report Addendum and Errata (WSDOT 2011j) provides a detailed analysis of the effects of the project on fish and their habitat.

Lake Washington and East Approach Area

Under the Preferred Alternative and all the SDEIS options, the new Evergreen Point Bridge would have a substantially wider footprint than the existing bridge. It would permanently limit access to usual and accustomed tribal fishing areas for the Muckleshoot Indian Tribe. The wider bridge deck, supplemental stability pontoons, and anchor cables would span from 450 to 600 feet wider than the existing Evergreen Point Bridge. In addition, the alignment of the new bridge would shift north.

The project would have some beneficial effects on the aquatic habitat that supports tribal fishing. These effects include:

- The Preferred Alternative, like all the SDEIS options, would result in overall water quality improvements because WSDOT will be treating stormwater for the project roadways to levels that comply with current water quality standards. In contrast, there is only limited stormwater treatment under existing conditions.
- Spacing of bridge columns in the west approach area under the Preferred Alternative would be increased compared to the existing structures and bridge spans would be longer, which would reduce the number of columns in fish habitats in tribal fishing areas.

The project would also have a number of potentially adverse effects on tribal fishing in Lake Washington. These effects can be summarized as follows:

- The project's footprint would be significantly larger than that of the existing bridge, resulting in a permanent loss of fishing area to the Muckleshoot Indian Tribe. Bridge structures and operations located in or near water could obstruct access for fishers. Because the bridge anchors would extend farther from the bridge than the existing anchors, tribal fishers may need to move farther away from the bridge to fish. This could bring their equipment into areas of heavier boat traffic, potentially exposing their gear to an increased risk of damage.
- The Ship Canal provides the only access to the Lake Washington system and is a critical route for all salmonids migrating between Puget Sound and Lake Washington. Salmon passing through this area, including out-migrating juveniles and returning adults, are already affected by vessel traffic and the existing bridge structure. As noted in Section 5.11, the project's wider footprint (and resultant shading or shadow effects) could worsen these effects. The influence of in-water shading on fish behavior is complex and it varies by width and height of the structures, species, time of year, and other factors. The Ecosystems Discipline Report Addendum and Errata (Attachment 7) and the Biological Assessment and Opinions [Attachment 18] provide a detailed analysis of the effects of the project on fish and their habitat.
- The Preferred Alternative and all SDEIS design options would include a bridge maintenance facility on the east end of the bridge in an area that may be used for sockeye spawning (see Section 4.11). This facility could have adverse effects on the sockeye spawning grounds. Design refinements to the east approach have resulted in more substrate displacement in the sockeye spawning areas than was reported in the SDEIS (see Section 5.11 for more information). The maintenance facility's new dock would create new shading and salmon predator habitat at this location, and would result in permanent loss of this specific location for tribal fishing.
- The proposed lighting on the Montlake Cut bascule bridge, west approach, and floating spans and lighting on the east approach span and maintenance facility have the potential to affect listed salmonids. Lighting associated with the Montlake Cut bascule bridge would be similar to lighting on the existing bridge; however, because there will be two new bridges, the area illuminated is shifted to the east by approximately 100 feet. Lighting in the west approach and east approach structures will be less than under existing condition due to shielding and increased structure heights. The project would also include a reduction of roadway lighting fixtures to the extent possible

on portions of the west approach, the entire floating span, and portions of the east approach.

What are the indirect effects of the project on social elements?

The project would not result in indirect effects on social elements and would not indirectly affect low income or minority populations. Operation of the Preferred Alternative, or Options A, K, or L would generally benefit community cohesion and would not change demographics or existing land use patterns. The project would not increase demand for public services or utility infrastructure within the project vicinity, as the project would not induce growth (see Section 5.2).

What has been done to avoid or minimize negative social effects?

The Preferred Alternative and all the SDEIS design options incorporate features intended to minimize negative effects on neighborhoods, including context-sensitive design, landscaped lids, a regional bicycle/pedestrian path, and transit improvements in the Montlake area. In addition, design of the roadway reflects community goals for the narrowest possible footprint while not precluding future light rail, and a lower floating bridge profile so as not to encroach on residential or park property more than necessary, and to prevent views from being obscured. The Preferred Alternative design reflects comments received on the SDEIS from project area neighborhoods, and incorporates the results of a collaborative design process for the Montlake area that will help to enhance community cohesiveness and provide improved pedestrian, bicycle, and transit facilities. The project also would enhance parks, particularly the Arboretum, as mitigation for the increased width and bulk of the highway in this area.

In evaluating effects to tribes in the project area, the project design has been refined to avoid effects to Foster Island (as discussed in Section 2.5) and to fish resources and habitat (as discussed in Section 5.11). The following section summarizes those project refinements in the context of tribal environmental justice effects.

Tolling

In 2009, the Washington State legislature authorized King County to raise property taxes to fund transit, a portion of which has been dedicated to enhancing service along the SR 520 corridor in anticipation of tolling. At the time of publication of the SDEIS, there were no specific plans for how the service dollars would be allocated. Since then, a plan for transit service improvements has been developed and adopted.

A comparison of the transit service improvements map with the demographic analysis of the SR 520 travelshed shows that although there

are pockets of low-income residents throughout the SR 520 travelshed, the highest concentrations of low-income SR 520 users are living in the following areas: neighborhoods along SR 522; the Totem Lake area in Kirkland; Bothell where I-405 intersects with SR 522; and the Seattle neighborhoods of Northgate, the University District, First Hill, and downtown Seattle. King County Metro Transit and Sound Transit have committed to making transit service improvements on routes that serve some of these neighborhoods. The new routes are described below.

These improvements address the issue of transit frequency for many people living in neighborhoods with low-income populations in the SR 520 travelshed. It should be noted that many of the improvements are on commuter routes rather than all-day routes; therefore, they do not expand travel options for low-income people who need to travel during non-peak hours (such as service or shift workers). However, tolls are lower or non-existent during non-peak hours, reducing the effect on low-income users crossing the bridge during those times. Because the transit service improvements include only one new route (Sound Transit route 542, described below), they do not help many low-income users for whom transit is too far from where they live or work to serve as a reasonable alternative to paying the toll on the Evergreen Point Bridge.

The new transit enhancements include improvements to the following routes:

- King County Metro Transit route 255: This is all day service from the Totem Lake area in Kirkland to downtown Seattle. Starting in October 2010, route 255 extended morning and afternoon weekday trips from Kirkland Transit Center to Totem Lake Transit Center. Starting in February 2011, Route 255 will improve weekday service frequencies by 10 to 30 minutes. Route 255 service from Totem Lake to downtown Seattle begins at approximately 4:30 a.m. and ends at 10:30 p.m. Return service begins at approximately 5:25 a.m. and ends at midnight. These improvements will provide better access and more frequent service for low-income people living in the Totem Lake area of Kirkland.
- King County Metro Transit route 265: This commuter route operates during peak periods from Redmond to Downtown Seattle. Starting in October 2010, route 265 extended from Downtown Seattle to First Hill. However, because route 265 provides only PM peak period service from First Hill, these improvements will have a negligible benefit to low-income residents in First Hill.
- King County Metro Transit route 271: This is all-day service from the Eastgate Park and Ride to the University District via Bellevue Transit Center. Starting in October 2010, Eastgate-University District weekday service began running every 10-30 minutes until 6:00 p.m. Route 271 also extended its 30 minute headway service later into the evening on weekdays. Service from the University District to Eastgate

begins at approximately 5:30 a.m. and ends at 10:20 p.m., with return service beginning at 5:45 a.m. and ending at 10 p.m. This improvement will provide more frequent cross-lake travel for low-income residents living in the University District.

- King County Metro Transit route 311: This is a commuter route that operates during peak periods on weekdays. Starting in February 2011, route 311 will have three new morning and three new afternoon trips between Woodinville and Downtown Seattle, which will provide low-income people living in the Duvall area with service every 15 minutes during the peak periods. Service from Duvall to Downtown Seattle begins at 4:51 a.m. and ends at 7:17 a.m.. Return service begins at 3:15 p.m. and ends at 6:15 p.m.. There are six outbound trips from Duvall to Seattle and six return trips, so these route improvements have limited benefits for low-income people who work non-peak hours (such as service or shift workers).
- Sound Transit route 542: This new commuter route started in October 2010 and provides two-way weekday service with 15-minute frequency during peak periods from Redmond to the University District. Service begins from the University District to Redmond at approximately 6:30 a.m. and runs every 15 minutes until 10 a.m.. It starts up again at 2:30 p.m. and runs every 15 minutes until 6 p.m.. Return service begins at 5:30 a.m. and runs every 15 minutes until 9 a.m.. It starts up again at 3:30 p.m. and runs every 15 minutes until 7 p.m.. This improvement will provide more frequent cross-lake service for low-income people living in the University District. Because route 542 does not provide all day service, these route improvements have limited benefits for low-income people who work non-peak hours.
- Under the WSDOT Vanpool Investment Program (VIP), there will be a number of new vanpools in service. Vanpools are currently available on a first-come, first-served basis for a monthly rate that covers gas, maintenance, and insurance. Parking and tolls for vanpools are generally free. The rate varies, depending on the size of the van, number of trips per week, and distance traveled per trip. For example, the monthly rate for a 7-10 passenger van traveling up to 20 miles roundtrip five days a week would be \$380 (\$38-\$54 per person/month). Individuals who wish to form a vanpool must do the following: assemble a group of four or more people, choose a driver, and complete an application. WSDOT has been promoting vanpools to community-based social service agencies as an affordable alternative to paying the toll for their staff and clients.

Although not related to implementation of early tolling on SR 520, King County Metro Transit will be launching RapidRide bus service to from Redmond to Bellevue via Crossroads and Overlake in fall 2011. RapidRide B Line will provide all day, high frequency service and improve connections to buses serving the Eastside, Seattle, south King County, Lynnwood,

Everett, and other places. This will help low-income residents of Bellevue's Crossroads neighborhood as well as low-income people traveling to Bellevue or Redmond for work.

In addition, WSDOT has been conducting extensive outreach to community-based social service agencies that serve low-income residents of the SR 520 travelshed to update them about the tolling and train them on how to help their staff and clients access affordable alternatives to paying the toll, including vanpools and ridesharing. Since May 2010, the WSDOT tolling team has been conducting the following outreach activities:

- Translated informational materials about tolling into Chinese, Korean, Japanese, Russian, Spanish, and Vietnamese – the same languages that the Washington State Department of Licensing translates.
- Translated the Good to Go! Website into Spanish.
- Distributed information about tolling to community-based social service agencies, churches, schools, and other organizations that serve low-income and minority populations throughout the travelshed.
- Facilitated two trainings for social workers to help them provide information about tolling to their clients and ensure that staff has the tools and materials to share accurate information with clients.
- Purchased advertising, pitched stories, and coordinated with editorial boards for ethnic newspapers and radio stations.
- Disseminated information about how to purchase transponders and establish and replenish prepaid transponder accounts using an EBT card. EBT cards function like a debit card for recipients of public benefits.

Tribal Cultural Resources and Fishing

The project design has resulted in the narrowest roadway width and the fewest columns practicable across Foster Island, minimizing effects on the TCP. The archaeological work that WSDOT conducted in 2010 also helped reduce the potential for effects by confirming that there were no archaeological resources in the areas planned for ground disturbance. Measures identified in the Programmatic Agreement for Section 106 (see Section 5.6 and the Final Cultural Resources Assessment and Discipline Report in Attachment 7) will ensure that work done on Foster Island respects the importance of this area to the tribes. Ongoing coordination with staff from the Muckleshoot Indian Tribe Fisheries Division has also resulted in design changes that will help reduce effects on tribal fishing. These changes include:

- Reducing in-water structures by minimizing the number and size of bridge support columns, increasing the space between columns, and using special footings for the structure foundation.

- Minimizing the effects of shading on open-water habitat by increasing the bridge height compared to existing conditions and SDEIS options and reducing the overall width of the over-water structures by minimizing the number of lanes and reducing shoulder widths.
- Improving water quality by treating stormwater runoff.
- Minimizing the effects of lighting on aquatic habitat by placing them on the center median whenever possible and using special fixtures on lights that are adjacent to the water.

What would be done to mitigate for negative effects that could not be avoided or minimized?

Tolling

As described in this report, there are substantial new improvements to transit serving SR 520 and extensive outreach to community-based social service agencies conducted by WSDOT. Coupled with the abatement and minimization measures described above, WSDOT concludes that the effects of the toll on low-income populations have been greatly minimized. Therefore, no mitigation measures are recommended.

Tribal Cultural Resources and Fishing

WSDOT is actively consulting with the Muckleshoot Indian Tribe, Suquamish Tribe, Snoqualmie Tribe, and Tulalip Tribes in accordance with Section 106 of the National Historic Preservation Act and the 1989 Centennial Accord between the Federally Recognized Tribes in Washington State and the State of Washington, the New Millennium Agreement, the WSDOT Executive Order on Tribal Consultation, E 1025.01, and the Centennial Accord Plan of the Washington Department of Transportation. To date, two separate agreements have been developed for this project:

- To address cultural resources effects, tribes are signatories to a Section 106 Programmatic Agreement to satisfy the requirements of the National Historic Preservation Act. The agreement includes by reference a separate Foster Island Treatment Plan to mitigate for adverse effects on Foster Island. In addition, an archaeological treatment plan is also incorporated by reference into the Section 106 Programmatic Agreement to address further cultural resources analyses as project design and construction progress.
- As described in Chapter 1, WSDOT and FHWA are engaged in government-to-government consultation with the Muckleshoot Tribe to determine appropriate mitigation for the project's effects on tribal treaty fishing. The outcome of this consultation will be a Memorandum of Agreement that documents WSDOT's commitment to a set of specific mitigation measures. .

Section 5.6 and the Final Cultural Resources Assessment and Discipline Report (Attachment 7) contain more information about mitigation relating to Foster Island. With implementation of these measures, there would be no disproportionately high and adverse effects on tribes regarding the Foster Island TCP.

A draft version of the Memorandum of Agreement with the Muckleshoot Tribe is expected to be completed for review by summer 2011 and signed by the end of the year. Conditional upon execution of this agreement, WSDOT anticipates that effects on tribal treaty fishing will be fully mitigated and that there will be no disproportionately high and adverse effect on minority populations as a result of the project.

What is the Environmental Justice Determination for the project?

According to the FHWA implementing order, when determining whether a particular program, policy, or activity will have disproportionately high and adverse effects on minority and low-income populations, FHWA must take into account mitigation measures, enhancements, and potential offsetting benefits to the affected minority or low-income populations. Other factors that may be taken into account include design, comparative effects, and the relevant number of similar existing transportation system elements in non-minority and non-low-income areas.

There would not be a disproportionately high and adverse effect to minority or low income populations as a result of tolling. This finding was reached considering the following:

- All SR 520 users would benefit from a safer bridge that is less vulnerable to catastrophic failure and that would provide a faster, more reliable trip across SR 520.
- Increased transit options (including more routes, improved headways, and vanpool and ride-sharing programs) are being implemented across Lake Washington to provide more affordable and convenient options for avoiding the toll.
- Tolls would be lower at non-peak hours.

There would not be a disproportionately high and adverse effect on minorities as a result of project construction or operation on Foster Island. In this case, the finding specifically refers to the tribal cultural resources of Foster Island.

This finding was reached considering:

- Measures in the current project design to minimize effects on the TCP
- The mitigation measures agreed upon as part of consultation under Section 106 of the NHPA

There would not be a disproportionately high and adverse effect to minorities as a result of project construction or operation in Lake Washington and associated waterbodies. In this case, the finding specifically refers to Muckleshoot Indian Tribe's treaty fishing rights.

This finding was reached considering:

- Measures in the project design to minimize effects on tribal fishing
- WSDOT's anticipated execution of an agreement with the Muckleshoot Indian Tribe to fully and fairly resolve issues associated with the impacts of the project on treaty rights.

5.4 Recreation

This section discloses potential effects on parks and recreation resources within the project area. The discussion presents information about acquisition of park land as well as changes in noise or visual quality or other elements of the environment that might affect the future use and enjoyment of the facilities. These resources are protected in part by two federal regulations. Section 4(f) (discussed in Chapter 9) requires an evaluation of the use of park and recreation resources in accordance with Section 4(f) of the Department of Transportation Act (49 USC 303). Section 6(f) (discussed in Chapter 10) requires an assessment of the conversion effects and replacement requirements for park properties that have been improved with funds from the Land and Water Conservation Fund Act (LWCFA) and Aquatic Lands Enhancement Account (ALEA) grant programs. Chapters 9 and 10 discuss the specific avoidance and mitigation requirements related to these laws and the project's effects in the context of those regulations. Chapter 9 presents all recreation mitigation measures that WSDOT proposes to undertake.

KEY POINT

The Preferred Alternative, like the SDEIS design options, would affect park land by acquiring all or a portion of six recreational properties. There could also be negative effects related to visual quality and aesthetics where widening of the roadway would bring the project footprint closer to parks. The Preferred Alternative would acquire 6.7 acres of park land, compared to 7.5 acres for SDEIS Option A, 9.1 acres for SDEIS Option K, and 7.6 acres for SDEIS Option L.

How would the project affect parks and recreation resources?

Under the Preferred Alternative, as with Options A, K, and L, the project would result in a loss of park land through the acquisition of all or a portion of six recreational properties. Estimated permanent acquisition of park and recreation resources is shown in Table 5.4-1. As shown, the Preferred Alternative would acquire the least amount of park land. Each recreation resource that would experience an effect from operation of the project (whether property is acquired or not) is discussed below. See Section 4.4 for a description of the existing characteristics and uses of each recreation resource.

Table 5.4-1. Permanent Park Acquisition (acres)

Resource	Existing Size	Preferred Alternative	Option A	Option K	Option L
Bagley Viewpoint	0.1	0.1	0.1	0.1	0.1
Montlake Playfield	26	1.2 ^a	2.0 ^a	1.0 ^a	0.8 ^a
East Montlake Park	8.8	2.8	2.8	5.2	4.3
McCurdy Park	1.4	1.4	1.4	1.4	1.4
Washington Park Arboretum	230	0.5	0.4	0.7	0.3
UW Open Space	3	0.7	0.9	0.8	0.6
Total Acquisition		6.7	7.5	9.1	7.6

Notes: Adding the suboptions to Options A, K, and L would not change the park acquisitions listed in this table. Column totals do not add due to rounding.

^a Acquisition includes the submerged lands north of Portage Bridge.

Bagley Viewpoint

The Preferred Alternative and all SDEIS options, would result in the complete acquisition of Bagley Viewpoint to provide right-of-way for the 10th Avenue East/Delmar Drive East lid (Exhibit 5.4-1). WSDOT proposes to replace the viewpoint functions of the existing site on that new lid. Section 5.5 provides more information on the views that would be provided from the lid.

Roanoke Park

Although no property would be acquired from Roanoke Park for the Preferred Alternative or any of the SDEIS options, the 10th Avenue East/Delmar Drive East lid would improve the park's setting and the experience of park users by reducing freeway noise and creating a more continuous stretch of open space south of the park. The lid would create new open space and grassy areas for residents in the surrounding neighborhoods. The 10th Avenue East/Delmar Drive East lid would include pathways to improve connectivity and to provide access across SR 520, improving safety for pedestrians and bicyclists.

Private Recreational Boating Facilities in Portage Bay

Queen City Yacht Club and Seattle Yacht Club

Operation of the Preferred Alternative or Options A, K, and L would not result in any negative effects on recreational activities at the yacht clubs. As a result of design changes made to reduce effects on the NOAA facility, the Preferred Alternative would reduce the physical space available for moorage at the Queen City Yacht Club by approximately one boat slip (see Section 5.2 for more information about property impacts and changes to right-of-way). Improvements to SR 520 and the Montlake interchange area would have a positive effect on traffic flow and access to the Seattle Yacht Club. The Preferred Alternative would reduce noise levels at the Queen City Yacht Club and Seattle Yacht Club compared to the No Build Alternative. Stormwater treatment would improve the quality of runoff entering Portage Bay in the vicinity of the yacht clubs (see Section 5.10 for more information on water resources and water quality). As noted for Montlake Playfield, context-sensitive design of the new Portage Bay Bridge is expected to provide a positive visual experience for boaters and seasonal boating event attendees.

Montlake Playfield

Preferred Alternative

The Preferred Alternative would acquire a portion of the Montlake Playfield (Exhibit 5.4-2). The new ramp at Montlake Boulevard would be on columns through approximately 0.2 acre at the east side of the Montlake Playfield property. Because this area is adjacent to WSDOT right-of-way

Exhibit 5.4-1. Permanent Park Acquisition at Bagley Viewpoint

Park Acquisitions

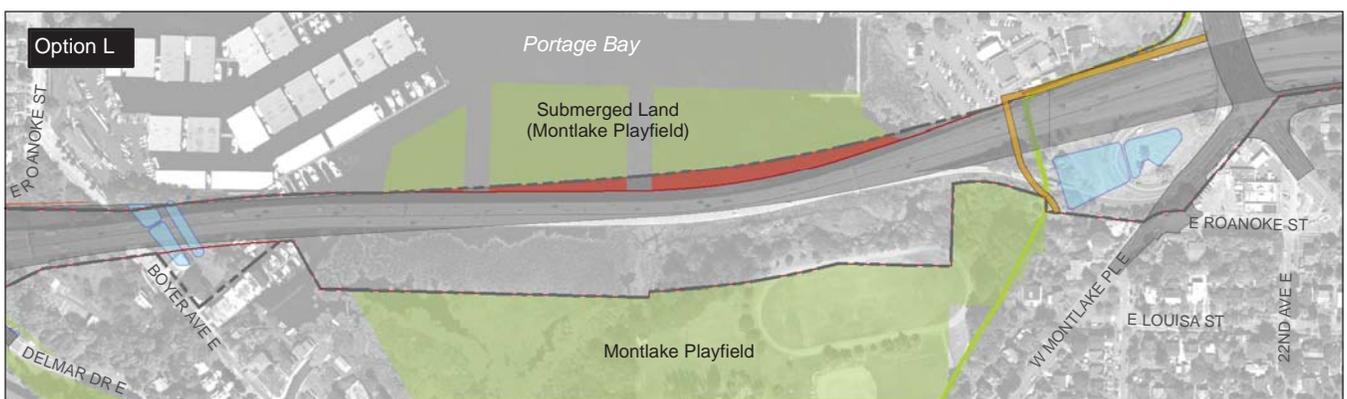
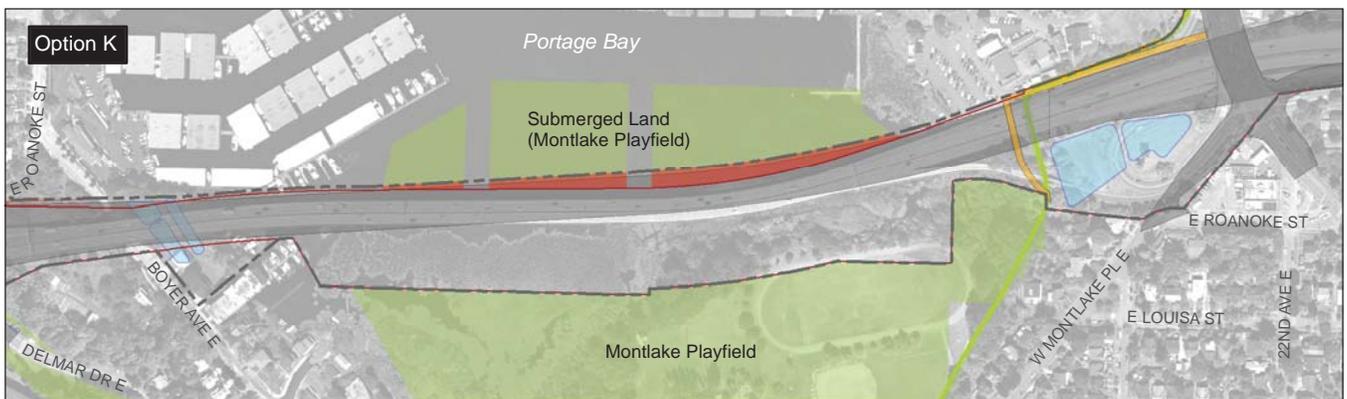
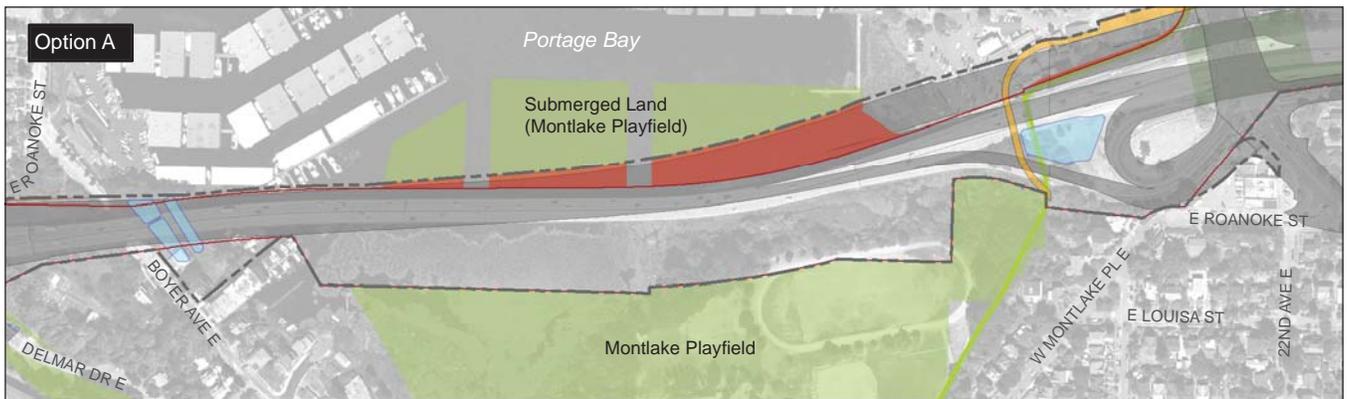
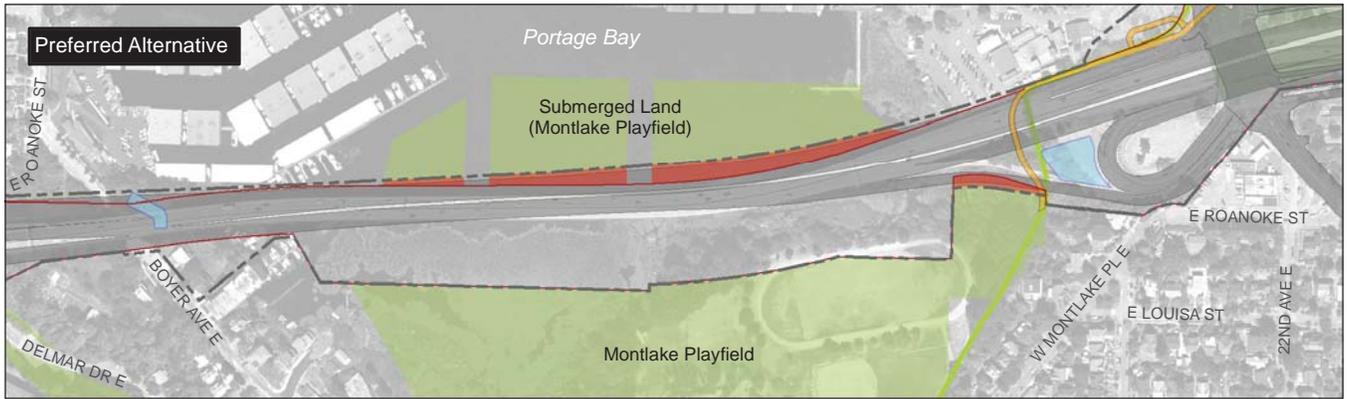
Conceptual Landscape Design



- Park Acquisition**
- Converted to right-of-way
 - Proposed right-of-way
 - Existing right-of-way
 - Stormwater treatment facility
 - Pavement
 - Park



Exhibit 5.4-2. Permanent Park Acquisition at Montlake Playfield



Park Acquisition	Existing right-of-way	Park
Converted to right-of-way	Stormwater treatment facility	Proposed bicycle/pedestrian path
Proposed right-of-way	Pavement	Existing regional bicycle/pedestrian path

0 200 400 Feet

and is somewhat removed from the main activities of the park, it is not used much. However, there would be no discernable difference to boating access around the bridge in this part of the park.

The southern edge of the Portage Bay Bridge would appear to be in the same location as today viewed from Montlake Playfield, with the alignment shifting over 10 feet farther away at the midspan of the bridge and 10 feet to 15 feet closer at the bridge ends. See Chapter 2 for a description of the new bridge location and the text box on page 5.2-3 for information on right-of-way boundaries in this area. As with existing conditions, the bridge would not be visible during the summer months from the playfield area of the park, screened by the existing deciduous trees between the playfield area and Portage Bay. Section 5.5 provides more information on the visual quality effects of the project.

There would be no change to shoreline access for launching and landing of small boats from Montlake Playfield. Views toward Portage Bay from the shoreline area would be similar to today. Noise from traffic on the Portage Bay Bridge would be less than under existing conditions or the No Build Alternative. Section 5.7 provides more information about noise effects in the Montlake Playfield area.

Options A, K, and L

The operational effects of Options A, K, and L would be similar to the Preferred Alternative except that none of these options would require the use of park property for a ramp to Montlake Boulevard. Options A, K, and L would reduce noise compared to the No Build Alternative, and noise walls recommended along the Portage Bay Bridge for options A and L would further reduce noise in the park.

East Montlake and McCurdy Parks

The Preferred Alternative and all the SDEIS options would remove the MOHAI facility and change all of McCurdy Park from recreation to transportation use. All options would make the freeway more noticeable at East Montlake Park (Exhibit 5.4-3).

Preferred Alternative

Under the Preferred Alternative, about 4.2 acres of combined park area would be changed to a transportation use, including all of McCurdy Park where a stormwater pond would be placed. The often-used features of East Montlake Park (including the nonmotorized boat launch areas along Union Bay, the Ship Canal Waterside Trail, and the Arboretum Waterfront Trail) would remain in place. The open space area of East Montlake Park would be reduced with placement of a parking lot here to retain on-site parking once the existing large lot was removed. Access to the park would be from the relocated 24th Avenue East.

Exhibit 5.4-3. Permanent Park Acquisition at East Montlake and McCurdy Parks (Preferred Alternative and Option A)

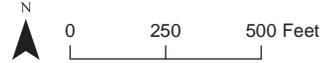


Park Acquisition

- Converted to right-of-way
- Proposed right-of-way
- Existing right-of-way

- Stormwater treatment facility
- Pavement
- Park

- Existing regional bicycle/pedestrian path
- Proposed bicycle/pedestrian path



The views of SR 520 would be different than today. Currently, SR 520 can be heard, but is generally not seen, from areas within East Montlake Park because the view to the south is blocked by the MOHAI facility and trees in McCurdy Park. With the Preferred Alternative, the top of the SR 520 Montlake lid would be taller than the ground surface at East Montlake Park and the north side wall of the lid would face the park area. The existing trees at McCurdy Park, which now buffer the existing freeway, would be gone and would be difficult to replace adjacent to the freeway due to space limitations.

The new stormwater facility (where McCurdy Park is now located) would be landscaped, which would contribute to screening of the freeway. A new pedestrian/bicycle trail would enter the park under SR 520, creating new north/south connectivity and a loop trail with the Arboretum Waterfront Trail (see Exhibit 5.4-3). Noise levels would not be perceptibly different than today or under the No Build Alternative.

Option A

The same acreage of park area would be acquired with Option A as with the Preferred Alternative (4.2 acres). The effects of Option A would be similar to those described above for the Preferred Alternative except that the Montlake lid would be smaller and the east lid portal and freeway ramps onto the lid would be more prominent visually at East Montlake Park.

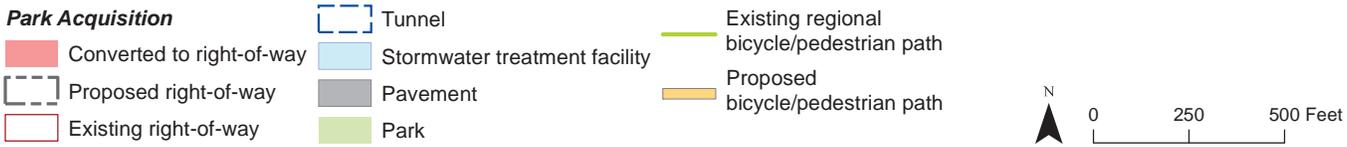
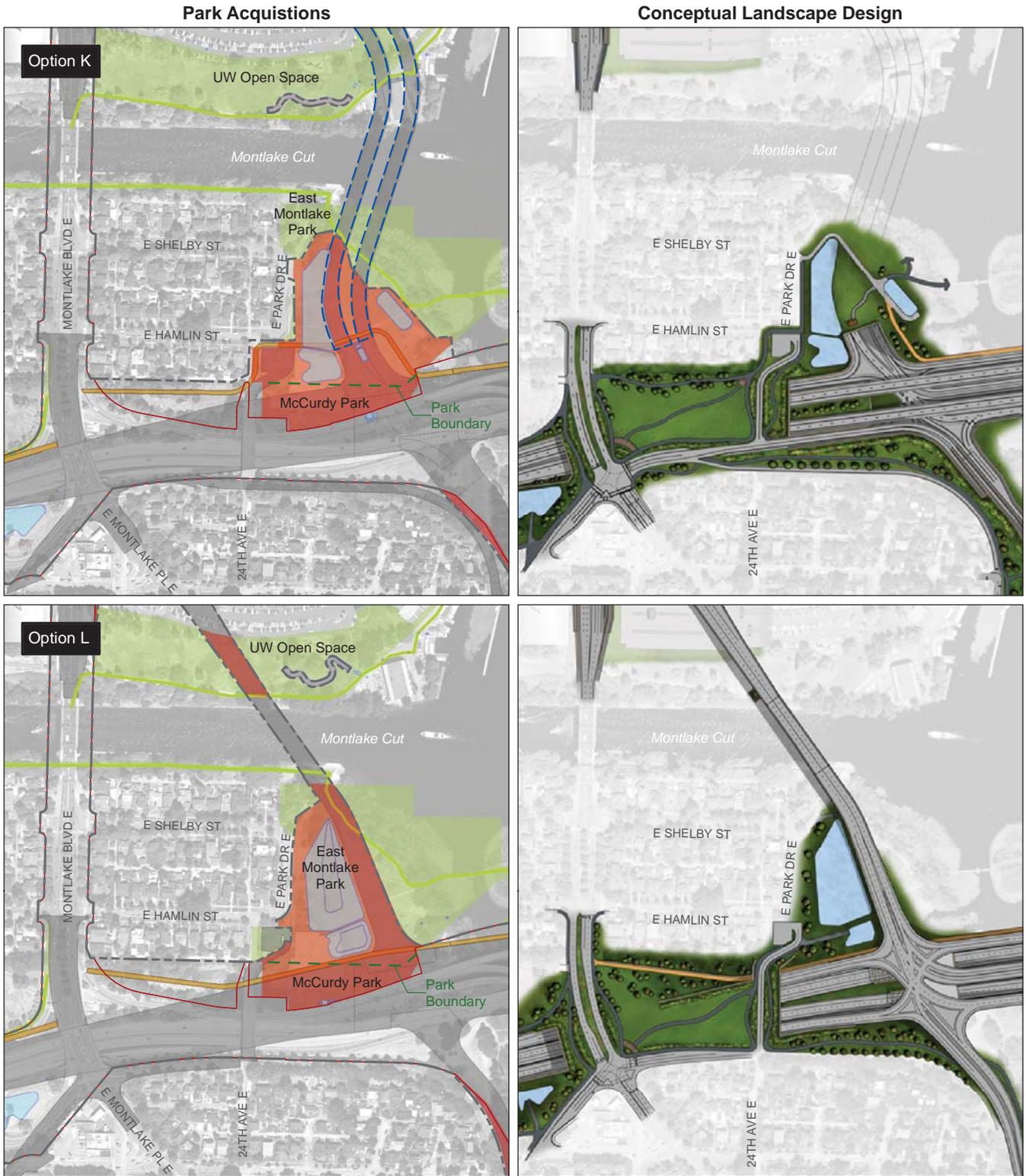
Option K

Option K would change 6.6 acres of the total park area to transportation use, the most of all the options. The atmosphere at the park would be different than the other options because of the below-grade SR 520/Montlake Boulevard interchange. Although the roadway would be closer to the park area than under existing conditions or the Preferred Alternative or Option A, there would be no noticeable change in noise levels for most of the park and noise levels would be noticeably lower toward the west side of the park due to the below-grade SR 520 interchange. The SR 520 regional bicycle and pedestrian path would be routed through the park area. All of the existing park uses (open space, trails, and boat launch/landing areas) would remain in place as with the other options (including the Preferred Alternative).

Option L

Option L would change 5.7 acres of the total park area to transportation uses (Exhibit 5.4-4). However, regardless of acreage acquired, this option would have the greatest effects on the park area of all the options. The new roadway between SR 520 and the second bascule bridge would travel overhead through the heart of the park, bringing associated shade and change in character of the park area. Noise levels in the park would not be noticeably different due to the elevation of the roadway over the area. All of the existing park uses (open space, trails, and boat launch/landing areas)

Exhibit 5.4-4. Permanent Park Acquisition at East Montlake and McCurdy Parks (Options K and L)



would remain in place as with the other options, but the park experience would be considerably different with the location of the new overhead roadway.

University of Washington Open Space

All options, including the Preferred Alternative, would acquire a portion of the University of Washington Open Space site. Exhibit 5.4-5 shows the acquisition associated with each option.

Preferred Alternative

The Preferred Alternative would acquire 0.7 acre of land from the University of Washington Open Space for transportation uses. Approximately 0.2 acre of that would be the grassy open space area at the west side of the site. That area would be taken up by a wider Montlake Boulevard (where the second bascule bridge connects to land). Also, in the western portion of the site, noise would increase somewhat with the new roadway configuration. The remaining 0.7 acre acquired on-site would be used for a stormwater bioswale that would treat runoff from Montlake Boulevard (see section 5.10, Water Resources).

Changes in noise would not be noticeable toward the middle and eastern portions of the University of Washington Open Space. The remaining 0.5 acre to be acquired here would be in this portion of the site and would be used for a stormwater bioswale. The bioswale would not affect the functions of this portion of the site—grassy open space, the Waterfront Activities Center, the climbing rock, or the Canoe House (on property adjacent and to the east of this site). The bioswale would be installed through an area where park users can currently walk or play, but it would be an aesthetically pleasing new feature for the site.

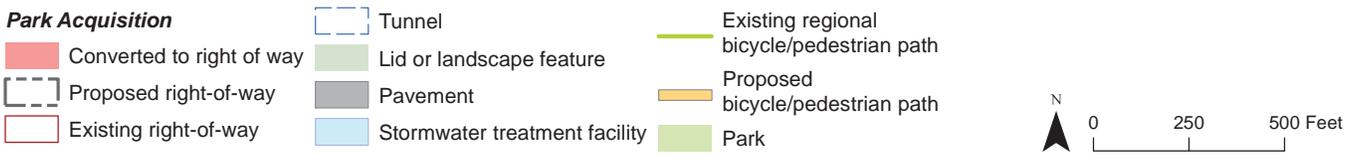
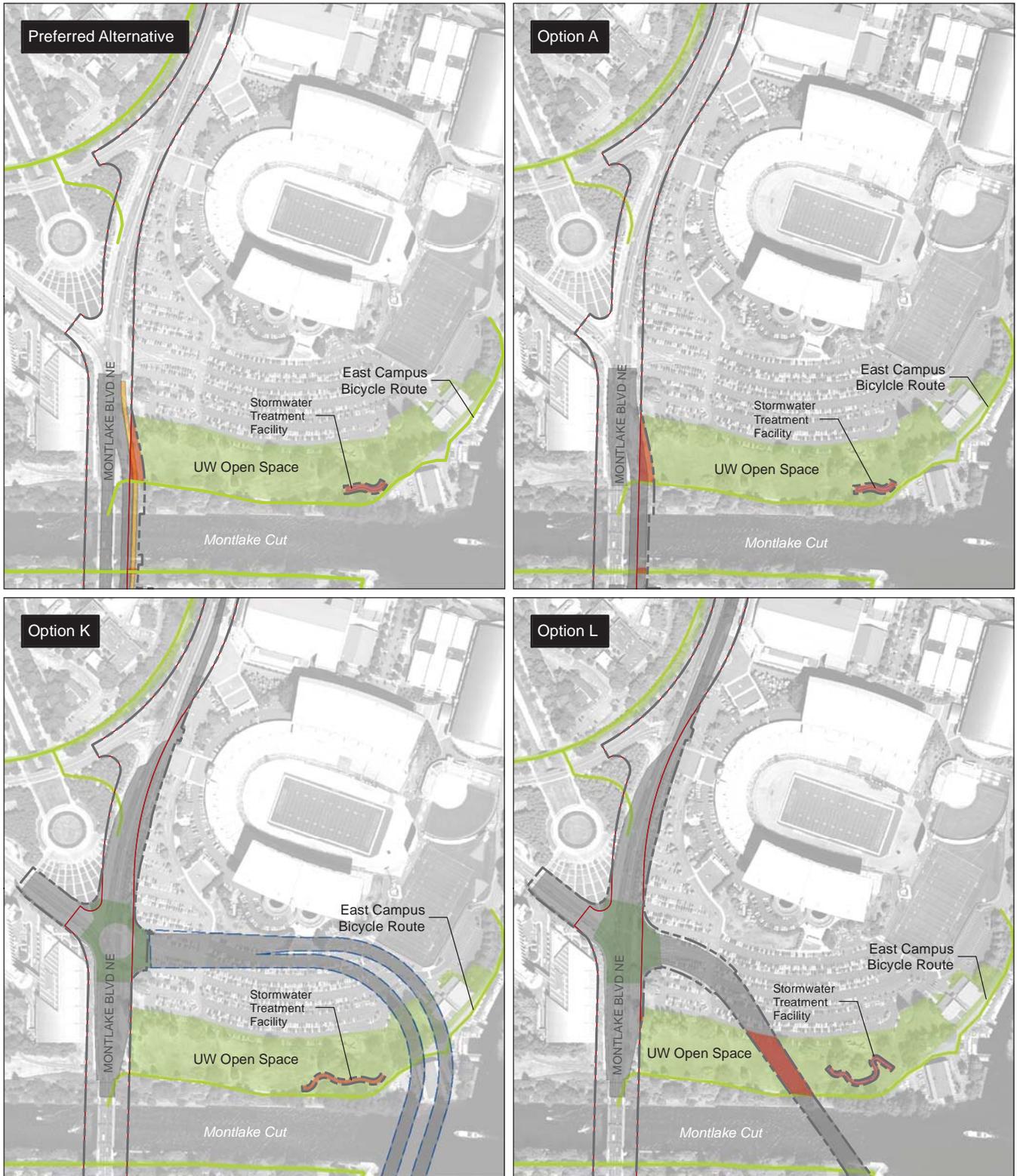
Option A

Option A would acquire 0.9 acre of land from the University of Washington Open Space for transportation uses. The overall effects would be the same as with the Preferred Alternative.

Option K

Option K would acquire 0.8 acre of the University of Washington Open Space for transportation functions, about the same as the Preferred Alternative and Option A. The new roadway between the SR 520/Montlake Boulevard interchange and the Montlake area would tunnel under the Montlake Cut and the UW Open Space, and surface in the Husky Stadium Parking lot north of and adjacent to the UW Open Space, where it would connect to a reconstructed Pacific Street/Montlake Boulevard intersection. To accommodate the tunnel portal, the other three legs of the intersection would be lowered, including the segment of Montlake Boulevard along the UW Open Space site. A retaining wall would be

Exhibit 5.4-5. Permanent Park Acquisition in UW Open Space



installed along Montlake Boulevard to accommodate the lowered roadway. There would be no perceptible change to noise levels at any portion of this site.

As with Option A and the Preferred Alternative, the bioswale would remove an area where park users can currently walk or play. All other existing functions and uses now available on the site would remain in place with this option.

Option L

Option L would acquire 0.6 acre of the UW open space for transportation uses and would have the greatest effect because it would place the north end of the new bascule bridge over the open space, making it visible to users of the Waterfront Activities Center, the climbing rock, and other areas. Noise levels in all areas of the park would increase noticeably. All existing functions and uses now available on the site would remain in place with this option, but the character of the site would have changed with the new overhead roadway through the site.

Washington Park Arboretum

The Preferred Alternative and all the SDEIS design options would convert land in the Washington Park Arboretum at Foster Island from recreation use to transportation use. Exhibits 5.4-6 and 5.4-7 show where land would be acquired. While all options, including the Preferred Alternative, would acquire a similar amount of right-of-way, Table 5.4-1 shows that Option K would require the largest area (0.7 acre) for its land bridge and related fill section. Effects of all options on the Washington Park Arboretum adjacent to the existing SR 520 would include filling of wetlands and removal of trees.

Preferred Alternative

The Preferred Alternative would cross Foster Island on a bridge. The wider footprint of the new roadway would require acquisition of 0.5 acre of land north of the existing right-of-way, of which 0.2 acre is forested and the remainder is vegetated with grass and shrubs. The highway main line would provide approximately 14 to 20 feet of clearance above the crossing of the Arboretum Waterfront Trail on Foster Island. The Arboretum Waterfront Trail currently crosses under SR 520 in a low and narrow (8 feet high by 12 feet wide) pedestrian underpass that many trail users find unpleasant and uncomfortable. The new SR 520 structure would allow the trail to pass between columns of an elevated structure, improving the user experience by opening views at ground level while still maintaining a relatively low profile.

Although the land underneath the footprint of the highway would be within the WSDOT right-of-way, it would be available for recreational use after construction, except for the area necessary for the columns to support the highway structure. Under current conditions, canoes and kayaks can access

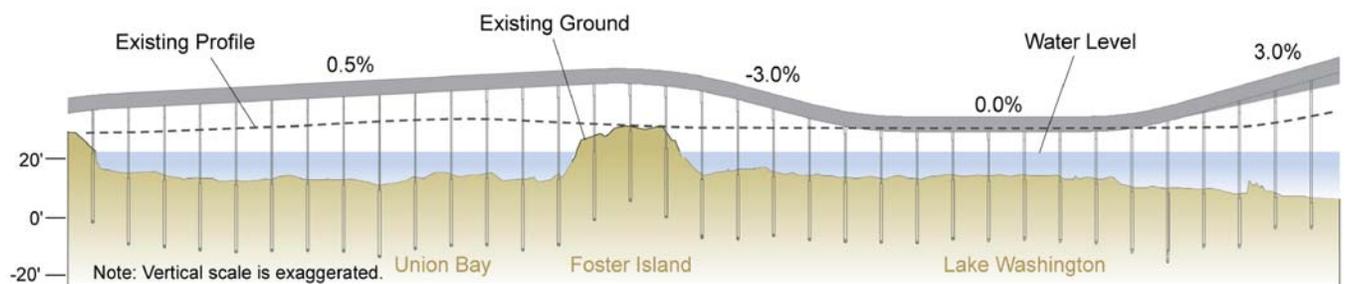
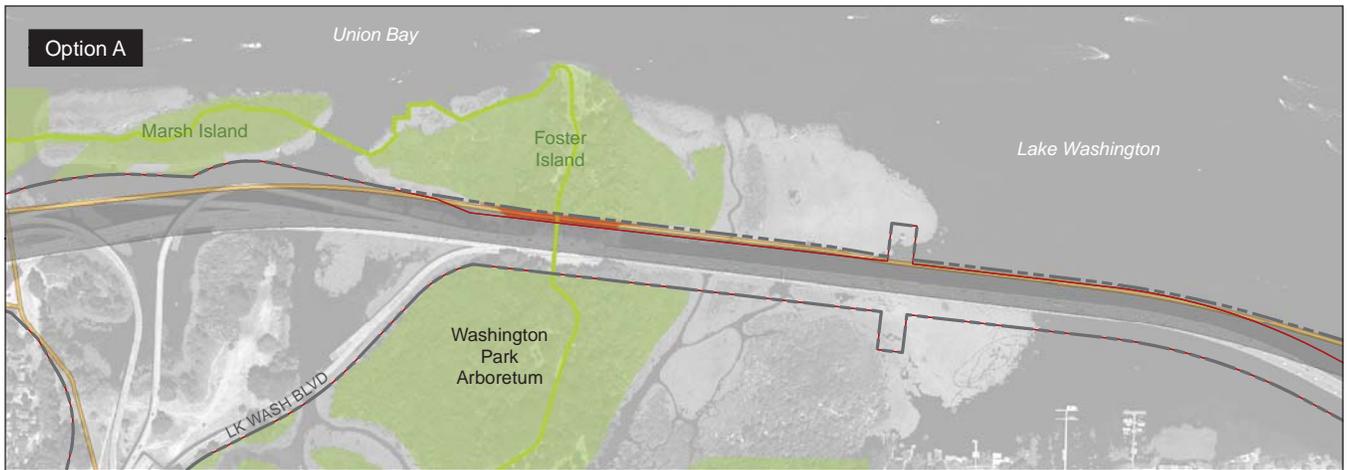
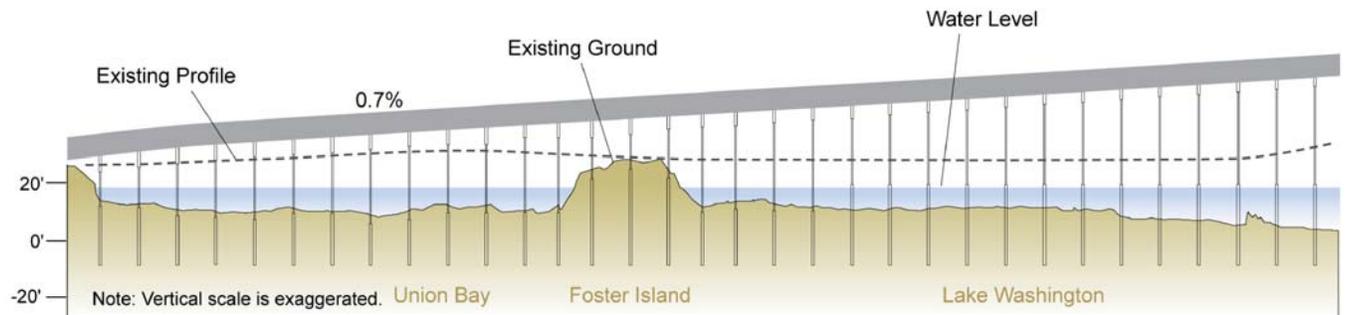
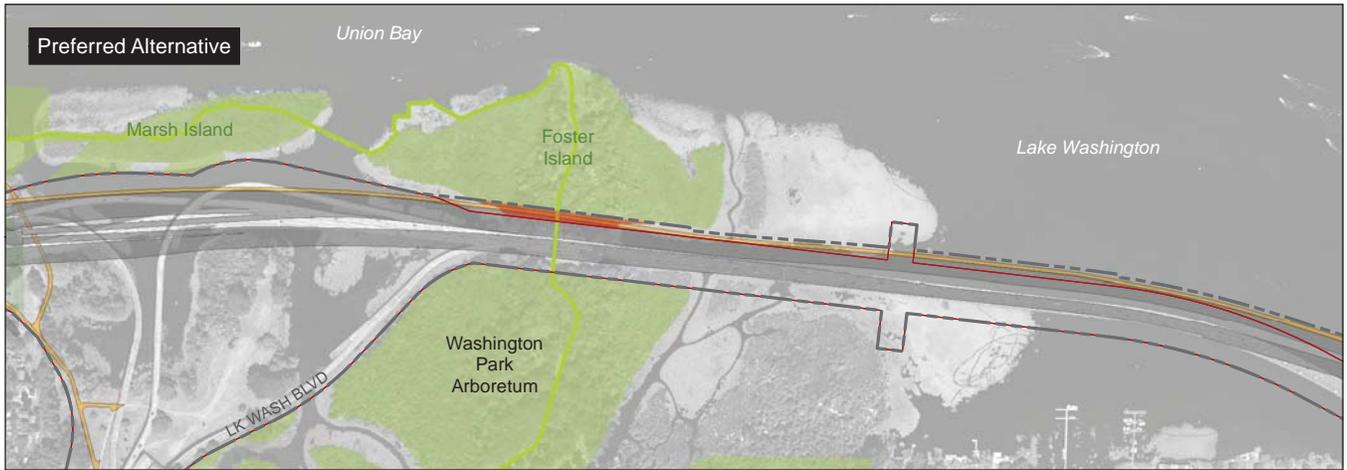


Arboretum Waterfront Trail under SR 520 on Foster Island



Preferred Alternative – Arboretum Area

Exhibit 5.4-6. Permanent Acquisition in Washington Park Arboretum (Preferred Alternative and Option A)



- Park Acquisition**
- Pavement
 - Converted to right-of-way
 - Park
 - Proposed right-of-way
 - Existing trail/bicycle path
 - Proposed bicycle/pedestrian path
 - Existing right-of-way

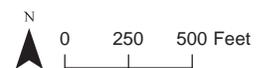
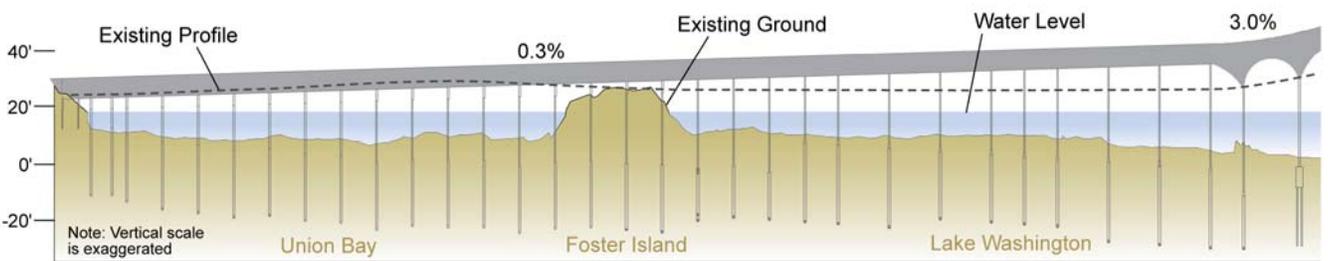
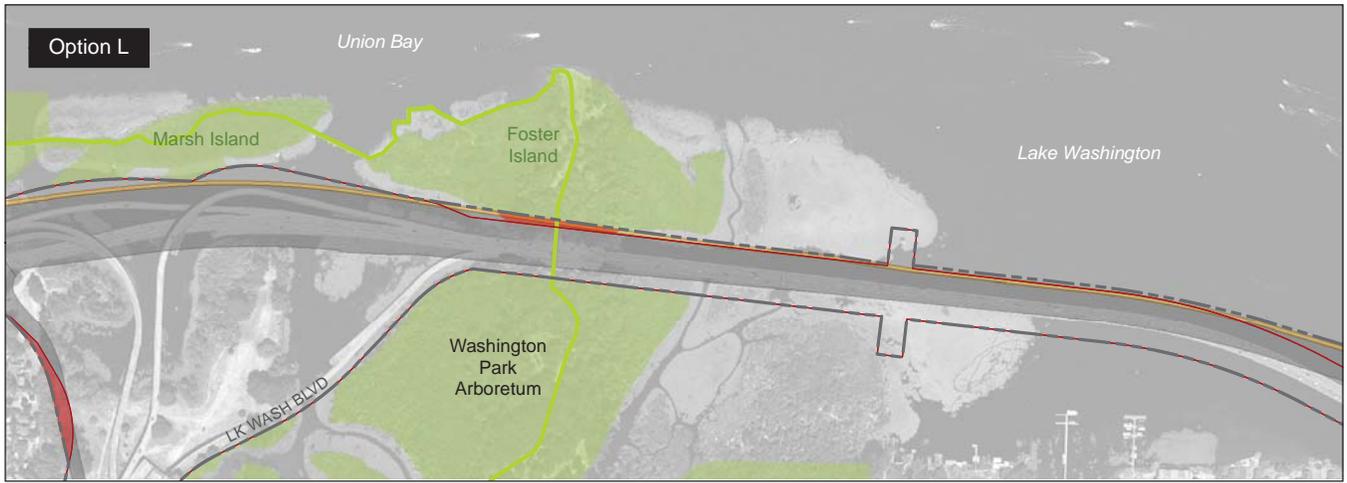
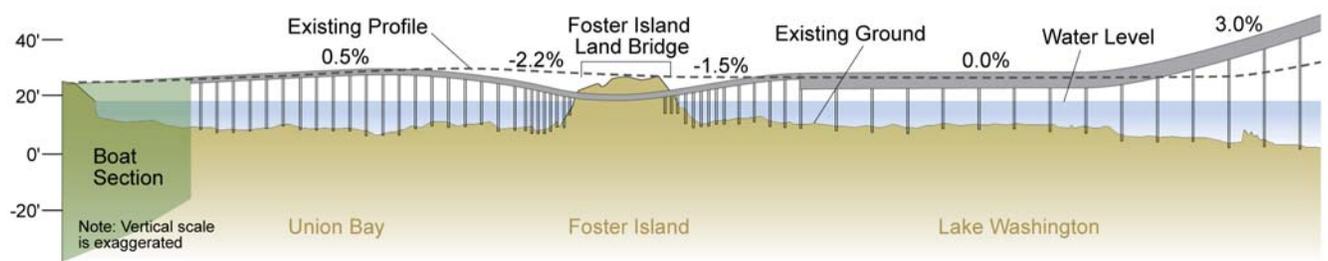
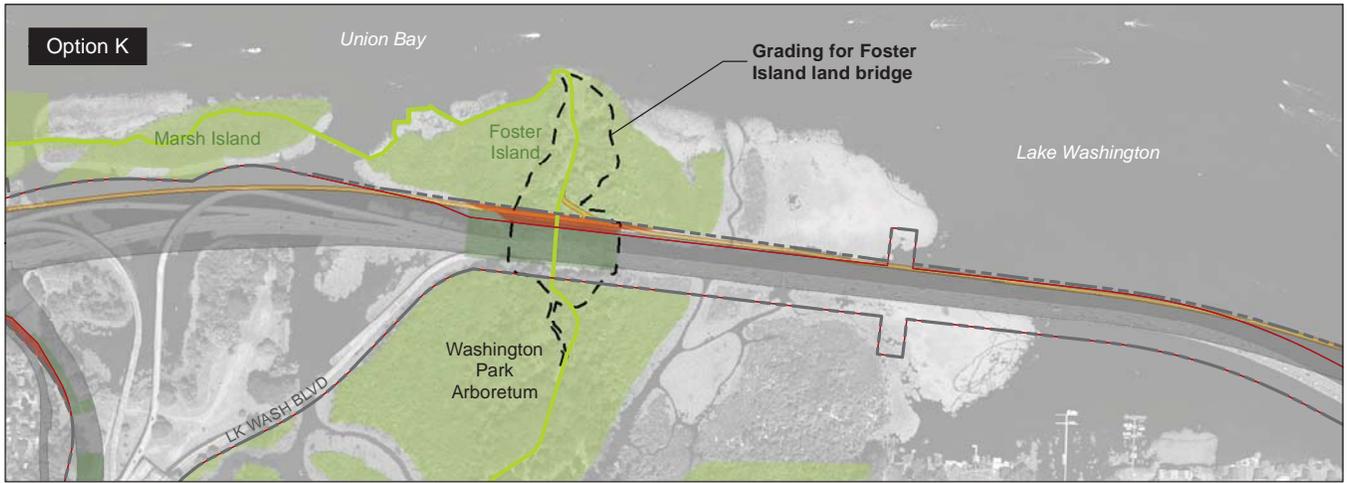
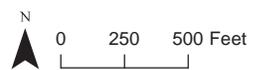


Exhibit 5.4-7. Permanent Acquisition in Washington Park Arboretum (Options K and L)



- Park Acquisition**
- Lid or landscape feature
 - Converted to right-of-way
 - Pavement
 - Proposed right-of-way
 - Park
 - Existing trail/bicycle path
 - Proposed bicycle/pedestrian path
 - Existing right-of-way



the Arboretum area south of SR 520 by travelling underneath the existing freeway structure and ramps.

With the Preferred Alternative, canoes and kayaks would have improved passage as a result of the structure's higher profile and removal of the existing Lake Washington Boulevard and R.H. Thompson Expressway ramps. Because the highway main line would be wider and approximately 10 feet higher than the existing roadway, it would become a more noticeable feature on Foster Island for trail users. However, the higher profile and the 4-foot concrete traffic barrier included in the project design would substantially reduce noise levels in the areas close to the highway (see Section 5.7 for information on noise effects at the Washington Park Arboretum).

Option A

Like the Preferred Alternative, Option A would cross Foster Island on a bridge. It would require acquisition of 0.4 acre of land on the island (see Table 5.4-1). The highway main line would provide approximately 15 to 18 feet of clearance above the crossing of the Arboretum Waterfront Trail on Foster Island, which is higher than the current clearance of 8 feet. Other than the amount of land acquired, the effects of Option A would be similar to those of the Preferred Alternative. Noise levels under Option A would be higher than for the Preferred Alternative.

Option A Suboptions

- The Lake Washington Boulevard ramps proposed as an Option A suboption would be located within and adjacent to the SR 520 main line, considerably farther west than they are now. They would have little additional effect on the Arboretum. However, traffic through the Arboretum would be higher than for Option A without the ramps.
- Adding the eastbound HOV direct-access ramp to Option A would not require any additional right-of-way in the Arboretum.
- Changing the profile in the west approach to a constant-slope profile would not require any additional right-of-way. The structure would be slightly lower across Foster Island than for Option A.

Option K

Under 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 that would provide pedestrian access over the highway. This option would require acquisition of 0.7 acre of land on Foster Island, of which 0.4 acre is forested. Although the land bridge would be within the WSDOT right-of-way, it would be available for recreational use after construction. The Arboretum Waterfront Trail would be reconstructed to pass over the land bridge and would also connect to the SR 520 regional bicycle/pedestrian path.



Option K Arboretum Area

The top of the land bridge would be landscaped, which would provide a more pleasant crossing of SR 520 than the current narrow underpass. Fill would be placed north and south of the land bridge to create a gentle slope from the bridge to the north end of Foster Island and into the Arboretum. This land bridge would provide enhanced views of the water for trail users, but would change the character of the Foster Island portion of the Arboretum Waterfront Trail from a wetland viewing opportunity to a more landscaped upland setting. Also, despite the landscaping, portions of the concrete structure supporting the land bridge would be visible as tall vertical walls, particularly from the north (see Section 5.5, Visual Quality, for more information).

Under Option K, nearshore access for small boats around Foster Island would be obstructed with the low roadway in this area. Boats would encounter a structural blockage requiring travel at least 200 feet away from Foster Island to cross underneath SR 520. The columns of the floating bridge approach spans would also be much more closely spaced than today, which would clutter the area for recreational navigation.

As with Option A, noise levels under Option K would be higher in the Arboretum than for the Preferred Alternative.

Option L

Option L would cross over Foster Island on a bridge. It would require acquisition of 0.3 acre of land on the island. The highway main line would provide approximately 10 to 12 feet of clearance above the crossing of the Arboretum Waterfront Trail on Foster Island, higher than today. Canoe and kayak access within the Arboretum area would be similar to the Preferred Alternative and Option A.

Because the highway main line would be higher than the existing roadway, the highway would become a more noticeable feature within the park, and would affect the visual environment for trail users on Marsh and Foster Islands. The wider spacing of the new columns on the proposed bridge would be a positive visual change, opening views of Lake Washington. As with Options A and K, noise levels under Option L would be higher in the Arboretum than for the Preferred Alternative, but noise would be reduced compared to the No Build alternative. Addition of noise-reduction features included in the Preferred Alternative could reduce noise levels further.

How would the project affect bicycle and pedestrian connections?

The Preferred Alternative, like all the SDEIS design options, would improve bicycle and pedestrian connections across the SR 520 corridor and the Montlake Cut by retaining and improving existing trails. The proposed regional bicycle/pedestrian path across SR 520 would provide a new connection between the City of Seattle's bicycle and pedestrian system and



Option L Arboretum Area

KEY POINT

The proposed regional bicycle/pedestrian path across SR 520 would provide a new connection between the City of Seattle's bicycle and pedestrian system and the Points Loop Trail in Medina.

The landscaped lids would provide new areas for passive recreation. Trails across these lids would further improve connectivity for bicyclists and pedestrians.

the Points Loop Trail in Medina. Bicyclists crossing SR 520 would have convenient access to the Burke-Gilman Trail and other portions of the regional recreational trail system.

The green open spaces, landscaping, and pathways planned for the lids of all options would provide new areas for passive recreation, although the lids would not be designated as parks. Trails across these lids would further improve connectivity for bicyclists and pedestrians.

What are the indirect effects of the project on parks and recreational resources?

Indirect effects on recreational resources can occur when there are changes in access, surrounding land use, noise levels, or visual intrusion that affect the value and integrity of the resource for park users. For the SR 520, I-5 to Medina project, most indirect effects on parks and recreational resources would be positive by encouraging greater use of these resources, improving connectivity and linkages between parks, and improving noise levels and visual quality in certain locations.

Replacement park property developed as part of the mitigation for direct effects (discussed below as a mitigation measure) would create additional recreational areas for park users. The regional bicycle/pedestrian path and lids would encourage increased pedestrian and bicycle use over the long term. Reduced noise in the corridor would also produce long-term benefits for park users. No adverse indirect effects on parks and recreational resources are expected to result from the project.

What has been done to avoid or minimize negative effects?

During project planning, extensive work has been done to minimize the SR 520 footprint through parks and to ensure that all possible measures have been taken to avoid park acquisition. Section 4(f) regulations require that avoidance of impacts on protected resources be analyzed, and Section 6(f) requires that resources protected by that regulation, and that are proposed to be converted, must be replaced. The City of Seattle also has its own regulatory requirement to ensure that parks are protected (see text boxes at right). The Section 6(f) and 4(f) processes were conducted together for the most part. WSDOT worked with the Parks Technical Working Group (TWG), which consisted of WSDOT, Seattle Parks and Recreation, the University of Washington, the Recreation and Conservation Office, the National Park Service, and FHWA, to evaluate park effects. This coordination effort included effects as defined under both Sections 4(f) and 6(f).

During the Parks TWG coordination process, WSDOT considered various alternatives for the project that would avoid effects on parks altogether, as

Section 6(f)

Section 6(f) of the Land and Water Conservation Fund Act (LWCFA) protects outdoor recreation property that was acquired or developed with LWCFA grant assistance. Section 6(f) prohibits the conversion of property acquired or developed with these grants to non-recreational purpose without the approval of the National Park Service. If a project results in converting Section 6(f) properties to another use, replacement land must be provided in accordance with Section 6(f) requirements and with the agreement of the agencies with jurisdiction over the Section 6(f) resources.

Replacement property is also needed for the affected recreation resources that were redeveloped with grants from the Aquatic Land Enhancement Act (ALEA) – the Ship Canal Waterside Trail and Arboretum Waterfront Trail). For this project, the Section 6(f) mitigation addresses both the LWCFA and ALEA resources.

Section 4(f)

Many of the park and recreation resources in the project vicinity are protected by federal regulations. Section 4(f) of the Department of Transportation Act of 1966 (23 United States Code [USC] 138 and 49 USC 303) prohibits FHWA from approving a project or program that uses land from a significant park, recreation area, wildlife or waterfowl refuge, or historic site unless the following criteria are met: 1) there is no feasible or prudent alternative to the use of the land, and 2) the project includes all possible planning to minimize harm to the property. See the Section 4(f) Evaluation for more details.

Seattle Ordinance 118477

Seattle parklands are further protected under Seattle Ordinance 118477, enacted in February 1997. This ordinance specifies that all lands and facilities held now or in the future by the City of Seattle for parks and recreational purposes, whether designated as park, boulevard, or open space, must be preserved for such use, or replacement land must be provided as mitigation. The land replacement requirements of Section 6(f) will help the City in meeting its obligations under this ordinance.

well as design changes to avoid individual resources; none of these were found to be feasible and prudent under Section 4(f), and none would avoid all conversions of resources under Section 6(f). Chapter 9 contains more information on avoidance alternatives and measures to minimize harm to the Section 4(f) park resources. Chapter 10 summarizes the process that WSDOT undertook to avoid Section 6(f) conversions.

As noted previously in Section 5.4, the Preferred Alternative would acquire less park property than any of the SDEIS design options and the Preferred Alternative was designed to reduce effects on Section 6(f) resources to 4.8 acres. In comparison, Options A, K, and L would result in Section 6(f) conversions of approximately 5.6, 9.3, and 7.9 acres, respectively. The Preferred Alternative incorporates a number of design refinements to further address operational effects of the project on recreation. These include a reduced footprint across Foster Island, a higher bridge profile across Foster Island, and a larger Montlake lid to provide better open-space connectivity between the Montlake neighborhood and the Washington Park Arboretum. The higher roadway profile and 4-foot concrete barriers included in the Preferred Alternative redesign would benefit parks in the project vicinity by reducing noise, especially at the Arboretum where park users pass directly under SR 520. Taller concrete traffic barriers could also be applied to Options A, K, and L, though the level of noise reduction provided by those elements would vary depending upon the individual project designs.

Although freeway lids are not considered to be parks for purposes of park mitigation, the lids included in the Preferred Alternative and all SDEIS options would have beneficial effects in connecting existing parks, and some areas would provide additional passive open space for community use.

What would be done to mitigate for adverse effects that cannot be avoided or minimized?

Both Section 4(f) and Section 6(f) involve mitigation planning for recreation effects. In addition to measures to avoid recreation effects, mitigation measures were identified by WSDOT during its work with the Parks TWG.

Section 6(f) of the LWCFA requires that replacement property be acquired for conversion effects. Chapter 10 provides a description of the Section 6(f) resources affected at both East Montlake Park and Washington Park Arboretum. The Parks TWG identified the Bryant Building site on Union Bay as a suitable replacement property for the Preferred Alternative's Section 6(f) effects. WSDOT is proceeding with negotiations with the UW and City of Seattle on that site. If an option other than the Preferred Alternative is chosen for the project, WSDOT will continue work with the Parks TWG to define full and appropriate mitigation for Section 6(f) effects for that option. The Parks TWG developed full-scale mitigation measures

under the Section 4(f) evaluation process for effects on park resources. This mitigation includes enhancement of existing parks and recreational properties in a manner consistent with applicable planning documents. WSDOT worked with the Parks TWG to determine the least overall harm to Section 4(f) resources, including parks under Options A, K, L and the Preferred Alternative. This work involved balancing the ability of each option 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 would meet the purpose and need of the project. These aspects were 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.

Since Section 4(f) provides a solid framework for evaluating recreation effects and determining and coordinating appropriate mitigation, Chapter 9 includes this Final EIS's discussion of all recreation mitigation measures.