22 February 2006

SR 520 Bridge Replacement and HOV Project Draft EIS

6-Lane Alternative Options

Addendum to Social Discipline Report

Washington State Department of Transportation

SoundTransit

U.S. Department of Transportation
Federal Highway Administration

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Addendum to Social Discipline Report

Prepared for

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Federal Highway Administration
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List of Exhibits

Acronyms and Abbreviations

EIS	Environmental Impact Statement
HOV	high-occupancy vehicle
LOS	level of service
WAC	Waterfront Activities Center
WSDOT	Washington State Department of Transportation

Introduction

This addendum to the *Social Discipline Report* (CH2M HILL 2005a; Appendix N to the *Draft SR 520 Replacement Bridge and HOV Project Environmental Impact Statement* [Draft EIS]) describes the affected environment and environmental consequences of three new options to the original 6-Lane Alternative. Two of these options are in Seattle and one is on the Eastside.

What are the key points of this report?

All three options would have the same or similar effects on community cohesion; recreation; regional and community growth; services; and pedestrian, bicycle , and transit facilities as the original 6-Lane Alternative.

The 6 Lanes with Pacific Street Interchange option would close the Montlake interchange and replace it with the Pacific Street Interchange to the east. This would help to reduce the footprint and address traffic congestion in Montlake. The Pacific Street Interchange option would also construct a new bridge over Union Bay, which would provide direct access to the proposed North Link light rail station and the University of Washington.

The Second Montlake Bridge would construct a second drawbridge parallel to and just east of the current Montlake Bridge across the Montlake Cut. Adding the bridge would increase traffic capacity and potentially improve transit operations through the corridor.

The South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option would add a new transit/high-occupancy vehicle (HOV)-only eastbound SR 520 off-ramp to 108th Avenue, as well as a new transit/HOV-only westbound SR 520 off-ramp. The footprint of SR 520 east of Bellevue Way would widen slightly to accommodate the new ramps.

Community Cohesion

The options would not displace affordable housing or community facilities, and would also not create physical impediments (barriers) that would make it more difficult for people to reach community facilities or affordable housing. If the Museum of History and Industry

was not moved as planned by the time SR 520 is being constructed, then that facility would be displaced.

Recreation

In the Seattle project area, similar to the original 6-Lane Alternative, all the options would require the acquisition of portions of Bagley Viewpoint, McCurdy Park, East Montlake Park, and the Washington Park Arboretum. The 6 Lanes with Pacific Street Interchange option would require the most permanent acquisition of parkland (3.67 acres versus 1.96 acres for the original 6-Lane Alternative). In addition, portions of the University of Washington recreational facilities and the Burke-Gilman Trail right-of-way would be acquired under the 6 Lanes with Pacific Street Interchange option.

In the Eastside project area, the option would affect parks the same as the original 6-Lane Alternative. The original 6-Lane Alternative and options would not make it more difficult to reach recreational facilities in the project area.

Noise, air quality, and water quality would improve in the same manner described under the original 6-Lane Alternative at the Seattle and Eastside project area parks. The visual experience at recreational facilities would both improve and degrade in the same manner as described under the original 6-Lane Alternative.

Regional and Community Growth

The proposed project would not directly affect either the number or the mix of people living in the project area neighborhoods.

In the Seattle project area, the 6 Lanes with Pacific Street Interchange option would displace one residence, and the Second Montlake Bridge option would displace three residences. In the Eastside project area, the same residence displaced by the original 6-Lane Alternative would be displaced by the South Kirkland Park-and Ride Transit Access – 108th Avenue Northeast option.

The original 6-Lane Alternative and any of the options would not negatively affect the quality of life in the neighborhoods. For example, air quality would improve, noise levels would decline with the construction of sound barriers, and traffic congestion on local streets would not worsen. As a result, residents would have little impetus to move elsewhere.

Overall, the project area contains predominantly owner-occupied and sought-after housing, as evidenced by the high median home values. Given the lack of displacements and negative effects in quality of life that would be caused by the proposed project, the composition of the project area communities and neighborhoods would not change.

The Puget Sound Regional Council has forecasted 2030 population and employment for the project area under the No Build Alternative and the original 6-Lane Alternative. Population and employment changes from the No Build Alternative to the 6-Lane Alternative would be minor. There would be no population and employment changes between the original 6-Lane Alternative and any of the options.

Services

The original 6-Lane Alternative with any of the options would not change the delivery of services within the project area. The project would not displace any services nor create any barriers to reaching those services.

Pedestrian, Bicycle, and Transit Facilities

The original 6-Lane Alternative with any of the options would improve capacity, circulation, and travel times for bicyclists and pedestrians. Like the original 6-Lane Alternative, the Second Montlake Bridge option would provide a continuous bicycle/pedestrian path from west of the Montlake Boulevard interchange to Northeast Points Drive in Kirkland. With the 6 Lanes with Pacific Street Interchange option, the bicycle/pedestrian path would follow the new Union Bay Bridge over the University of Washington campus to the Pacific Street/Montlake Boulevard intersection.

The original 6-Lane Alternative with any of the options would have continuous eastbound and westbound HOV lanes from I-5 to Bellevue Way.

The original 6-Lane Alternative with any of the options would improve bus travel time and reliability. With the Pacific Street Interchange option, bus routes that serve the University of Washington/Montlake area via SR 520 would use the HOV direct access ramps and would not be delayed by draw bridge openings. With the Second Montlake Bridge option, the additional capacity across the Montlake Cut would reduce congestion because the roadway would no longer narrow to four lanes. The South Kirkland Park-and-Ride Transit Access – 108th Avenue

Northeast option would improve bus travel times by 16 minutes compared to the original 6-Lane Alternative.

What options are being considered in this addendum?

6 Lanes with Pacific Street Interchange Option

This option would remove the Montlake interchange along SR 520 and would construct a new interchange at Pacific Street, just east of the Montlake interchange. Exhibit 1 shows the proposed lane configuration for this option.

The new interchange would be primarily located over the Washington State Department of Transportation (WSDOT)-owned peninsula near the Washington Park Arboretum. A new on- and off-ramp to and from the north would extend to Pacific Street at the University of Washington. A column-supported ramp of four general-purpose lanes (two lanes in each direction) extending over Union Bay (referred to as the Union Bay Bridge in this addendum) from the new interchange would touch down at the University of Washington Husky Stadium parking lot before joining the intersection of Pacific Street and Montlake Boulevard. At that intersection, the roadway would be lowered 8 to 10 feet from the existing elevation to provide vehicle-only access. The intersection would be covered to allow pedestrian access above and away from vehicular traffic.

The roadway on Montlake Boulevard north of Pacific Street would be widened to the east until just south of Northeast 45th Street. The navigational channel crossed by the new Union Bay Bridge would be the same width as the existing Union Bay reach (175 feet), with a vertical clearance of either 70 or 110 feet.[1] Columns would be placed just outside the width of the ship canal to not block boat traffic.

Ramps to and from Lake Washington Boulevard would still be included in this option; however, their footprint would be slightly different from

[1] The establishment of a new governing clearance would prevent any vessel with a higher clearance requirement from traveling east from the Montlake Cut to Lake Washington north of the Evergreen Point Bridge. Before establishing a new governing clearance, the Coast Guard will consider whether vessels requiring a higher clearance have an essential use in north Lake Washington. Two vessels with a vertical clearance higher than 70 feet are known to travel this part of the lake. No vessels with a vertical clearance higher than 110 feet travel this part of the lake.

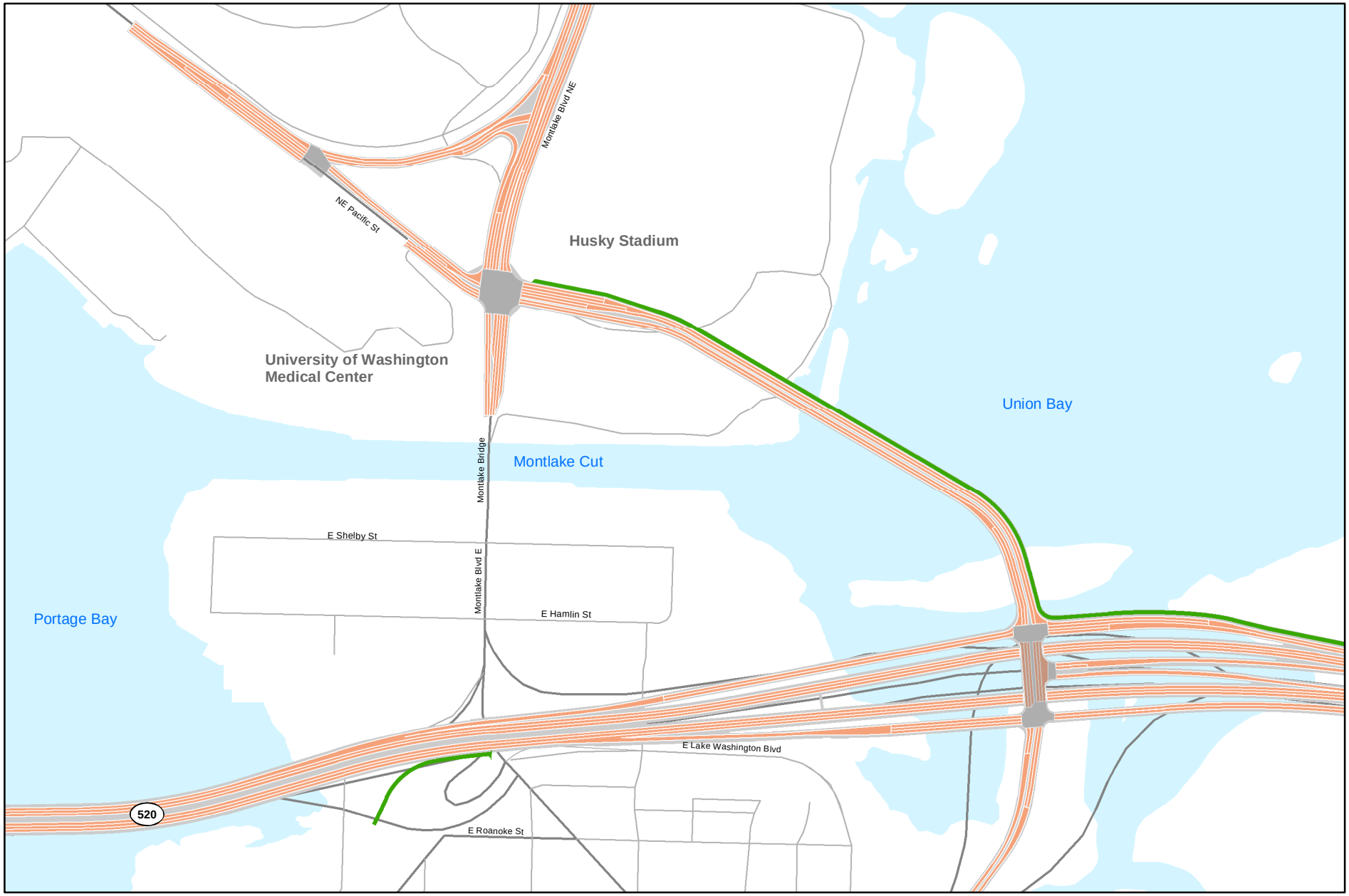

Exhibit 1. **Lane Configuration of the 6 Lanes with Pacific Street Interchange Option**
SR 520 Bridge Replacement and HOV Project

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the original 6-Lane Alternative. The ramp connections to and from Lake Washington Boulevard and to and from the Union Bay Bridge would construct a full diamond interchange, as opposed to a partial diamond interchange under the original 6-Lane Alternative. This full diamond interchange would provide more access to and from Lake Washington Boulevard. No access to or from SR 520 would be provided at Montlake Boulevard.

From Montlake Boulevard to I-5, SR 520 would be six lanes wide (three in either direction). The profile of the Portage Bay Bridge would not differ under this option from the original 6-Lane Alternative. Buses would access SR 520 via the Union Bay Bridge through the University area, providing for a more direct connection between buses and the proposed Sound Transit North Link Station at Husky Stadium. Instead of connecting to the Montlake interchange as in the original 6-Lane Alternative, the bicycle/pedestrian path would follow the Union Bay Bridge from SR 520 and would end at the Pacific Street interchange, close to the Burke-Gilman Trail.

Second Montlake Bridge Option

The intent of the Second Montlake Bridge option is to narrow the SR 520 footprint through the Montlake neighborhood, while providing for transit (bus) access from SR 520 to the University of Washington. Exhibit 2 shows the propose lane configuration for this option, which would be the same as the No Montlake Freeway Transit Stop option, except that it would also include a second Montlake bridge across the Montlake Cut. This bridge would be a parallel bascule (draw) bridge located just east of the existing Montlake Bridge. One bridge would carry northbound traffic, and one would carry southbound traffic.

South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast Option

The intent of the South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option is to improve access for buses to the South Kirkland Park-and-Ride from eastbound SR 520 and from the South Kirkland Park-and-Ride to westbound SR 520. This option, which is shown in Exhibit 3, would add a new transit/HOV-only westbound on-ramp from 108th Avenue Northeast and a new transit/HOV-only eastbound off-ramp to 108th Avenue Northeast.

The footprint of SR 520 east of Bellevue Way would be widened slightly to accommodate the new ramps. Both 108th Avenue Northeast and

Exhibit 2. **Lane Configuration of the Second Montlake Bridge Option**

SR 520 Bridge Replacement and HOV Project

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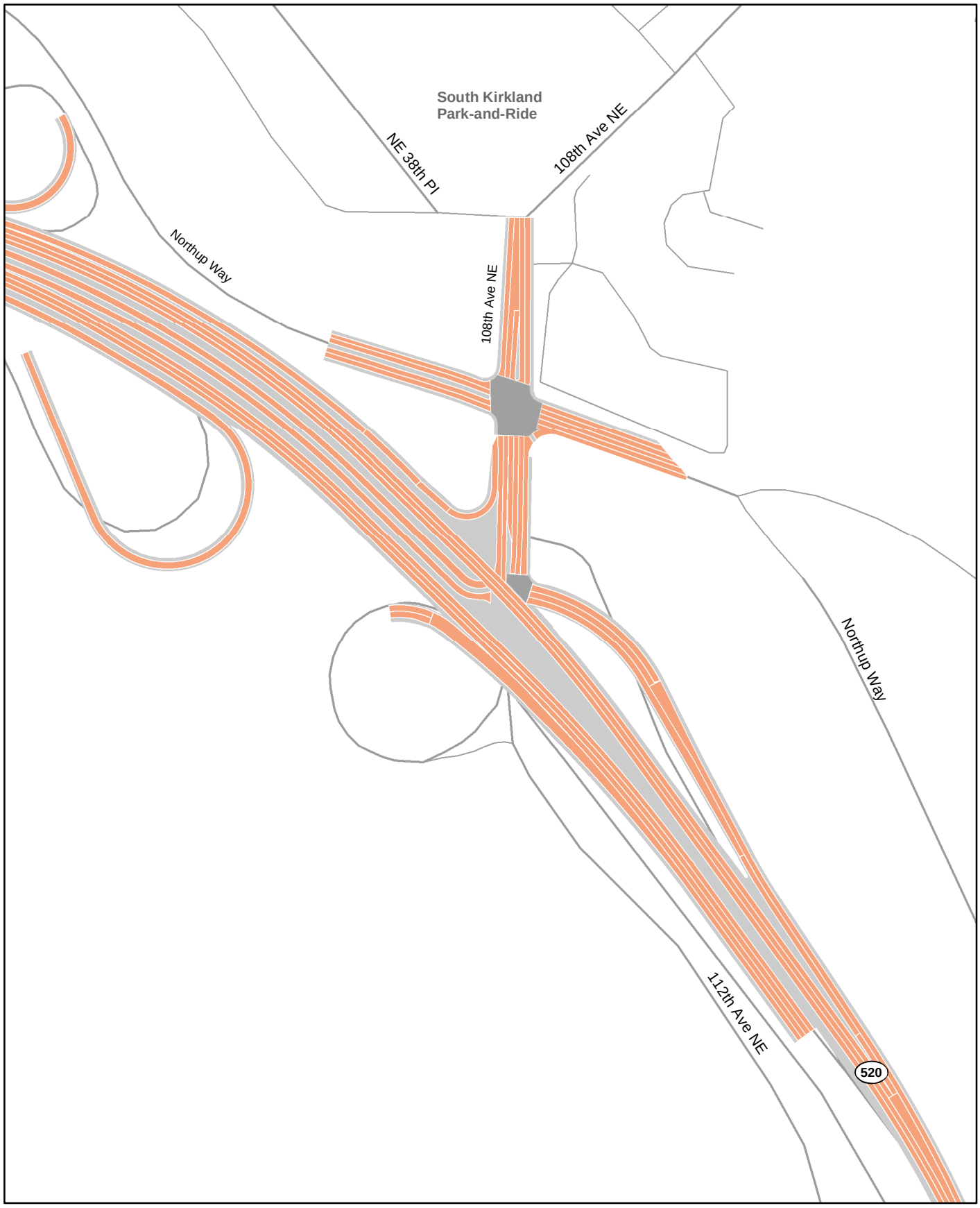

Option Lane Configuration
Shoulders and Barriers
Intersections

N

0 125 250 500 Feet

Exhibit 3. **Lane Configuration for the South Kirkland Park-and-Ride Transit Access - 108th Avenue Northeast Option**
SR 520 Bridge Replacement and HOV Project

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Northup Way would be widened and improved under this option. One lane would be added to 108th Avenue Northeast between the eastbound on-ramp and 38th Place Northeast. Along with the additional through lane on 108th Avenue Northeast, the northbound leg of the 108th Avenue Northeast/Northup Way intersection would be channelized to include two exclusive left-turn lanes, a through lane, and a shared through/right-turn lane.

There is also a possibility for adding a westbound second left-turn lane at the 108th Avenue Northeast/Northup Way intersection to facilitate clearing the left-turn queue and serving a higher number of westbound left-turn and through trips.

What additional information was collected for this analysis?

The Seattle, Lake Washington, and Eastside study areas for the social analysis would not change from the original 6-Lane Alternative. Exhibit 4 shows the location of neighborhoods and communities in the project area. The population and demographic makeup of Seattle neighborhoods in the project area is discussed in detail in the *Social Discipline Report*.

Affected Environment

The social characteristics of the project area with the 6-Lane Alternative options are the same as those discussed in the *Social Discipline Report* for the original 6-Lane Alternative.

Potential Effects of the Project

This section discusses the factors that would have both favorable and unfavorable effects on the communities and neighborhoods in the project area. In general, this includes any changes to community cohesion; recreational facilities; services; regional and community growth (including effects on population composition); and facilities for pedestrians, bicyclists, and transit. The same methodology used to

determine the effects of the original 6-lane Alternative were used to determine the effects of the options on each neighborhood.

Because the options would not change the original 6-Lane Alternative across the Lake Washington project area, please refer to the *Social Discipline Report* for a discussion of those effects.

The effects of the toll are discussed in the *Social Discipline Report* and the *Environmental Justice Analysis* (Parametrix 2006).

What are the effects of the options?

Seattle

Community Cohesion

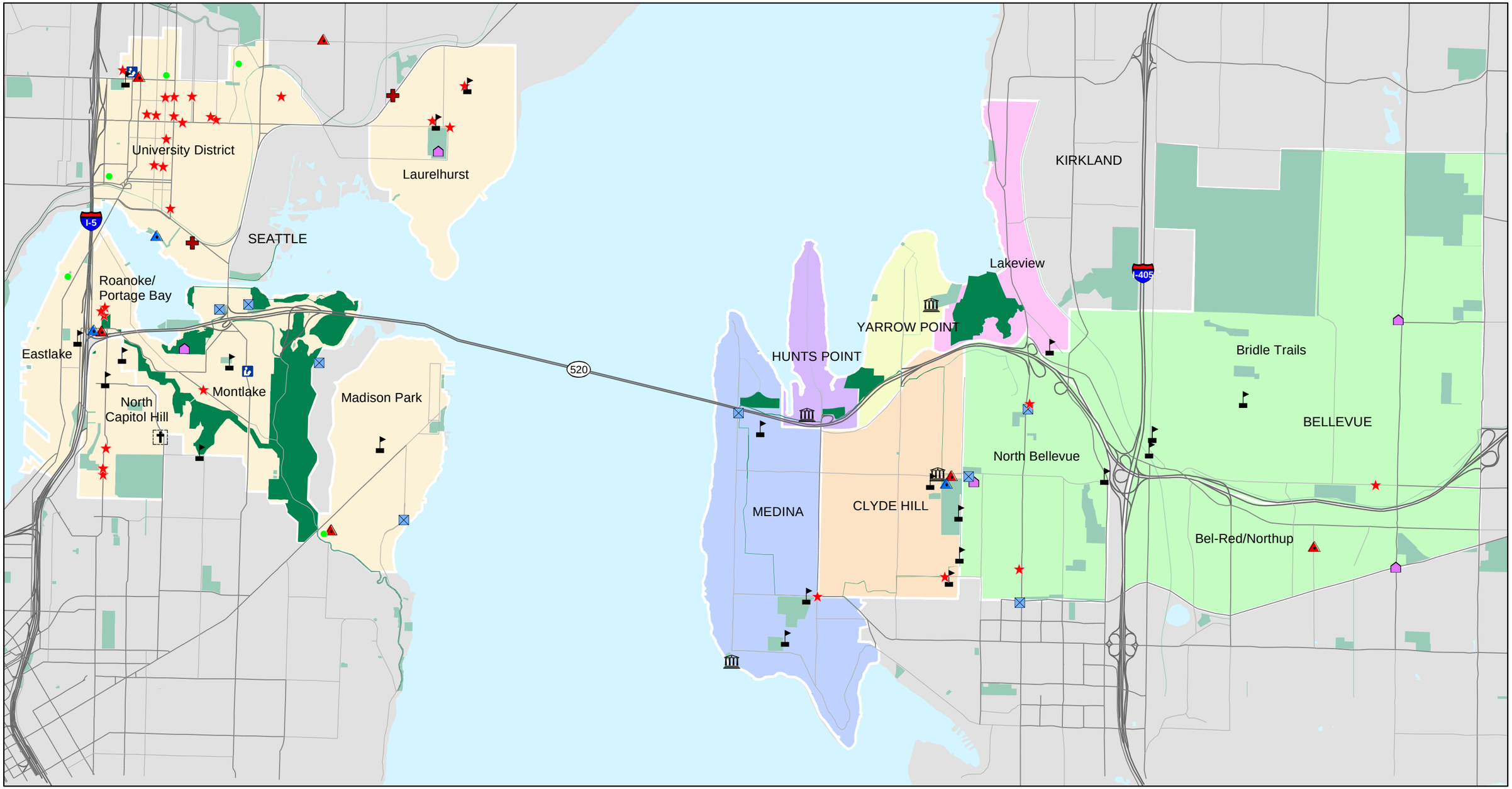
The same methods used to evaluate community cohesion in the *Social Discipline Report* were used in this addendum. Community cohesion is the degree to which residents have a sense of belonging to their neighborhood and an attachment to neighbors, groups, and institutions, usually as a result of continued association over time. The social discipline team considered project effects on community life that could alter the social and physical connections between persons and groups, such as physically isolating or dividing a neighborhood; residents' access to community facilities, adjoining residential areas, and affordable housing; and the composition of a neighborhood's population.

Would the project physically alter or separate portions of neighborhoods?

We reviewed the options to see if they would isolate or separate any neighborhoods by cutting off any existing streets or creating physical barriers between neighborhoods. We also considered project elements that could help link neighborhoods.

6 Lanes with Pacific Street Interchange Option

The 6 Lanes with Pacific Street Interchange option would have similar effects as the original 6-Lane Alternative. However, this option would remove the existing Montlake interchange and replace its function with the Pacific Street Interchange located to the east outside of the Montlake neighborhood. This would result in less traffic, visual clutter, and noise in and around the Montlake neighborhood. Freeway access would no longer occur at Montlake Boulevard but instead at the new Pacific Street interchange and the Lake Washington Boulevard ramps and the



Park

- Park in Project Area
- Park outside Project Area
- Other Place of Interest
- Community Center
- City Hall
- Library
- Cemetery
- Church
- Fire Station
- Law Enforcement
- Hospital
- School
- P-Patch

N

0 2,500 5,000 Feet

Exhibit 4. **Seattle and Eastside Neighborhoods and Communities in the Project Area**
SR 520 Bridge Replacement and HOV Project

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Union Bay Bridge. Montlake Boulevard would still cross over SR 520, and the Montlake lid would be constructed to maintain and enhance the connection between the north and south sections of the neighborhood.

This option would also construct the Union Bay Bridge and widen Montlake Boulevard in the University District. The new Union Bay Bridge and widening of Montlake Boulevard would not cut off any existing streets or create any physical barriers between neighborhoods. However, the increased roadway capacity would lead to an increase in noise and traffic traveling through the University District. Traffic demand would increase on Northeast Pacific Street between Montlake Boulevard Northeast and west of 15th Avenue Northeast, on Montlake Boulevard Northeast north of the Montlake Cut, and on 15th Avenue Northeast during both the a.m. and p.m. peak hours (the *Addendum to the Transportation Discipline Report* provides more detail on traffic demand). The increase in traffic would occur because of the following factors:

- Drivers taking advantage of increased capacity on Montlake Boulevard Northeast to access SR 520, rather than using I-5
- Improved access to and from the University District, attracting some traffic that would have previously accessed the neighborhood via I-5 and Northeast 45th Street.

With the improved roadway conditions and the changes in traffic patterns and traffic volumes, year 2030 intersection operations would also change. Level of service (LOS) would improve at the following four intersections:

- *Northeast Pacific Place/Montlake Boulevard Northeast* operations would improve from LOS E with the original 6-Lane Alternative to LOS D with the Pacific Street Interchange option during the p.m. peak hour because of the additional lanes on Montlake Boulevard Northeast.
- *Northeast 45th Street/Montlake Boulevard Northeast* operations would improve from LOS E with the original 6-Lane Alternative to LOS D with the Pacific Street Interchange option during the p.m. peak hour because of the additional lanes on Montlake Boulevard Northeast.

- *Northeast Pacific Street/Montlake Boulevard Northeast* operations would improve from LOS D with the original 6-Lane Alternative to LOS C with the Second Montlake Bridge option during the a.m. peak period because of the additional lanes across the Montlake Cut.
- *Lake Washington Boulevard Northeast/Montlake Boulevard Northeast* operations would improve from LOS F with the original 6-Lane Alternative to LOS C with the Pacific Street Interchange option during the a.m. peak hour because traffic volumes would decrease with the relocation of the SR 520 ramps to the new interchange. During the p.m. peak hour, LOS would improve from LOS E to C.

LOS would degrade at the following intersection:

- *Northeast Pacific Street/15th Street Northeast* operations would degrade from LOS D with the original 6-Lane Alternative to LOS E with the Pacific Street Interchange option during the p.m. peak hour because traffic volumes would increase through this intersection.

Although, this option would not separate portions of the University District neighborhood, widening Montlake Boulevard and constructing the new Union Bay would physically alter areas within the University District. Montlake Boulevard would be wider and would carry more traffic. Because the adjacent parking lots are not sensitive receivers, there would be no sound barriers. The three pedestrian overcrossings that currently connect this parking to the west side would be reconstructed.

The Union Bay Bridge would affect the University's southeast campus recreational facilities over the Waterfront Activities Center (WAC) and through the University of Washington Husky Stadium south parking lot to the intersection of Pacific Street and Montlake Boulevard. At this location, the Union Bay Bridge structure would be about 80 feet wide and 80 to 90 feet above the waterfront between the WAC facilities and the Canoe House. Along with the span itself, the placement of two bridge support columns would affect current operations and the overall recreational experience of users.

Second Montlake Bridge Option

The Second Montlake Bridge option would have the same effects as the original 6-Lane Alternative. In addition to these effects, this option would physically alter a portion of the Montlake neighborhood by

adding another bridge adjacent to the existing Montlake Bridge. The additional travel lanes would increase the separation between the northwest and northeast portions of the Montlake neighborhood.

Traffic demand would increase similarly to the 6 Lanes with Pacific Street Interchange option.

Would it be more difficult to reach community facilities or affordable housing?

We reviewed the options for any physical barriers that would make it more difficult for neighborhood residents to get to community facilities or affordable housing. We considered changes in travel times as a potential improvement or hindrance to accessing community facilities or affordable housing.

6 Lanes with Pacific Street Interchange Option

Like the original 6-Lane Alternative, this option would not make it more difficult to reach community facilities or affordable housing. The HOV connections to I-5 and the continuous HOV lanes in both directions would potentially make it easier to reach community facilities and affordable housing by improving mobility and reducing travel times, particularly for HOVs and transit.

Second Montlake Bridge Option

Like the original 6-Lane Alternative, this option would not make it more difficult to reach community facilities or affordable housing. The HOV connections to I-5 and the continuous HOV lanes in both directions would potentially make it easier to reach community facilities and affordable housing by improving mobility and reducing travel times, particularly for HOVs and transit.

Would neighborhood population distribution be affected?

To assess how the distribution of the neighborhoods' populations may be affected, we reviewed the *Addendum to Land Use, Economics, and Relocations Discipline Report* for the number of residential displacements resulting from the project and the potential for the creation of excess land following construction that could be privately redeveloped for housing. We considered changes in traffic, air quality, and noise levels that could affect the quality of life in neighborhoods and prompt people to move.

We also reviewed the *Addendum to Indirect and Cumulative Effects Discipline Report,* which considers the indirect effects of the project on population and employment compared to the No Build Alternative in

neighborhoods and community planning areas in Seattle and on the Eastside. The indirect and cumulative effects analysis relied on forecasts of 2030 population and employment changes prepared by the Puget Sound Regional Council.

6 Lanes with Pacific Street Interchange Option

Similar to the original 6-Lane Alternative, this option would not affect neighborhood population distribution. While one residence would be relocated, this would not affect population distribution.

Second Montlake Bridge Option

Similar to the original 6-Lane Alternative, this option would not affect neighborhood population distribution. While three residences would be relocated under the Second Montlake Bridge option, this would not affect population distribution.

How might community life change in general?

We looked at the answers to the following questions to evaluate in general how community life might change in the Seattle project area neighborhoods:

- Would the project physically alter or separate portions of neighborhoods?
- Would it be more difficult to reach community facilities or affordable housing?
- Would neighborhood population distribution be affected?

Tolls are not discussed here because this section focuses on community life in the Seattle project area; however, tolls could affect social interactions that require crossing the lake. See the original *Social Discipline Report* for a detailed discussion.

6th Lanes with Pacific Street Interchange Option

Like the original 6-Lane Alternative, communities in the area would benefit through decreased traffic congestion at local intersections, reduced noise levels with the construction of sound walls, improved air quality due to increased mobility, and increased community connectivity with the construction of lids.

The Montlake neighborhood would benefit more from the construction of the 6 Lanes with Pacific Street Interchange option than with the Second Montlake Bridge option or original 6-Lane Alternative. The Montlake interchange, as we know it today, is perpetually congested. Nearly 40 percent of the traffic crossing Lake Washington and 30

percent of the traffic crossing Portage Bay uses the Montlake interchange and the Lake Washington Boulevard ramps. The 6 Lanes with Pacific Street Interchange option would move the traffic out of the neighborhood by closing the Montlake interchange and relocating it to the east. Moving the Montlake interchange out of this community would help reconnect the north and south portions of the neighborhood that were disconnected during construction of the original highway. Relocating the interchange would reduce congestion and improve reliability between SR 520 and the University District. It would improve intra-city traffic flow on Montlake Boulevard, which SR 520 currently impedes, and it would remove the unreliability of crossing the Montlake Bridge for vehicles accessing SR 520.

Second Montlake Bridge Option

Like the original 6-Lane Alternative, communities in the area would benefit through decreased traffic congestion at local intersections, reduced noise levels with the construction of sound walls, improved air quality due to increased mobility, and increased community connectivity with the construction of lids. Sound walls would be in the same location as proposed for the original 6-Lane Alternative. Construction of the lids would be the same as proposed by the original 6-Lane Alternative.

Recreation

When we analyzed the effects that the options would have on recreation, the following elements were taken into consideration: the amount of parkland acquisition; changes to park access; changes to aesthetics, air quality, noise, and water quality in the vicinity of project area parks; and effects on land uses around project area parks. The methods used to evaluate recreation are the same as discussed in the *Social Discipline Report*.

Would recreational facilities be displaced or harder to reach?

To identify potential displacement of recreational facilities, the social discipline team reviewed the *Addendum to Recreation Discipline Report*. We also reviewed the options to see if any of the project elements would create physical or traffic-related barriers that would affect access and travel times to recreational facilities.

6 Lanes with Pacific Street Interchange Option

The 6 Lanes with Pacific Street Interchange option would affect the same recreational facilities as the original 6-Lane Alternative. In Seattle, portions of Bagley Viewpoint, Montlake Playfield (submerged land),

McCurdy Park, East Montlake Park, and the Washington Park Arboretum (Arboretum) would be acquired. In addition, this option would affect portions of the University of Washington recreational facilities and the Burke-Gilman Trail right-of-way.

Unlike the original 6-Lane Alternative, this option would include the Union Bay Bridge. Construction of the bridge would affect the University of Washington's southeast campus recreational facilities, the WAC, and the Husky Stadium south parking lot.

The bridge alignment and column placement would adversely affect the WAC's canoe launching dock, which could not operate as it does now and would need to be relocated on-site. Water access and facilities would need to be relocated on the remaining areas in and around the bridge and its columns. Recreational activities (canoe and rowboat rentals, open space, and trail use) may still continue, but the shading and visual encroachments from the new bridge could affect the area's recreational success and appeal.

Unlike the original 6-Lane Alternative, this option would add two lanes to Montlake Boulevard, bringing the roadway closer to the Burke-Gilman Trail between Montlake Boulevard and the University of Washington campus. The Burke-Gilman Trail would continue to operate as it does today, but the overall character of the trail in this area would change. Montlake Boulevard would be widened approximately 20 feet to the west, which would result in the removal of most of the trees in the 30-foot buffer that currently visually screens the roadway from the trail. The slopes would likely be cleared and regraded during construction, and a retaining wall would be constructed along Montlake Boulevard. With these improvements, the trail would be within 10 feet of the roadway and the top of the retaining wall in some locations. Because the trail would be much closer to the roadway, a safety barrier would likely be placed along the top of the retaining wall to separate trail users from the traffic on the roadway below.

Second Montlake Bridge Option

The Second Montlake Bridge option would have the same effects on recreational facilities as the original 6-Lane Alternative. In Seattle, portions of Bagley Viewpoint, Montlake Playfield (submerged land), McCurdy Park, East Montlake Park, and the Washington Park Arboretum (Arboretum) would be acquired.

This option would affect the same recreational facilities but to a lesser extent than the original 6-Lane Alternative. The Second Montlake

Bridge option would result in about half the area of permanent acquisitions at McCurdy Park and East Montlake parks compared to the original 6-Lane Alternative.

Would the project change the visual appearance of any recreational facilities?

We reviewed the options and the *Addendum to Visual Quality and Aesthetics Discipline Report* to see how the appearance of the recreational facilities would change.

6 Lanes with Pacific Street Interchange Option

The effects of the 6 Lanes with Pacific Street Interchange option on visual appearance would include effects discussed under the original 6-Lane Alternative, with the following additions.

Eastward views across Union Bay would be affected by the Union Bay Bridge from East Montlake Park, which would not be a part of the original 6-Lane Alternative. This bridge would be a column-supported ramp of four general purpose lanes (two lanes in each direction) that would extend over Union Bay from the Pacific Street interchange through the Husky Stadium south parking lot to the intersection of Pacific Street and Montlake Boulevard.

Over Marsh Island, the Union Bay Bridge would be roughly 100 feet high and 100 feet wide. The bridge and its support columns would be dominant and noticeable features, which would affect the visual environment for park and trail users.

Directly south of the island, the new interchange would rise up over the mainline, with eastbound and westbound on- and off-ramps and an inside transit-only eastbound on-ramp and westbound off-ramp. The interchange itself would sit about 80 feet above the water and in plain view of the floating portions of the Arboretum trail.

The Union Bay Bridge would be 110 feet above the water at its highest point just west of the Ship Canal, and would be highly visible from all points around Union Bay, including the WAC and the University of Washington Canoe House. Even if relocated, the in-water columns would block the mostly pristine views toward the Arboretum, and the overhead bridge span would shade the docks and the waterway east of the Ship Canal currently used by boaters as passage into the Arboretum. The bridge overhead and the new piers would encroach upon the broad views from these facilities, their openness, and the unobstructed sky overhead. In addition, the bridge would be visible

from the north stands of the Husky Stadium, but would not obstruct the iconic views of Lake Washington or Mount Rainier from the stadium.

The visual character of the Burke-Gilman Trail in this area would change. Montlake Boulevard would be widened approximately 20 feet to the west, which would result in the removal of most of the trees in the 30-foot buffer that currently provides a visual blockage of the roadway from the trail. The deciduous trees that provide the mostly natural and somewhat-protected environment along the trail would be removed along the slope, revealing a planter strip, 6-lane roadway, retaining wall, and protective barrier. The visual character would become more urban through the loss of trees and the encroachment of the road.

Second Montlake Bridge Option

The effects of the Second Montlake Bridge option on visual appearance would be the same effects discussed under the original 6-Lane Alternative, except that westward views of the existing Montlake Bridge from the Ship Canal Waterside Trail would be blocked by the second Montlake Bridge.

Would the air quality, water quality, or noise within the recreational facilities be different?

We reviewed the *Addendum to Air Quality Discipline Report*; *Addendum to Water Quality Discipline Report*; and *Addendum to Noise Discipline Report* to see what effects the options would have on recreational facilities.

6 Lanes with Pacific Street Interchange Option

This option would have similar effects on air quality and noise as those described for the original 6-Lane Alternative. Under the 6 Lanes with Pacific Street Interchange option, the sound walls in Seattle would be similar to the original 6-Lane Alternative. With the construction of noise barriers, there would be no increases in noise levels at any of the recreational facilities.

This option would generate amounts of pollutants comparable to the original 6-Lane Alternative and provide the necessary water quality treatment facilities to accommodate the increased amount of the stormwater, resulting in a similar effect as the original 6-Lane Alternative.

Second Montlake Bridge Option

This option would have similar effects on air quality and noise as those described for the original 6-Lane Alternative. With the construction of

noise barriers, there would be no increases in noise levels at any of the recreational facilities.

This option would generate amounts of pollutants comparable to the original 6-Lane Alternative and provide the necessary water quality treatment facilities to accommodate the increased amount of the stormwater, resulting in a similar effect as the original 6-Lane Alternative.

Would land uses near recreational facilities change?

To evaluate the potential for land uses to change near recreational facilities, we reviewed the *Addendum to Land Use, Economics, and Relocations Discipline Report* for current land use plans and policies to determine the potential for any property acquired near recreational facilities to be redeveloped following construction.

6 Lanes with Pacific Street Interchange Option

Like the original 6-Lane Alternative, this option would not encourage land uses around recreational facilities to change in the Seattle project area. Land uses around SR 520 are primarily single-family residences and parks. These uses have been constant since construction of SR 520 in the 1960s. Seattle Comprehensive Plan land use and zoning designations support the continuation of these uses. This option would not cause any effects that would induce these land uses to change. The types of effects that could induce land use changes include substantial displacements, increases in noise and traffic congestion, and decreases in air quality. As described in the immediately preceding sections, noise levels, traffic congestion, and air quality would improve with implementation of this option. The 6-Lane Alternative with this option would acquire land from two adjacent parks, McCurdy Park and East Montlake Park; a portion of this land could be redeveloped after project construction. The most probable reuse of this land would be to return the land to the parks in partial compensation for recreational facilities displaced by the project.

Second Montlake Bridge Option

Like the original 6-Lane Alternative, this option would result in the same land use changes near the same recreational facilities as described for the original 6-Lane Alternative.

Regional and Community Growth

The methods used to evaluate regional and community growth are discussed in the *Social Discipline Report*. For the analysis of regional and

community growth, we considered how the project would change population patterns and population characteristics (race, age, family composition, income levels, and major employment) in the project area. The *Addendum to Indirect and Cumulative Effects Discipline Report* addresses changes to regional population as a result of the options.

Would this project cause changes in population growth?

To assess the project's potential to cause direct changes in the project area's population, we considered the amount of residential displacement that would occur as a result of the project, the land use plans and policies in place, and the quality of life factors that can shape a neighborhood's desirability.

6 Lanes with Pacific Street Interchange Option

Like the original 6-Lane Alternative, this option would not cause changes in population growth.

Second Montlake Bridge Option

Like the original 6-Lane Alternative, the Second Montlake Bridge option would not cause changes in population growth.

Would this project change population characteristics such as race, age, or income in the project area?

To evaluate effects on the composition of the project area's population, we considered the factors that could lead to changes in the number of people living in the project area's neighborhoods: the amount of residential displacement resulting from the project, the land use plans and policies in place, and the quality of life factors that can shape a neighborhood's desirability.

6 Lanes with Pacific Street Interchange Option

Like the original 6-Lane Alternative, this option would not have an effect on population characteristics.

Second Montlake Bridge Option

Like the original 6-Lane Alternative, the Second Montlake Bridge option would not have an effect on population characteristics.

Services

When we analyzed the effects on services within the project area, we considered the educational facilities, religious institutions, social institutions (community centers), medical services, fire and police protection, utilities, cemeteries, government institutions, and other governmental services that exist within the boundaries of the project area.

Would service travel times for school buses, fire trucks, and police cars be affected?

We reviewed the *Addendum to Transportation Discipline Report* to identify the travel times for the options. We also reviewed the preliminary designs for the options to determine if any existing streets would be cut off or altered, thereby creating longer routes and increasing travel times.

6 Lanes with Pacific Street Interchange Option

Similar to the original 6-Lane Alternative, the 6 Lanes with Pacific Street Interchange option would have beneficial effects on travel times for school buses and emergency service vehicles. Relocating the interchange would reduce congestion and improve reliability between SR 520 and the University District. It would improve intra-city traffic flow on Montlake Boulevard, which SR 520 currently impedes, and it would remove the unreliability of crossing the Montlake Bridge for vehicles accessing SR 520.

In addition, this option would still provide a continuous HOV lane in both travel directions throughout the Seattle project area, in addition to four general purpose lanes. These HOV lanes would decrease travel times for service vehicles.

Second Montlake Bridge Option

Similar to the original 6-Lane Alternative, the Second Montlake Bridge option would have beneficial effects on travel times for school buses and emergency service vehicles. This option would still provide a continuous HOV lane in both travel directions throughout the Seattle project area, in addition to four general purpose lanes. This HOV lane would decrease travel times for service vehicles.

Would access to and from any public service buildings be more difficult?

We reviewed the options to see if the project would cause any physical changes that would impede access, such as cut off streets, or if the project would displace any public service buildings. We also reviewed the *Addendum to Transportation Discipline Report* to see if travel times under the options would lead to longer trips.

6 Lanes with Pacific Street Interchange Option

The 6 Lanes with Pacific Street Interchange option would have similar effects on travel times to public service buildings as the original 6-Lane Alternative. During certain travel periods, travel times would improve, making it possible for service users to get to their destinations more

quickly. Removing the Montlake interchange access and replacing it with the Pacific Street interchange would reroute access to some facilities. Because traffic would operate better with this change, travel time would not increase compared to the original 6-Lane Alternative and it would be easier to get to some facilities.

Second Montlake Bridge Option

This option would have similar effects on travel times to public service buildings as the original 6-Lane Alternative. During certain travel periods, travel times would improve, making it possible for service users to get to their destinations more quickly.

Would any service areas change?

We reviewed the options to see if the project would cut off any existing streets, requiring service areas to change. We also considered if there would be any population changes that would affect the service areas.

6 Lanes with Pacific Street Interchange Option

Like the original 6-Lane Alternative, this option would not cause service areas to change.

Second Montlake Bridge Option

Like the original 6-Lane Alternative, this option would not cause service areas to change.

How would any changes in public services affect the neighborhoods they serve?

We reviewed the answers to the above questions (*Would service travel times for school buses, fire trucks, and police vehicles be affected?*, *Would access to and from any public service building be more difficult?*, and *Would any service areas change?*) to evaluate how changes in public services would affect Seattle project area neighborhoods.

6 Lanes with Pacific Street Interchange Option

Like the original 6-Lane Alternative, no public services in the Seattle project area neighborhoods would change as a result of this option.

Second Montlake Bridge Option

Like the original 6-Lane Alternative, no public services in the Seattle project area neighborhoods would change as a result of the Second Montlake Bridge option.

Pedestrian, Bicycle, and Transit Facilities

We considered how the project would affect residents' ability to travel within their own neighborhoods and to other neighborhoods in the project area. We considered the following factors:

- Would the alternatives provide new facilities?
- Would the alternatives improve connections between facilities?
- How long would it take bicyclists, pedestrians, and transit riders to travel?
- Would the options change the access to facilities?

The methods used to evaluate pedestrian, bicycle, and transit facilities are the same as those discussed in the *Social Discipline Report* (CH2M HILL 2005a).

Would the project change the capacity, circulation, or travel time for these facilities?

We reviewed the preliminary designs for the options to see how proposed improvements would interconnect with existing facilities and reviewed the *Addendum to Transportation Discipline Report* for information on how the new facilities would operate.

6 Lanes with Pacific Street Interchange Option

The 6 Lanes with Pacific Street Interchange option would provide similar capacity, circulation, and safety benefits to the bicycle/pedestrian system as the original 6-Lane Alternative. The only difference would be that the new bicycle/pedestrian path would not provide the same connections to the Arboretum as the original 6-Lane Alternative. This is because the new path would parallel the westbound off-ramp at the new Pacific Street interchange, then continue northwest along the new Union Bay Bridge to connect with the Burke-Gilman Trail. The pedestrian/bicycle facilities at the Pacific Street/Montlake Boulevard intersection would be grade-separated above Montlake Boulevard and Pacific Street. This design would improve safety and connectivity for pedestrians and bicyclists compared to the original 6-Lane Alternative.

Although the new SR 520 bicycle/pedestrian path would not connect to the Arboretum, like it would have with the original 6-Lane Alternative, it could still improve travel times for bicyclists crossing the bridge similar to the original 6-Lane Alternative.

For many of the same reasons as those described in the *Social Discipline Report* for the original 6-Lane Alternative, this option would also improve highway capacity for transit and thereby decrease transit travel times. With the 6 Lanes with Pacific Street Interchange option, existing bus services would be affected in the following ways:

- Bus routes that serve the University of Washington/Montlake area via SR 520 would use the new Pacific Street interchange. The new interchange would have HOV direct access ramps to and from the east (a westbound off-ramp and an eastbound on-ramp). Bus travel times would likely be better than under the original 6-Lane Alternative because of the HOV direct access ramps and buses would not be delayed by drawbridge openings.
- Improvements associated with this option would increase capacity at many locations in the University of Washington/Montlake vicinity. These capacity improvements would improve bus travel times and reliability in this area. As a result of these improvements, some of the bus layover spaces proposed by King County Metro could be relocated. The SR 520 project team will continue to coordinate with King County Metro regarding their needs for maintaining transit service in this area.

The Pacific Street Interchange option also provides direct access to the proposed North Link light rail station and the University of Washington. One of the critical locations for HOV direct access is at the Montlake interchange connecting the University of Washington and areas north. Direct access is necessary because the University is considered a major destination for car pools and buses in the region, and the bus systems are considering connections to the North Link light rail station. A connection at that station would be desirable to reduce the number of buses using the downtown Seattle streets.

Second Montlake Bridge Option

The Second Montlake Bridge option would provide the same capacity, circulation, and safety benefits to the bicycle/pedestrian system as the original 6-Lane Alternative.

For the same reasons described in the *Social Discipline Report* for the original 6-Lane Alternative, this option would also improve highway capacity for transit and thereby decrease the travel times. In addition, the additional capacity across the Montlake Cut would help reduce congestion because the roadway would no longer narrow to four lanes.

This option would close the Montlake freeway transit stop, which would improve travel times for buses traveling to and from downtown Seattle and the Eastside because they would no longer have to stop. Bus patrons that currently use this stop to travel between the University District and the Eastside would have fewer bus routes to choose from because they could no longer use the downtown Seattle-Eastside routes

to cross the bridge. Planning level analysis indicates that approximately six additional buses would be needed in each direction between the University District and the Eastside to accommodate the closure of the Montlake freeway transit stop. The SR 520 project team will continue to coordinate with local and regional transit agencies regarding future transit service needs.

Would the project affect access to these facilities?

We reviewed the options to see if there would be any project elements that would improve or impede access to bicycle, pedestrian, and transit facilities.

6 Lanes with Pacific Street Interchange Option

The 6 Lanes with Pacific Street Interchange option would provide similar benefits to the bicycle/pedestrian system as the original 6-Lane Alternative. The only difference would be that the new bicycle/pedestrian path would connect to the University District via the Union Bay bridge instead of connecting in Montlake as proposed by the original 6-Lane Alternative.

Second Montlake Bridge Option

The Second Montlake Bridge option would provide the same benefits to the bicycle/pedestrian system as the original 6-Lane Alternative.

Eastside

South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast Option

The South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option would not alter the original 6-Lane Alternative; its effects on community cohesion, recreation, and regional and community growth would not change from those described in the *Social Discipline Report*. This is because this option would make only slight modifications to the original 6-Lane Alternative. These modifications would occur near the 108th Avenue Northeast intersection, and would result in a slightly wider footprint in this area to accommodate a new transit/HOV-only westbound on-ramp from 108th Avenue Northeast and a new transit/HOV-only eastbound off-ramp to 108th Avenue Northeast.

The effects of the original 6-Lane Alternative are discussed in detail in the *Social Discipline Report*. However, because this option would add new transit/HOV ramps, there would be slight benefits to services

compared to the original 6-Lane Alternatives. These differences are described below.

Services

Would service travel times for school buses, fire trucks, and police cars be affected?

The South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option would have the same positive effect on service travel times as the original 6-Lane Alternative. Travel service time would be faster because the original 6-Lane Alternative and this option would add an HOV lane in each direction. In addition to those benefits discussed in the *Social Discipline Report*, the direct access ramps with this option would have a positive benefit on any emergency service and other public service vehicles allowed use of the direct access ramp. The ramps would allow service vehicles to bypass congestion at the Bellevue Way/Northup Way intersection as well as along Northup Way, resulting in travel time savings.

Under this option, travel time (the amount of time it would take a bus to travel between I-405 and 92nd Avenue Northeast and serve the park-and-ride) would improve by 16 minutes compared to the original 6-Lane Alternative.

Would access to and from any public service buildings be more difficult?

This option would have the same positive effect on access to and from public service buildings as the original 6-Lane Alternative. These effects include improved mobility and the addition of a bicycle/pedestrian path that extends farther east along SR 520 than the Points Loop Trail. In addition, the continuous HOV lane would decrease HOV and transit travel times.

Would any service areas change?

Like the original 6-Lane Alternative, this option would not cause service providers to change their service areas.

How would any changes in public services affect the neighborhoods they serve?

Like the original 6-Lane Alternative, this option would not change public services nor affect the neighborhoods they serve.

Pedestrian, Bicyclist, and Transit Facilities

Would the project change the capacity, circulation, or travel time of these facilities?

The South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option would provide the same benefits to the bicycle/pedestrian system, improvements to highway capacity and transit travel times, and increase in transit riders as the original 6-Lane Alternative. The original 6-Lane Alternative would add a continuous bicycle/pedestrian path across Lake Washington and along the south side of SR 520, increasing circulation along this cross-lake connection and providing new capacity to the Eastside project area's bicycle/pedestrian system. The new bicycle/pedestrian path has the potential to partially separate bicyclists from pedestrians; pedestrians would be more likely to use the Points Loop Trail because of its established recreational use, and faster-paced bicyclists could opt to use the new path to avoid pedestrians. Bicyclists could increase their speeds and decrease their travel times if they did not have to avoid pedestrians. Bicyclists could also increase their travel times across Lake Washington because they would no longer have to wait for a bus with an available bike rack to get across the lake.

In addition to those benefits, the direct access ramp would have a positive benefit on any transit and HOV vehicle use of the direct access ramp. Under this option, bus travel time between I-405 and 92nd Avenue Northeast would improve by 16 minutes compared to the original 6-Lane Alternative.

Would the project affect access to pedestrian, bicyclist, and transit facilities?

This option would have the same benefits as discussed for the original 6-Lane Alternative. These effects include improved mobility with the continuous HOV lane and the addition of a bicycle/pedestrian path that extends farther east along SR 520 than the Points Loop Trail. In addition to the benefits discussed in the *Social Discipline Report*, the direct access ramps would have a positive benefit on transit service times. The ramps would allow transit to bypass congestion at the Bellevue Way/Northup Way intersection as well as along Northup Way, resulting in travel time savings. Compared to the original 6-Lane Alternative, bus travel time would improve by 16 minutes between I-405 and 92nd Avenue Northeast.

How do the options differ in their effect on community cohesion?

Seattle

The Seattle project area 6-Lane Alternative options would have the same beneficial effects on community cohesion as the original 6-Lane Alternative because of the two lids over SR 520. These lids at 10th and Delmar and Montlake would partially restore the connections between the Roanoke/Portage Bay and North Capitol Hill neighborhoods and the north and south areas of the Montlake neighborhood. The lids, in addition to carrying the local streets across SR 520, would have landscaped, open space with paths connecting the separated neighborhoods and places for small groups to gather.

The 6 Lanes with Pacific Street Interchange option would further benefit the Montlake neighborhood because it would relocate the interchange outside of the neighborhood. This would result in less traffic, visual clutter, and noise in and around this neighborhood.

Eastside

The South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option would not differ from the original 6-Lane Alternative.

How do the options differ in their effect on recreation?

Seattle

The primary differences between the 6 Lanes with Pacific Street Interchange option and the original 6-Lane Alternative would result from the Pacific Street interchange over the Arboretum, the new Union Bay Bridge, and the widening of Montlake Boulevard.

Although the 6 Lanes with Pacific Street Interchange would result in a smaller net loss at McCurdy and East Montlake parks, overall it would acquire more land from recreational facilities in the Seattle project area and less of this land could be returned to park use after construction. It would also further degrade the recreational experiences at the Arboretum's Marsh and Foster islands and affect the University of Washington's WAC and the Burke-Gilman Trail.

The primary differences between the Second Montlake Bridge option and the original 6-Lane Alternative would result from the new bridge and the widening of Montlake Boulevard. In general, the Second Montlake Bridge option would result in less property permanently acquired from McCurdy and East Montlake parks because SR 520 would be narrower in this area, a portion of the East Campus Bicycle Route would be lost, and more shading of the Ship Canal Waterside Trail would occur because of the second bridge over the Montlake Cut.

Eastside

There would be no differences in effects on recreation between the South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option and the original 6-Lane Alternative.

How do the options differ in their effect on regional and community growth?

Seattle

There would be no differences between the 6-Lane Alternative options and their effect on regional and community growth in Seattle. At most, three single-family residences would be acquired (under the Second Montlake Bridge option), which is not enough to change the population of the neighborhoods. Additionally, current land use plans and policies envision the continued use of the project area as single-family neighborhoods. Effects from the proposed project would not alter the quality of life in the neighborhoods to any degree that would cause changes in the number or characteristics of the people living in them.

Eastside

There would be no differences between the South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option and the original 6-Lane Alternative and their effect on regional and community growth. The neighborhoods in the Eastside project area are already well developed and one single-family residence would be acquired, which is not enough to change the population of the neighborhoods. Additionally, current land use plans and policies envision the continued use of the project area as single-family neighborhoods. Effects from the project would not alter the quality of life in the

communities and neighborhoods to any degree that would cause changes to the number or characteristics of the people living in them.

How do the options differ in their effect on services?

Seattle

The effect on services (improving response and travel times of service vehicles) would not differ between the original 6-Lane Alternative and the options.

Eastside

The effect on services (improving response and travel times of service vehicles) would be slightly better with the South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option in comparison to the original 6-Lane Alternative.

How do the options differ in their effect on pedestrian, bicycle, and transit facilities?

Seattle

The 6-Lane Alternative with any of the options would include a bicycle/pedestrian path. The effects on pedestrian, bicycle, and transit facilities would not differ in Seattle between the original 6-Lane Alternative with any option. One difference, however, would be with the 6 Lanes with Pacific Street Interchange option, which would not provide the benefit of a connection between the SR 520 bicycle/pedestrian path and the Arboretum.

The Pacific Street Interchange option would also provide direct access to the proposed North Link light rail station and the University of Washington. One of the critical locations for HOV direct access is the Montlake interchange, which connects the University of Washington and areas north. Direct access is necessary because the University is considered a major destination for car pools and buses in the region, and the bus systems are considering connections to the North Link light

rail station. A connection at that station is desirable to reduce the number of buses using downtown Seattle streets.

Eastside

The effects on pedestrian, bicycle, and transit facilities on the Eastside would not differ between the original 6-Lane Alternative and the South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option.

What are the temporary construction effects of the project?

Seattle

Project construction may affect the quality of life at nearby residences in Seattle. Such effects would be caused by aspects of construction such as the following:

- Increased noise, dust, and changes in visual quality (e.g., glare from nighttime construction lighting or unscreened construction staging areas)
- Traffic congestion and changes in access
- Elimination of on-street parking

The 6-Lane Alternative with either option would have the same type of construction effects as the original 6-Lane Alternative; however, construction may occur in some different areas. The duration of construction would be slightly longer and the intensity of construction would be slightly greater (more clearing, grading, pile driving, etc.) in certain areas.

Specifically, construction of the Pacific Street interchange option would take the longest and would be the most intense in comparison to the original 6-Lane Alternative and the Second Montlake Bridge option. This is because it would require construction of the Union Bay Bridge, and improvements along Montlake Boulevard and at the Pacific Street/Montlake Boulevard intersection. As a result, approximately 400 parking spaces would be temporarily displaced in the University of Washington's E-11/E-12 parking lot for 6 to 12 months during construction of the new Union Bay Bridge and Northeast Pacific Street/Montlake Boulevard Northeast intersection.

Eastside

The Eastside project area would experience the same general construction effects as the Seattle project area during construction of the highway:

- Increased noise, dust, and changes in visual quality
- Traffic congestion and changes in access routes
- Elimination of on-street parking

The 6-Lane Alternative with the South Kirkland Park-and-Ride Transit Access – 108th Avenue Northeast option would have the same type of construction effects as the original 6-Lane Alternative.

Mitigation

What has been done to avoid or minimize negative effects?

The 6-Lane Alternative with any of the options includes the same measures to avoid or minimize negative effects on the neighborhoods surrounding the proposed project as the original 6-Lane Alternative. These measures avoid or minimize negative effects on quality of life factors such as noise, air quality, water quality, visual quality, and recreation opportunities and enjoyment. The measures that have been included in the project to avoid or minimize negative effects are summarized in the *Social Discipline Report* and presented in detail in the following discipline reports:

- Appendix C, *Air Quality Discipline Report* (CH2M HILL 2005b)
- Appendix M, *Noise Discipline Report* (Michael Minor and Associates 2005)
- Appendix O, *Recreation Discipline Report* (CH2M HILL 2005c)
- Appendix P, *Section 4(f) Evaluation* (CH2M HILL 2006)
- Appendix S, *Visual Quality and Aesthetics Discipline Report* (Parametrix 2005a)
- Appendix T, *Water Resources Discipline Report* (Parametrix 2005b)

Noise

Early in the development of this project, WSDOT committed to installing sound walls wherever they were needed to reduce the noise

levels caused by the SR 520 Bridge Replacement and HOV Project to below the noise abatement criteria. These sound walls are included as part of the project design; in other words, they are integral to and inseparable from the project, not just mitigation added to the project. In addition, several other design elements would also help reduce noise levels from those caused by the current roadway. The sound walls and the other noise-reducing features are discussed in detail in Appendix M, *Noise Discipline Report*.

Air Quality

The build alternatives would reduce traffic congestion and thus would improve air quality.

Water Quality

Negative effects of the build alternatives would be avoided or minimized through the inclusion of stormwater flow control and water quality facilities in the overall design of the 6-Lane Alternative with any of the options. Inclusion of high-efficiency sweeping, sedimentation vaults, and stormwater treatment wetlands for the bridge columns at the west approach of the Evergreen Point Bridge would provide a higher rate of metal removal than basic treatment.

Negative effects on surface water and groundwater quality during construction would be avoided and minimized by implementing the water quality pollution control measures outlined in the required Temporary Erosion and Sedimentation Control Plan and the Spill Prevention Controls and Countermeasures Plan and by following permit conditions.

Visual Quality

The 6-Lane Alternative with any of the options would reduce the number of bridge columns by increasing the spacing between columns from 100 to 250 feet. This would substantially reduce the visual clutter when looking at the bridge from outside the roadway.

In some cases, sound walls would also serve as visual screens. This must be balanced against situations where the sound walls simply act as barriers and create a confined or hard-edged visual character or reduce visual quality by cutting off desirable views.

Many of the stormwater facilities would be placed underground, out of sight, or would have natural-appearing landscaping, which would be

consistent with the parks and open spaces where they would be located.

Recreation

The following measures and features would minimize the effects on recreation facilities:

- The new ramps and mainline structures near the Washington Park Arboretum, while elevated, have been designed to be below the existing tree line to minimize adverse visual effects. In addition, these structures would include haunched girders designed to reduce their visual bulk.
- Retaining walls have been incorporated into the design to minimize encroachment into adjacent parklands and historic properties.
- Existing curves in the alignment have been retained in the Montlake area. The more efficient, straight-line alternative was not selected to avoid existing structures and minimize property acquisition and displacements.

How could the project compensate for unavoidable negative effects?

Neither the original 6-Lane Alternative nor the 6-Lane Alternative with any options would have negative long-term effects on community cohesion, regional and community growth, or services. The 6-Lane Alternative and any of the three options would improve pedestrian and bicycle facilities. As a result, no long-term mitigation is proposed or necessary for these aspects of the social environment. The same mitigation measures as discussed in the *Social Discipline Report* would be used to reduce or avoid negative long-term effects on the human environment.

How could temporary construction effects be minimized?

Neither the original 6-Lane Alternative nor the 6-Lane Alternative with any options would have negative temporary effects on regional and community growth during construction. The same mitigation measures as discussed in the *Social Discipline Report* would be used to reduce or

avoid negative long-term effects on community cohesion; recreation; services; and pedestrian, bicycle and transit facilities.

Community Cohesion

- Work with any existing community groups or help to establish community groups to develop specific mitigation measures. During construction, meet with these groups to inform them about any construction activities and ensure that mitigation measures are effective.
- Schedule neighborhood meetings, as often as needed, to keep residents informed of any construction activities before and during construction.
- Continue to use the project Web site and send out newsletters providing information about the project, such as road closures and detour routes. Newsletters would be sent out in the appropriate languages to ensure effective communication with project area residents.
- Provide contact numbers (project Web site and newsletters) to allow neighborhood residents to voice their concerns.
- Minimize, as much as possible, any land acquisitions that may be required, especially where it would have a negative effect on residential property.
- Ensure that temporary road closures are minimized. Detour routes would be well signed.

Recreation

- Identify and provide signage for detour routes for bicycle/pedestrian paths.
- Return portions of any parks used during construction to preconstruction conditions.

Refer to Appendix O, Recreation Discipline Report, for a complete discussion of construction mitigation measures.

Services

- Coordinate with public service providers before construction.
- Present service providers with the proposed detour routes and work with them to establish alternative detour routes if necessary.

- Coordinate with school officials during construction.
- Notify residents of any disruptions or changes to services well in advance.

Pedestrian, Bicycle, and Transit

- Identify and sign detour routes on bicycle/pedestrian paths.
- Identify and sign detour routes for the closures of the Delmar Drive bridge over SR 520 and the Lake Washington Boulevard ramps.
- Improve intersection channelization, signal operations, or both along the detour route.

Chapter 9 of Appendix R, *Transportation Discipline Report*, identifies the following potential mitigation measures:

- Provide the contractor with an incentive for opening the SR 520 westbound HOV lane quickly.
- Require the contractor to minimize and/or prohibit construction truck trips during the peak periods.
- Use barges for transporting materials.

In addition, the Pacific Street Interchange option would implement the following measures:

- Ensure pedestrian access is maintained to and from parking areas around Husky Stadium and the University of Washington during construction.
- Maintain access to the University of Washington parking areas during construction. While mitigation strategies have not yet been fully developed, it is possible that a new parking structure could be built in the University of Washington's E-11/E-12 parking lot because the E-12 parking lot is typically at capacity. During construction, parking could be relocated to the E-1 lot with shuttle service provided to transport users back to the University of Washington Medical Center area. It may also be possible to stage the bridge construction to reduce the temporary parking space losses or to shorten the duration of the parking losses.

References

CH2M HILL. 2005a. *Social Discipline Report*. Appendix N of the SR 520 Bridge Replacement and HOV Project Draft EIS. Prepared for Washington State Department of Transportation.

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