

# Transportation 2040

toward a sustainable transportation system

## Appendix G: Environmental Justice



MAY 20, 2010

Puget Sound Regional Council

## Appendix G: Environmental Justice

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### **What is environmental justice?**

The concept of “environmental justice” has been discussed publicly for decades, and has its roots in the civil rights movements of the 1960s and the federal Civil Rights Act of 1964. Environmental justice is an approach that is meant to avoid decisions that can have disproportionately greater negative human health and environmental effects on low income or minority communities than on the population as a whole.

With transportation projects, negative effects can include disruptions in community cohesion, restricted access to a publicly funded facility, safety concerns, higher exposures to hazardous materials, raised noise levels, increased water and air pollution, and other adverse effects. Environmental justice principles also consider how projects can be developed to benefit low income or minority communities. To address both positive and potential negative effects of projects, effective environmental justice approaches emphasize ways to involve affected communities throughout a project’s development.

### **Why is environmental justice being addressed?**

Existing regional and local policies support the concept of environmental justice, and many of the projects implemented through Transportation 2040 will need to comply with federal environmental justice regulations during their individual project-level environmental review processes. PSRC recognizes that large transportation projects have the potential to cause disproportionate impacts to environmental justice populations. Therefore, PSRC has prepared this environmental justice analysis to promote the principles of environmental justice, continue current environmental justice efforts, and facilitate any future environmental justice analysis on projects identified in Transportation 2040.

### Which laws govern environmental justice analyses for environmental review?

In 1994, President Clinton issued Executive Order 12898, requiring federal agencies to incorporate environmental justice principles into planning activities.

In response, the U.S. Department of Transportation (USDOT) ordered transportation agencies to consider environmental justice in all environmental documents pursuant to National Environmental Policy Act (NEPA).

The USDOT Order requires the following:

- Provide meaningful opportunities for public involvement by members of minority populations and low-income populations during the development of programs, policies, and activities.
- Provide the public, including members of minority and low-income populations, access to public information concerning human health or environmental impacts of programs, policies, and activities. Such information must address the concerns of minority and low-income populations for the proposed action.

### 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.”

Executive Order 12898 is a renewed focus on Title VI with respect to minority populations, and adds emphasis on low-income populations.

PSRC’s policy is to fully comply with Title VI, Executive Order 12898, and related statutes and regulations in all programs and activities.

### ~~What is the U.S. Department of Transportation (USDOT) definition for low-income?~~

Low-income is defined as a person whose household income is at or below the U.S. Department of Health and Human Services poverty guidelines, which follow below for 2009:

<del>Persons in</del> family	Poverty guideline
1	\$10,830
2	\$14,570
3	\$18,310
4	\$22,050
5	\$25,790
6	\$29,530
7	\$33,270
8	\$37,010

## What are the demographics of the study area?

Transportation 2040 includes projects located within the four-county region that are intended to serve and benefit the entire region. Individuals residing near planned projects would likely receive the greatest impacts as well as the greatest benefits. PSRC examined census tracts within the study area in order to identify the presence of minority and low-income individuals.

The environmental justice study area is the four-county central Puget Sound region, comprising 553 census tracts. Using the most recent available data from the 2000 U.S. Census, Exhibits 1, 2, and 4 through 15 summarize the minority and poverty status characteristics for the census tracts. At the regional scale, the 2000 Census information represents the best data currently available. When the projects contained in the Transportation 2040 alternatives undergo future project-level environmental review, more recent information on demographic conditions at the project level should be available to help supplement Census data. The upcoming 2010 U.S. Census will also provide updated information.

### Exhibit 1 Minority Population Summary in 2000

County	Minority (Number)	Minority (Percent)
King	461,907	27
Kitsap	41,218	18
Pierce	167,886	24
Snohomish	100,826	17
<b>Total</b>	<b>771,837</b>	<b>24</b>

Source: U.S. Census Bureau, 2000

Exhibit 1 shows the distribution of minority populations in the central Puget Sound region. Minorities, including Native Americans, make up 24 percent of the total population in the region.

Census tracts with high percentages of minority populations can be found throughout the region (Exhibits 4 through 7). The census tracts with the greatest percentage of minority residents are located in Bellevue, Bremerton, Burien, Des Moines, Everett, Federal Way, Kent, Lakewood, Lynnwood, Normandy Park, Renton, SeaTac, Seattle, Tacoma, and Tukwila (listed alphabetically). Because of the regional scale of this analysis, some communities with a high percentage of minority populations may not be apparent. They would be identified in project-level analyses.

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### What is the timeline for the 2010 U.S. Census?

- **Spring 2009:** Census employees go door-to-door to update address list nationwide.
  - **Fall 2009:** Recruitment begins for census takers needed for peak workload in 2010.
  - **February – March 2010:** Census questionnaires are mailed or delivered to households.
  - **April 1, 2010:** Census Day
  - **April – July 2010:** Census takers visit households that did not return a questionnaire by mail.
  - **December 2010:** By law, Census Bureau delivers population counts to President for apportionment.
  - **March 2011:** By law, Census Bureau completes delivery of redistricting data to states.
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There are eight federally recognized tribes (Stillaguamish, Tulalip, Port Gamble S'Klallam, Port Madison Suquamish, Nisqually, Puyallup, Muckleshoot, Snoqualmie) in the central Puget Sound region and one tribe (Duwamish) pursuing recognition. Tribal reservations, other tribal lands, and tribal economic enterprises are an integral part of the region's economic and environmental landscape.

There is at least one tribal sovereign nation in each of the four counties. In every case, roads on tribal lands connect to county road networks.

Many tribal enterprises are located along interstate and state highways and both contribute to roadway congestion and benefit from the regional system. At least two tribal governments operate paratransit systems that are available to the general public.

Tribal leaders hold seats on PSRC boards and are invited to participate in the discussions on growth management, economics, and transportation.

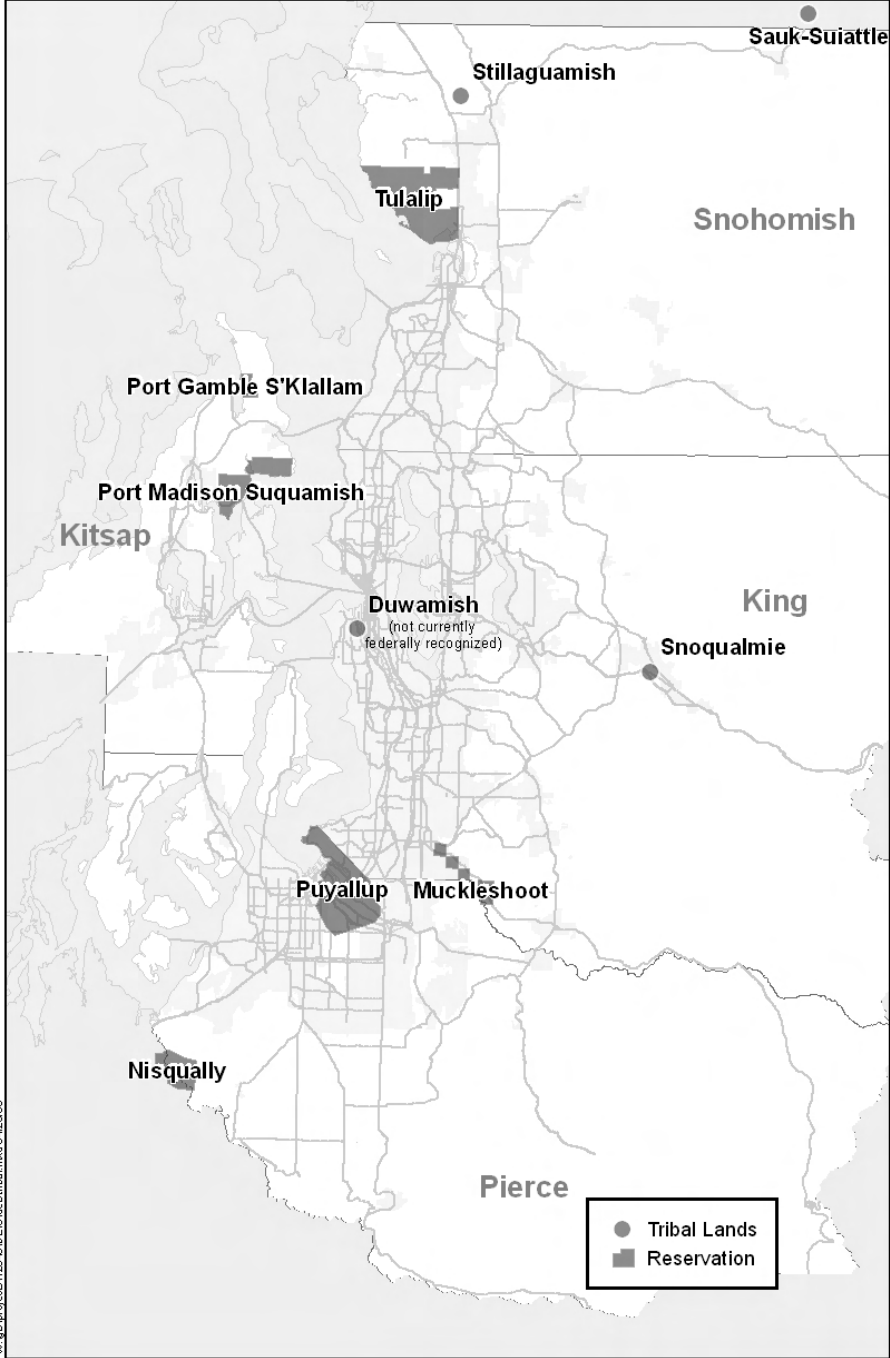
PSRC staff participates in the Tribal Transportation Planning Organization (a statewide group of tribal leaders and planners) and through its leadership has an ongoing relationship with tribal leaders.

Exhibit 2 depicts the location of tribal reservations and lands in the central Puget Sound region.

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**What is the USDOT definition of a minority?**

- Black (a person having origins in any of the black racial groups of Africa)
  - Hispanic (a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race)
  - Asian (a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent)
  - American Indian or Alaskan Native (a person having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition)
  - Native Hawaiian or Other Pacific Islander (a person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands)
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Census data on poverty status were used to identify low-income populations. In response to public comments, low-income designation was divided into the two categories described below.

- Very low-income: These are individuals living below the poverty level. Following the Office of Management and Budget’s Directive 14, the U.S. Census Bureau uses a set of income thresholds (in dollar amounts) that varies by family size and composition to detect who is poor. If the total income for a family or unrelated individual falls below the relevant poverty threshold, then the family or unrelated individual is classified as being below the poverty level.
- Low-income: These are individuals living at or near the poverty level (between 1 and 1.99 times the poverty level). In urban areas, the low-income category is more representative of the functionally poor populations than just those at or below the federal poverty level.

As shown in Exhibit 3, in 1999, the regional population had 9 percent in the very low-income category and 12 percent in the low-income category. Pierce County has the highest percentage in the very low-income (10 percent) and low-income categories (16 percent), followed by Kitsap County with 9 percent very low-income and 15 percent low-income.

### Exhibit 3. Low-Income Population Summary by County in 1999

	<b>Very</b>		<b>Low-</b>		<b>Combined<sup>3</sup></b>	
	<b>Low-</b>	<b>Low-</b>	<b>Income<sup>2</sup></b>	<b>Income<sup>2</sup></b>	<b>(Total)</b>	<b>(Percent)</b>
	<b>Income<sup>1</sup></b>	<b>Income<sup>1</sup></b>	<b>(Total)</b>	<b>(Percent)</b>	<b>(Total)</b>	<b>(Percent)</b>
	<b>(Total)</b>	<b>(Percent)</b>	<b>(Total)</b>	<b>(Percent)</b>	<b>(Total)</b>	<b>(Percent)</b>
King	142,546	8	101,870	11	334,426	20
Kitsap	19,601	9	33,583	15	53,184	24
Pierce	71,316	10	105,718	16	177,034	26
Snohomish	41,024	7	68,969	12	109,993	18
<b>Total</b>	<b>274,487</b>	<b>9</b>	<b>400,149</b>	<b>12</b>	<b>674,636</b>	<b>21</b>

<sup>1</sup> Very low-income indicates the number or percentage of individuals living below the poverty level.

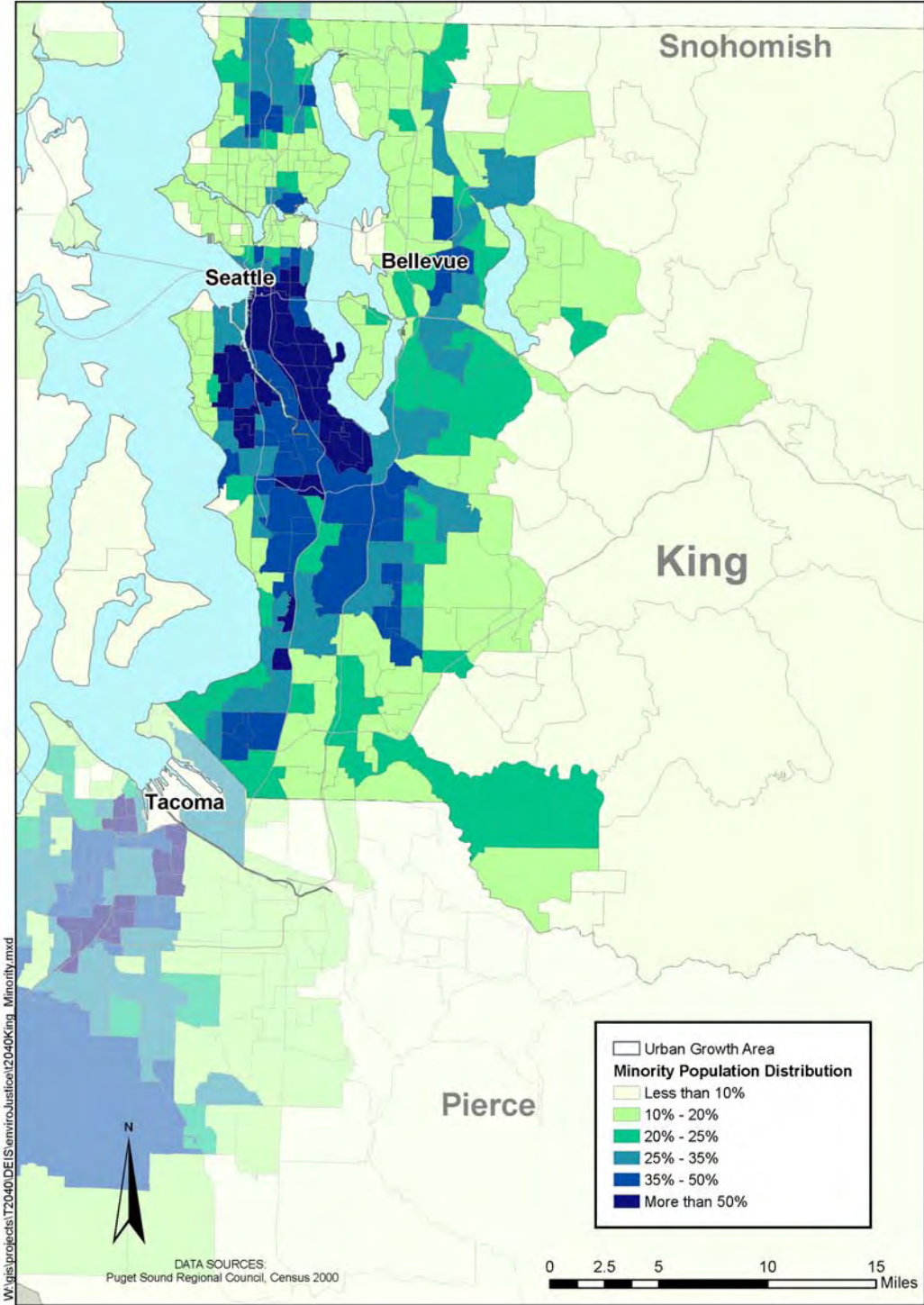
<sup>2</sup> Low-income indicates individuals living between 1 and 1.99 times the poverty level.

<sup>3</sup> Combined indicates the number of individuals living below two times the poverty level, representing both low-income and very low-income populations.

Source: U.S. Census Bureau, 2000

The percentage of low-income residents in each census tract (Exhibits 8 through 15) ranged from 3 to 20 percent. The census tracts with the highest percentages of low-income and very low-income residents are located in Auburn, Bremerton, Des Moines, Everett, Kent, Lakewood, Seattle, Sumner, and Tacoma (listed alphabetically). Because of the regional scale of this analysis, some communities with high percentages of low-income and very low-income populations may not be apparent. They would be identified in project-level analyses.

Exhibit 4. Minority Populations by Census Tract for King County



**Exhibit 5. Minority Populations by Census Tract for Pierce County**

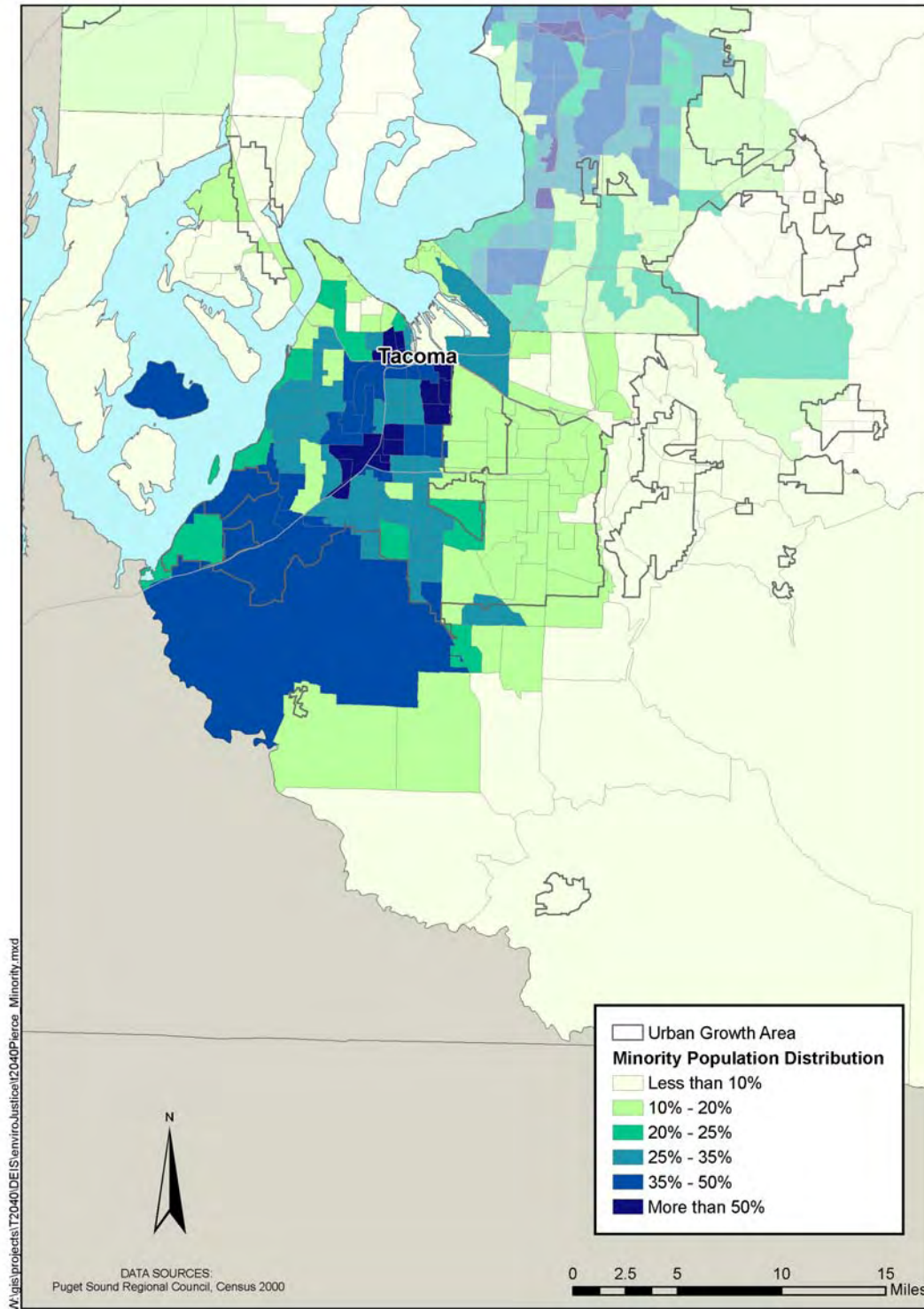


Exhibit 6. Minority Populations by Census Tract for Snohomish County



**Exhibit 7. Minority Populations by Census Tract for Kitsap County**

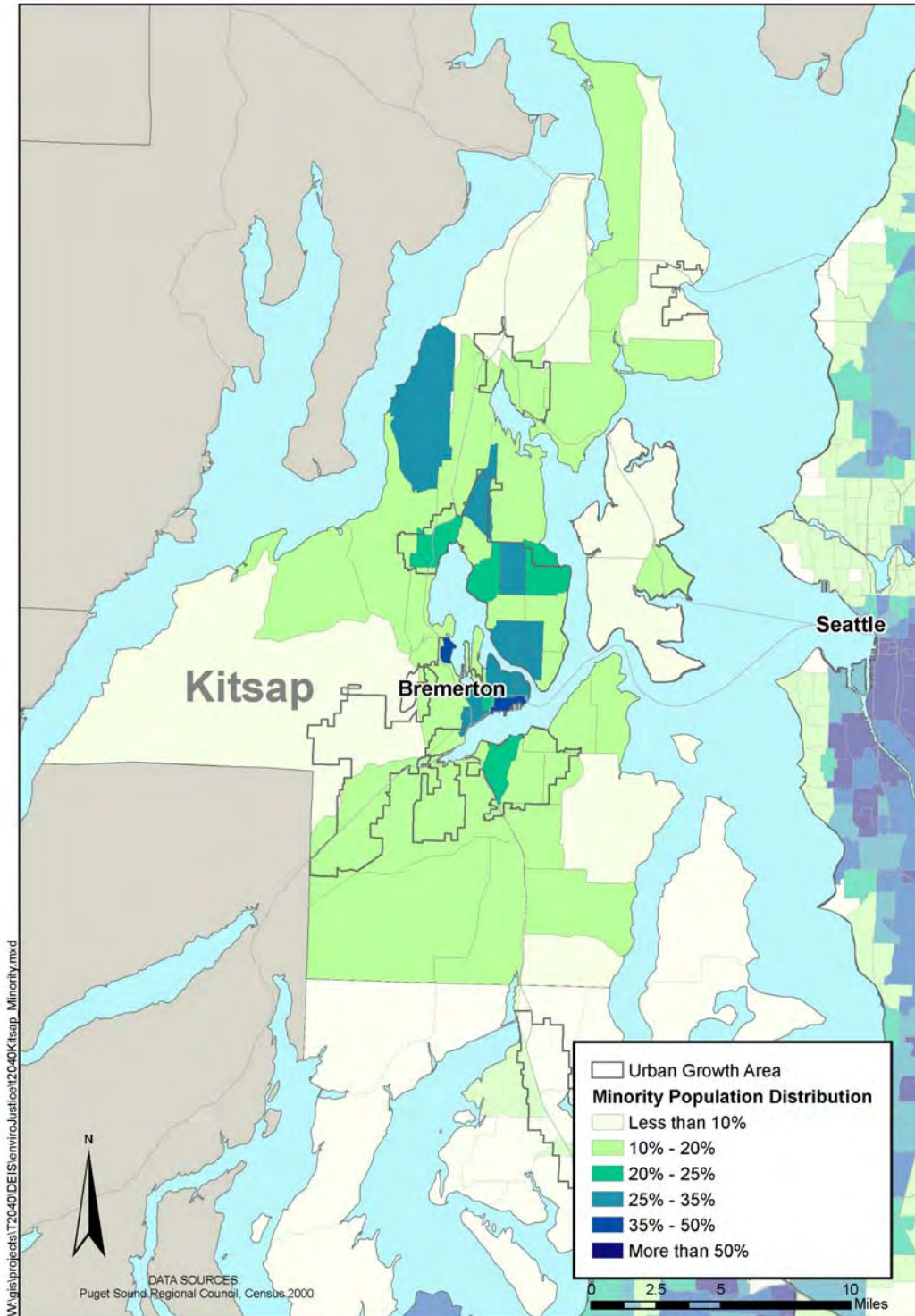
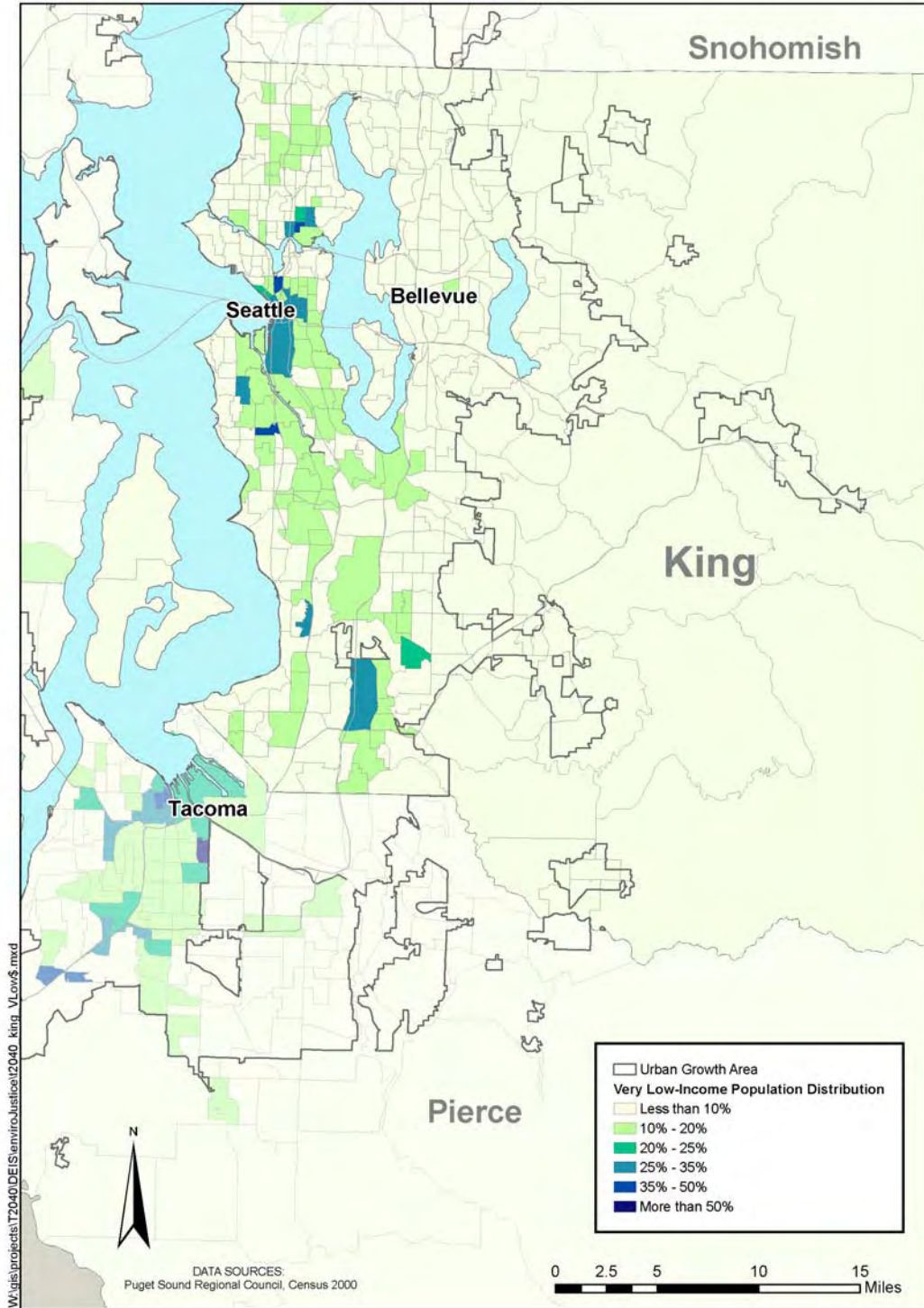
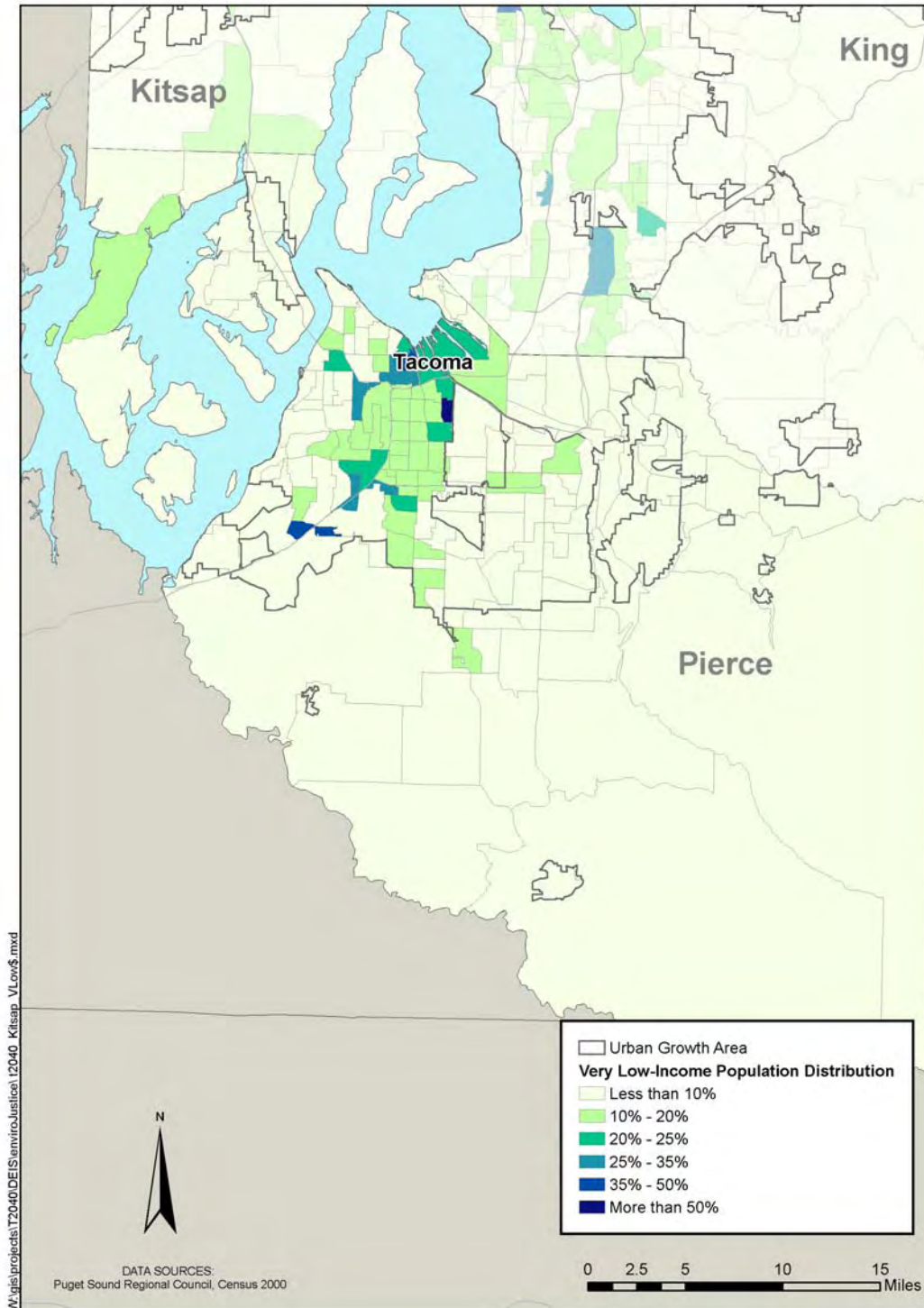


Exhibit 8. Very Low Income Populations by Census Tract for King County



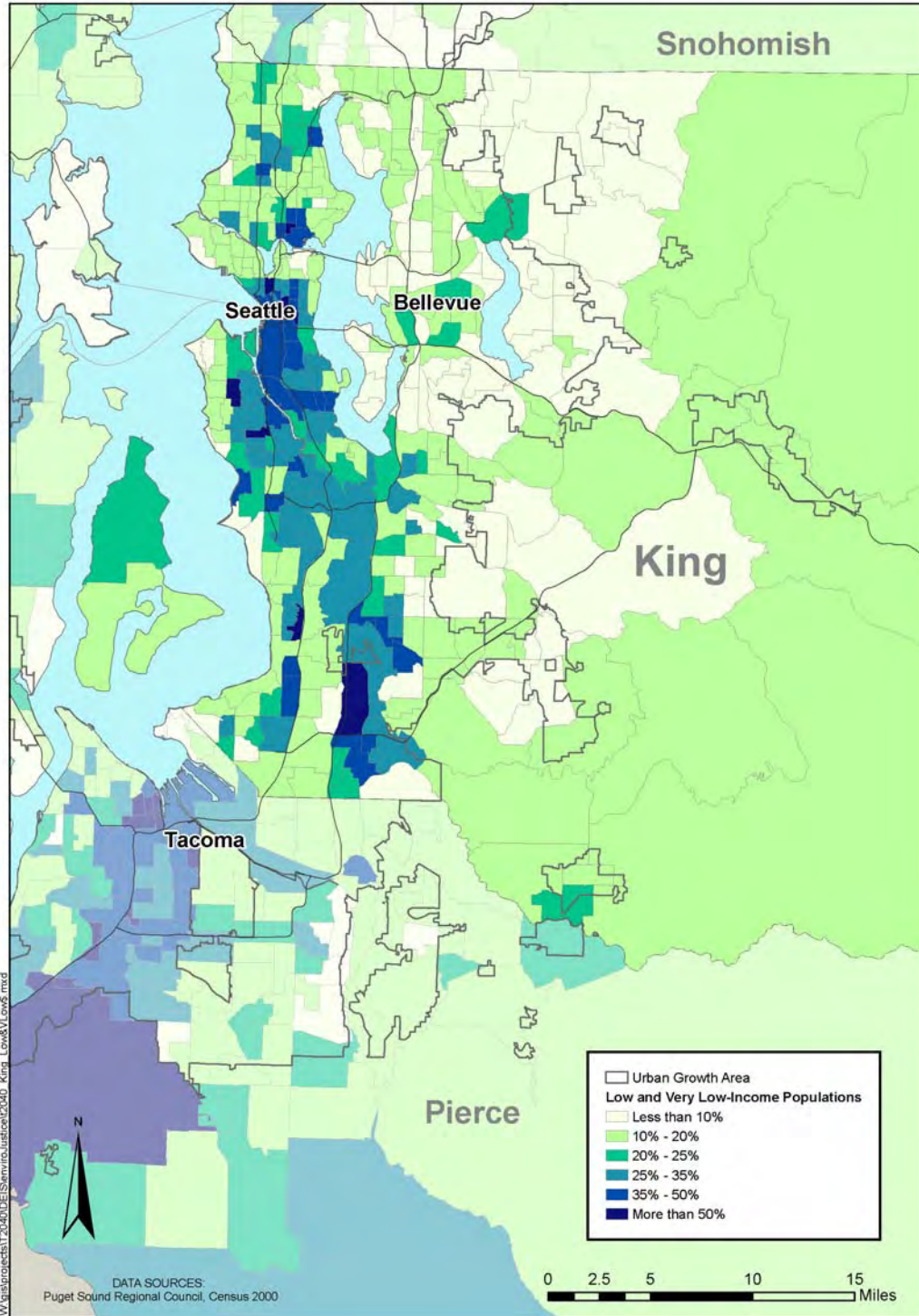
**Exhibit 9. Very Low Income Populations by Census Tract for Pierce County**





**Exhibit 11. Very Low Income Populations by Census Tract for Kitsap County**





**Exhibit 13. Low and Very Low Income Populations by Census Tract for Pierce County**

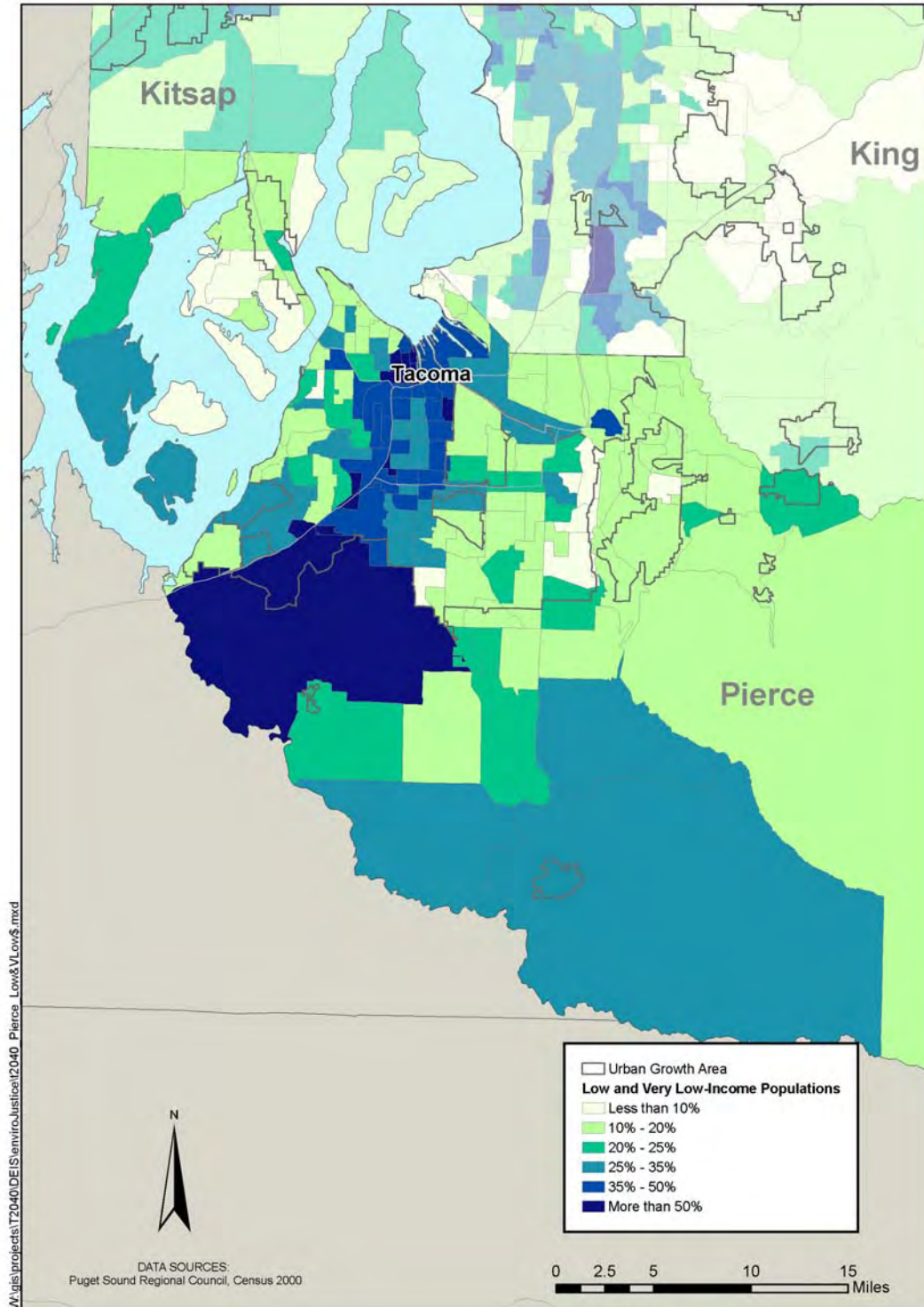
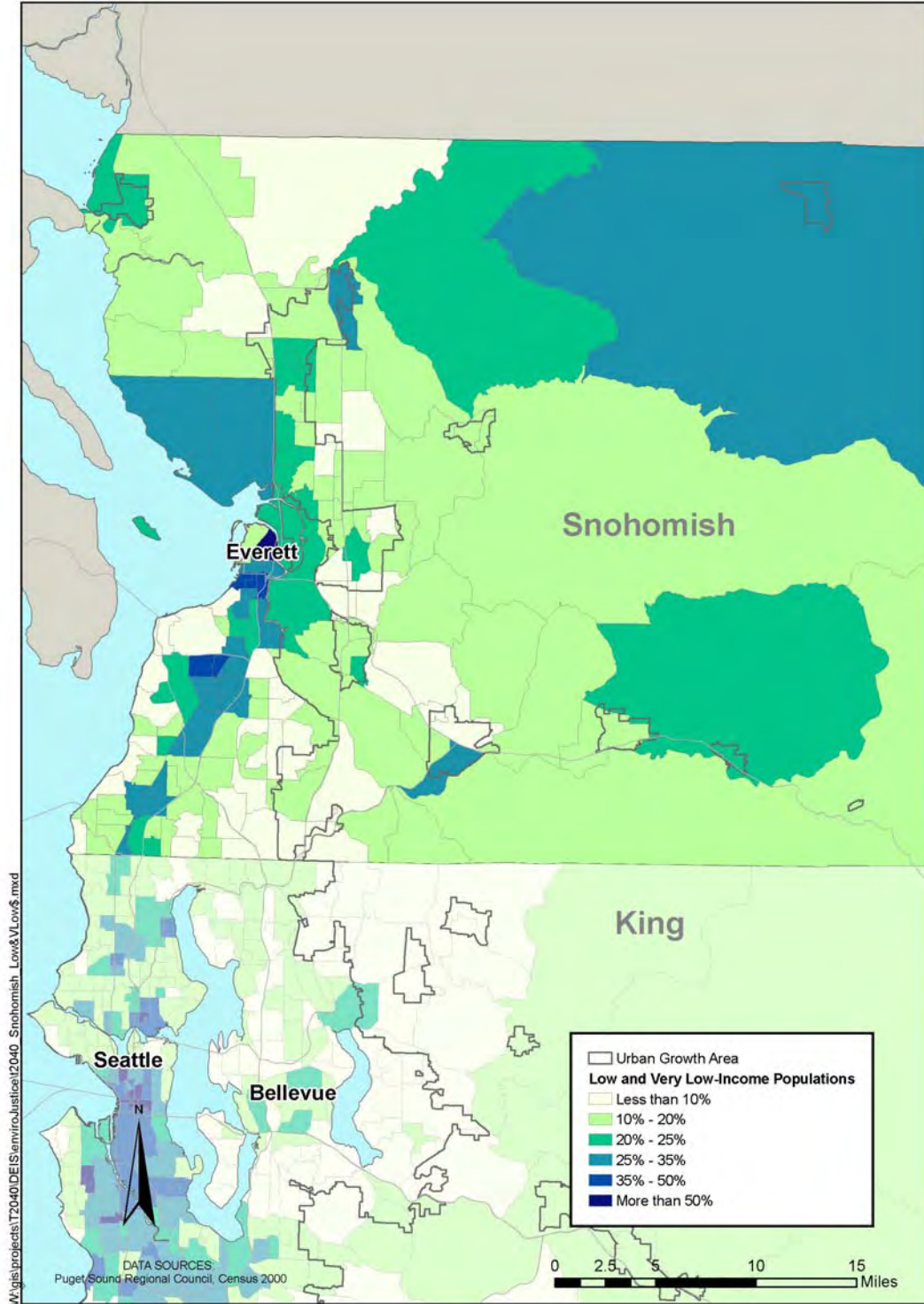
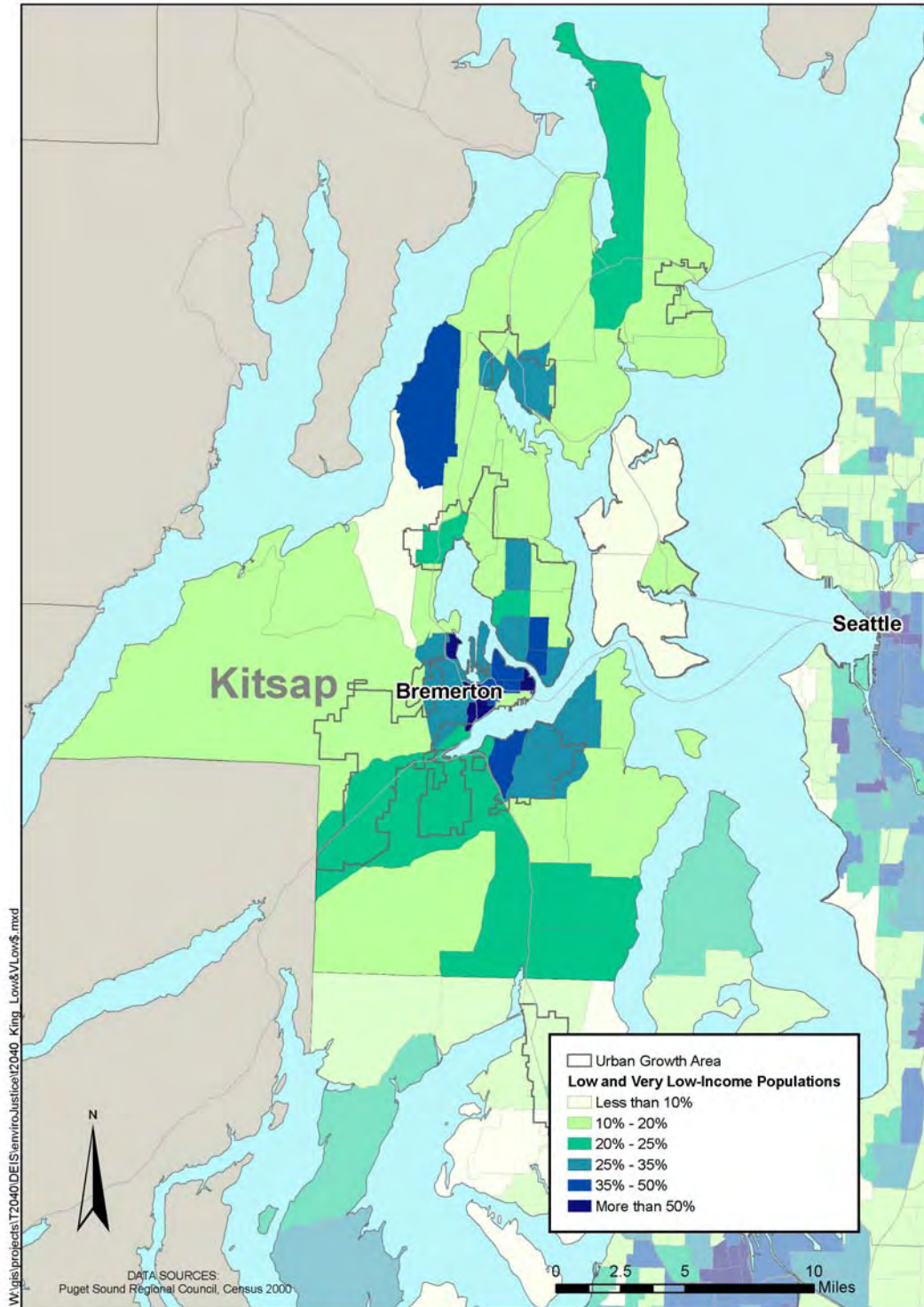


Exhibit 14. Low and Very Low Income Populations by Census Tract for Snohomish County



**Exhibit 15. Low and Very Low Income Populations by Census Tract for Kitsap County**



### **How did PSRC involve minority and low-income populations while creating Transportation 2040?**

To best understand the perceptions of possible effects that Transportation 2040 might have on low-income or minority populations, PSRC held ten roundtable discussions with community leaders in the four counties that are members of the Puget Sound Regional Council—King, Kitsap, Pierce, and Snohomish.

Although the public was welcome to attend any of the roundtable discussions, specific invitations were extended to leaders representing low-income and minority populations. Consistent with PSRC policy, invitations were also extended to leaders representing the elderly, special needs populations, limited-English proficient (LEP) residents or business owners, people who are completely reliant on public transit, and social service providers.

Roundtable discussions were held at Americans with Disabilities Act (ADA)-accessible facilities. PSRC announced the discussions on the PSRC website and through a regionwide mailing to leaders identified in PSRC's contact database that represent minority and low-income populations. This database has been created over the years by PSRC as it has conducted outreach activities. Follow-up telephone calls and emails were made to population leaders to encourage attendance and participation.

Five roundtable discussions were held during the formal public comment period for the Draft EIS (DEIS), which began on May 28, 2009 and concluded on July 31, 2009. Nearly 60 people representing more than 40 organizations and local governmental units participated in the roundtable discussions.

The PSRC Transportation Policy Board held an open house and formal public hearing on July 9, 2009, at which the public had an opportunity to speak with PSRC staff and to make comments on the draft alternatives to the Transportation Policy Board. PSRC's boards and committees considered input from the roundtable discussions and public hearing, as well as other public comments and analyses, and selected and refined the preferred alternative that became the basis of the draft Transportation 2040 plan, which was released for public review and comment on January 22, 2010. Notice of the plan's availability was published on the PSRC website and sent electronically to PSRC's mailing lists, including a wide variety of organizations and individuals representing minority and low-income populations and communities. Copies of the draft plan were also sent to all of the individuals and organizations who had participated in the summer 2009 roundtable discussions.

In February and March 2010, PSRC hosted a second round of five follow-up discussions with population leaders to present the plan, share how PSRC incorporated their feedback into the plan, identify ways in which the plan may benefit or affect their communities, and discuss ways in which they could stay engaged in the implementation.

**Key themes.** Key themes emerging from these roundtable discussions included:

- Lack of trust in government and fear that adverse impacts will outweigh benefits.
- Concern about traffic diversion onto local, untolled roads.
- Strong reservations about tolling arterials.
- Need to coordinate planning for land use, transit, economic development, and housing.
- Need to ensure equity and fairness in tolling practices.
- Need to dramatically expand transit service and improve travel connectivity and convenience.
- The need to preserve and improve air quality in low-income and minority communities.
- Concern that the plan focuses on meeting the needs of the average resident and does not adequately address populations with transportation unique needs.

**How were these themes addressed in Transportation 2040?** These comments directly influenced the final composition of Transportation 2040, which addresses many of these concerns:

- An aggressive transit investment strategy to increase the availability of alternatives to driving alone, more than doubling local transit service.
- A tolling system for limited access freeways that does not directly toll local arterials.
- Investment of a portion of tolling revenue in transit and paratransit services, focused on serving centers and areas with high concentrations of employment.
- Additional funding for special needs transportation services proportional to the growth of special needs populations.
- A mix of investments that reduces regional per capita vehicle miles traveled and delay.
- Many more transit, bicycle, pedestrian, rideshare, and other travel options to avoid or minimize congestion.
- Support for the VISION 2040 Regional Growth Strategy, which calls for affordable housing, services and employment to be concentrated in regional growth centers.
- Improved air and water quality throughout the region.

**Transportation 2040 Benefits.** These and other plan elements were shown to convey a wide variety of benefits to minority and low-income people in the central Puget Sound region:

- Speeds and trip reliability will improve for all motorists and transit.
- Substantial increases in transit access, routes, and frequency will benefit low-income populations, especially those living in or near regional growth centers.
- Substantial increases in paratransit and improvements to connectivity and access will benefit special needs and senior populations.
- Owning, maintaining, and operating a vehicle is very expensive, therefore, low-income populations will benefit from the availability of many more options to driving alone.
- Low-income and minority populations who suffer from higher obesity rates and similar adverse health impacts will benefit from substantial improvements to pedestrian and bicycle infrastructure, especially in regional growth centers.
- By providing many more opportunities to use transit, bike, or walk instead of driving alone, the plan will benefit communities by containing or reducing the transportation-related impacts to air quality, environmental health, and noise.

**Potential adverse effects.** Potential adverse effects were also identified:

- The toll payment would burden low-income populations, especially those who are car dependent.
- The electronic payment method would also burden low-income and limited-English proficient populations.
- Construction and operation of new road and transit facilities may adversely affect the people and environment near those facilities, which may include low-income and minority populations.

PSRC recognizes the importance of these issues. This analysis highlights these issues and recommends that they be included in future analysis for project-level environmental review, but cannot analyze these issues at the plan-level. For more detailed information on findings of the environmental justice roundtable discussions, see *Transportation 2040 Environmental Justice Roundtable Discussions Summary Report*. PSRC, April 2010.

### **How could Transportation 2040 affect minority and low-income populations?**

Transportation 2040 includes continued expansion of transit and rideshare services, as well as projects that provide improvements for nonmotorized travel. These services, systems, and facilities provide improved mobility at a lower cost than travel by private automobile. Overall improvements to the regional system would benefit low-income and minority populations, although specific benefits resulting from individual projects would vary depending on the project location. Benefits include shorter travel times and better connections to and from residential areas, employment centers, and educational, health, recreational, and community service facilities.

### **How would minority and low-income populations be affected by the individual alternatives?**

The Transportation 2040 Final Environmental Impact Statement (FEIS) discusses the potential effects on the natural and built environment that could result from Transportation 2040, and describes the methods that could be used to mitigate these impacts. As noted earlier, the analysis in this appendix is not intended to identify all effects likely to result from the hundreds of projects and programs contained in Transportation 2040. Rather, this appendix seeks to identify the types of effects that could result from the implementation of these projects. Whether these effects from individual projects would have a disproportionate impact on minority or low-income populations would be determined in future project-level environmental reviews. Potential effects are summarized below:

#### **Transportation**

Projects in Transportation 2040 would affect travel patterns of transportation users throughout the Puget Sound region. These effects are discussed extensively in Chapter 4: Transportation of the *Transportation 2040 Final Environmental Impact Statement*. The analysis of transportation effects uses the following measures to evaluate the effects of the plan alternatives:

- Vehicle trips by time of day
- Average daily trip times and lengths
- Freeway and arterial vehicle miles traveled, vehicle hours traveled, and delay
- Peak, off-peak, freeway, and arterial speeds
- Mode share for work, nonwork, and all trips
- Person trips by mode
- Morning and midday transit service
- Increase in morning and midday transit service hours
- Daily transit boardings
- Auto and passenger ferry routes
- Auto and passenger ferry boardings

- Investment in walking and bicycling facilities
- Nonmotorized trips
- Annual benefits to commercial and passenger users
- Annual transportation mobility benefits
- Annual accident reduction benefits
- Annual user benefits by regional sub-area
- Annual benefits by income
- Annual benefits by user type

For more information about the evaluations listed above, refer to *Transportation 2040 Environmental Impact Statement*, Chapter 4: Transportation.

### **Land Use, Population, Employment, and Housing**

An underlying assumption in the development of Transportation 2040 is that from 2006 to 2040, the region will grow by an additional 1.5 million people, an additional 1.2 million jobs, and approximately 800,000 additional housing units. This is consistent with the assumptions for VISION 2040, the region's growth management, environmental, economic and transportation strategy adopted under the Washington State Growth Management Act.

The environmental justice analysis conducted for VISION 2040 found that low-income and minority populations could likely benefit most from development patterns under the Regional Growth Strategy contained in the plan that direct the majority of population and employment growth to existing urban communities that are closer to major employment centers and are better served by transit. As minority and low-income communities have historically been more dependent on public transportation than the regional population as a whole, the Regional Growth Strategy could offer more and better access to a greater variety of housing and employment opportunities, and could likely improve the quality and condition of urban neighborhoods that have historically been the locations of concentrated minority and low-income communities.

Transportation 2040 was found to support and implement the VISION 2040 Regional Growth Strategy. Therefore, implementation of Transportation 2040 would not result in impacts to land use, employment, population, or housing beyond those described in the *VISION 2040 Final Environmental Impact Statement*.

### **Air Quality and Climate Change**

Under the federal Clean Air Act, EPA established National Ambient Air Quality Standards for six principal (or "criteria") pollutants considered harmful to public health and the environment. Primary standards set limits to protect public health; secondary standards set limits to protect the environment, including protection against decreased visibility and damage to wildlife, plants, and buildings. The six criteria pollutants are carbon monoxide, lead, nitrogen dioxide, particulate matter (PM<sub>10</sub> and PM<sub>2.5</sub>), ozone (nitrogen oxides and volatile organic compounds), and sulfur oxides.

Carbon monoxide reduces the blood's oxygen-carrying capability. Acute health effects include headaches, slowed reflexes, weakened judgment, and impaired perception. Lead in the ambient air is no longer considered a public health concern, and it has not been monitored in the region since 1999. Health effects of particulate matter include respiratory illnesses, such as aggravated asthma, chronic bronchitis, and decreased lung function. Ozone is an eye and respiratory tract irritant and increases the risk of respiratory and heart diseases.

At this time, there are no federal standards related to greenhouse gases. There may be future federal and state legislation that sets requirements for reducing greenhouse gas emissions and/or vehicle miles traveled, pertinent to the transportation and growth management planning activities conducted by PSRC. In the absence of such requirements, PSRC has taken an active stance to address the state's climate change goals in the VISION 2040 policies and in the development of Transportation 2040.

Expected consequences from climate change include an increase in global temperatures, resulting in a rising of the sea level. Other effects include a change in precipitation and impacts to local climates, which could alter forests, crop yields, and water supplies. Climate change may also affect human health, animals, and many types of ecosystems.

Beyond the transportation-related impacts described previously, Transportation 2040 would result in development and construction activity in various areas throughout the region. Construction would likely generate localized dust and exhaust emissions from vehicles and other equipment. In addition, these construction activities would likely contribute to localized traffic congestion, which may temporarily worsen localized emissions. The potential quantities of generated dust and exhaust emissions would depend on the amount of construction activity associated with each project. Specific impacts would be analyzed and addressed during project-level analysis of individual projects.

The surface transportation-based forecasts used for the air quality analysis do not attempt to predict other changes in regional and external pollution that could affect regional air quality. Growth outside of the region could also increase vehicle emissions in nearby metropolitan areas.

Transportation 2040 is estimated to result in emissions well below the motor vehicle emission budget for the pollutants for which the region is in maintenance (CO and PM10); therefore, mitigation to reduce these emissions would not be required. However, given that certain pollutants are still a concern in the region (e.g., ozone and PM2.5), existing programs and measures to ensure the region's continued attainment and maintenance status should continue.

Given the wide distribution of transportation projects and programs throughout the region, it is not expected that implementation of Transportation 2040 would produce air quality impacts in a manner that would affect minority and low-income populations differently than the region's population as a whole.

For more information and results of the air quality analysis, refer to *Transportation 2040 Final Environmental Impact Statement* Chapter 6: Air Quality and Climate Change.

## **Noise**

Transportation 2040 will likely affect traffic patterns in the Puget Sound region. For example, widening a highway would likely increase traffic and associated noise levels on the highway and on nearby feeder roads. The effect of transportation-generated noise depends on the proximity of noise-sensitive land uses to the noise source.

Noise during construction could be bothersome to nearby residents and businesses. Construction workers also would be subject to construction noise while working on the site. Construction noise would vary widely both in its range and hours over the course of implementing the program. Individual projects would generate disturbances in their general vicinity during construction.

Given the wide distribution of transportation projects and programs throughout the region, it is not expected that implementation of Transportation 2040 would produce noise impacts in a manner that would affect minority and low-income populations differently than the region's population as a whole.

For more information and results of the noise analysis, refer to *Transportation 2040 Final Environmental Impact Statement* Chapter 7: Noise.

## **Visual and Aesthetic Resources**

Some transportation facilities would affect the views and visual character of some residential neighborhoods, natural areas, and open spaces. However, impact levels would generally be reduced where improvements are located along existing freeways and arterials, at existing park-and-ride lots, in activity centers, and in other aesthetically compatible locations.

Some transportation facilities, such as recreational trails or other nonmotorized facilities could result in positive effects on the visual environment when they are placed in natural settings. Transportation projects that replace existing aging facilities with more aesthetically pleasing modern facilities can also result in improvements to the visual environment, such as removing view-blocking structures or using context-sensitive design principles.

Construction of transportation facilities would cause visual impacts by removing or altering existing visual resources that contribute to the quality of the visual environment. Examples include clearing vegetation, grading, and demolishing structures.

Given the wide distribution of transportation projects and programs throughout the region, it is not expected that implementation of Transportation 2040 would produce visual and aesthetic impacts in a manner that would affect minority and low-income populations differently than the region's population as a whole.

For more information and results of the noise analysis, refer to *Transportation 2040 Final Environmental Impact Statement* Chapter 8: Visual and Aesthetic Resources.

**Water Quality and Hydrology**

Adverse water quality and hydrology impacts, if identified, would primarily affect the region's water resources, not its inhabitants. Therefore, effects of Transportation 2040 on water quality and hydrology are not expected to affect minority and low-income populations differently than populations that are not minority or low income.

**Ecosystems and Endangered Species Act Issues**

Adverse effects on ecosystems and impacts related to the Endangered Species Act, if identified, would primarily affect the region's plants and wildlife, not its human inhabitants. Therefore, effects of Transportation 2040 on ecosystems and impacts relating to the Endangered Species Act are not expected to affect minority and low-income populations differently from populations that are not minority or low income.

**Energy**

Adverse energy impacts, if identified, would primarily affect the region's energy supply, not its inhabitants. Therefore, effects of Transportation 2040 on energy are not expected to affect minority and low-income populations differently from populations that are not minority or low income.

**Earth**

Adverse impacts to soils, topography, and geologic features, if identified, would primarily affect the region's physical environment, not its inhabitants. Therefore, effects of Transportation 2040 on soils, topography, and geologic features are not expected to affect minority and low-income populations differently from populations that are not minority or low income.

**Environmental Health**

Operation and maintenance of the region's transportation system will involve materials that can affect environmental health and human health. Oil-based lubricants, vehicle batteries, parts-cleaning fluids, paints, solvents, and fuels are among the products typically used in the maintenance and operation of transportation vehicles. All vehicles are subject to fluid leaks. Because the region's transportation system includes aviation, surface, and marine transportation, releases to the environment could affect a range of environmental media, including soils, groundwater, surface water, and sediments.

For all construction projects identified in Transportation 2040, persons involved in construction excavation, trenching, or moving soil may be affected by hazardous waste release sites. Persons living or working near such sites may also be exposed through skin contact, ingestion, or inhalation of soil particles, dust, or vapors. If safe work practices are followed in site preparation and development, the impact risk would be low. The effects of Transportation 2040 on environmental health are not expected to affect minority and low-income populations differently from populations that are not minority or low income. For more information and results of the environmental health analysis, refer to *Transportation 2040 Final Environmental Impact Statement* Chapter 13: Environmental Health.

### **Public Services and Utilities**

Few land use-related effects are expected on public services and utilities from Transportation 2040 beyond those identified in the *VISION 2040 Final Environmental Impact Statement*. These effects could include solid waste generation, sanitary sewer generation, water supply usage, and school enrollments. Depending upon how land is actually developed in the future, there could be differences in terms of safety, access, and mobility for fire, police, and health services, as well as safety, access, and mobility to schools. Nevertheless, the effects of Transportation 2040 on Public Services and Utilities are not expected to affect minority and low-income populations differently from populations that are not minority or low income. For more information, refer to refer to the *VISION 2040 Final Environmental Impact Statement*, and *Transportation 2040 Final Environmental Impact Statement* Chapter 14: Public Services and Utilities.

### **Parks and Recreation**

If acquisition of parkland is required for specific transportation projects, the amount of available parkland may be reduced. Although parks and recreational facilities would typically be avoided, use of parklands or other direct impacts may occur, particularly when other physical constraints limit the location of infrastructure.

Parks and recreational facilities in proximity to transportation projects can be affected in a number of ways, including temporary trail closures and temporary restrictions on park use and access. However, the effects of Transportation 2040 on parks and recreation are not expected to affect minority and low-income populations differently from populations that are not minority or low income. For more information, refer to *Transportation 2040 Final Environmental Impact Statement* Chapter 15: Parks and Recreation.

### **Historic and Cultural Resources**

Traditional cultural properties in the central Puget Sound region are primarily associated with Native American tribes. Both federally and nonfederally recognized tribes are allowed to identify traditional cultural properties. Consultation with the appropriate tribe is done at the project level by the lead agency with the assistance of the Department of Archaeology and Historic Preservation and the Washington state Governor's Office of Indian Affairs to avoid or minimize impacts to traditional cultural properties. With proper planning and implementation, Transportation 2040 has the potential to avoid or minimize effects on traditional cultural properties. Because of this, effects of the Transportation 2040 on historic and cultural resources are not expected to affect minority and low-income populations differently from populations that are not minority or low income. For more information, refer to *Transportation 2040 Final Environmental Impact Statement* Chapter 16: Historic and Cultural Resources.

### **Human Health**

Death and injuries on the transportation system represent a fundamental link between human health and transportation. Successful safety programs at the metropolitan planning level require collaboration with many different partners including law enforcement agencies, local and state jurisdictions, transit agencies, emergency service responders, and advocacy organizations.

The link between transportation and health is an emerging national issue. Public health professionals at the local, state, and national levels are evaluating ways for the built environment to help people incorporate physical activity

into their daily routines. Because of the wide distribution of projects and programs throughout the region, potential effects of Transportation 2040 on human health and safety are not expected to affect minority and low-income populations differently from populations that are not minority or low income. For more information, refer to *Transportation 2040 Final Environmental Impact Statement* Chapter 18: Human Health.

### **Does tolling represent a disproportionate impact on minority or low-income populations?**

Transportation 2040 contains a wide variety of tolling systems that will be implemented over time as the plan is implemented. Determining whether individual projects or programs like tolling would have disproportionate impacts on minority or low-income populations would be determined in future project-level environmental reviews. Many opportunities exist to measure tolling at the project-level.

During the plan-level environmental review conducted for Transportation 2040, some preliminary analyses were conducted on the potential effects of tolling on environmental justice populations.

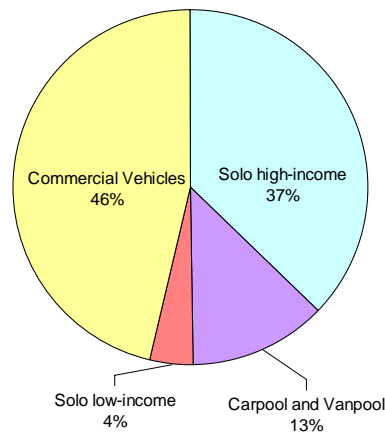
Tolling could have adverse impacts but could also bring benefits to low-income populations. USDOT Order 5610.2 and Federal Highway Administration (FHWA) Order 6640.23 apply two criteria to determine whether an effect would be disproportionately high and adverse:

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

In response to the first criterion, Exhibit 16 shows, in terms of total tolls paid, higher-income solo drivers and commercial vehicle classifications would predominantly bear the effect of the tolls.

## Exhibit 16

### Percent of Tolls Paid by Vehicle Classification (Preferred Alternative)



Source: PSRC

Low-income solo drivers would bear a lesser burden than other users of the system. Transit riders, walkers, and bike users would not pay tolls.

In response to the second criterion, it is more difficult to determine whether the effect on low-income or minority populations would be considerably more severe or greater in magnitude than the effect suffered by the general population. This difficulty is due to the following factors:

- It is clear that toll payment represents a burden for low-income users. What is not clear, and presents an opportunity for future research, is whether paying for transportation improvements through tolling is more or less equitable than through gas taxes or other traditional funding sources.
- Often, tolling projects are coupled with transportation infrastructure or transit service improvements within the tolled corridor. It is unclear at the plan level whether the benefits of these improvements would outweigh the burden of the tolls.
- Tolling improves mobility, which results in travel time benefits for all populations. This effect is discussed in more detail below.

### **How would toll payment represent a burden on low-income, minority, or LEP populations?**

Toll payment would not affect minority populations differently than the general population. However, there are two principal ways in which toll payment would adversely affect low-income or limited English proficiency (LEP) populations.

- **Cost of Toll Payment:** Toll costs could present a burden to low-income users. If tolls are the same amount for all users, regardless of income, toll payment would require a higher proportion of income from low-income users.
- **Method of Payment:** Tolling systems that require drivers to purchase a transponder and set up an account to pay the toll could present a burden to low-income and LEP users. Many low-income and LEP populations do not have a credit card or checking account, which is often required for activation of a transponder. The instructions and procedures required for transponder activation and maintenance might also present difficulties for LEP populations.

### **What are the benefits of tolling?**

There are two ways in which implementation of the Transportation 2040 Preferred Alternative would benefit all users, including low-income, minority, and LEP populations:

- All drivers, including low-income, minority, and LEP drivers, would benefit from increased traffic speed and trip reliability.
- All bus transit users sharing travel lanes with other vehicles, including low-income, minority, and LEP users, would benefit from improved transit speed, reliability, and accessibility.

Specifically related to environmental justice populations, focus group interviews of low-income drivers for the Urban Partnership SR 520 Variable Tolling Project indicated that some low-income drivers believed that a \$3.50 toll would be worth it for a faster, more reliable trip. This is consistent with other studies on the equity of high-occupancy toll lanes, which also found that some lower-income people supported congestion pricing if it ensured a faster, more reliable trip. Researchers hypothesized in these studies that lower income people who worked for hourly wages or depended on child care would choose to pay a toll to avoid losing wages or paying high late fees at their child care facilities. For many lower income people who are juggling multiple jobs and child care, traffic delays may pose an even bigger burden than a toll (See *SR 520 Bridge Replacement and HOV Project EIS, Appendix G - Environmental Justice Analysis*, Washington State Department of Transportation, 2009).

Some low-income populations are auto-dependent for other reasons that cannot be mitigated by transit. For example, they may have special needs and drive a specially outfitted vehicle, hold multiple jobs, or work at different job sites,

such as a housecleaner or home-health worker, or they might have a large family, etc. These populations might benefit from increased speeds and trip reliability.

**Distribution of benefits to environmental justice populations**

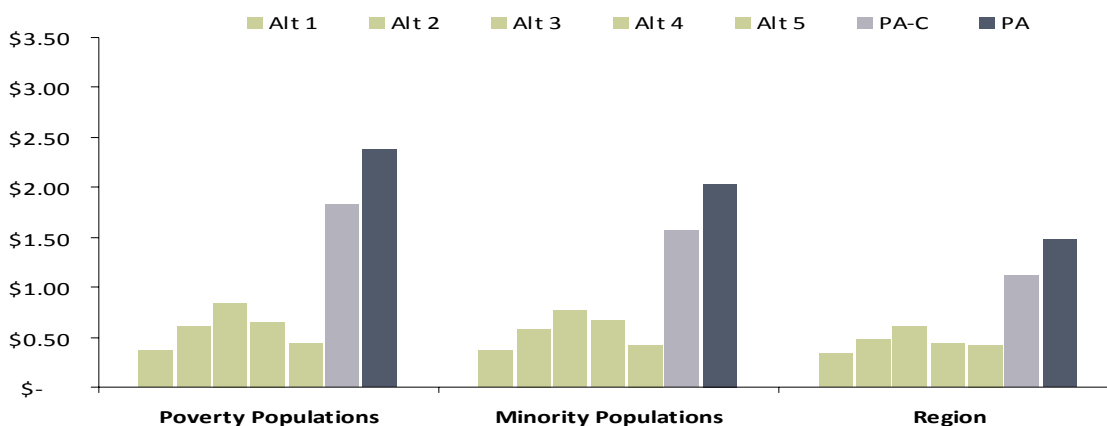
Annual user benefits were calculated for environmental justice (low-income and minority) populations (that is, geographic areas that are correlated with observed percentages of minority and low-income populations greater than the regional average).

The analysis shown in Exhibit 17 indicates Transportation 2040 would produce positive benefits for both minority and low-income populations compared to the Baseline Alternative, or conducting business as usual. The analysis showed that the Preferred Alternative on which Transportation 2040 was based would produce the greatest annual benefit to both low-income and minority populations, ranging from just under \$700 million to nearly \$1 billion. Transportation 2040 produced more benefits to minority and low-income people than any other alternative that was analyzed.

**Exhibit 17  
Annual Benefits to Environmental Justice Populations**

	Alt 1	Alt 2	Alt 3	Alt 4	Alt 5	Preferred Alternative Constrained (PA-C)	Preferred Alternative (PA)
(millions of 2008 dollars)							
Low-Income Populations	\$ 141	\$ 244	\$ 328	\$ 252	\$ 158	\$692	\$876
Minority Populations	\$ 180	\$ 290	\$ 378	\$ 320	\$ 197	\$747	\$946

**Changes in Total User Benefits Per Personal Trip from 2040 Baseline**



Benefits per person vehicle trip were calculated for low-income and minority populations, as well as for the region as a whole. Under Transportation 2040, geographic areas with higher percentages of low-income and minority populations were found to have greater user benefits than the region as a whole.

### **During future project-level environmental review, what analyses could be performed to effectively evaluate the impact of tolling upon minority and low-income populations?**

**Community Resource Mapping.** Neighborhood resources within and near the study area that fit the following commonly accepted neighborhood resource categories could be identified and mapped: parks, schools, locally and nationally recognized historic structures, and emergency services. The maps could help community members and the project team to determine how these resources would be affected.

**Displacement Surveys.** Location-specific surveys could help to determine the characteristics of the population being directly affected by the project and whether there would be a disproportionate impact on environmental justice populations.

**Traffic Diversion Analysis.** For projects that include tolled facilities near alternative untolled facilities, traffic analyses could be performed to determine the effects of the diverted traffic on the communities that contain the untolled facilities.

**Opportunity Equity Analysis.** Geographical comparisons of tolls collected and benefits gained by geographic area could be conducted to ensure that the communities experiencing the burden of the tolls are also benefiting from the reinvested revenue.

### **How will Transportation 2040 affect transportation provisions for special needs populations?**

PSRC promotes and maintains an open dialogue among special needs transportation funding agencies, providers, and brokers in the region by facilitating discussions at the regional and local levels. This communication is of paramount importance to providing coordinated transportation for those with special needs.

#### ~~What are special needs populations?~~

Special needs populations are those whose mobility is affected due to age, income, disability, or physical condition. In the state of Washington, people with special transportation needs are defined in Revised Code of Washington 47.06B as those "including their personal attendants, who because of physical or mental disability, income status, or age are unable to transport themselves or purchase transportation."

As part of that coordination, PSRC has developed and adopted a regional plan addressing special needs transportation services—the *PSRC Coordinated Transit-Human Services Transportation Plan (Coordinated Plan)*. See Appendix K. The Coordinated Plan serves as a unified, comprehensive strategy for public transportation service delivery that identifies the transportation needs of individuals with disabilities, older adults, and individuals with limited incomes.

The Coordinated Plan also lays out strategies for meeting those needs, and prioritizes services and implementation strategies to guide investment decisions, particularly for the federal Job Access and Reverse Commute (JARC) and New Freedom programs administered by PSRC.

### **What cumulative effects on minority and low-income populations could occur if the Transportation 2040 actions coincide with other planned actions?**

The demographics discussion above reflects past and present cumulative effects on minority and/or low-income populations. Future cumulative effects on environmental justice populations could be affected by other regional plans and actions. Local jurisdictions throughout the region may revise their existing land use plans to be consistent with VISION 2040 and complement Transportation 2040. New development resulting from these plans could have both positive and negative effects on the environment.

PSRC has performed an analysis of the development pattern changes that could result from the transportation alternatives (refer to *Transportation 2040 Final Environmental Impact Statement* Chapter 5: Land Use, Population, Employment, and Housing) and has concluded that Transportation 2040 would support future land use and development patterns consistent with the adopted VISION 2040 regional growth strategy.

The development pattern analysis did not address the possible effect of transit expansion upon affordable housing. It is possible that housing prices near new transit facilities will rise, which would affect low-income populations currently living near these facilities or wishing to move near these facilities unless efforts are made to maintain affordable housing near transit.

### **How can the effects on minority and low-income populations be mitigated?**

- Specific measures should be considered to mitigate any adverse impacts that tolling could potentially have on environmental justice populations. The measures fall into the categories of outreach, assistance, accessible toll collection methods, and monitoring. Inclusive, early public involvement should be implemented so that people could make choices based on the knowledge that transportation costs would increase if they use the tolled facilities.
- Assistance programs that aid low-income populations with travel options, tolling assistance, bus passes, and bicycles should be considered, depending on which tolling schemes are chosen. There are several programs in the central Puget Sound region that are designed to assist special groups of individuals with the costs and challenges of transportation. In order to mitigate the impacts of the tolls, assistance could be provided to these programs, so their levels of service could increase and aid more people taking alternative travel modes.

Before and after a toll facility opens, WSDOT should provide information on how to obtain transponders, and how to receive transportation assistance.

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#### **What are cumulative effects?**

Cumulative effects address the impact on the environment that results from the incremental impact of the action being considered when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

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Some options for improving low-income drivers' access to the transponders include:

- Locate venues for acquiring transponders close to lower-income neighborhoods.
- Enable people without credit cards or checking accounts to obtain a transponder.
- Share information with and through other public service providers.
- Consider subsidizing or providing transponders to individuals and families below the poverty line. Alternatively, transponders could be provided as an additional service, cooperatively with an existing public service provider (e.g., food stamps).
- Include rideshare opportunities.

The following four strategies are commonly used by transportation project sponsors to address equity concerns (See Weinstein, A. and G.-C. Sciara. 2004. *Assessing the Equity Implications of Hot Lanes. A Report Prepared for the Santa Clara Valley Transportation Authority*. November 2004):

- Conduct a highly proactive public involvement and educational campaign.
- Perform various equity analyses (e.g., demographic characteristics of corridor/travel shed; origin/destination studies; and existing transit options/alternative driving routes, including commitments to collect data and/or monitor effects for years into project operations).
- Monitor and evaluate projects to ensure equity effects are acceptable.
- Create revenue expenditure plans that fund beneficial projects or programs for lower-income stakeholders who would be adversely affected by the project.

In 2005, PSRC conducted workshops with minority and low-income population community leaders as part of the VISION 2040 environmental justice outreach. PSRC learned that participants support increased transportation funding and tolls if they are accompanied by beneficial transportation options. The participants said that increased access to transit is especially important for low-income populations, but that language barriers prevent some non-English-speaking people from using transit. When low-income people move to outlying areas to seek lower-cost housing, they often find transit services lacking.

### **Are there any significant unavoidable adverse impacts to minority and low-income populations?**

Significant unavoidable adverse impacts are discussed by discipline under each element of the environment, elsewhere in the *Transportation 2040 Final Environmental Impact Statement*. The effect of tolling on low-income and minority populations is an area of emerging research, so the relative regressivity of paying for transportation improvements through tolling versus taxes on gas or sales is not well understood. Specific toll rates, facility locations, methods of toll payment, and use of toll revenues are topics likely to be discussed in detail in future project-level environmental review. In some instances, there may be significant unavoidable adverse impacts to specific groups of minority and low-income populations. If so, mitigation would be developed to partially offset these impacts.