

3 March 2006

**SR 520 Bridge Replacement
and HOV Project EIS**

Appendix G

**Environmental
Justice Analysis**



SR 520 Bridge Replacement and HOV Project EIS

Environmental Justice Analysis



Prepared for

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Federal Highway Administration
Sound Transit

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Acronyms and Abbreviations

BMP	best management practice
dBA	decibel (A-weighted scale)
EIS	Environmental Impact Statement
FHWA	Federal Highway Administration
GIS	geographic information system
HOV	high-occupancy vehicle
HOT	high-occupancy toll
mph	miles per hour
NEPA	National Environmental Policy Act
SHPO	State Historic Preservation Office
USDOT	U.S. Department of Transportation
WSDOT	Washington State Department of Transportation



Introduction

What is environmental justice?

The concept of "environmental justice" has been discussed publicly for decades. Environmental justice acknowledges that the quality of our environment affects the quality of our lives, and that negative environmental effects should not disproportionately burden low-income or minority communities. Effects associated with transportation projects may include disruptions in community cohesion, restricted commercial access, presence of hazardous material, raised noise levels, increased water and air pollution, and other adverse effects.

Presidential Executive Order 12898 lists three major principles of environmental justice:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations.
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations.

This analysis identifies and assesses the project effects that could disproportionately affect minority or low-income populations.

Why is environmental justice considered in an EIS?

The U.S. Department of Transportation (USDOT) requires that environmental justice be considered for all phases of transportation planning and development, including the preparation of documentation, such as an Environmental Impact Statement (EIS), performed under the National Environmental Policy Act (NEPA). This section describes the regulatory background for an environmental justice analysis.



Environmental Justice Orders

On February 11, 1994, President Clinton issued Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (Executive Order 12898). In a memorandum accompanying the Executive Order, President Clinton urged federal agencies to incorporate environmental justice principles into planning and programming activities. NEPA provides a forum for environmental justice analysis and involving minority and low-income populations in the planning and project development process.

Executive Order 12898 provides that:

Each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations.

In response to Executive Order 12898, USDOT issued Order 5610.2, *Order to Address Environmental Justice in Minority Populations and Low-Income Populations* (USDOT Order 5610.2). It outlined generally how environmental justice analyses should be performed and how transportation project decisions should be made. The USDOT Order requires agencies to accomplish the following:

- Explicitly consider human health and environmental effects related to transportation projects that may have a disproportionately high and adverse effect on minority or low-income populations; and
- Implement procedures to provide “meaningful opportunities for public involvement” by members of those populations during project planning and development (USDOT Order 5610.2, § 5(b)(1)).

In response to the above, the Federal Highway Administration (FHWA) issued its own order, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (FHWA Order 6640.23). It contains almost identical language to USDOT Order 5610.2.

Relationship of Executive Order 12898 to Title VI of the Civil Rights Act

Title VI of the Civil Rights Act of 1964 requires that “no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” FHWA provides guidance for documenting the potential social, economic, and environmental effects considered in the selection and implementation of highway projects (*FHWA Guidance for Preparing and Processing Environmental and*



Section 4(f) Documents [FHWA Technical Advisory 6640.8A]). Executive Order 12898 is a renewed focus on the Title VI law with respect to minority populations, and adds emphasis on low-income populations.

What is the purpose of this analysis?

In compliance with Executive Order 12898, USDOT 5610.2, and FHWA Order 6640.23, the purpose of this analysis is to determine whether the proposed SR 520 Bridge Replacement and HOV Project would result in disproportionately high and adverse human health or environmental effects on minority and low-income populations. This analysis focuses on:

- The population demographics of the project study area
- The results of specific public outreach efforts that were conducted to engage minority and low-income populations and how these groups were included in the decision-making process
- The location, intensity, and duration of anticipated project effects as reported in the various discipline reports and studies prepared as part of this EIS.

What are the key points of this analysis?

The key points of this analysis are:

- The SR 520 Bridge Replacement and HOV Project would result in a variety of environmental effects across the different environmental elements. Some of these effects would be positive and some would be negative. For most elements, implementation of proposed mitigation measures would eliminate or reduce those negative effects.
- Sound walls integrated into the design of the build alternatives would substantially reduce the number of locations affected by noise, and would generally make the project area quieter than it is today. However, even with the sound walls, a few areas would be affected by noise under both alternatives. No mitigation for these noise effects has been proposed because there are no reasonable or feasible methods of reducing noise in these areas. These effects would be predominately borne by non-minority and non-low-income populations.



- The decrease in transit travel time on SR 520 would be a key benefit for all the traveling public, but particularly for low-income people who ride buses proportionally more than people with higher incomes.
- The adverse effect of the Evergreen Point Bridge toll on low-income people would be more severe than the adverse effect of the toll on non-low-income people. However, there would be choices for avoiding the toll, including riding in a bus or a carpool with three or more people, changing the destination to avoid crossing Lake Washington, or taking an alternate route across or around Lake Washington, even though these alternate routes may be less direct and may take more travel time.
- The outreach, assistance, monitoring, and toll collection method mitigation measures described in the *What measures can WSDOT take to avoid or mitigate disproportionately high and adverse effects on low-income populations?* section could reduce the adverse effects of the toll. Project benefits that would accrue to low-income populations include improvements in transit travel times and bicycle and pedestrian access. After considering these conditions, the environmental justice discipline team concludes that tolling the new Evergreen Point Bridge would not have disproportionately high and adverse effects on low-income populations.

What are the project alternatives?

The SR 520 Bridge Replacement and HOV Project area comprises neighborhoods in Seattle from I-5 to the Lake Washington shore, Lake Washington, and Eastside communities and neighborhoods from the Lake Washington shore to 124th Avenue Northeast just east of I-405. Exhibit 1 shows



Exhibit 1. Project Vicinity Map



the general location of the project. Neighborhoods and communities in the project area are:

- Seattle neighborhoods – Portage Bay/Roanoke, North Capitol Hill, Montlake, University District, Laurelhurst, and Madison Park
- Eastside communities and neighborhoods – Medina, Hunts Point, Clyde Hill, Yarrow Point, Kirkland (the Lakeview neighborhood), and Bellevue (the North Bellevue, Bridle Trails, and Bel-Red/Northrup neighborhoods).

The SR 520 Bridge Replacement and HOV Project Draft EIS evaluates the following three alternatives and one option:

- No Build Alternative
- 4-Lane Alternative
 - Option with pontoons without capacity to carry future high capacity transit
- 6-Lane Alternative

Each of these alternatives is described below. For more information, see the *Alternatives Description and Construction Methods Report* contained in Appendix A of this EIS.

What is the No Build Alternative?

All EISs provide an alternative to assess what would happen to the environment in the future if nothing were done to solve the project's identified problem. This alternative, called the No Build Alternative, means that the existing highway would remain the same as it is today (Exhibit 2). The No Build Alternative provides the basis for measuring and comparing the effects of all of the project's build alternatives.

This project is unique because the existing SR 520 bridges may not remain intact through 2030, the project's design year. The fixed spans of the Portage Bay and Evergreen Point bridges are aging and are vulnerable to earthquakes; the floating portion of the Evergreen Point Bridge is vulnerable to wind and waves.

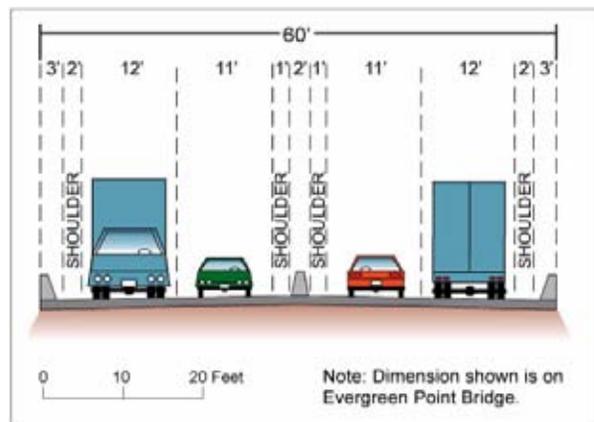


Exhibit 2. No Build Alternative



In 1999, the Washington State Department of Transportation (WSDOT) estimated the remaining service life of the Evergreen Point Bridge to be 20 to 25 years based on the existing structural integrity and the likelihood of severe windstorms. The floating portion of the Evergreen Point Bridge was originally designed for a sustained wind speed of 57.5 miles per hour (mph), and was rehabilitated in 1999 to withstand sustained winds of up to 77 mph. The current WSDOT design standard for bridges is to withstand a sustained wind speed of 92 mph. In order to bring the Evergreen Point Bridge up to current design standards to withstand at least 92 mph winds, the floating portion must be completely replaced.

The fixed structures of the Portage Bay and Evergreen Point bridges do not meet current seismic design standards because the bridge is supported on hollow-core piles. These hollow-core piles were not designed to withstand a large earthquake. They are difficult and cost prohibitive to retrofit to current seismic standards.

If nothing is done to replace the Portage Bay and Evergreen Point bridges, there is a high probability that both structures could fail and become unusable to the public before 2030. WSDOT cannot predict when or how these structures would fail, so it is difficult to determine the actual consequences of doing nothing. To illustrate what could happen, two scenarios representing the extremes of what is possible are evaluated as part of the No Build Alternative. These are the Continued Operation and Catastrophic Failure scenarios.

Under the Continued Operation Scenario, SR 520 would continue to operate as it does today as a 4-lane highway with nonstandard shoulders and without a bicycle/pedestrian path. No new facilities would be added and no existing facilities (including the unused R.H. Thompson Expressway Ramps near the Arboretum) would be removed. WSDOT would continue to maintain SR 520 as it does today. This scenario assumes the Portage Bay and Evergreen Point bridges would remain standing and functional through 2030. No catastrophic events (such as earthquakes or high winds) would be severe enough to cause major damage to the SR 520 bridges. This scenario is the baseline the environmental justice discipline team used to compare the other alternatives.

In the Catastrophic Failure Scenario, both the Portage Bay and Evergreen Point bridges would be lost due to some type of catastrophic event. Although in a catastrophic event, one bridge might fail while the



other stands, this Draft EIS assumes the worst-case scenario – that both bridges would fail. This scenario assumes that both bridges would be seriously damaged and would be unavailable for use by the public for an unspecified length of time.

What is the 4-Lane Alternative?

The 4-Lane Alternative would have four lanes (two general-purpose lanes in each direction), the same number of lanes as today (Exhibit 3).

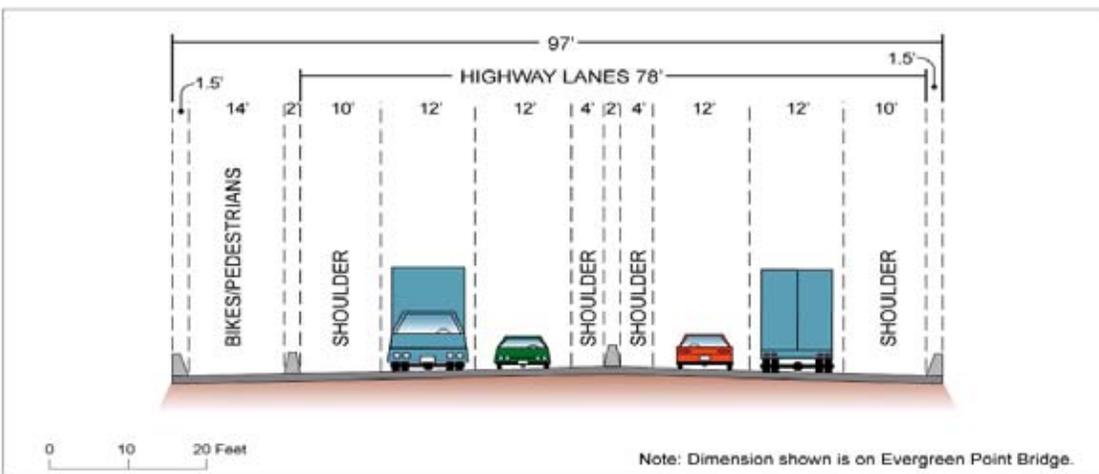


Exhibit 3. 4-Lane Alternative

SR 520 would be rebuilt from I-5 to Bellevue Way. Both the Portage Bay and Evergreen Point bridges would be replaced. The bridges over SR 520 would also be rebuilt. Roadway shoulders would meet current standards (4-foot inside shoulder and 10-foot outside shoulder).

A 14-foot-wide bicycle/pedestrian path would be built along the north side of SR 520 through Montlake, across the Evergreen Point Bridge, and along the south side of SR 520 through Medina, Hunts Point, Clyde Hill, and Yarrow Point to 96th Avenue Northeast, connecting to Northeast Points Drive. Sound walls would be built along much of SR 520 in Seattle and the Eastside. This alternative also includes stormwater treatment and electronic toll collection.

The floating bridge pontoons of the Evergreen Point Bridge would be sized to carry future high-capacity transit. An option with smaller pontoons that could not carry future high-capacity transit is also analyzed. The alternative does not include high-capacity transit.



A bridge operations facility would be built underground beneath the east roadway approach to the bridge as part of the new bridge abutment. A dock to moor two boats for maintenance of the Evergreen Point Bridge would be located under the bridge on the east shore of Lake Washington.

A flexible transportation plan would promote alternative modes of travel and increase the efficiency of the system. Programs include intelligent transportation and technology, traffic systems management, vanpools and transit, education and promotion, and land use as demand management.

What is the 6-Lane Alternative?

The 6-Lane Alternative would include six lanes (two outer general-purpose lanes and one inside HOV lane in each direction; Exhibit 4). SR 520 would be rebuilt from I-5 to 108th Avenue Northeast in Bellevue, with an auxiliary lane added on SR 520 eastbound east of I-405 to 124th Avenue Northeast. Both the Portage Bay and Evergreen Point bridges would be replaced. Bridges over SR 520 would also be rebuilt. Roadway shoulders would meet current standards (10-foot-wide inside shoulder and 10-foot-wide outside shoulder). A 14-foot-wide bicycle/pedestrian path would be built along the north side of SR 520 through Montlake, across the Evergreen Point Bridge, and along the south side of SR 520 through the Eastside to 96th Avenue Northeast, connecting to Northeast Points Drive. Sound walls would be built along much of SR 520 in Seattle and the Eastside. This alternative would also include stormwater treatment and electronic toll collection.

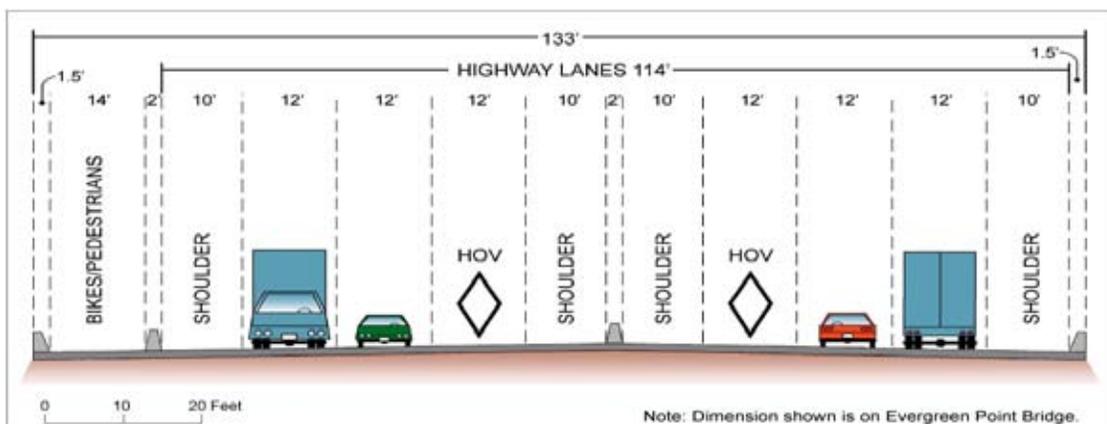


Exhibit 4. 6-Lane Alternative



This alternative would also add five 500-foot-long landscaped lids to be built across SR 520 to help reconnect communities. These communities are Roanoke, North Capitol Hill, Portage Bay, Montlake, Medina, Hunts Point, Clyde Hill, and Yarrow Point. The lids are located at 10th Avenue East and Delmar Drive East, Montlake Boulevard, Evergreen Point Road, 84th Avenue Northeast, and 92nd Avenue Northeast.

The floating bridge pontoons of the Evergreen Point Bridge would be sized to carry future high-capacity transit. The alternative does not include high-capacity transit.

A bridge operations facility would be built underground beneath the east roadway approach to the bridge as part of the new bridge abutment. A dock to moor two boats and maintain the Evergreen Point Bridge would be located under the bridge on the east shore of Lake Washington.

A flexible transportation plan would promote alternative modes of travel and increase the efficiency of the system. Programs would include intelligent transportation and technology, traffic systems management, vanpools and transit, education and promotion, and land use as demand management.

What are the toll rates?

Exhibit 5 shows the proposed toll rates that would be imposed on all single- and two-person-occupancy vehicles traveling in each direction across the Evergreen Point Bridge. The peak hour, one-way rate is proposed to be \$3.35 in today’s dollars. Both the 4-Lane and 6-Lane Alternatives would be tolled.

Exhibit 5. Proposed Toll Rates for Evergreen Point Bridge for 2030

Toll Category	Toll Rate (in today’s dollars)	
	Today	
2030 p.m. peak-period toll rate	\$3.35	
2030 off-peak toll rate	\$1.80	

Source: WSDOT. (2005).

Transit service, emergency vehicles, registered vanpools, and carpools with three or more people would not have to pay the toll because they are able to use the untolled HOV lanes. The use of an electronic toll collection system would allow traffic to operate at free-flow conditions



as opposed to manual toll collection, which would require drivers to reduce speeds to pass through a toll collection plaza to pay.

The electronic toll collection system is currently proposed to consist of an overhanging fixture beside the roadway, similar to a lighting fixture, which would monitor vehicles with a “card reader” as they crossed the bridge. Users who are required to pay the toll would have transponders or “cards” in or on their vehicles that would be read by the card reader. Two types of transponders that could be used include:

1. A permanent transponder. This transponder attaches permanently to a vehicle’s windshield. In many places, they are sold at kiosks. In the future, they may be available at actual automated teller machines.
2. A portable transponder. This transponder could be transferred between multiple vehicles.

Vehicles on SR 520 that do not cross the Evergreen Point Bridge would not be required to pay the toll.



How was this environmental justice analysis performed?

The environmental justice discipline team prepared this document using the latest FHWA and WSDOT guidance documents and the best available project-specific and demographic data. This environmental justice analysis was developed in a manner consistent with Executive Order 12898, USDOT 5610.2, FHWA Order 6640.23, and the following guidance documents:

- Section 458 *Environmental Justice* from the WSDOT Environmental Procedures Manual, M31-11, March 2004 (WSDOT M31-11, 2004a)
- *Environmental Justice: What You Should Know*, FHWA Washington Division, June 13, 2003 (FHWA Washington Division 2003).

Information reviewed by the environmental justice discipline team included:

- Demographic data from the 2000 U.S. Census
- The components of the public outreach program specifically focused on minority and low-income populations, and the results to date
- The NEPA environmental documentation developed for the SR 520 Bridge Replacement and HOV Project EIS (this documentation includes a comprehensive evaluation of the project's effects, as well as information on project benefits)
- Research into the effects of highway tolls on low-income populations

The following describes the steps taken to perform this analysis:

1. **Define the study purpose.** The purpose of this study was previously described above in *What is the purpose of this analysis?*
2. **Identify the study area and conduct a demographic analysis.** The environmental justice discipline team identified and defined the limits of the demographic analysis, and mapped where minority and low-income populations live in the study area using data from the 2000 U.S. Census (see *What are the demographics of the study area?* below). We also reviewed information on the distribution of



populations with limited English proficiency; this information was used to inform the public involvement team where outreach materials in alternative languages should be distributed.

3. **Conduct targeted public outreach and solicit feedback on the project.** The public involvement team supplemented the results of the demographic analysis discussed under step 2 above by researching and documenting other local demographic information sources. They held interviews with local social service organizations to develop a more refined understanding of the study area population. This research gave the public involvement team a better understanding of the locations and potential concerns of minority and low-income populations. Based on all of this information, the public involvement team developed a public involvement strategy that outlined specific outreach activities designed to reach minority and low-income populations and solicit feedback on the project. (See *What types of outreach were used to engage minority and low-income populations?* below for more information on the public involvement strategy and the results of these public outreach activities.)

4. **Review and assess potential effects and analyze their location in relation to minority and low-income populations.** The environmental justice discipline team evaluated the location, intensity, and duration of environmental effects that would result from the proposed project. We relied principally on the information developed for the EIS and documented in the discipline reports; we also interviewed key discipline report authors to further clarify the information contained in the reports. Based on this information, we identified the negative effects of the project that were deemed to be of sufficient magnitude and to have the potential to affect different human populations in different ways or to different degrees, such that they warranted closer examination to determine who, from a minority and income perspective, would be affected by them. These negative effects were then examined more closely by using a geographic information system (GIS) to electronically map effects on Census Block and Block Group maps. The concentrations of minority and low-income populations living in the affected Blocks and Block Groups were determined by the GIS, based on data from the 2000 U.S. Census. We also reviewed the proposed mitigation and project benefits (see *How would the project affect minority and low-income populations?* below for a discussion of the project's effects, including mitigation and project benefits). To characterize and



assess the effect of the build alternative tolls on low-income populations, we researched available literature on the effects of highway tolls on low-income populations, comments on tolling from social service organizations and the public, options for avoiding the toll, available data on usage of the existing Evergreen Point Bridge by low-income populations, and available literature on low-income population usage of transit.

5. **Assess whether the project would result in disproportionately high and adverse effects on minority and/or low-income populations.** The environmental justice discipline team conducted a qualitative assessment of the likelihood that the project would result in disproportionately high and adverse effects on minority and/or low-income populations.

What are the demographics of the study area?

For the demographic analysis, the study area was defined as the polygon created on an area map by applying a 1-mile buffer around the two sections of highway under consideration for this project:

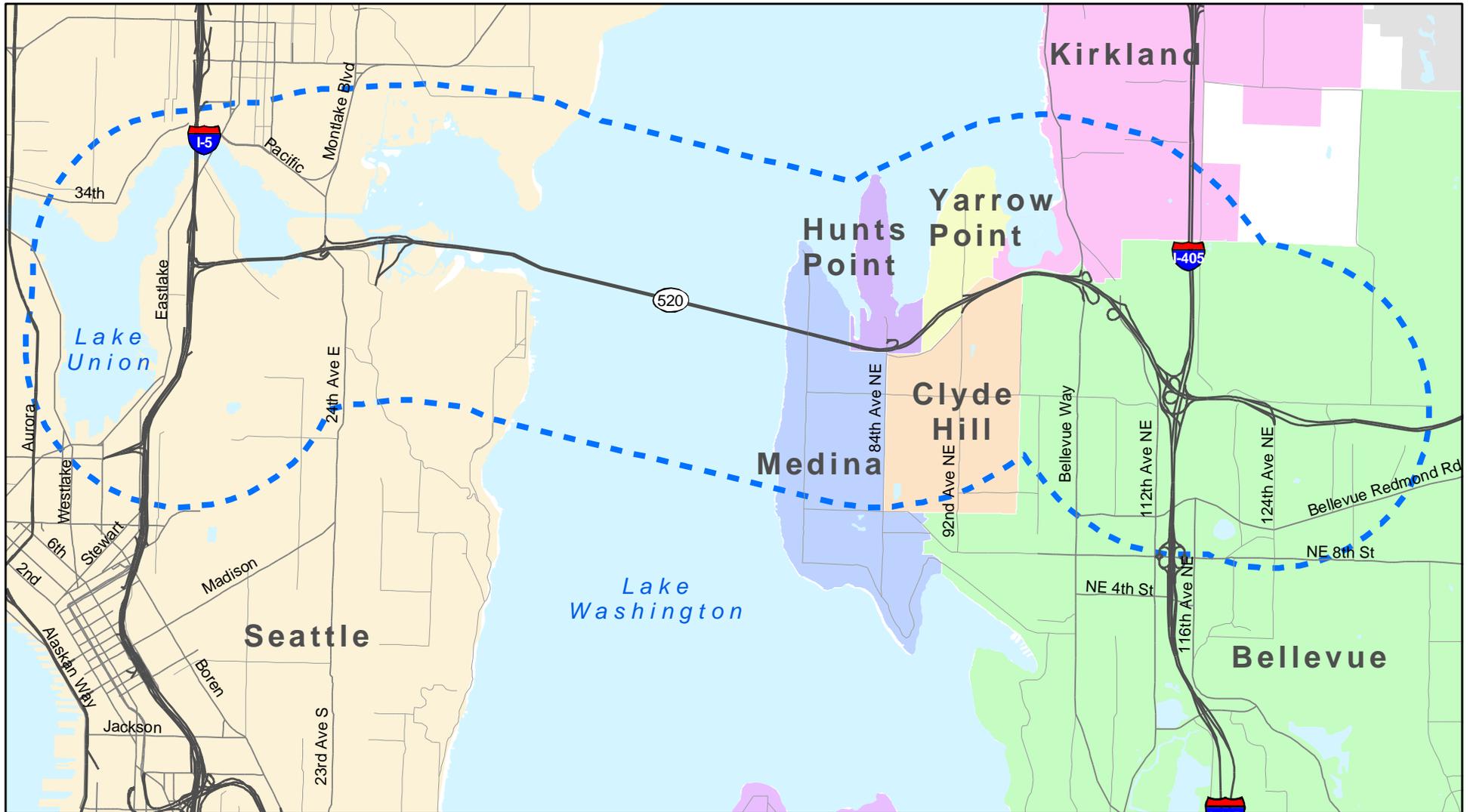
- SR 520 from the I-5 interchange in Seattle east to the 124th Avenue Northeast interchange in Bellevue
- I-5 from the SR 520 interchange south to the Boylston Avenue East on-ramp to I-5

Exhibit 6 shows the study area boundary, and cities and towns in the project vicinity. This study area was chosen because most of the environmental effects resulting from this project would be limited to areas less than a mile from SR 520. In addition, while some effects of this project may occur outside of the 1-mile buffer, areas within this buffer would be expected to experience the greatest environmental effect from the project.

For the minority, low-income, and limited English proficiency analyses, 2000 Census data at the Block Group level were analyzed and mapped for all Block Groups that were entirely or partially contained in the study area. Detailed demographic data behind these maps are provided in Attachment 1.

Exhibit 7 shows both individual Census Block Groups that are entirely or partially contained within the study area and the percentage of





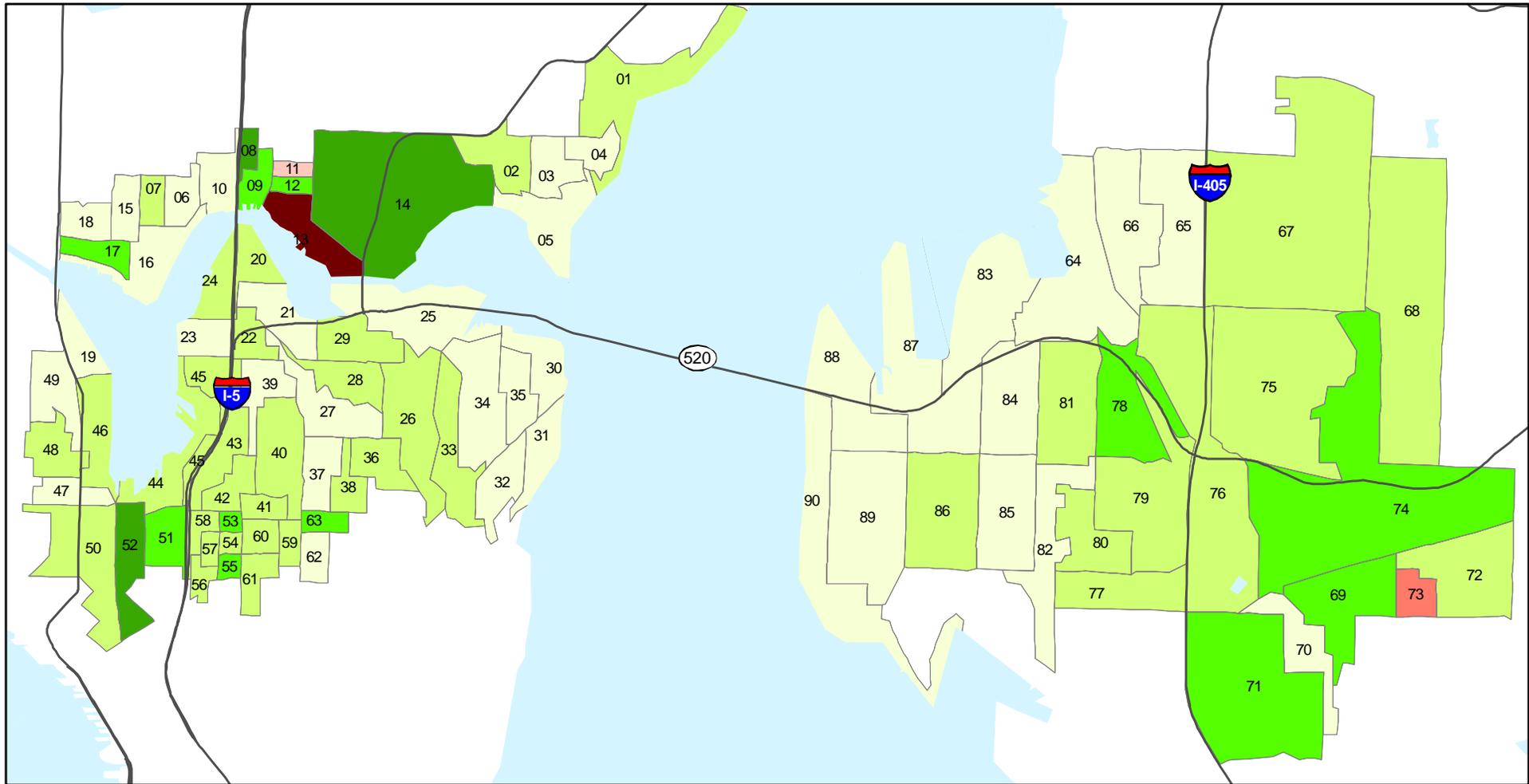
0 2,500 5,000 Feet



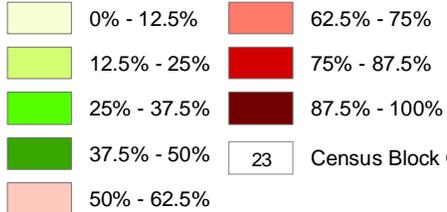
 Study Area Boundary



Exhibit 6. Project Area Cities and Towns
SR 520 Bridge Replacement and HOV Project



Percent of minority population within census block group



Census Block Group ID Number

Please see demographic data table in Attachment 1 for detailed demographic information on individual block groups.

Source: U.S. Census (2000).

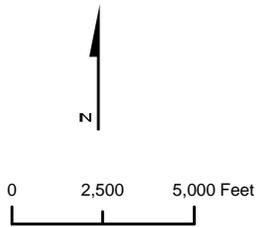


Exhibit 7. Minority Population
SR 520 Bridge Replacement and HOV Project

minority population residing within each Block Group. The map shows eight different percentage ranges of minority population concentrations. Relatively high concentrations (the highest in the study area) of minority populations are in parts of the University District and in the South Lake Union neighborhoods in Seattle and in the Crossroads neighborhood in Bellevue.

Exhibit 8 shows individual Census Block Groups that are entirely or partially contained within the study area and the percentage of low-income population residing within each Block Group. The map shows eight different percentage ranges of low-income population concentrations. As shown, most of the Block Groups in the study area have low concentrations of low-income populations. Relatively high concentrations of low-income populations are in parts of the University District and in the South Lake Union neighborhoods in Seattle.

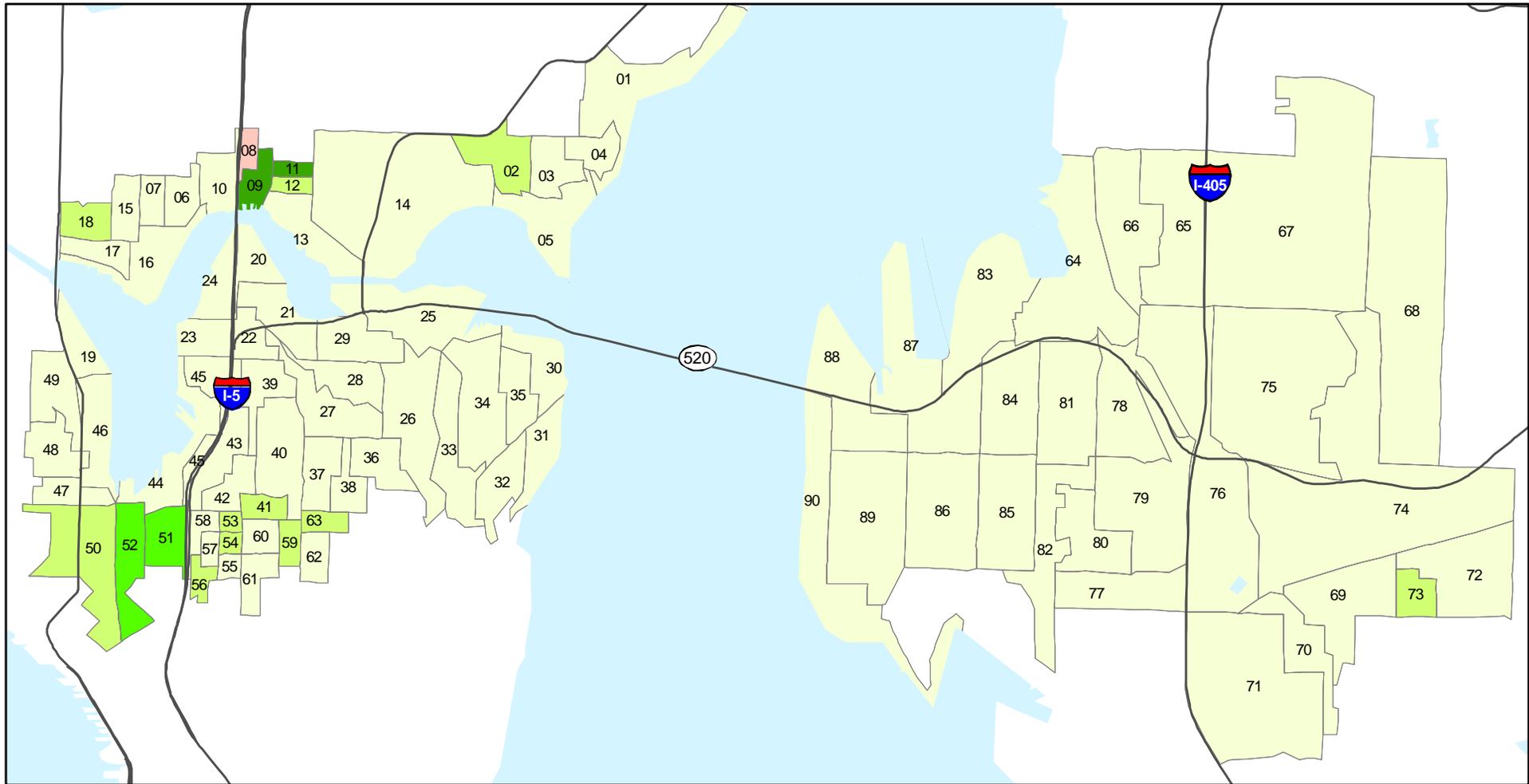
Exhibit 9 shows individual Census Block Groups that are entirely or partially contained within the study area and the percentage of individuals living in these Block Groups reported by the 2000 Census to have limited ability to speak English. As shown, most of the Block Groups in the study area have low concentrations of people with limited ability to understand English. Five Block Groups with relatively higher concentrations (5 percent or greater) of people with limited ability to understand English are identified on Exhibit 9. Exhibit 10 presents data from the 2000 Census indicating the languages spoken by residents of these Block Groups.

What types of transportation assistance can low-income populations receive?

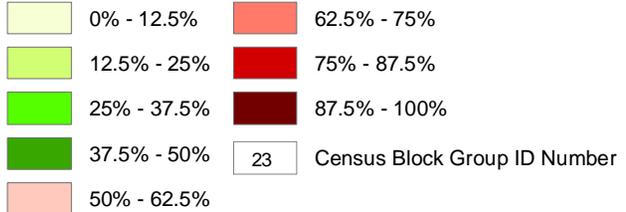
The environmental justice discipline team learned that some low-income individuals receive the following special transportation services:

- The King County Department of Transportation Jobs Access Transportation Program currently provides transportation programs for low-income and welfare recipients. King County received \$740,500 from the Federal Transit Administration Jobs Access and Reverse Commute Programs to implement these programs. The County partners with social service agencies,





Percent of census block group population below federal poverty line



Please see demographic data table in Attachment 1 for detailed demographic information on individual block groups.

Source: U.S. Census (2000).

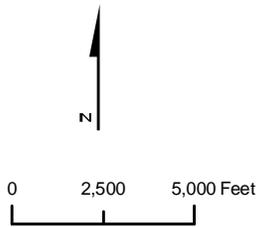
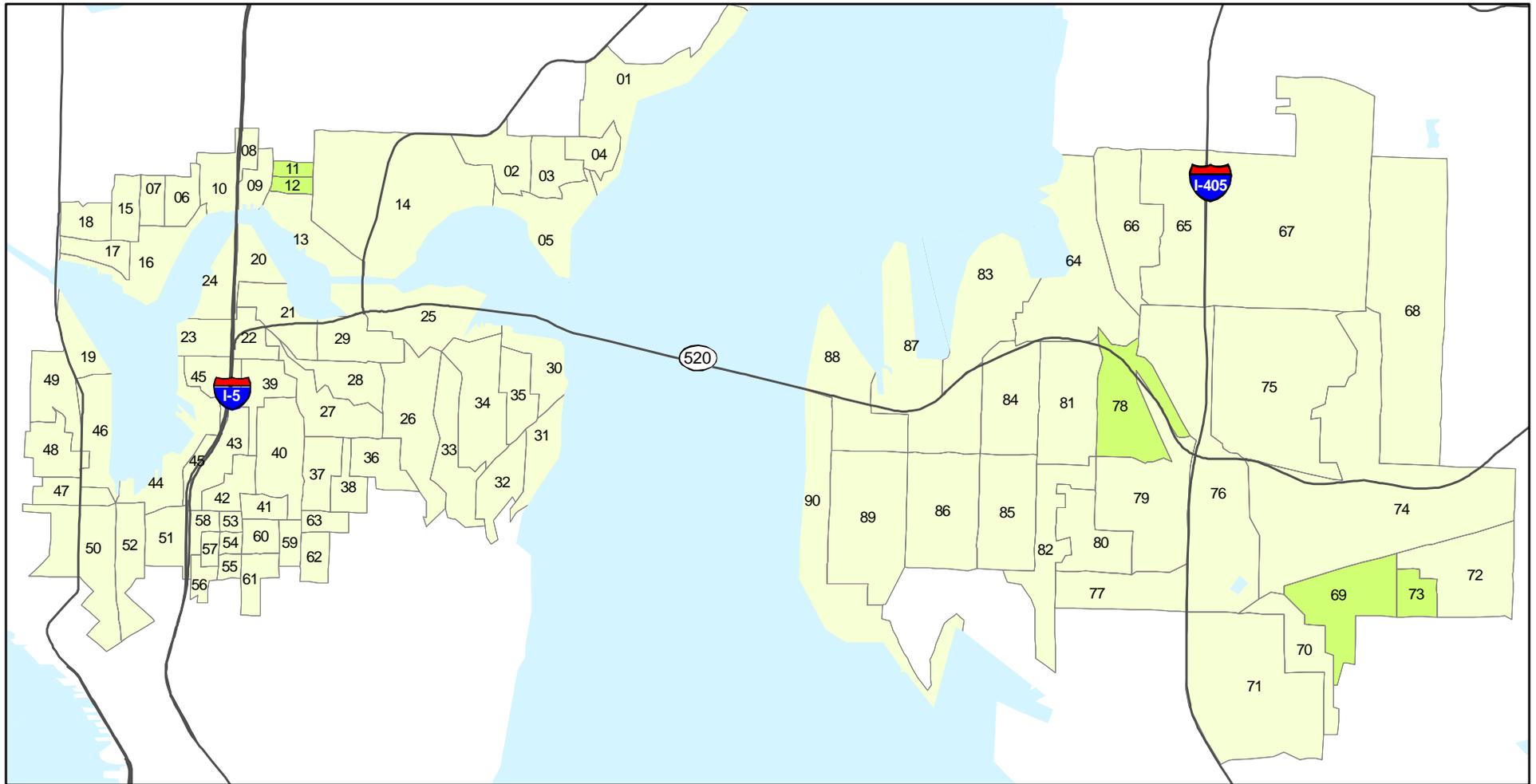
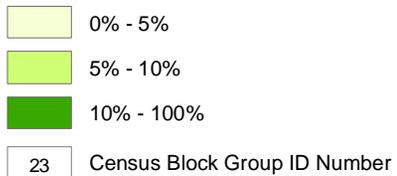


Exhibit 8. Low-Income Population
SR 520 Bridge Replacement and HOV Project



Percent of census block group population having limited English proficiency



Please see demographic data table in Attachment 1 for detailed demographic information on individual block groups.

Source: U.S. Census (2000).

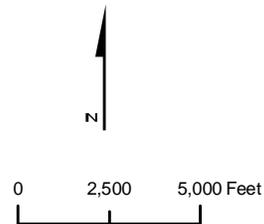


Exhibit 9. Limited English Proficiency Population
 SR 520 Bridge Replacement and HOV Project

Exhibit 10. Populations with Limited English Proficiency in the Study Area by Block Group

Block Group ID	Total Population over 5 Years of Age	Limited English Proficiency (%)	Speak Spanish	Speak Other Indo-European Languages	Speak Asian and Pacific Island Languages	Speak Other Languages
				(Total / % of Population)		
11	968	7.4	52 / 5.4%	7 / 0.7%	270 / 27.9%	0 / 0.0%
12	357	5.9	5 / 1.4%	0 / 0.0%	96 / 26.9%	0 / 0.0%
69	1,078	8.2	57 / 5.3%	118 / 10.9%	195 / 18.1%	30 / 2.8%
73	1,888	6.4	304 / 16.1%	257 / 13.6%	525 / 27.8%	72 / 3.8%
78	886	9.6	110 / 12.4%	38 / 4.3%	11 / 1.2%	0 / 0.0%

community-based organizations, housing authorities, local jurisdictions, and employers for the match (King County 2005). Translation services are available for those who do not speak English.

- King County Metro ACCESS, Dial-a-Ride, Hopelink, and other programs assist people who need special transportation assistance. People who qualify for programs tend to be low-income, disabled, or elderly.

The general public can get help planning transit trips from the King County Metro Customer Service Office.

What types of outreach were used to engage the public?

The public involvement team developed and implemented a Public Involvement Plan for the SR 520 Bridge Replacement and HOV Project. Specific past and ongoing opportunities for the public to get involved in the project include project committee meetings, public scoping meetings, open houses, community design workshops, community roundtables, Corridor Aesthetics Design Advisory Group meetings, community and jurisdictional briefings, and the Freeway Transit Station Usage Survey. General public outreach activities and information include:

- Newsletters mailed to about 3,500 people in the area.



- Project information displays at festivals, libraries, community centers, and other community gathering places. Information distributed includes brochures and fact sheets on the project. These materials are also distributed at park-and-rides and transit stops.
- Signs posted along the SR 520 corridor and posters displayed at community gathering places.
- Display advertisements and legal notices in local papers.
- Press releases issued throughout the course of the project.
- Project Web site created to provide detailed information, an additional mechanism for public feedback, and a complete record of all project documents.
- Monthly emails sent to an extensive e-mail list.

The Public Involvement Plan was designed to meet the public involvement requirements of NEPA and the State Environmental Policy Act, but also provided outreach activities that were specifically designed to reach minority and low-income populations, in compliance with the Executive Order, USDOT Order, and FHWA Order on environmental justice. The outreach strategies contained in the Public Involvement Plan were flexible and have been revised and updated to adapt to situations or new information.

Details of the public involvement program are available in Appendix B to the Draft EIS, *Agency Coordination and Public Involvement*.

What types of outreach were used to engage minority and low-income populations?

This section summarizes the results of the outreach activities that were conducted to engage minority and low-income populations. The public involvement team began with the demographic data (based on the 2000 U.S. Census) developed specifically for the environmental justice analysis, and then conducted further analysis of census data to acquire a better picture of the population in the study area.

The public involvement team investigated additional resources and held interviews with local social service organizations to learn more about the potential concerns of the minority and low-income



populations in the study area. Interviews were conducted with the following social service organizations:

- Hopelink
- Fremont Public Association
- King County Metro's ACCESS Transportation Program
- University of Washington Ethnic Cultural Center and Theater Complex
- Circle of Friends – Adult Day Health Center
- Foundation for International Understanding through Students
- Catholic Community Services
- City of Bellevue Office of Cultural Diversity

In Seattle, the public involvement team used information acquired during other WSDOT projects and incorporated relevant information from overlapping geographic areas into their strategy for public outreach. This included demographic information obtained from organizations such as Plymouth Housing Group, Seattle Housing Authority, Human Services Coalition, and Chinese Information and Service Center. The public involvement team expanded outreach to University of Washington groups such as the Foundation for International Understanding through Students, and the University of Washington Ethnic Cultural Center and Theater Complex. The public involvement team also visited organizations such as the Fremont Public Association. Through these informational and informative visits, the public involvement team deepened its knowledge of the locations and concerns of minority and low-income populations in the greater Seattle area.

On the Eastside, the public involvement team compared census demographic data for the study area with information from the Office of Cultural Diversity for Bellevue, which provided citywide population trends and neighborhood patterns. The public involvement team met with the Director of the Office of Cultural Diversity, who provided insight and specifics about the minority and low-income populations in Bellevue and offered suggestions of ways to conduct outreach to these communities. The director also provided the public involvement team with a list of minority organizations through which further outreach was conducted. Eastside social service organizations that were



interviewed include Hopelink, Circle of Friends, and Catholic Community Services. This information was valuable in the development of specific outreach strategies for minority populations.

Based on the findings of the demographic research and social service organization interviews, the Public Involvement Plan was expanded to include specific outreach activities designed to reach minority and low-income populations, and solicit feedback on the project. General approaches included:

- Involving and working through trusted leaders of existing minority and low-income organizations
- Reaching out to communities via local meetings at different community sites, or attending other previously scheduled events
- Working with ethnic media sources, including non-English-speaking or English as a Second Language media
- Working through social and community service organizations
- Translating project materials into Spanish, Russian, Chinese and Vietnamese. These languages were determined by evaluating 2000 Census data along with information from social service organizations serving minority and limited English proficient populations.
- Having translators available at meetings, as needed. Individuals can request language interpretation services at any time.
- Working with employers with large minority populations in their employee base as well as minority-owned businesses

In the fall of 2004, the project team published a general project article in three prominent ethnic newspapers in the project area. The article, which appeared in *Siete Dias*, the *North American Post* and the *International Examiner*, was translated into Spanish and Japanese.

The public involvement team scheduled and attended several community briefings with minority organizations, minority business groups, and other umbrella organizations working with minority and low-income populations. For example, the public involvement team had a display booth at Bellevue City Hall for their Latino/Hispanic cultural celebration and made a presentation to the Eastside Refugee and Immigrant Coalition. In addition, the public involvement team contacted other groups such as the Black Dollar Days Task Force,



Northwest Minority Business Council, and the Eastside Latino Leadership Forum to offer briefings to their members.

To expand outreach to minority businesses, the public involvement team developed a list of minority-owned businesses within the study area by purchasing a list of minority-owned businesses from Dunn and Bradstreet and acquiring the African-American Business Directory from the Black Dollar Days Task Force. The minority-owned businesses list was added to the existing regular and electronic mailing lists. The comprehensive list allows the public involvement team to keep minority-owned businesses informed of project events, activities, and public involvement opportunities such as open houses, public hearings, and committee meetings. The public also had opportunities to comment on the project through open houses and the project Web site. The public involvement team has received hundreds of comments on various aspects of the project.

The public involvement team will continue to conduct outreach to all potentially affected groups throughout the life of the project (including during construction). These efforts will include outreach to minority and low-income populations. Activities may include those listed above such as language translation, coordinating with social service organizations, and other activities to be determined.

Results of Project Outreach

To date, interactions with the groups listed above and the public have been effective in generating feedback, and have provided many environmental justice-related comments. Some common concerns include the following:

- Some social service organizations (at the interviews) and individuals (through the project Web site and open houses) expressed concern over the effect of tolls on low-income populations. Additional discussion is provided in the *What has WSDOT learned about tolling from its public outreach program?* section.
- Several social service organizations that work with low-income populations were concerned that the implementation of tolls on the bridge could hinder their ability to provide services for their clients. Additional discussion is provided in the *What has WSDOT learned about tolling from its public outreach program?* section.



- Some social service organizations were concerned that construction congestion would impede their ability to provide services to their low-income and minority clients.
- Some of the organizations that work with minority and low-income populations wanted assurance that transit services would be improved and expanded because transit is an important form of transportation for those populations.



How would the project affect minority and low-income populations?

What would be the project's effects and what mitigation is proposed?

The environmental justice discipline team conducted a review of the location, intensity, and duration of environmental effects that would result from the SR 520 Bridge Replacement and HOV Project, relying principally on the information developed for the EIS, as documented in the discipline reports provided in Appendices B through U of this EIS. We also interviewed key discipline report authors to further clarify the information contained in the reports.

Attachment 2 summarizes the effects of the project identified in those reports, along with proposed mitigation measures to reduce the severity of these effects. Most of the effects identified in Attachment 2 are long-term, or operational, effects. The last row of this exhibit identifies short-term, or construction, effects. The right-hand column (*Effects and Mitigation Assessment*) assesses the anticipated project effects and proposed mitigation. This assessment is a subjective review of the following:

- Magnitude of the anticipated project effects (e.g., minor, moderate, or major)
- Nature of the effects (either negative or positive)
- Effectiveness of the proposed mitigation in reducing the effects
- If effects are adverse, whether they disproportionately affect minority and low-income populations. In the case of tolling, this was analyzed in more detail in the next section.

USDOT Order 5610.2, § 5(b)(1) requires agencies to explicitly consider human health and environmental effects related to transportation projects that may have a disproportionately high and adverse effect on minority or low-income populations.

Under Section 8(b) of the USDOT Order, mitigation and enhancement measures and benefits to the affected populations may also be considered.



What are the effects of tolling?

The tolls associated with the build alternatives for the SR 520 Bridge Replacement and HOV Project could negatively affect low-income individuals. While these tolls would have to be paid by all users of the new bridge except for vehicles in the HOV lanes (transit, emergency vehicles, and carpools with three or more people), they would represent a proportionally greater expense burden for low-income individuals than for higher income individuals. It is assumed that I-90 and other alternate routes are not tolled. Additional analysis would be needed if any alternate routes are tolled or if a regional tolling system is implemented.

What have other agencies concluded about the equity of tolling?

WSDOT conducted research on the equity of tolling for the SR 520 Bridge Replacement and HOV Project, and although we were unable to find any studies on the equity of tolling facilities like the one proposed for the Evergreen Point Bridge, many studies exist on the equity of high occupancy toll (HOT) lanes. While HOT lanes are only somewhat relevant to this project because they have adjacent untolled general-purpose lanes, some findings from HOT lane studies are relevant.

The Colorado Department of Transportation evaluated the use of potential HOT lanes on I-25. They found that issues related to income and equity are not as pronounced as anticipated, and public opinion can be favorably affected when informed about means of avoiding tolls by carpooling or riding the bus (Ungemah 2004).

In their study on the equity implications of HOT lanes, the Santa Clara Valley Authority identified four strategies that are commonly used by sponsors of HOT lane projects to address equity concerns (Weinstein and Sciara 2004). These involved:

1. Conducting a highly proactive public involvement and educational campaign.
2. Performing various equity analyses (e.g., demographic characteristics of corridor/travel shed; origin/destination studies; and existing transit options/alternate driving routes, including commitments to collect data and/or monitor effects for years into project operations).



3. Monitoring and evaluating projects to ensure equity effects that are acceptable.
4. Creating revenue expenditure plans that fund benefits/compensation to lower-income stakeholders who would be adversely affected by the project.

Orange County prepared an equity study for a toll facility on SR 91 (Sullivan 2004). Their study found that drivers with higher incomes use the lanes for a proportionally greater number of their trips. This suggests that price or difficulty with transponder acquisition may prohibit some individuals with lower incomes from using the facility. However, Orange County concluded that no income group considers it worthwhile to use the tolled lanes for every trip; most users use them infrequently, when they perceive the greatest benefit. Middle-income groups appear to be the most affected by toll increases. The study also found that females and those with more education use the lanes for a proportionally greater number of their trips. Concerning age, middle age groups use toll lanes more often than the youngest and oldest age categories. The study concluded that there is a moderate income effect in travelers' use of the toll lanes, but the choice to use the optional toll lanes seems more related to current travel conditions and trip needs than user demographics. These findings are consistent with study findings from many other toll and HOT lane facilities, including I-10 in Houston and I-15 in San Diego.

According to the Victoria Transport Policy Institute, if the public is informed of the toll well ahead of time, the burden of tolls generally decreases over time because fees can be taken into consideration in traditional life choices (such as where to live and work) (Victoria Transport Policy Institute 2004). Determining if a toll is not equitable depends on the quality of travel alternatives, road funding options, and generated-revenue use. Low-income motorists may be willing to pay for time savings.

The Puget Sound Regional Council (PSRC) conducted environmental justice outreach for Vision 2020+20, the current growth management, transportation, and economic strategy for the Puget Sound Region. PSRC held focus group workshops with environmental justice leaders in King, Kitsap, Pierce, and Snohomish counties. Workshop participants expressed strong support for increased transportation funding, including tolls, but the participants felt that tolls needed to be accompanied by good transportation options (PSRC 2005). The



participants said that increased access to transit is especially important for low-income populations, and that language barriers prevent some non-English speaking people from using transit. Some low-income people move to outlying areas to seek lower-cost housing, but these areas often lack transit services.

Toll collection methods can be an equity issue for tolled facilities. One study presented to the Transportation Research Board looked at environmental justice issues related to transponder ownership and road pricing (Parknay 2004). The author found that requirements for participating in programs that use transponders for electronic collection of tolls can create real hurdles for low-income households. Application processes, initial pre-payment of tolls, deposits, requirements for credit cards or payment by check, and burdensome distribution processes can all be hurdles because:

- As many as 27 percent of U.S. households do not have a credit card.
- Only 28.5 percent of households with incomes less than \$10,000 have a credit card, and only 56.1 percent of household incomes between \$10,000 and \$24,999 have a credit card.
- One adult in ten in the U.S. does not have a bank account upon which to draw a check or establish automatic transponder replenishment.
- Total start-up costs vary between \$20 and \$115 (application processes, transponder purchase, initial pre-payment of tolls, and deposits).
- For some households, prepayment of \$40, \$50, or even \$20 in toll credits on the transponder would be prohibitively expensive.

Although a number of studies expressed concerns about the effect of toll facilities on low-income users, WSDOT could not find an instance in which the final conclusion was a high and disproportionate adverse effect on low-income populations resulting in specific mitigation for those effects.

What has WSDOT learned about tolling from its public outreach program?

Public involvement activities related to environmental justice are discussed in the *What types of outreach were used to engage minority and*



low-income populations? section. Concerns about tolling learned through outreach activities are listed below:

- Advocates for low-income populations expressed their concerns that many people would be unable to afford the tolls, which would limit their ability to cross the bridge. These concerns were consistent with the findings of an SR 520 Stated Preference Survey. WSDOT conducted the survey to forecast customers' willingness to shift travel behavior in response to new tolls on an improved Evergreen Point Bridge. The survey found that, by a significant margin, all income categories were in favor of the new toll bridge except the less-than-\$40,000 category. WSDOT found that sensitivity to trip cost varies with household income.
- Several social service organizations that work with minority and low-income populations were concerned that, given their limited budgets, the implementation of tolls on the bridge could hinder their ability to provide services for their clients. Some of the organizations interviewed coordinate transportation to and from medical appointments for low-income populations on Medicaid assistance. These organizations often use taxis as emergency or courier vehicles. A taxi would only be able to use the HOV lane if there were three or more people in the taxi. Special transportation services such as King County Metro ACCESS paratransit service are not classified as transit and would therefore not be able to use the HOV lane if there were less than three people in the vehicle. This would affect the ability of King County Metro ACCESS Transportation to pick up clients in a timely manner and would increase operating costs.
- Some of the organizations that work with minority and low-income populations wanted assurance that transit services would be improved and expanded because transit is an important form of transportation for those populations.

How do transportation improvements throughout the region benefit users?

As WSDOT improves and maintains a number of critical regional facilities throughout the Puget Sound region, including SR 520, users of this regional transportation system would benefit, regardless of their origin and destination, because the highway network is interconnected and interrelated. For example, any improvements made to I-405 would



benefit users of I-5 and State Route 99 because drivers would more frequently choose to use the newly improved I-405. In addition, improved and more consistent travel times throughout the system increase transit system reliability, which benefits all users. Improvements and additions to transit service in other corridors will allow more people to access transit or access destinations with transit.

What are the safety and reliability benefits?

The SR 520 Bridge Replacement and HOV Project has several benefits that would improve corridor safety and reliability for general purpose, HOV, transit, and freight traffic. The most critical public safety benefit would be the replacement of the existing fixed spans of the Portage Bay and Evergreen Point bridges, and replacement of the floating portion of the Evergreen Point Bridge. The fixed spans of these bridges are aging and, because they do not meet current seismic design standards, are highly vulnerable to earthquakes. The floating portion of the Evergreen Point Bridge is also aging and highly vulnerable to wind and waves. This portion of the bridge has been retrofitted to withstand sustained winds of up to 77 miles per hour but cannot be further improved to withstand higher wind speeds. The current WSDOT design standard for bridges of this type is the ability to withstand sustained winds of 92 miles per hour. If these bridges are not replaced, there is a high probability that one or both bridges could collapse, or otherwise become unusable. In addition, the project would reduce the effect of waves caused by high winds on drivers because the new Evergreen Point Bridge would be higher over Lake Washington than the existing structure.

What are the overall mobility benefits?

Due to improved traffic flow and increased demand, the average number of people crossing Lake Washington on SR 520 (average person trips throughput) would increase, particularly with the 6-Lane Alternative, as shown in Exhibit 11.

Exhibit 11. Increased Person Throughput under the 6-Lane Alternative

	Average Person Trips Throughput (persons/hour)
Existing Conditions	12,470
2030 No Build Alternative	13,130
2030 4-Lane Alternative	13,590
2030 6-Lane Alternative	16,490



The project would encourage more transit use and carpooling because of decreased travel times in the HOV lanes. Under the 6-Lane Alternative, the project decreases travel time for HOV and transit during the a.m. and p.m. peak periods in the eastbound and westbound directions. Under the 4-Lane Alternative, the project decreases travel time for HOV and transit during the p.m. peak period in the eastbound and westbound directions, and in the a.m. peak period in the eastbound direction (see Exhibit 12).

Exhibit 12. Average Transit Travel Times

Alternative	A.M. Peak		P.M. Peak	
	Eastbound (minutes)	Westbound (minutes)	Eastbound (minutes)	Westbound (minutes)
No Build	19	39	9	24
4-Lane	8	46	8	10
6-Lane	8	14	8	11

Exhibit 13 compares travel times for general-purpose and HOV lanes. These travel time benefits are seen for both the 4-Lane and the 6-Lane Alternatives. Users of the HOV lanes under the 6-Lane Alternative would save 21 minutes of travel time compared to the general-purpose lanes. This compares to a 6 minute savings with the 4-Lane Alternative.

Exhibit 13. Estimated Average Travel Times During the A.M. Peak Period Between I-5 and 124th Avenue Northeast (in minutes)

Scenario	General-Purpose Lanes	HOV Lane	HOV Lane Advantage
Current	13	12	1
2030 No Build Alternative	34	29	5
2030 4-Lane Alternative	33	27	6
2030 6-Lane Alternative	32	11	21

Exhibit 13 also compares travel times for the Build Alternatives and the No Build Alternative. Travel times in the general-purpose lanes would decrease slightly under the 4-Lane and 6-Lane Alternatives compared to the No Build Alternative. Travel times in the HOV lanes would decrease slightly (2 minutes) under the 4-Lane Alternative and by a substantial amount (18 minutes) under the 6-Lane Alternative compared to the No Build Alternative.



What are the benefits to pedestrians and bicyclists?

Currently, no bicycle/pedestrian path exists on the Evergreen Point Bridge. Bicyclists and pedestrians must board a bus to cross Lake Washington on SR 520, or take another bicycle route around the lake or across I-90. The project would provide a continuous bicycle/pedestrian path across Lake Washington that would be an additional regional connection between Seattle and the Eastside. There would also be additional connections to pedestrian trails in the Washington Park Arboretum.

What are other benefits of the project?

The project would have the following additional benefits:

- Improved response times for emergency service vehicles
- A higher bridge deck and fewer bridge columns in Portage Bay, Union Bay, and Lake Washington, leading to benefits to fish
- A more open feel for park users on Foster Island in the Washington Park Arboretum
- Reduced noise for residences, businesses, parks, and a school close to SR 520
- Improved regional air quality compared to the No Build Alternative
- Generally improved water quality from stormwater treatment where there currently is no treatment
- Slower stormwater flow rates into eastside streams, resulting in improved stream habitat
- Under the 6-Lane Alternative, lids that would provide landscaped, publicly accessible, and passive open space that would help reconnect neighborhoods divided by the original SR 520 construction

What options are available for avoiding this project's toll?

All drivers, regardless of income level, would be able to drive from one side of the lake to the other and avoid paying a toll by taking the I-90 bridge, or by taking a combination of highways around the northern or



southern ends of the lake. According to the SR 520 Toll Feasibility Study (WSDOT 2004b), the value of the added time and operating costs in taking most alternate routes would be higher than the \$3.35 toll (peak-hour, one-way). As shown in Exhibit 14, the additional travel costs for taking an alternate route from Redmond to the University of Washington via I-90 was estimated at \$8.40, from Seattle to Kirkland via I-90 was \$3.80, from Bellevue to Capitol Hill via I-90 was \$2.60, and from Kirkland to Roosevelt via SR 522 was \$4.60. This is based on the average peak period value of time, the average vehicle operating cost per mile, and other transportation information from 2004. The peak hour, one-way toll rate of \$3.35 is the most recent rate assumed for the project. Obviously, each driver and vehicle passenger would have different values of time and perceptions of cost, and even those would vary by trip purpose and circumstance.

Aside from taking an alternate route, there are other ways to avoid the project’s toll. The toll could be avoided by taking transit across the lake or by carpooling with three or more people. In addition, users could choose to change their destination to avoid crossing Lake Washington. In the long term, users might be able to change the place where they live or could choose to live closer to their work and other important destinations to avoid crossing Lake Washington.

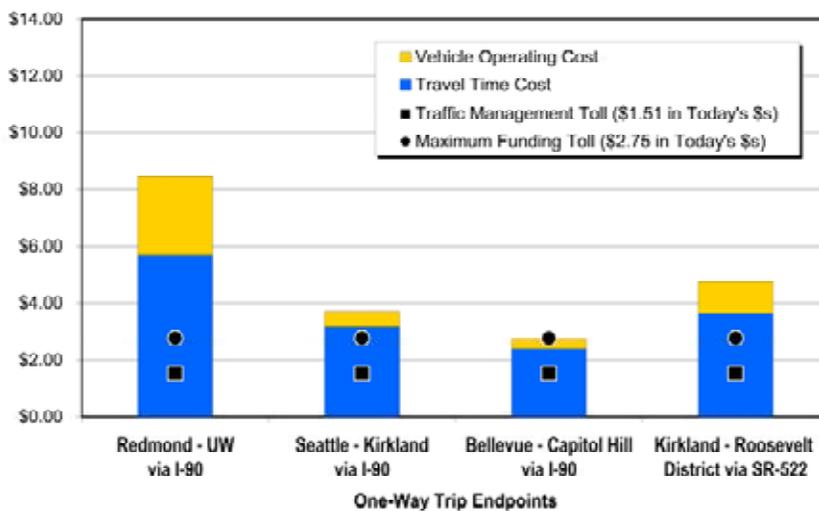


Exhibit 14. Present-Day Alternative Route Travel Costs versus Peak Period SR 520 Toll
 Source: WSDOT (2004b).



How would this project benefit low-income users?

The various project benefits mentioned above would accrue to the traveling public as a whole, including low-income populations. However, the improvement in transit travel times would be particularly beneficial to low-income populations, as transportation studies have indicated that low-income individuals tend to use transit proportionally more than higher-income individuals. For example, data from the 1995 Nationwide Personal Transportation Survey (FHWA 2001) demonstrated that low-income persons traveled 4.2 percent of their person miles on public transit, as compared with 2.1 percent of all person miles traveled by the total population. Murakami and Young (1997), working with the same Nationwide Personal Transportation Survey dataset, demonstrated that low-income households are more likely to use transit to get to work than the general population – 5 percent compared to 2 percent. Data from the 2000 U.S. Census for King County (USDOT 2004) indicate that out of all workers who take transit to get to and from work, approximately 23 percent are from households earning less than \$30,000 per year, while these same individuals comprise only approximately 12 percent of all workers in the county. Finally, data from the 2003 King County Department of Transportation, Transit Division, Rider/Non-Rider Survey (King County Department of Transportation 2004) indicate that of the individuals who participated in the survey (a total of 2,412 individuals), approximately 29 percent used King County Metro regularly. Nineteen percent of the survey participants earned under \$35,000 per year.

The 6-Lane Alternative would provide greater benefits to low-income users than the 4-Lane Alternative because the transit travel time savings would be greater for the 6-Lane Alternative. In addition, the reductions in transit travel times across SR 520 would benefit the transit system as a whole. Improving the timing and reliability of transit vehicles in this section of the regional transit network would improve the overall efficiency of the transit system. Increased reliability and efficiency could attract new riders, which would generate additional revenue for the transit operators. In time, this could lead to increased transit service providing additional benefits to users.



Would low-income users experience disproportionate effects or adverse effects from the toll?

The Evergreen Point Bridge tolls would have disproportionate effects on low-income populations because the toll would be the same amount for all users, regardless of income. This means that low-income populations would have to spend a higher proportion of their income on transportation. A study on transportation spending by low-income households in California indicated that transportation was the third-largest budget item for California's low-income households – despite the fact that these residents are more likely to use public transit, carpool, or walk to work (Rice 2004). Given that median household incomes for California and Washington in 1999 were similar (\$47,000 and \$46,000, respectively) and both states have metropolitan areas with relatively high levels of traffic congestion and high housing prices, it is likely that low-income households in Washington spend about the same proportion of their income on transportation (U.S. Census 2000). Depending on the transportation choices made, the toll could increase a low-income household's transportation costs to an even greater proportion of its budget.

Low-income populations who choose to avoid the toll by taking alternate routes would be adversely affected because they would spend additional time and vehicle operating costs on the alternate route compared to the tolled route. Additionally, even more time would be spent avoiding the toll if the alternate route had high levels of congestion. Some low-income populations drive because they live in outlying areas with lower housing costs, but insufficient transit service. Others hold jobs that are not accessible by transit. The National Household Travel Survey found that increasing numbers of low-income individuals are auto-dependent (Loveless 2006). These people cannot avoid the toll by taking transit, and must accept the higher travel times and vehicle operating costs if they want to avoid paying the toll.

Would low-income users experience disproportionately high and adverse effects from the toll?

While it is important to acknowledge that low-income users would experience adverse and disproportionate effects from the toll, the Executive Order is concerned about disproportionately high and adverse effect on low-income populations. This type of effect:



(A) is predominately borne by a low-income population,

or

(B) is suffered by the low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the higher-income population.

Criterion A can be analyzed by comparing an estimate of the number of Evergreen Point Bridge users who are low-income to the number of low-income populations in King County. The number of Evergreen Point Bridge users who are low-income can be estimated by overlaying census demographics over origin-destination survey information. The analysis shows that 9 percent of the Evergreen Point Bridge users are low-income (U.S. Census 2000, WSDOT 1999). Eight percent of King County residents are low-income. Since the proportion of low-income bridge users based on the origin-destination study is not appreciably different than the percent of low-income residents in King County, it does not appear that the negative effects of tolling the bridge would be predominately borne by low-income populations.

In considering Criterion B, the question is whether the effect is disproportionately high and adverse. In conducting this analysis, mitigation and benefits may be taken into account. Low-income populations tend to use transit at a higher rate than the general population, and thus will benefit more from the transit travel-time improvements. In the case of SR 520, low-income users of SR 520 have options to avoid the tolls, as described in previous sections.

For most low-income populations, the effect of the toll would not be highly adverse due to the project benefits and the options to avoid the toll as discussed above. However, based on comments from social service providers, tolling the Evergreen Point Bridge could potentially have a highly disproportionate and adverse effect on some low-income populations who are unable to ride the bus. These tend to be elderly or disabled low-income people who rely on special transportation services, or low-income people that do not understand the transit system due to language, learning, or other barriers. Three social service providers felt that tolls could affect the services that they provide for their low-income clients. Alternate routes would not be attractive to these services because they serve hundreds of people daily and must be mileage- and time-conscious, especially when using taxis.



In addition, if the project's electronic toll collection method requires users to pay large set-up fees and/or own a credit card or bank account, some low-income populations may not be able to purchase a transponder, as indicated by the Parknay study discussed earlier. Not being able to purchase a transponder due to large set-up fees and/or lack of a credit card and bank account would potentially be a disproportionately high and adverse effect on those low-income populations affected.

What measures can WSDOT take to avoid or mitigate disproportionately high and adverse effects on low-income populations?

The measures listed below are recommended to mitigate the highly disproportionate and adverse effects that tolling the Evergreen Point Bridge could potentially have on low-income populations. The measures fall into the categories of outreach, assistance, accessible toll collection methods, and monitoring. Additional mitigation may be needed if I-90 and other alternate routes are tolled or if a regional tolling system is implemented.

Outreach

Inclusive, early public involvement should be implemented so that people can make life choices based on the knowledge that transportation costs will increase if they choose to drive across Lake Washington on SR 520 (for example: where to live and work). In addition, before and after the toll facility opens, WSDOT should provide information on how to obtain transponders, how to avoid the tolls, and how to receive transportation assistance. King County Metro, Hopelink, and other organizations currently provide special transportation services described in the *What types of transportation assistance can low-income populations receive?* section. Although WSDOT does not manage these programs, WSDOT can help make people aware of the programs. This information should be broadly communicated in multiple languages and media.

Assistance

Hopelink, King County Metro Transit, and other service providers may need assistance from WSDOT in the form of HOV lane access, transponder subsidies, or financial help in order to provide the services listed above, especially if demand for their services increases substantially. WSDOT should coordinate with these organizations to



identify how the organizations can assist low-income people affected by the toll and the organizations' needs.

Accessible Toll Collection Methods

The technology used for collecting tolls should be developed so that transponders are accessible to people at all income levels and to those without credit cards or bank accounts.

Monitoring

Requests for assistance should be monitored to determine whether or not the measures listed above are avoiding or mitigating the potential disproportionately high and adverse effects. If it is determined the effects are still disproportionately high and adverse, additional mitigation measures should be considered. This information will be valuable in assessing the effects of tolling other facilities.



Final Determination

Based on the information presented in this analysis, the findings of this analysis are summarized as follows:

- The SR 520 Bridge Replacement and HOV Project would result in a variety of environmental effects across the different environmental elements. Some of these effects would be positive and some would be negative. For most elements, implementation of proposed mitigation measures would eliminate or reduce those negative effects.
- Sound walls integrated into the design of the build alternatives would substantially reduce the number of locations affected by noise, and would generally make the project area quieter than it is today. However, even with the sound walls, a few areas would be affected by noise under both alternatives. No mitigation for these noise effects has been proposed because there are no reasonable or feasible methods of reducing noise in these areas. These effects would be predominately borne by non-minority and non-low-income populations.
- The decrease in transit travel time on SR 520 would be a key benefit for all the traveling public, but particularly for low-income people who ride buses proportionally more than people with higher incomes.
- The tolls associated with the build alternatives could negatively affect low-income individuals. While these tolls would have to be paid by all users of the new bridge (except for transit, emergency vehicles, and carpools with three or more people), they would represent a proportionally greater expense burden for low-income individuals than for higher-income individuals. Options to avoid the tolls include traveling by transit, carpooling, or taking an alternate route. Project benefits that would accrue to low-income populations include improvements in transit travel times and bicycle and pedestrian access. The outreach, assistance, monitoring, and toll collection method mitigation measures described in the previous section could reduce the adverse effects of the toll. After considering these conditions, the environmental justice discipline team concludes that tolling the new Evergreen Point Bridge would not have disproportionately high and adverse effects on low-income populations.



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**Attachment 1
Environmental Justice Study Area,
Demographic Data**

**Environmental Justice Study Area
Demographic Data**

ID	Block Group	Total Population	Not Hispanic or Latino; White alone	Minority	Percent Minority	Population for whom poverty was determined	Income below poverty level	Percent Low-Income	Total Population 5 years and over	English Proficiency	Limited English Proficiency	Percent with Limited English Proficiency
01	530330041003	1,089	940	149	13.7	1,089	69	6.3	1,039	1,036	3	0.3
02	530330041005	1,030	811	219	21.3	1,023	142	13.9	909	888	21	2.3
03	530330041006	734	705	29	4.0	734	0	0.0	685	685	0	0.0
04	530330041007	715	698	17	2.4	715	0	0.0	645	632	13	2.0
05	530330041008	981	942	39	4.0	981	20	2.0	951	951	0	0.0
06	530330051003	725	671	54	7.5	725	30	4.1	690	683	7	1.0
07	530330051004	657	553	104	15.8	657	53	8.1	644	639	5	0.8
08	530330052001	1,177	710	467	39.7	1,177	650	55.2	1,174	1,155	19	1.6
09	530330052002	1,026	693	333	32.5	1,026	501	48.8	1,026	1,005	21	2.1
10	530330052003	838	734	104	12.4	838	78	9.3	820	810	10	1.2
11	530330053014	981	410	571	58.2	981	373	38.0	968	896	72	7.4
12	530330053021	357	230	127	35.6	357	55	15.4	357	336	21	5.9
13	530330053022	31	0	31	100.0	31	0	0.0	31	31	0	0.0
14	530330053023	2,173	1,200	973	44.8	0	0	0.0	2,173	2,105	68	3.1
15	530330054001	993	949	44	4.4	993	110	11.1	938	938	0	0.0
16	530330054002	1,017	906	111	10.9	1,017	87	8.6	988	988	0	0.0
17	530330054003	585	429	156	26.7	585	60	10.3	585	577	8	1.4
18	530330054004	893	784	109	12.2	893	118	13.2	875	875	0	0.0
19	530330060001	1,378	1,207	171	12.4	1,370	68	5.0	1,351	1,351	0	0.0
20	530330061001	757	617	140	18.5	757	29	3.8	741	741	0	0.0
21	530330061002	810	709	101	12.5	810	44	5.4	797	797	0	0.0
22	530330061003	638	506	132	20.7	638	68	10.7	609	609	0	0.0
23	530330061004	1,156	1,038	118	10.2	1,156	69	6.0	1,114	1,114	0	0.0
24	530330061005	1,086	932	154	14.2	1,086	93	8.6	1,086	1,077	9	0.8
25	530330062001	587	543	44	7.5	574	27	4.7	556	556	0	0.0
26	530330062002	667	582	85	12.7	667	8	1.2	631	625	6	1.0
27	530330062003	735	682	53	7.2	735	17	2.3	674	674	0	0.0
28	530330062004	895	760	135	15.1	895	22	2.5	821	812	9	1.1
29	530330062005	916	760	156	17.0	916	33	3.6	864	864	0	0.0
30	530330063001	1,634	1,552	82	5.0	1,634	145	8.9	1,620	1,612	8	0.5
31	530330063002	941	910	31	3.3	941	71	7.6	902	902	0	0.0
32	530330063003	562	524	38	6.8	562	0	0.0	547	547	0	0.0
33	530330063004	471	381	90	19.1	471	13	2.8	471	471	0	0.0
34	530330063005	729	724	5	0.7	729	10	1.4	680	672	8	1.2

**Environmental Justice Study Area
Demographic Data**

ID	Block Group	Total Population	Not Hispanic or Latino; White alone	Minority	Percent Minority	Population for whom poverty was determined	Income below poverty level	Percent Low-Income	Total Population 5 years and over	English Proficiency	Limited English Proficiency	Percent with Limited English Proficiency
35	530330063006	669	606	63	9.4	669	29	4.3	589	582	7	1.2
36	530330064001	759	656	103	13.6	746	9	1.2	707	707	0	0.0
37	530330064002	1,165	1,029	136	11.7	1,165	112	9.6	1,109	1,096	13	1.2
38	530330064004	693	534	159	22.9	693	7	1.0	664	650	14	2.1
39	530330065001	925	844	81	8.8	925	21	2.3	886	886	0	0.0
40	530330065002	626	539	87	13.9	619	28	4.5	615	609	6	1.0
41	530330065003	930	766	164	17.6	930	117	12.6	868	851	17	2.0
42	530330065004	1,564	1,350	214	13.7	1,560	124	8.0	1,543	1,513	30	1.9
43	530330066001	913	795	118	12.9	913	54	5.9	904	904	0	0.0
44	530330066002	479	415	64	13.4	479	12	2.5	479	479	0	0.0
45	530330066003	1,457	1,116	341	23.4	1,457	128	8.8	1,441	1,436	5	0.4
46	530330067001	1,043	837	206	19.8	1,043	24	2.3	1,019	1,012	7	0.7
47	530330067002	583	511	72	12.4	583	30	5.2	577	577	0	0.0
48	530330067003	2,159	1,777	382	17.7	2,159	166	7.7	2,104	2,098	6	0.3
49	530330067004	1,584	1,410	174	11.0	1,584	85	5.4	1,566	1,532	34	2.2
50	530330072001	430	349	81	18.8	430	64	14.9	430	423	7	1.6
51	530330073001	860	564	296	34.4	721	244	33.8	839	830	9	1.1
52	530330073003	181	99	82	45.3	181	53	29.3	178	172	6	3.4
53	530330074001	804	552	252	31.3	804	168	20.9	797	790	7	0.9
54	530330074002	825	680	145	17.6	825	106	12.9	819	819	0	0.0
55	530330074003	701	523	178	25.4	701	81	11.6	701	693	8	1.1
56	530330074005	1,796	1,353	443	24.7	1,796	353	19.7	1,770	1,738	32	1.8
57	530330074006	1,322	1,125	197	14.9	1,322	153	11.6	1,297	1,287	10	0.8
58	530330074007	1,867	1,514	353	18.9	1,867	195	10.4	1,867	1,827	40	2.1
59	530330075001	1,162	936	226	19.5	1,162	175	15.1	1,162	1,116	46	4.0
60	530330075003	1,518	1,306	212	14.0	1,518	172	11.3	1,497	1,487	10	0.7
61	530330075005	921	735	186	20.2	921	80	8.7	898	898	0	0.0
62	530330076003	875	783	92	10.5	842	93	11.1	836	836	0	0.0
63	530330076004	875	645	230	26.3	875	131	15.0	863	855	8	0.9
64	530330227012	1,237	1,114	123	9.9	1,237	17	1.4	1,211	1,211	0	0.0
65	530330227022	1,120	1,018	102	9.1	735	0	0.0	1,048	1,035	13	1.2
66	530330227023	1,115	986	129	11.6	1,104	56	5.1	1,022	1,014	8	0.8
67	530330227031	1,444	1,112	332	23.0	1,427	102	7.2	1,380	1,348	32	2.3
68	530330228013	1,365	1,108	257	18.8	1,365	23	1.7	1,238	1,194	44	3.6

**Environmental Justice Study Area
Demographic Data**

ID	Block Group	Total Population	Not Hispanic or Latino; White alone	Minority	Percent Minority	Population for whom poverty was determined	Income below poverty level	Percent Low-Income	Total Population 5 years and over	English Proficiency	Limited English Proficiency	Percent with Limited English Proficiency
69	530330236011	1,157	726	431	37.3	1,157	110	9.5	1,078	990	88	8.2
70	530330236012	820	766	54	6.6	809	57	7.1	805	791	14	1.7
71	530330236014	1,274	944	330	25.9	1,274	82	6.4	1,208	1,161	47	3.9
72	530330236031	1,003	780	223	22.2	1,003	63	6.3	945	903	42	4.4
73	530330236032	1,938	689	1,249	64.5	1,931	382	19.8	1,888	1,767	121	6.4
74	530330237001	898	646	252	28.1	898	54	6.0	843	828	15	1.8
75	530330237002	1,633	1,390	243	14.9	1,633	37	2.3	1,559	1,534	25	1.6
76	530330237003	1,502	1,232	270	18.0	1,502	82	5.5	1,413	1,375	38	2.7
77	530330238022	1,359	1,128	231	17.0	1,171	94	8.0	1,350	1,317	33	2.4
78	530330240001	915	673	242	26.5	915	0	0.0	886	801	85	9.6
79	530330240002	833	698	135	16.2	833	40	4.8	787	758	29	3.7
80	530330240003	1,524	1,215	309	20.3	1,524	60	3.9	1,441	1,390	51	3.5
81	530330240005	1,033	850	183	17.7	1,033	12	1.2	1,028	1,005	23	2.2
82	530330240006	1,392	1,268	124	8.9	1,388	36	2.6	1,360	1,317	43	3.2
83	530330241001	965	901	64	6.6	965	19	2.0	917	915	2	0.2
84	530330241002	818	737	81	9.9	818	4	0.5	763	752	11	1.4
85	530330241003	592	552	40	6.8	592	6	1.0	557	549	8	1.4
86	530330241004	1,049	910	139	13.3	1,049	12	1.1	973	973	0	0.0
87	530330241005	917	821	96	10.5	917	20	2.2	871	857	14	1.6
88	530330242002	832	748	84	10.1	832	12	1.4	789	777	12	1.5
89	530330242003	703	648	55	7.8	703	6	0.9	650	633	17	2.6
90	530330242004	790	732	58	7.3	790	0	0.0	741	741	0	0.0

Attachment 2
Summary of Effects of the Project
Alternatives, Proposed Mitigation, and
Effects and Mitigation Assessment

Attachment Table 2.1. Summary of Effects of the Project Alternatives, Proposed Mitigation, and Effects and Mitigation Assessment

Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
Air Quality		
<p>Construction of both of the build alternatives would lower carbon monoxide emissions over existing conditions and would improve air quality.</p> <p>The 6-Lane Alternative would construct lids that limit the dispersion of particulate matter in the area around the lids.</p> <p>Under the Continued Operation Scenario of the No Build Alternative, there would be higher emissions from vehicle exhaust than either of the build alternatives; however, air quality would improve over existing conditions. The Catastrophic Failure Scenario was not modeled but it is expected that air quality would degrade as traffic uses alternative routes.</p>	<p>No mitigation is proposed.</p>	<p>Anticipated project effects related to air quality are positive.</p>
Visual Quality and Aesthetics		
<p>Near the Montlake neighborhood, the build alternatives would include sound walls that would block existing views of the highway from the first row of residences south of the existing highway. On the Eastside near Hunts Point, views from residences on the north side of the existing highway would change from landscaped shrubs to sound walls.</p> <p>The build alternatives would remove unused ramps and would have increased column spacing compared with the existing structures, producing a positive effect on visual quality.</p> <p>The 6-Lane Alternative would construct landscaped lids that would have a positive effect on visual quality</p>	<p>Mitigation cannot be fully developed until more detailed project design information is known. Conceptually, mitigation would take the form of:</p> <ul style="list-style-type: none"> • Establishing design guidelines that include visual standards for the corridor • Revegetating cleared areas and including landscaping compatible with existing vegetation character • Following the guidelines in WSDOT's Roadside Classification Plan • Providing visual screening consistent with applicable guidelines, particularly in residential 	<p>Anticipated project effects related to visual quality and aesthetics are a mix of positive and negative. The negative visual quality effects resulting from this project would be minor. These effects would be further reduced in the final design by WSDOT following the guidelines in the WSDOT (1996) <i>Roadside Classification Plan</i>. Adverse visual effects would not occur in predominantly minority or low-income residential areas.</p>



Attachment Table 2.1. Summary of Effects of the Project Alternatives, Proposed Mitigation, and Effects and Mitigation Assessment

Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
<p>with the addition of open space and vegetation. areas</p> <p>The build alternatives, particularly the 6-Lane Alternative, would be wider and in some locations higher than the existing structures. This may be perceived as a negative visual effect.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would not affect visual quality. The Catastrophic Failure Scenario could have either a positive or negative effect on visual quality, depending on what happened with the existing structure.</p>		
Geology and Soils		
<p>Both of the build alternatives would have minor effects on geology and soils, including changes to topography and increased potential for a loss of topsoil.</p> <p>The build alternatives would have the potential to stabilize slopes and liquefaction areas.</p> <p>Under the build alternatives, recycling of existing materials would make the project a net exporter of granular embankment materials.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would leave the existing structure susceptible to damage from earthquakes and windstorms.</p>	<p>No mitigation is proposed.</p>	<p>Anticipated project effects related to geology and soils are a mix of positive and minor negative. Adverse geological and soil effects would not occur in predominantly minority or low-income residential areas.</p>



Attachment Table 2.1. Summary of Effects of the Project Alternatives, Proposed Mitigation, and Effects and Mitigation Assessment

Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
Ecosystems – Wetlands		
<p>The build alternatives would fill and shade wetlands and wetland buffers. The 4-Lane Alternative would fill 3.4 acres of wetland and 7.5 acres of wetland buffer, and would shade 4.5 acres of wetland and 2.5 acres of wetland buffer; the 6-Lane Alternative would fill 6.6 acres of wetland and 13.8 acres of wetland buffer, and would shade 6.7 acres of wetland and 3.8 acres of wetland buffer.</p> <p>The build alternatives would reduce the number of bridge columns compared with the existing structure, creating more open water area. The project design incorporates features such as retaining walls to reduce side slopes, and stormwater treatment facilities that would improve water quality in the wetlands.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would not affect existing wetlands, but roadway runoff would remain untreated. Under the Catastrophic Failure Scenario, portions of the existing structure could collapse into existing wetlands.</p>	<p>Best management practices (BMPs) would be implemented to reduce erosion and sedimentation.</p> <p>Wetlands lost would be replaced through creation, restoration, and/or enhancement, as appropriate. The 4-Lane Alternative would require 22 to 35 acres and the 6-Lane Alternative would require 35 to 55 acres of compensatory wetlands.</p>	<p>Anticipated project effects related to wetlands are a mix of positive and minor negative. Adverse effects to wetlands would not occur in predominantly minority or low-income residential areas.</p>
Ecosystems – Wildlife		
<p>The build alternatives would have little effect on wildlife. Some wildlife habitat would be affected by removing and shading vegetation. The 4-Lane Alternative would remove 35.36 acres vegetation and shade 8.34 acres; the 6-Lane Alternative would remove 52.84 acres vegetation and shade 11.48 acres.</p> <p>The build alternatives would generally improve water quality and reduce noise levels, thereby producing a</p>	<p>Areas of clearing for construction would be limited. BMPs would be implemented to reduce erosion and sedimentation.</p> <p>Cleared areas would be revegetated as soon as practicable after construction.</p> <p>Pile driving would be minimized during bald eagle nesting season.</p>	<p>Anticipated project effects related to wildlife resources are a mix of positive and minor negative. In parts of the U.S. some populations depend on subsistence use of wildlife resources. However, the project site is not located in an area that experiences subsistence harvesting of wildlife resources.</p>



Attachment Table 2.1. Summary of Effects of the Project Alternatives, Proposed Mitigation, and Effects and Mitigation Assessment

Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
<p>beneficial effect on wildlife.</p> <p>Both of the build alternatives would have minimal effects on federal and state listed species.</p> <p>Both scenarios of the No Build Alternative would have minimal effects on wildlife.</p>		
Ecosystems – Fish		
<p>The build alternatives would have the following beneficial effects on fish: increased light penetration over open water would improve fish habitat; stormwater treatment facilities would improve water quality; existing culverts that block fish passage would be replaced with fish-passable culverts.</p> <p>The build alternatives would remove vegetation from the riparian buffer. The 4-Lane Alternative would remove 0.17 acre and the 6-Lane Alternative would remove 0.75 acre, which may have a negative effect on fish.</p> <p>The project is in the “Usual and Accustomed” fishing area of the federally recognized Muckleshoot Tribe. The build alternatives are not expected to have an effect on tribal use of the fish resource. See the <i>Indian Fishing Rights</i> section in Appendix D, <i>Cultural Resources</i>, for more information on tribal fishing.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would cause no further changes to fish and fish habitat. Improvements to fish habitat included in the build alternatives would not be done. The Catastrophic Failure Scenario could improve fish habitat by removing vehicles from the corridor and thereby decreasing pollutant levels.</p>	<p>BMPs would be implemented to reduce erosion and sedimentation.</p> <p>Vegetation removed from riparian buffers during construction would be replaced with native riparian vegetation as soon as practicable after construction.</p>	<p>Anticipated project effects related to fish resources are primarily positive.</p>



Attachment Table 2.1. Summary of Effects of the Project Alternatives, Proposed Mitigation, and Effects and Mitigation Assessment

Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
Water Resources		
<p>Both of the build alternatives would increase the amount of impervious surface compared to the existing facility. However, the design would include treatment facilities to detain and treat stormwater and would meet water quality standards.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would continue to discharge untreated stormwater into surface waterbodies. The Catastrophic Failure Scenario may decrease the level of pollutants in surface waterbodies because of decreased vehicular traffic in the corridor.</p>	<p>No mitigation is proposed.</p>	<p>Anticipated project effects related to water resources are generally positive.</p>
Navigable Waterways		
<p>The build alternatives would not allow passage of vessels with masts taller than 70 feet. This permanent height restriction would have a minimal effect because it has the same height restriction as the I-90 East Channel Bridge.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would not change existing navigation channels. The Catastrophic Failure Scenario could open a large gap in the Evergreen Point Bridge, making passage easier.</p>	<p>No mitigation is proposed.</p>	<p>Anticipated project effects related to navigable waterways are minor. This is not a resource that has been identified as particularly important to minority or low-income populations.</p>
Noise		
<p>Sound walls integrated into the design of the build alternatives would reduce the number of locations affected by noise. In general, the project area would be quieter than it is today.</p> <p>The 4-Lane Alternative would have noise effects on 153 residences and the 6-Lane Alternative would have effects on 129 residences. Many of these effects are due to noise from roads other than SR</p>	<p>Since sound walls are integrated into project design, no additional mitigation is proposed. While some areas would be affected by noise, many of these exceedances would not be due to the project. There are no reasonable or feasible methods for reducing noise in these areas.</p>	<p>Anticipated project effects related to noise are a mix of positive and negative. Although the project area would be generally quieter than it is today, a few areas would be affected by noise, even with the integrated sound walls. Under the 4-Lane Alternative, the block groups that would be affected by noise have 13 percent minority and 3 percent low-income populations. Under the 6-Lane</p>



Attachment Table 2.1. Summary of Effects of the Project Alternatives, Proposed Mitigation, and Effects and Mitigation Assessment

Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
<p>520.</p> <p>Under the No Build Alternative, 444 residences would be affected by noise. Currently 410 residences are affected by noise.</p> <p>The Catastrophic Failure Scenario would realize large decreases in noise in the corridor due to the removal of vehicular traffic.</p>		<p>Alternative, the block groups that would be affected by noise have 15 percent minority and 5 percent low-income populations. The block groups that would not be affected by noise have 19 percent minority and 9 percent low-income populations. Since the project affects areas with lower percentages of minority and low-income populations, it is assumed that neither alternative would have disproportionate effects on minority and low-income populations. The number of minority and low-income populations in Seattle has increased since the Census was conducted in 2000. It is likely that there are more minority and low-income populations in the study area and</p> <p>affected block groups. However, this is not likely to change the conclusion of effects.</p>
Hazardous Material		
<p>The build alternatives could disturb existing hazardous material sites. The 4-Lane Alternative would affect 9 sites and the 6-Lane Alternative would affect 12 sites.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would not disturb any existing hazardous material. The Catastrophic Failure Scenario would affect the transport of hazardous material by rerouting traffic.</p>	<p>Initial Site Assessments for acquired sites or sites located adjacent to the project right-of-way would be conducted.</p> <p>The location of underground storage tanks would be verified prior to construction.</p> <p>The presence or absence of polychlorinated biphenyls in transformers to be removed during relocation of electrical utilities would be confirmed.</p>	<p>Anticipated project effects related to hazardous material are negative but minor. WSDOT would further reduce these effects by conducting initial site assessments and other preconstruction due-diligence measures. Adverse hazardous material effects would not occur in predominantly minority or low-income residential areas.</p>



Attachment Table 2.1. Summary of Effects of the Project Alternatives, Proposed Mitigation, and Effects and Mitigation Assessment

Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
Cultural Resources		
<p>The build alternatives would have no permanent effects on any known archeological or ethnographic sites. Both build alternatives would decrease the landscaped buffer zone, demolish the Museum of History and Industry, acquire some National Oceanic and Atmospheric Administration Fisheries property, increase visual intrusion in Montlake with new sound walls, remove the Evergreen Point Bridge (a National Register of Historic Places-eligible structure), and increase visual intrusion at 2891 Evergreen Point Road (a historic resource). The 4-Lane Alternative would also demolish a historic house in Medina.</p> <p>Both build alternatives include project design features, such as installation of sound walls, removal of the R.H. Thompson Expressway ramps, and lowering of the roadway in Montlake, which would decrease noise and visual effects on adjacent historic sites. In addition, both build alternatives include a bicycle/pedestrian path that would reconnect the two sides of the National Register of Historic Places-eligible Montlake Historic District and relocation of the Evergreen Point Bridge to the north, which would move the highway further away from the historic house at 2857 Evergreen Point Road. The landscaped lids of the 6-Lane Alternative would be beneficial to adjacent historic districts in Seattle.</p> <p>Work on identifying traditional cultural properties on Foster Island and elsewhere is ongoing. The Cultural Resources Discipline Report contains additional information on this work.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would not affect cultural</p>	<p>WSDOT would work with each affected jurisdiction and the State Historic Preservation Office (SHPO) to identify appropriate mitigation measures.</p>	<p>Anticipated project effects related to cultural resources are a mix of positive and negative. WSDOT plans to work closely with the SHPO to identify appropriate mitigation measures to address the identified negative project effects. These mitigation measures would be integrated into the final design of the project. The negative effects currently identified would not occur to resources that are particularly important to minority or low-income populations. Existence of any traditional cultural properties, as well as potential archaeological resources would be subject to further investigation and mitigation, as appropriate.</p>



Attachment Table 2.1. Summary of Effects of the Project Alternatives, Proposed Mitigation, and Effects and Mitigation Assessment

Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
<p>resources. The Catastrophic Failure Scenario would affect the Evergreen Point Bridge.</p>		
Land Use, Economics, and Relocations		
<p>The build alternatives would displace residences, businesses, and civic and quasi-public properties, but would not change any existing land use patterns.</p> <p>The 4-Lane Alternative would displace 2 residences; a 76 service station; the southernmost dock of Queen City Yacht Club; 8 structures at the National Oceanic and Atmospheric Administration Northwest Science Fisheries Center; Museum of History and Industry; Randi's Food Services; and an espresso stand. The 6-Lane Alternative would have the same displacement effects as the 4-Lane Alternative, except it would displace an additional residence, and one residence displaced by the 4-Lane Alternative would not be displaced by the 6-Lane Alternative.</p> <p>The build alternatives would have a positive effect on economic activity due to increased mobility.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would have little effect on land use, economics and relocations. The Catastrophic Failure Scenario would have little effect on land use and relocations, but the loss of the Portage Bay Bridge and/or Evergreen Point Bridge could result in a substantial hindrance to economic activity.</p>	<p>The project has been designed to remain within existing WSDOT right-of-way as much as practicable.</p> <p>Relocations and acquisitions would be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisitions Policies Act of 1970, as amended. WSDOT would purchase affected properties in a manner that ensures fair and equitable treatment of all property owners. WSDOT would ensure that owners are paid just compensation for their property and the property rights sold to the state. In addition, WSDOT would pay all closing costs and associated transaction fees. WSDOT would also assist residents and businesses displaced by the project with relocation to suitable new locations. These property owners would be eligible for relocation benefits to help them get established at their new locations.</p>	<p>Anticipated project effects related to land use, economics, and relocations are a mix of positive and negative. The identified residential displacements would not occur in predominantly minority or low-income residential areas, and the non-residential displacements would not affect facilities that are particularly important to minority or low-income populations. In addition, as described in the mitigation discussion, WSDOT would mitigate these land acquisition and relocation effects by purchasing these properties in a manner that ensures fair and equitable treatment of the property owners. WSDOT would also provide relocation assistance to displacees.</p>



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Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
Energy		
<p>The build alternatives would consume less energy than the No Build Alternative because of improved mobility.</p>	<p>No mitigation is proposed.</p>	<p>Anticipated project effects related to energy are positive.</p>
Social		
<p>The build alternatives would have positive effects on neighborhood conditions with the creation of continuous bike paths, improvements in air and water quality, and reduced noise levels.</p> <p>The 6-Lane Alternative would reconnect neighborhoods with lids and improve transit mobility.</p> <p>The build alternatives would have a negative effect on a number of parks. See Recreation summary for more details.</p> <p>The tolls associated with the build alternatives could negatively affect low-income individuals. WSDOT has assumed \$3.35 (current dollars) one-way during the peak period for evaluating the environmental effects of the proposed project. The method of electronic toll collection could reduce low-income individuals' access to the bridge.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would have little effect on the Social element, with the exception that travel times would worsen and the lids and bicycle/pedestrian path would not be built. The Catastrophic Failure Scenario would sever links, decrease accessibility, require adjustment of travel patterns, and increase travel times.</p>	<p>To mitigate recreation effects, WSDOT would work with the City of Seattle to identify suitable replacement property under Seattle Ordinance 118477, as appropriate.</p>	<p>Anticipated project effects related to social elements are a mix of positive and negative. The effect of tolling the facility was further examined for this report (see the <i>What are the effects of tolling</i> section.)</p>



Attachment Table 2.1. Summary of Effects of the Project Alternatives, Proposed Mitigation, and Effects and Mitigation Assessment

Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
Public Services and Utilities		
<p>The build alternatives would improve mobility, reduce travel times, reduce response times of emergency vehicles, and decrease noise levels at the Montlake Community Center.</p> <p>The response times and mobility of public service vehicles would either remain at current levels or worsen under both scenarios of the No Build Alternative.</p>	<p>No mitigation is proposed.</p>	<p>Anticipated project effects related to public services and utilities are positive.</p>
Recreation		
<p>The 4-Lane Alternative would affect 10 parks, and the 6-Lane Alternative would affect 11 parks. The 4-Lane Alternative would cause the loss of 1.96 acres of parkland, and the 6-Lane Alternative would cause the loss of 3.67 acres of parkland.</p> <p>The build alternatives would decrease noise levels in some of the adjacent parklands due to the construction of sound walls.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would have no effect on parklands. The Catastrophic Failure Scenario could affect adjacent parklands if portions of the structure collapsed into the parklands.</p>	<p>To mitigate recreation effects, WSDOT would work with the City of Seattle to identify suitable replacement property under Seattle Ordinance 118477, as appropriate.</p>	<p>Anticipated project effects related to recreation resources are a mix of positive and negative. WSDOT plans to work closely with affected jurisdictions to identify appropriate mitigation measures to address the identified negative project effects. These mitigation measures would be integrated into the final design of the project. The negative effects on recreational resources would not occur in predominantly minority or low-income residential areas.</p>
Section 4(f)/6(f)		
<p>Both build alternatives would affect eight Section 4(f) properties (four recreation and four historic). Both build alternatives would affect one Section 6(f) property.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would not affect Section 4(f) or</p>	<p>The design of the project would incorporate measures and features to minimize effects on Section 4(f) and 6(f) properties.</p> <p>WSDOT would work with each affected jurisdiction and the SHPO to identify appropriate mitigation measures.</p>	<p>Anticipated project effects related to Section 4(f)/6(f) resources are a mix of positive and negative. WSDOT plans to work closely with the SHPO and the affected local jurisdictions to identify appropriate mitigation measures to address the identified negative project effects. These mitigation measures would be integrated into the final design</p>



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Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
<p>6(f) properties. The Catastrophic Failure Scenario would include the loss of the Evergreen Point Bridge, an historic structure eligible for the NRHP and Washington State Historic Register. The collapsed structure could affect additional Section 4(f) and 6(f) properties.</p>		<p>of the project. The negative effects on Section 4(f)/6(f) resources would not occur in predominantly minority or low-income residential areas.</p>
Transportation		
<p>The build alternatives would increase mobility of the traveling public, improve travel times, benefit nonmotorized uses with the addition of the bicycle/pedestrian path, and improve transit operations.</p> <p>Under the No Build Alternative, the Continued Operation Scenario would increase congestion on SR 520 and local streets. Under the Catastrophic Failure Scenario, transportation mobility would decrease.</p>	<p>Signal modifications are proposed at several interchanges to improve local circulation.</p> <p>Displaced parking would be replaced where needed.</p>	<p>Anticipated project effects related to transportation are primarily positive.</p>
Construction (Short-Term Effects of the Build Alternatives)		
<p>Temporary increases in emissions and dust levels.</p> <p>Temporary visual effects through clearing, grubbing, grading, structure demolition, and the presence of construction equipment and signage.</p> <p>Temporary removal of vegetation and disturbance of soil and seed bank.</p> <p>Potential release of contaminants during excavation and demolition work.</p> <p>Temporary increases in traffic congestion, delays for public service provider vehicles, and the elimination of on-street parking.</p> <p>Temporary increases in construction-related noise, especially from pile driving.</p>	<p>Reasonable precautions to prevent dust from becoming airborne would be implemented.</p> <p>Vegetation clearing would be minimized. Existing stands of mature trees would be preserved where practicable.</p> <p>Cleared areas would be restored to preconstruction grades, and replanted with appropriate native herbaceous and woody species.</p> <p>Consultation with the SHPO and affected Tribes would occur if any cultural resources are discovered during construction.</p> <p>Appropriate plans for hazardous material handling and construction techniques would be developed. All applicable regulations for removal and handling</p>	<p>Anticipated project effects across the elements of the environment related to construction are negative, but minor and temporary. WSDOT would implement a series of mitigation measures to further reduce these effects. Construction would not occur in predominantly minority or low-income residential areas.</p>



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Effects of the Project Alternatives	Mitigation	Effects and Mitigation Assessment
<p>Temporary construction noise and congestion, which could have negative economic effects such as loss of business, and possible temporary effects on residential property values.</p> <p>Temporary construction noise and activity, and temporary work bridges, may have a negative effect on wildlife and fish.</p> <p>Temporary increases in sedimentation, turbidity, and degradation of fish habitats.</p> <p>Relocation or protection of utilities within the project area that could require temporary service interruptions.</p> <p>Temporary restrictions on vessel passage due to short-term closure of west and east high-rises.</p> <p>Temporary restrictions on tribal fishing activities near the construction sites in Lake Washington, Portage Bay, and Union Bay.</p> <p>Possible user restrictions in parks and partial or total inaccessibility to other facilities during construction.</p>	<p>of hazardous material would be followed.</p> <p>Construction techniques that minimize disturbance to the subsurface and prevent the transport of possible contaminants to uncontaminated areas would be implemented.</p> <p>Temporary traffic control measures would be implemented, including detour signage, intersection channelization, and signal operation.</p> <p>Advance notice of construction schedules, and planned road closures and detours, would be provided to local public service providers.</p> <p>Construction would be conducted in compliance with applicable noise regulations. Nearby residences would be alerted prior to extremely noisy work.</p> <p>Vibration limitations would be included in construction specifications.</p> <p>Erosion control plans, spill prevention plans, hydraulic project approval, and BMPs would be prepared, implemented, and monitored during construction.</p> <p>A utilities relocation plan would be developed and implemented. Field verification of utility locations would occur prior to construction.</p> <p>BMPs would be implemented to avoid unintentional discharge of sediment from the permanent support column excavation. A containment system would be used to contain falling debris during construction of the new bridge decking and demolition of the</p>	



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	<p>existing decking.</p> <p>Local commercial and recreational boating communities would be notified of construction schedules and navigation restrictions.</p> <p>Detour routes would be developed to direct access to parks. Park landscaping would be returned to original condition as soon as practicable after construction.</p>	

