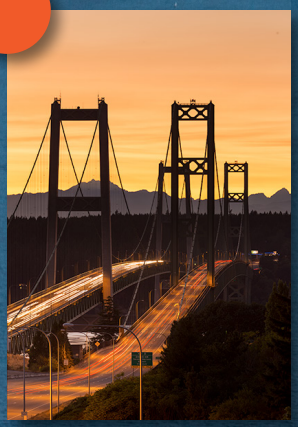
The Regional Transportation Plan — 2018



Appendix B

Equity Analysis Report

May 2018

Puget Sound Regional Council

May 2018

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APPENDIX B: Equity Analysis Report

Chapter 1: Introduction

THE REGIONAL TRANSPORTATION PLAN AND EQUITY

The Regional Transportation Plan was developed to provide accessible, affordable, and convenient mobility to all people in the region and is about ensuring that everyone has access to goods, services and jobs. Social equity is one of the nine key outcomes used to evaluate the plan, along with access to opportunity. Applying an equity approach allows PSRC to better understand how the plan impacts different people and to ensure the plan meet specific needs, specifically for people of color and people with low-incomes.

The outcomes of the plan are evaluated through an 'equity lens' to better understand how some communities might be impacted compared to the region's total population. With this information, the plan can be designed to respond different needs.

WHY IS EQUITY IMPORTANT?

The purpose of this Equity Analysis Report is to evaluate the potential benefits and possible burdens of proposed transportation policies and projects on people of color and people with low-income for the Regional Transportation Plan.

Definition of Equity

Social equity means all people can attain the resources and opportunities that improve their quality of life and enable them to reach their full potential. Social equity also means that those affected by poverty, communities of color, and historically marginalized communities are engaged in decision-making processes, planning, and policy-making.

PSRC incorporates equity in its overall work program in several ways, including an equity analysis as part of the plan, improving its public involvement and outreach program, as well as incorporating equity through its hiring and contracting practices.

EQUITABLE ACCESS TO TRANSPORTATION

Social equity and increasing access to opportunity are two of the key outcomes used to evaluate the Regional Transportation Plan. Equitable access to transportation includes having choices between various transportation options, ensuring that costs are affordable, and ensuring that travel times to destinations are reasonable for all people.

POLICY DIRECTION

The plan implements the VISION 2040, the region's long-range strategy for growth. VISION 2040 includes multi-county planning policies, which include goals for equitable outcomes. This Equity Analysis Report seeks to measure how well the Regional Transportation Plan supports these policies.

- MPP-T-22: Implement transportation programs and projects in ways that prevent or minimize negative impacts to low-income, minority, and special needs populations.
- MPP-T-25: Ensure mobility choices for people with special transportation needs, including persons with disabilities, the elderly, the young, and low-income populations.

See Appendix A, Multicounty Planning Policies.

Transportation Policy Board Direction

The PSRC Transportation Policy Board (Board) conducted engagement sessions on various topics in the development of the plan, including social equity. Board guidance from equity engagement sessions included direction to ensure benefits and impacts are evaluated for the most disenfranchised communities, and when possible, to evaluate how social determinants of equity support healthy outcomes. In addition, the Board recognized socio-demographic changes that underlie the plan, such as the suburbanization of poverty, and the importance of providing access to opportunity.

POTENTIAL BENEFITS AND BURDENS OF TRANSPORTATION

According to guidance from the Federal Highway Administration, transportation projects can cause positive and negative effects, or "benefits and burdens," which may occur in the short, medium, or long term[1]. Transportation practitioners should consider potential imbalances in both the benefits and burdens of transportation projects on minority and low-income populations. Some examples of potential burdens include disruption of community cohesion (e.g., access to schools, parks, medical facilities, and religious institutions), adverse employment effects, decline in tax base or property values, displacement, increased noise and/or emissions, diminished aesthetics, and disruption to businesses. At the regional scale, many of these potential burdens can be difficult to assess, and are more appropriately evaluated at the project level. Potential benefits from a collection of transportation projects can include reduced travel times, reduced congestion, improved safety outcomes, and improved travel options, all of which can be modeled at a regional scale.

To understand how Regional Transportation Plan investments may benefit or burden minority and low-income populations, this equity analysis evaluates geographic locations with higher than the regional average of low-income people and people of color today, and considers the distribution of future transportation outcomes in and to those areas. These results are useful to create a baseline for understanding the geographic and demographic distribution of both benefits and burdens throughout the region. Knowing what the outcomes would be to areas with high concentrations of people of color and low-income households provides an insight into how these populations may benefit from the plan, and highlights the greater discussion of gentrification and displacement.

Displacement risk is a key concern in the central Puget Sound region, and better methods to assess this will be the subject of future model development and research. Modeling displacement risk, however, is difficult, with limited means to forecast the future geographic locations of types of people, and whether households with certain characteristics will remain in place for long periods of time. PSRC is investigating methods to evaluate displacement at a regional scale, and will continue to explore how to best evaluate and address displacement.

[1] Federal Highway Administration Environmental Justice Reference Guide, U.S. Department of Transportation, April 1, 2015. Retrieved from USDOT website on 11/27/17: https://www.fhwa.dot.gov/environment/environmental_justice/publications/reference_guide_2015/fhwahep15035..pdf

REQUIREMENTS

This equity analysis addresses federal laws and regulations.

The Civil Rights Act of 1964

The Title VI of the Civil Rights Act of 1964 requires that transportation planning and programming be nondiscriminatory on the basis of race, color, national origin or disability. The federal statute was further clarified and supplemented by the Civil Rights Restoration Act of 1987 and a series of federal statutes enacted in the 1990s relating to the concept of environmental justice. The fundamental principles of environmental justice include:

- Avoiding, minimizing or mitigating disproportionately high and adverse health or environmental effects on minority and low-income populations.
- Ensuring full and fair participation by all potentially affected communities in the transportation decision-making process.
- Preventing the denial, reduction or significant delay in the receipt of benefits by minority populations and low-income communities.

Americans with Disabilities Act of 1990

The ADA requires that all federally funded activities be nondiscriminatory on the basis of physical or mental disabilities. The fundamental principles of complying with ADA include:

- Ensuring full access to information related to agency activities including an accessible website, accessible offices and meeting spaces, and availability of alternative formats including a TTY Relay access.
- Designation of a staff member to serve as an ADA Coordinator for the agency. PSRC's ADA Coordinator is Thu Le, 206-464-6175 or tle@psrc.org.

Executive Orders

An Executive Order is an order given by the President to federal agencies. As a recipient of federal revenues, PSRC assists federal transportation agencies in complying with these orders.

1. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low–Income Populations: In February 1994, President William Clinton signed Executive Order 12898, Federal Actions to Address Environmental Justice for Minority Populations and Low-Income Populations, which mandates that federal agencies make achieving environmental justice part of their missions.

The USDOT Order requires agencies to do 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.

2. **Executive Order 13166**: Improving Access to Services for Persons with Limited English Proficiency: Executive Order 13166 states that people who speak limited English should have meaningful access to federally conducted and federally funded programs and activities. It requires that all federal agencies identify any need for services to those with limited English proficiency and develop and implement a system to provide those services so all persons can have meaningful access to services.

DEFINITIONS

Environmental Justice, which has its roots in the civil rights movement of the 1960s and the Civil Rights Act of 1964, is an approach that is meant to avoid disproportionately negative effects on people with low-incomes and people of color and to ensure these populations do not shoulder potential negative effects of transportation projects. Federal Law requires environmental justice principles be applied into planning activities.

Social equity is another way to frame environmental justice principals using a term more commonly applied. These terms may be used interchangeably in this report.

In addition to considering how the plan affects people of color and people with low-incomes, PSRC makes a special effort to address how this plan affects special needs populations.

Environmental Justice Populations
Environmental justice populations include people of color (black, Hispanic, Asian, American Indian, Alaskan Native, Native Hawaiian, or other Pacific Islander) and people with low income (people with household income at or below U.S. poverty guidelines). People of color are sometimes referred to in this report as 'minority populations' when referencing US Census Bureau data and people with low-incomes are sometimes referred to in this report as low-income populations or low-income households also to be consistent with US Census Bureau terms.

Federal Poverty Rate vs. the definition of low-income for the central Puget Sound region
A person whose household income (or in the case of a community or group, whose median household income) is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines is considered low-income by the federal government. States and localities may, however, adopt a higher threshold for low-income.

PSRC has identified people that are at 200% of the federal poverty rate as low-income based on the cost of living in the Puget Sound region. Therefore, for clarity in this report, people who are at or below the federal poverty guidelines will be referred to as 'in poverty' or at the 'poverty rate or level' whereas people who are at 200% of the federal poverty guidelines will be referred to as 'low-income'. NOTE that these populations are only for those people whose poverty status can be determined.

Special Needs Populations
While the various orders on environmental justice require consideration of minority and low-income populations as defined above, discussions of other populations protected by Title VI and related nondiscrimination statutes - such as the elderly, disabled, etc. - are encouraged in addressing environmental justice and Title VI in federally sponsored transportation programs, policies, and activities. State law identifies special needs populations, including: people with disabilities, youth, seniors and seniors aging in place, limited-English proficient residents, homeless school-aged children, families who have experienced domestic violence, veterans, and limited literacy residents.

Chapter 2: Demographics

This section presents key demographic data to document the changing population in the central Puget Sound region. Additional demographic information can be found in the Environmental Justice Demographic Profile which can be found on the PSRC website.

GIS MAP PROFILES

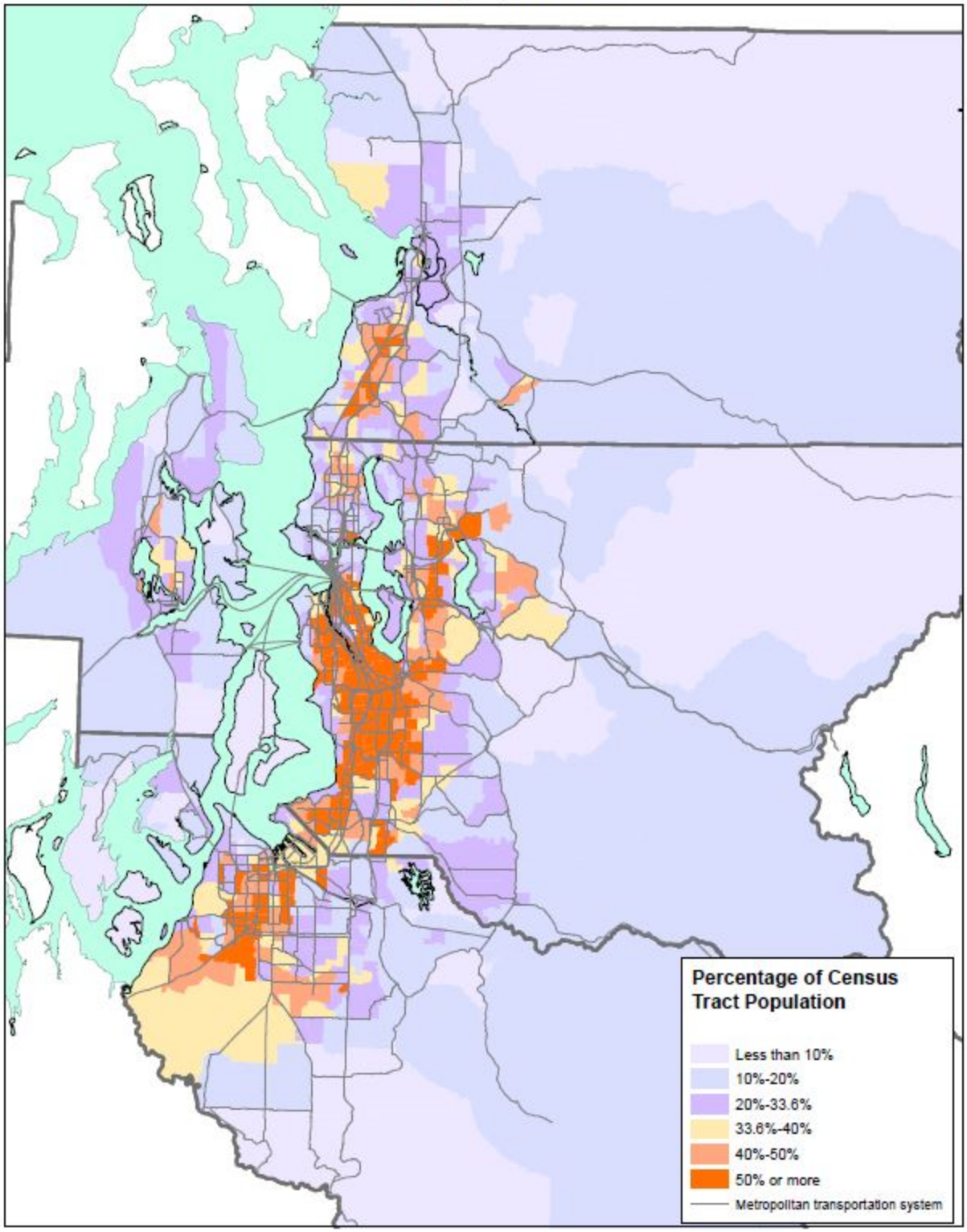
The following maps show distributions of people of color and low-income populations across the region to identify geographic areas and communities with higher concentrations of these populations. Because this analysis uses U.S. Census and American Community Survey (ACS) data, people of color are referred to as minority populations to be consistent with the data source.

Map 1. Minority Population, Central Puget Sound: 2011-2015
Map 2. Black/African American Population, Central Puget Sound: 2011-2015
Map 3. American Indian/Alaskan Native Population, Central Puget Sound: 2011-2015
Map 4. Asian/Pacific Islander Population, Central Puget Sound: 2011-2015
Map 5. Hispanic/Latino Population, Central Puget Sound: 2011-2015
Map 6. People Below 100% of Poverty Level: 2011-2015
Map 7: People Below 200% of Poverty Level: 2011-2015

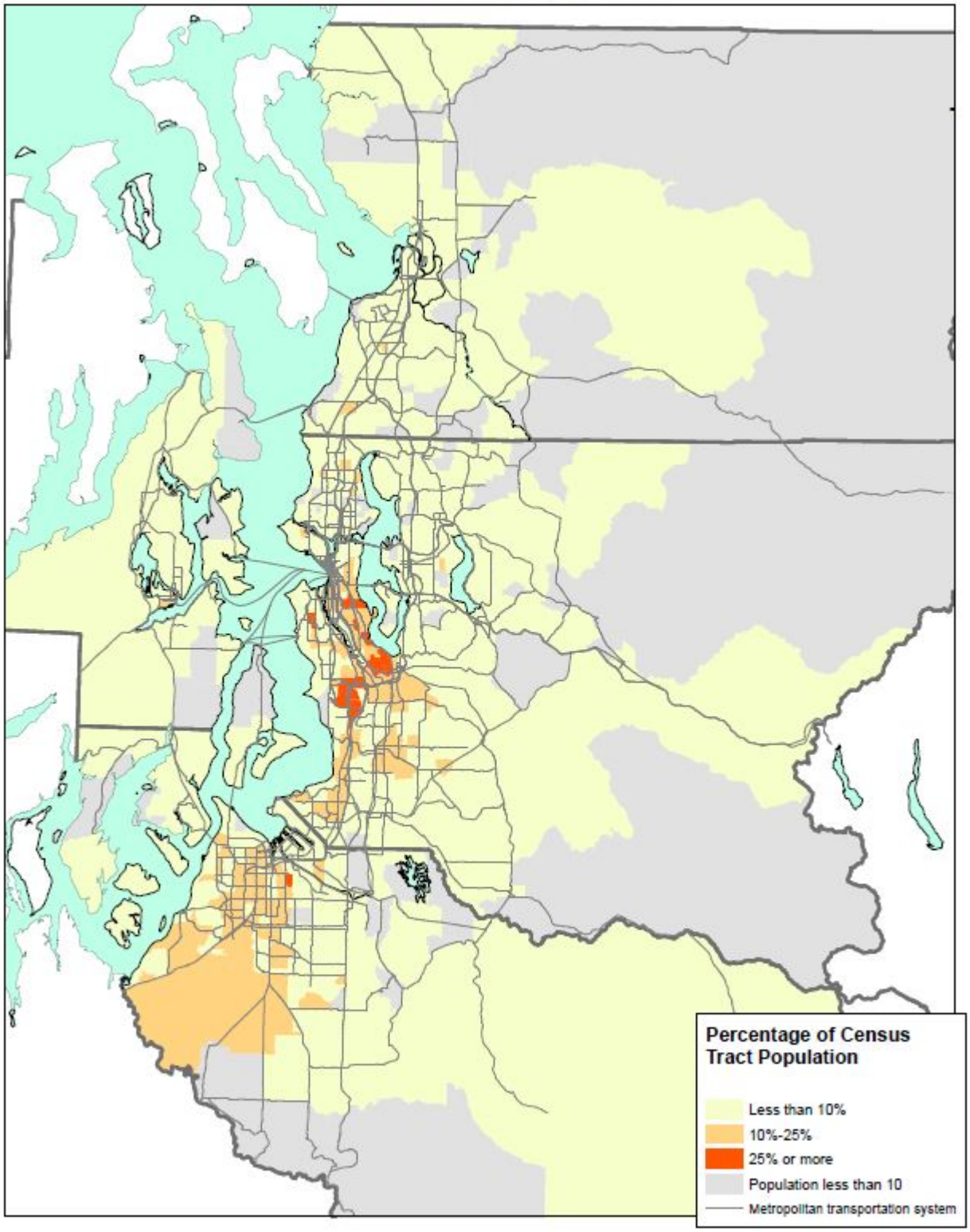
The minority population profile maps utilized census tract-level race and Hispanic/Latino origin data from the 2010-2014 American Community Survey 5-year data set, and the low-income population profile map utilized census tract-level poverty status data from the same data set.

PSRC established a set of regional population thresholds to determine whether a census block-group or census tract had a regionally significant minority or low-income population concentration. For example, in Map 1 – Minority Population, Central Puget Sound: 2010, census blocks with a minority population share equal to or greater than the regional threshold – 31.2 percent of total population - are shaded in orange, whereas census blocks with a minority population share less than the regional threshold are shaded in blue.

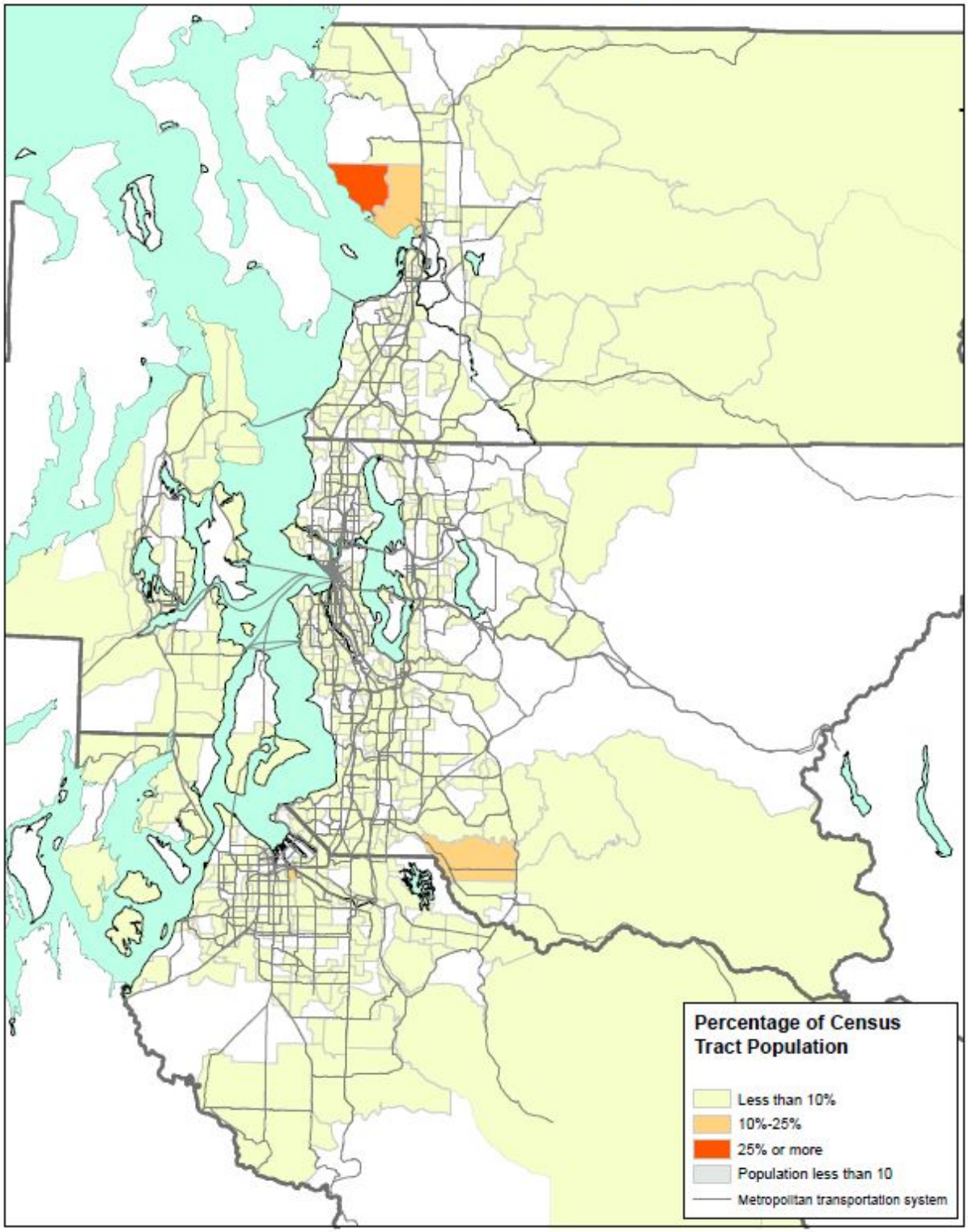
Map 1. Minority Population, Central Puget Sound: 2011-2015



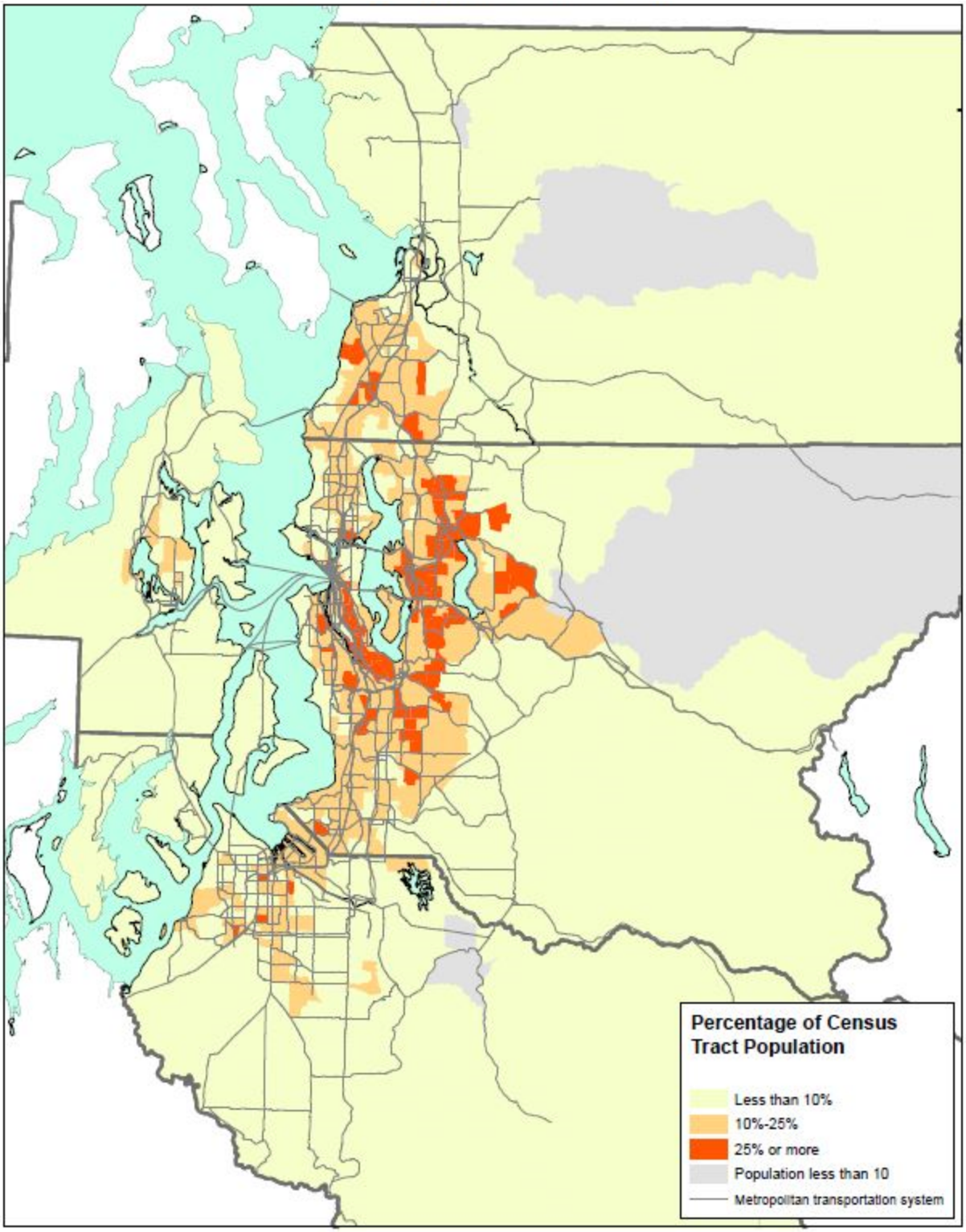
Map 2. Black/African American Population, Central Puget Sound: 2011-2015



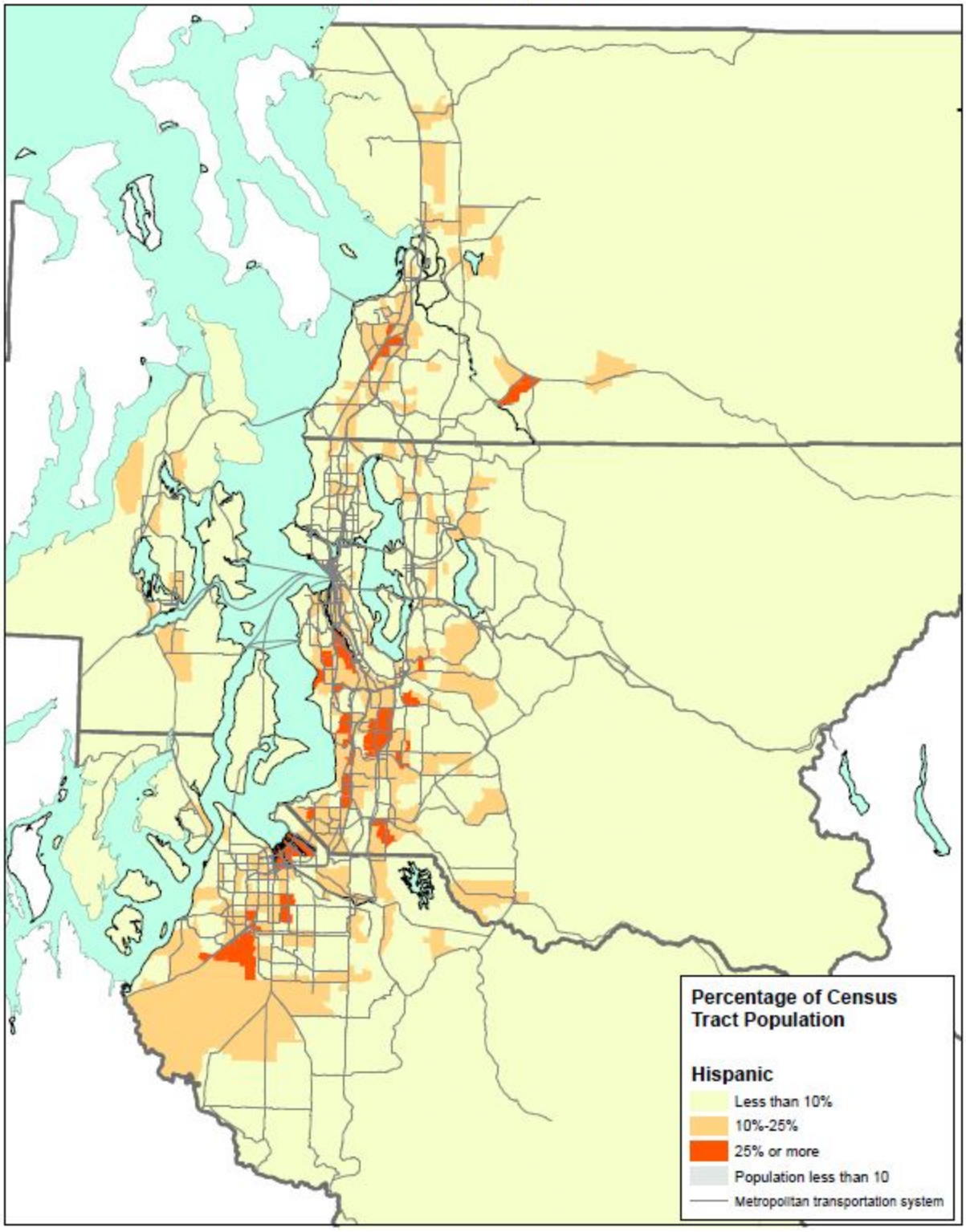
Map 3. American Indian/Alaskan Native Population, Central Puget Sound: 2011-2015



Map 4. Asian/Pacific Islander Population, Central Puget Sound: 2011-2015



Map 5. Hispanic/Latino Population, Central Puget Sound: 2011-2015



Between 2000 and 2015 the region's population grew by over 700,000 people. The population of people of color grew by 66 percent, rising from 770,000 to 1.28 million. This large rise represents 85 percent of regional population growth during this period. The Latino/Hispanic population saw the largest growth at 124 percent, growing from representing 5 percent of the total regional population to over 9 percent. More than 12 percent of the total population in the region is Asian/ Pacific Islander. This population grew by 81 percent from 2000 to 2015. The white population has the largest representation in the region, at 72 percent of the total population, but it saw the lowest population growth since 2010 at just 9 percent. The Black or African American population is the smallest of the total population at 5 percent and saw a growth of 37 percent.

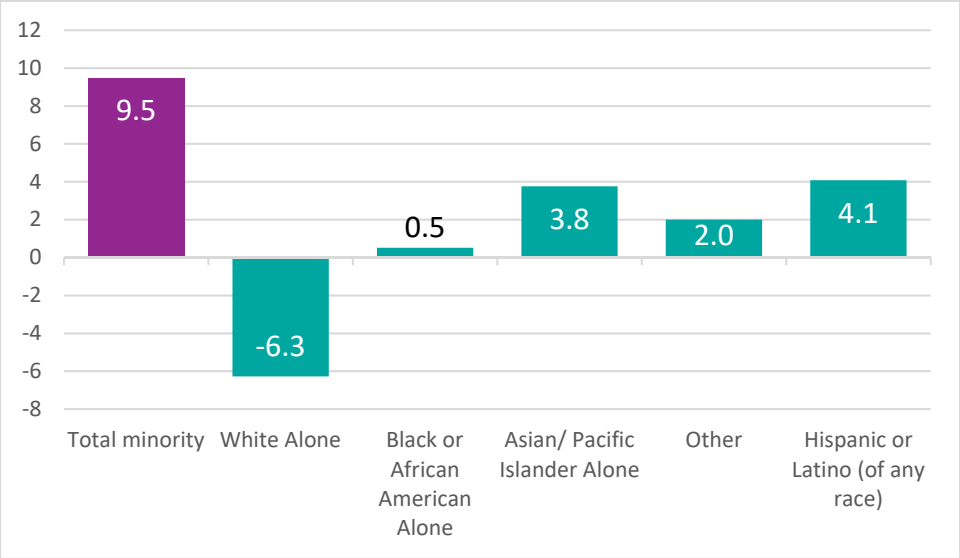
Table 1: Minority population as a share of total population by race/ethnicity, 2000-2015

	2000		2006-2010 average		2011-2015 average	
	population	% of total	population	% of total	population	% of total
Total population	3,275,847		3,603,425		3,869,802	
Total minority	771,790	23.6	1,075,940	29.9	1,279,583	33.1
White Alone	2,579,402	78.7	2,693,529	74.7	2,804,263	72.5
Black or African American Alone	159,206	4.9	189,669	5.3	207,976	5.4
Asian/ Pacific Islander Alone	286,964	8.8	411,090	11.4	484,472	12.5
Other	250,275	7.6	309,237	8.6	373,091	9.6
Hispanic or Latino (of any race)	171,982	5.3	295,265	8.2	360,947	9.3

Source: U.S. Census 2000; 2010 and 2015 American Community Survey 5-Year Estimates, tables B02001, B03002

The total minority population grew by 9.5 percent between 2000 and 2015. The largest percentage growth as a share of total population was the Hispanic or Latino population, with 4 percentage points of growth. The white population had 6 percentage points of decrease as a share of total population.

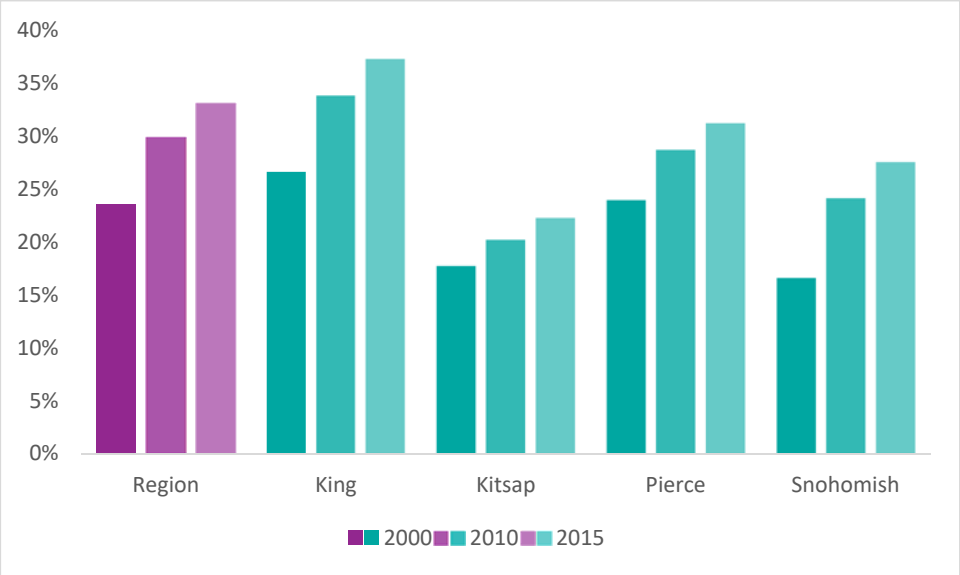
Chart 1: Percentage point change in population by race/ethnicity



Source: U.S. Census 2000; 2010 and 2015 American Community Survey 5-Year Estimates, tables B02001, B03002

The minority population as a share of total population is growing in each of the four counties in the region. Snohomish County has seen the highest minority population share of total population with 11 percent growth, followed closely by King County with 10 percent. Pierce County's minority population share has grown the slowest at just 4 percent, compared to the regional growth of 9 percent.

Chart 2: Minority population as a share of total population by county, 2000-2015



Source: U.S. Census 2000 U.S. Census Summary File 1; 2010 and 2015 American Community Survey 5-Year Estimates, tables B02001, B03002

PEOPLE WITH LOW-INCOMES

As defined in Chapter 2, a person whose household income is at or below the U.S. Department of Health and Human Services (HHS) poverty guidelines is considered low-income by the federal government but for the Puget Sound region, people at 200% of the federal poverty rate are considered low-income based on the cost of living in the Puget Sound region.

Twenty-five percent, or nearly one million individuals lived in households with annual incomes less than 200 percent of the federal poverty line in 2015. A low-income family of four has a household income at or below $48,500.

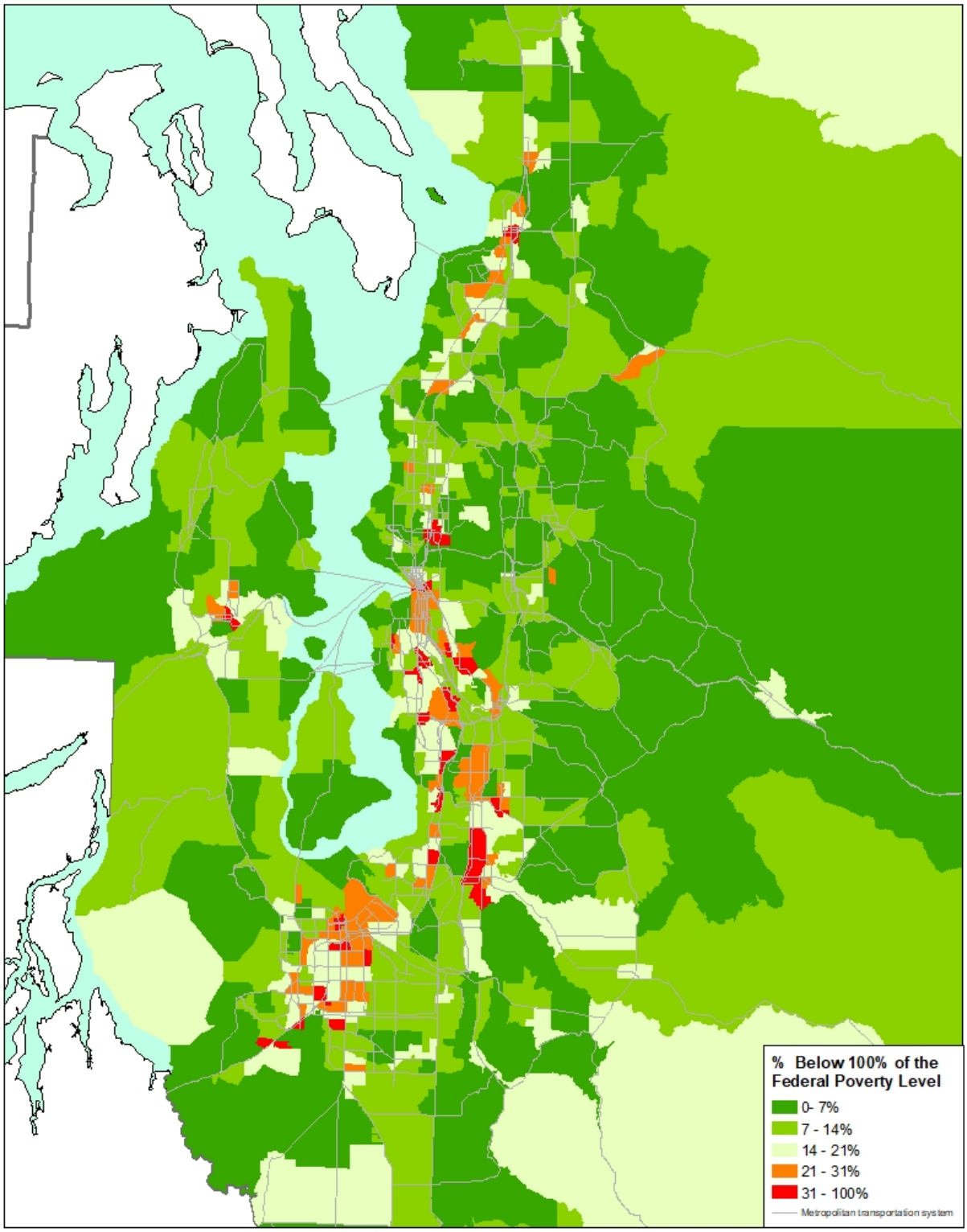
The U.S. Department of Health and Human Services releases an annual table of poverty guidelines showing family size and the respective income for 100 and 200 percent of the federal poverty level. These guidelines offer a simplified version of the U.S. Census Bureau's poverty thresholds used for statistical purposes.

Table 2: Income as a percentage of the federal poverty level by number of persons per household

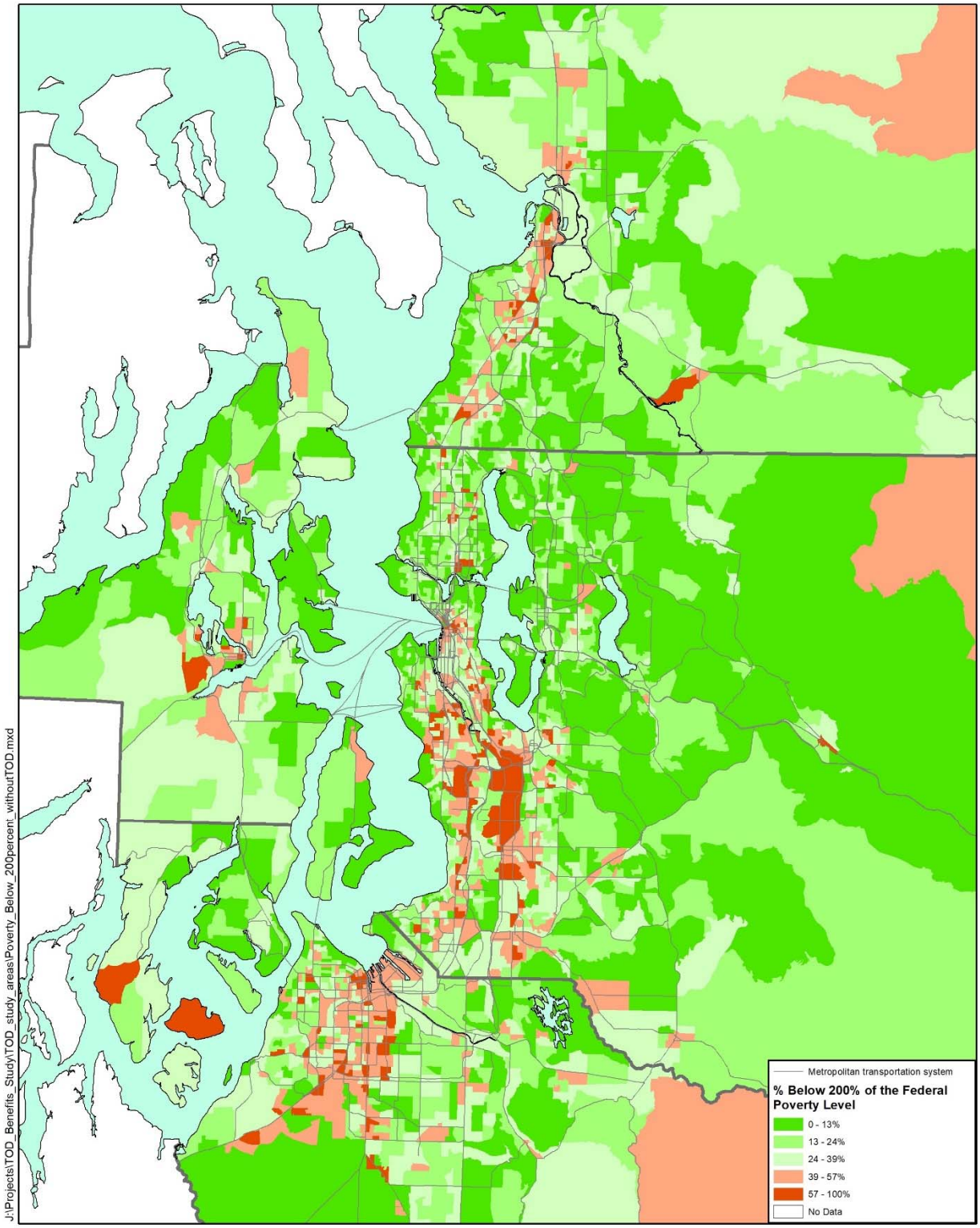
Persons in family household	Income	
	100%	200%
1	$11,770	$23,540
2	$15,930	$31,860
3	$20,090	$40,180
4	$24,250	$48,500
5	$28,410	$56,820
6	$32,570	$65,140
7	$36,730	$73,460
8	$40,890	$81,780

Source: U.S. Department of Health and Human Services 2015 Poverty Guidelines. https://aspe.hhs.gov/2015-poverty-guidelines

Map 6. People Below 100% of Poverty Level: 2011-2015

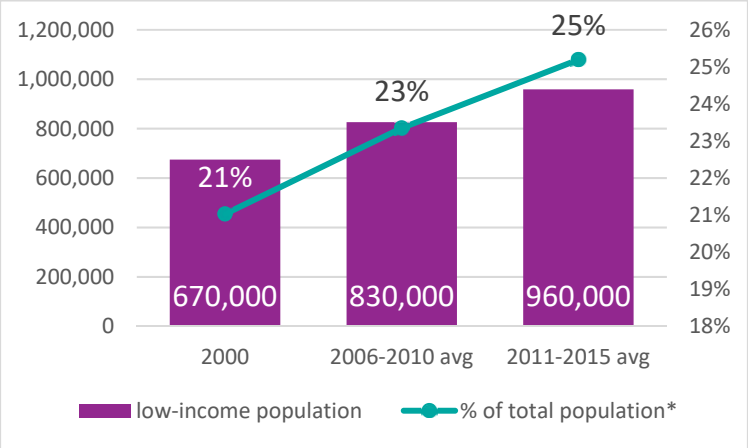


Map 7: People Below 200% of Poverty Level: 2011-2015



The following table shows the rate of population growth as compared to the share of people who are considered low-income. Even as the total regional population has increased in the same time-frame, the share of low-income households for whom poverty status is determined has steadily increased.

Chart 3: Number and share of individuals in Low-income households, Region, 2000-2015



Source: U.S. Census 2000; 2010 and 2015 American Community Survey 5-Year Estimates, tables C17002
*estimated for whom poverty status is determined

Kitsap County saw the lowest change in its share of low-income population with only a 1.8% rise from 2010 to 2015. Snohomish County's low-income population rose 5.5% over the same amount of time. In 2010, 26.0% of Pierce County's population was low-income. This has risen steadily to be 29.7% in 2015.

Chart 4: Low income population as a share of total population, 2000-2015*

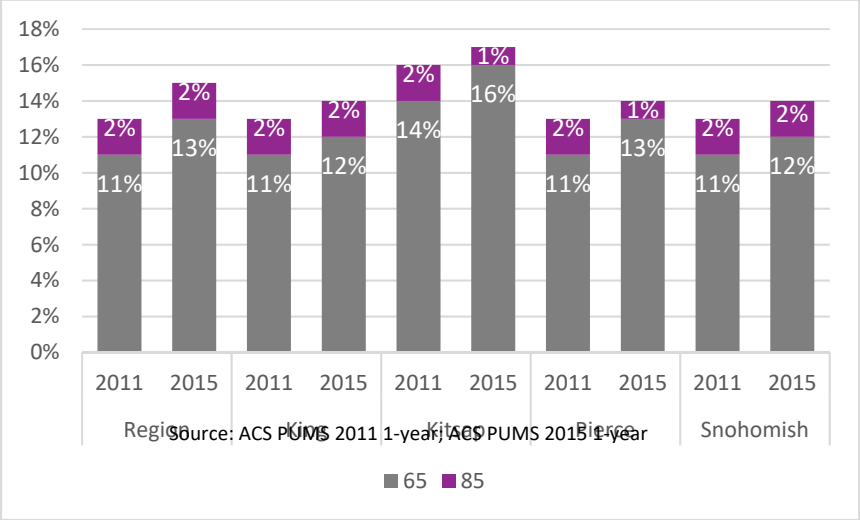
Source: U.S. Census 2000 U.S. Census Summary File 1; 2010 and 2015 American Community Survey 5-Year Estimates, tables C17002
*estimated for whom poverty status is determined

SPECIAL NEEDS POPULATIONS

The Coordinated Transit-human Services Transportation Plan ("Coordinated Plan") is included as Appendix H of the Regional Transportation Plan. The Coordinated Plan identifies the transportation needs of individuals with disabilities, older adults, youth, and individuals with limited incomes. Because the special needs population includes many different and overlapping groups, the distribution of these populations is region-wide. Density maps do not tell the full picture, nor communicate the needs to serve people with special needs. Likewise, the analysis in chapter 4 of this report is unable to separate the impacts for special needs populations from the region as a whole. However, additional data regarding these populations, identification of the needs and challenges as well as strategies to address them can be found in Appendix H.

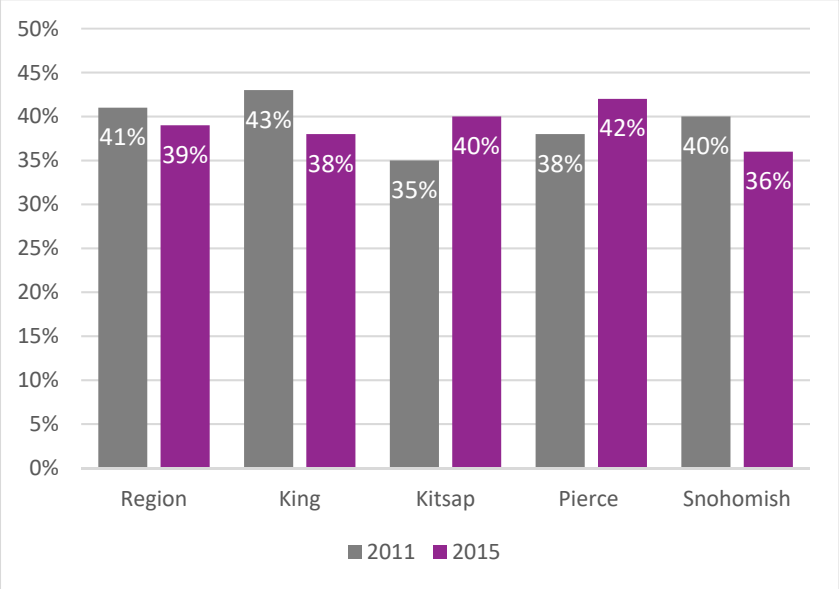
As is happening across the country, the share of older adults is rising in the region. Kitsap County has the highest share of individuals 65 and older. King, Pierce, and Snohomish counties are relatively consistent with regional shares.

Chart 5: Seniors as a share of total population, 2011-2015



Source: ACS PUMS 2011 1-year; ACS PUMS 2015 1-year

Chart 6: Persons with one or more disabilities as a share of total population, 2011-2015



Source: ACS PUMS 2011 1-year; ACS PUMS 2015 1-year

As a region, the number of persons with one or more disabilities as a share of total population is declining. This is consistent with King and Snohomish counties which have declined by 5 and 4 percent respectively. The shares in both Kitsap and Pierce counties have risen between 2011 and 2015.

TRAVEL CHOICES

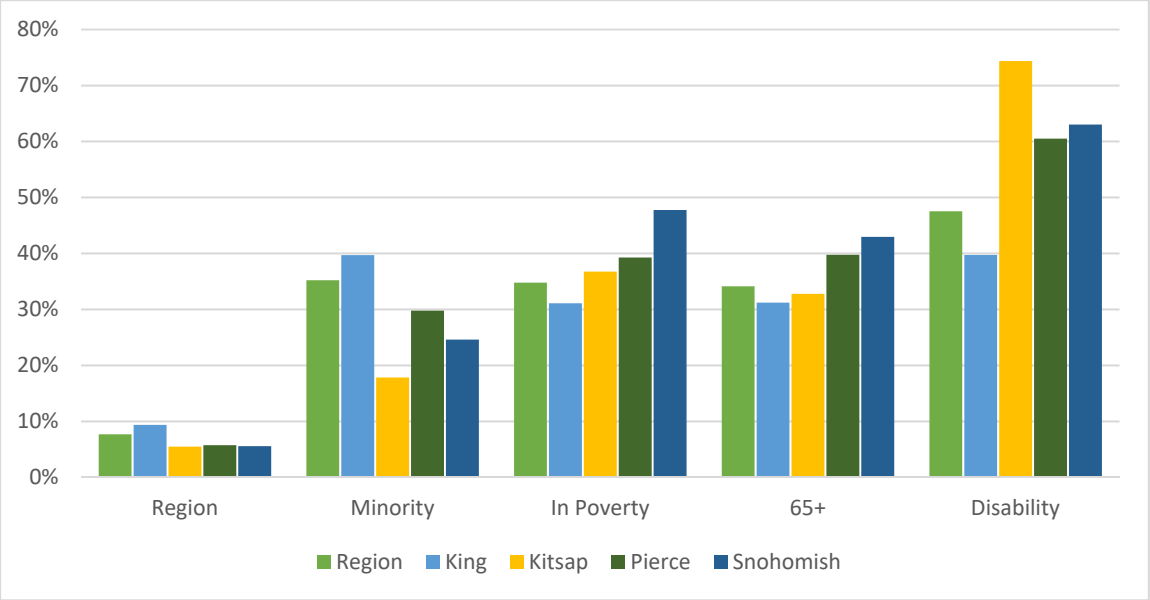
Regionally, the percentage of individuals who commute to work by transit is growing. Regional investments in the transportation system have given more people access to high capacity transportation. In King and Kitsap counties the number of individuals commuting to work by transit has increased by two percent. Overall transit commute rates in Pierce and Snohomish counties have stayed relatively flat.

Travel choices differ significantly for some people based on their race, income, age, or level of ability. As shown in the chart below, these groups are less likely to own a vehicle and are therefore much more dependent on other means of transportation, such as public transit. In Snohomish County, 48 percent of people in poverty do not own a vehicle and in Kitsap County for people with disabilities, the rate is at 74 percent. The growing population of aging adults and the high rate of people with no vehicle among these popluations supports the need for increased transit investments to serve populations and areas that might be transit dependent.

NOTE: Some of the popluations represented in the following chart may be represented in more than one group.

Vehicle Ownership

Chart 7: Percent of people with no vehicle - by household type, 2015



Source: 2015 American Community Survey 1-year Estimate, table B25045, 2015 ACS Public Use Microdata Samples

Commute mode choice also varies by race and income. According the American Community Survey data:

- People in poverty walk three times more than people above 150 percent of poverty.
- People below 150 percent of the poverty level have a four percent higher transit usage than people above.
- People above the 150 percent of poverty have a much higher rate of driving alone.

Table 3: Commute Mode Share by Poverty Status

	Commute Mode Share					
Poverty Status	Drove Alone	Carpool	Transit	Walked	Other	Worked at Home
100% below poverty level	57.0%	11.6%	12.8%	9.1%	2.9%	6.6%
100 to 149% below poverty level	63.9%	11.1%	12.5%	5.5%	2.6%	4.3%
At or above 150% of the poverty level	71.3%	10.0%	8.3%	2.9%	2.1%	5.4%

Similarly, the differences in mode choice vary by race.:

- Black workers have the highest transit commute mode share.
- Asian, Other, and Hispanic/Latino workers have the highest carpool shares.
- White workers have the highest drive alone and work at home commute mode shares.
- Commute by walking is similar for all races.

Table 4: Commute Mode Share by Race

	Commute Mode Share					
Race	Drove Alone	Carpool	Transit	Walked	Other	Worked at Home
White Alone	71.2%	9.1%	7.6%	3.6%	2.4%	6.1%
Black Alone	66.8%	9.8%	14.4%	3.5%	1.6%	3.9%
Asian Alone	63.7%	14.7%	12.5%	3.7%	1.4%	3.9%
Some Other Race Alone	67.3%	14.7%	9.3%	3.7%	1.8%	3.2%
Two or More Races	64.3%	14.2%	11.9%	4.0%	1.6%	4.0%
Hispanic or Latino Status						
White Alone, Not Hispanic or Latino	71.4%	8.8%	7.6%	3.6%	2.4%	6.3%
Hispanic or Latino	67.0%	14.9%	9.1%	4.5%	1.5%	3.0%

Source: 2014 American Community Survey 5-year Estimate, table B08122

Chapter 3: Methodology and Measures

PUBLIC ENGAGEMENT

Focused engagement for environmental justice and special needs

Between March and October 2017, PSRC with the help of EnviroIssues, conducted outreach to environmental justice and special needs populations with the goal of gaining meaningful feedback from people of color, people with low-income and people with special needs to inform the update of the Regional Transportation Plan and the Coordinated Transit-Human Services Transportation Plan appendix (Coordinated Plan) with the following objectives:

- Build awareness of upcoming and the Regional Transportation Plan and other regional plan updates
- Educate about the role PSRC plays in transportation planning
- Show how community partners can help to inform this process
- Make connecting and engaging with PSRC simple and easy to understand
- Provide opportunities for people to engage in a variety of ways
- Leverage existing relationships to aid robust outreach effort
- Help build long-term relationships, particularly with new community groups

The project team collaborated with local community based organizations (CBOs) to conduct outreach how, when and where it was most convenient for them. The team identified three general outreach approaches designed to engage these audiences; each approach allowed variability in execution to help the project team align outreach activities with specific CBOs and their audiences. More information and the results of these findings can be found in Appendix C, Public Engagement and Outreach.

Engagement with Decision Makers

In addition to the focused engagement with these groups, PSRC conducted special engagement sessions with the PSRC policy boards on various topics including equity. The Transportation Policy Board had two engagement sessions on the topic of equity, one in November of 2016, and another in April 2017 which included an extended session. The latter session involved PSRC working with the Center for Social Inclusion (CSI) which assisted PSRC with board engagement on this topic. Direction from the board on this topic included:

- Focus on who benefits with emphasis on understanding impacts to the most disenfranchised communities – those who need it most
- Where possible, evaluate how social determinants of equity support healthy outcomes (e.g., access to affordable, healthy food, access to health and human services)
- In addition to race, place and income, consider other aspects (age, disability, etc.)
- Consider social equity and access to opportunity (employment, education, medical support, healthy food)
- Measure impacts on racial/ ethnic communities when possible
- Provide resources to community organizations to enable them to engage
- Suburbanization of poverty an important topic
- Equity is both a process and outcome

In addition, CSI also provided feedback on a variety of documents and planning products through and equity lens. Feedback from CSI has been incorporated into the planning process and products.

The full summary from all the engagement sessions can be found on the PSRC website at https://www.psrc.org/our-work/transportation-2040.

SUMMARY OF REGIONAL OUTCOMES

Regional Outcomes

PSRC has an integrated and broad performance based planning program that examines historically observed data and develops forecasts for the future using the latest modeling techniques. Integrated throughout the planning process, measures are organized by a Regional Outcome Framework consisting of eleven key outcomes that have been developed to assess the regional policies and objectives in VISION 2040. The framework is then used to evaluate the overall performance of the Regional Transportation Plan, and it will also be used to help inform other stages of the transportation planning process, such as plan implementation and broader performance measurement programs currently being implemented related to federal performance monitoring requirements.

Regional Outcome Framework
Air Quality and Climate Change
Freight
Health
Jobs
Multi-Modal
Maintenance and Preservation
Puget Sound Land and Water
Safety and System Security
Social Equity and Access to Opportunity
Support for Centers
Travel

This performance-based evaluation program based on the Regional Outcome Framework includes Social Equity and Access to Opportunity. These performance measures are further detailed in Appendix K, System Performance Report. This Equity Analysis report will this measure in more detail.

Equity Geography Definition

Areas with disproportionately higher shares of people of color and low-income households are illustrated on the following maps. These are areas that will be analyzed as part of the outcomes section in Chapter 4 and are places that the region will regularly monitor as they have a potential for a higher risk of displacement.

People of color and people with low income are defined based on geographical analysis of US Census data. Census tracts where more than 50% of the households are non-white are grouped and analyzed together and compared against regional averages. Similarly, a low-income area includes only tracts where more than half of residents earn 200% the federal poverty level (a number that varies based on household size). From this process, unique geographies are generated, as shown below in Maps 8 and 9.

Map 8: Zones where share of people of color is greater than 50%.

Map 9: Zones where share of people with low income is greater than 50%.

A threshold of 50% was selected based on a similar equity analysis[2] performed by the Metropolitan Transportation Commission in the San Francisco Bay Area, and qualitative judgements to select a reasonably descriptive and unique set of geographies. Throughout the region, 25.2 percent of households are at 200 percent the federal poverty level, while 33.1 percent of residents are non-white.

Table 5. Definitions for Areas of People of Color and of Low Income

	Measure	*% Regional Population*	*Concentration Threshold*
Bay Area	People of Color	58%	70%
Bay Area	<200% Federal Poverty Level	25%	30%
Puget Sound	People of Color	33%	50%
Puget Sound	<200% Federal Poverty Level	25%	50%

[2] Metropolitan Transportation Commission http://www.planbayarea.org/2040-plan/plan-details/equity-analysis

Geographical boundaries are originally based on Census tracts, using 5-year ACS data for 2011-2015. For forecast measures however, traffic analysis zones (TAZs) are used to define geography. TAZs do not precisely geographically align within Census tracts, so logic rules were defined to decide where TAZ and Census zones overlap. Fortunately, individual parcels do nest within both TAZ and Census tracts, so a parcel layer was used to relate TAZ and Census zones. In cases where a tract overlaps with multiple TAZs, only the TAZ with the greatest number of parcels in the TAZ is selected.

Models and Tools

PSRC has recently deployed two new software tools to model land use and travel demand. The new land use modeling system, UrbanSim, simulates land development and the locations of jobs and people by using assessor data on parcels and buildings, employment data, survey data on households and persons, travel time data from the regional travel model, and future land uses compiled from local zoning and comprehensive plans. PSRC uses UrbanSim to produce Land Use Vision (LUV), a policy-based land use distribution product that is controlled to predefined city-level population and employment totals consistent with adopted regional growth targets including countywide growth targets and VISION 2040's Regional Growth Strategy.

The new travel model, SoundCast, uses the person-level data from LUV to predict how different people will use the transportation system based on their needs and preferences. UrbanSim and SoundCast are different from previous land use and travel demand models because they describe individual parcels/developments and the behavior of individual people instead of aggregated areas and generic trips. Variables included in these models related to equity are: household income, household size/presence of children, household number of workers, person age, and gender. By including these variables, PSRC can better understand how travel demand to different activities and places will change over time, and examine how different populations are impacted by different policies. For example, PSRC can model how travel costs for households with low income change when new road user charges are applied. PSRC can also model how transit use will change as the population ages. For more information about PSRC's analysis tools, see Appendix R.

Chapter 4: Summary of Findings

The central Puget Sound region continues to grow at a fast pace. In 2016, 82,000 new residents were born or moved into the region, with one million additional people expected by 2040. The economy is one of the hottest in the country, with 328,000 new jobs created since 2010, and growth likely to continue. By 2040, the population of the region is expected to reach nearly 5 million, and employment will reach nearly 3 million. That represents a 25 percent increase in population and 40 percent increase in jobs compared to 2016. This rate of growth has increased pressure on the region's housing market and transportation system, with housing costs, congestion, and the need for more travel options at the forefront of public concern.

KEY THEMES FROM PUBLIC ENGAGEMENT

Some of the key findings from the direct public engagement as described in Chapter 3 are as follows:

- Participants expressed a need for more transit options and increased frequency throughout the region. Participants noted cuts in transit services have been impactful and that some areas have not transit options whatsoever, particularly in more rural areas where more transit options are desired.
- A safer walking environment also ranked consistently high.
- Although seen as less important, maintenance and preservation ranked consistently across income groups. Adding or expanding roads ranked very low for low income groups and increased in importance with income.

Users of specialized transportation services identified the following needs as most important.

- Increase transportation services that connect rural/suburban areas to urban services
- Increase awareness of appropriate mobility options
- Being able to schedule and take trips in the same day
- Increased connections to areas outside of major activity hubs

Additional themes from the formal public comment period related to equity also mirrored some of these themes and offered others:

- Overall, there was wide support for increasing a focus on social equity, environmental justice, health, climate and public engagement.
- There is broad concern regarding how current and changing funding sources may affect lower-income people disproportionately, particularly those who have to move farther from jobs due housing costs.
- Comments also suggested a broadened definition of equity or expanded narrative to include people with disabilities and people experiencing environmental or other impacts due to proximity to places such as airports.
- Several comments focused on transit related equity topics such as including language on how important public transit is to equitable access to opportunity, that when park and rides fill-up early this does not accommodate people with alternate schedules, and that the access to transit narrative should also include accessible communications in terms of language or pointing people to accessible options.
- Other comments encouraged additional improvements in public engagement such as holding public meetings at accessible locations and times, offering childcare or other services to remove barriers to attending and that meetings and materials should accommodate multiple languages and in accessible formats.
- Several comments referenced the challenges in rural areas citing less investment in transportation and transit access and suggested to provide more distinction between rural areas and incorporated rural towns and cities.
- It was suggested that equity related performance measures include targets and that PSRC should monitor the combined transportation and housing burden index by income levels.

- There were also several comments related to increasing representation on the boards for people of color, those affected by poverty and for people with disabilities.

For the full summary of the public engagement efforts and results, see Appendix C, Public Engagement and Outreach.

FINANCIAL STRATEGY IMPLICATIONS

Potential impact of the plan's financial strategy will be determined by policy that will guide the implementation of user fees. When designing and implementing user fees, such as a Road Usage Charge (RUC), the design should be careful to consider the financial implication on different populations, particularly those with low incomes, or who live in remote areas with few transportation options. Existing regional programs, such as the ORCA Lift card and regional Reduced Fare Permits, have been designed by transit providers to offer reduced fares for low income, elderly, and disabled public transit users. These could serve as a model for how to consider fare structures for other user fees

REGIONAL OUTCOMES ADDRESSED IN THIS REPORT

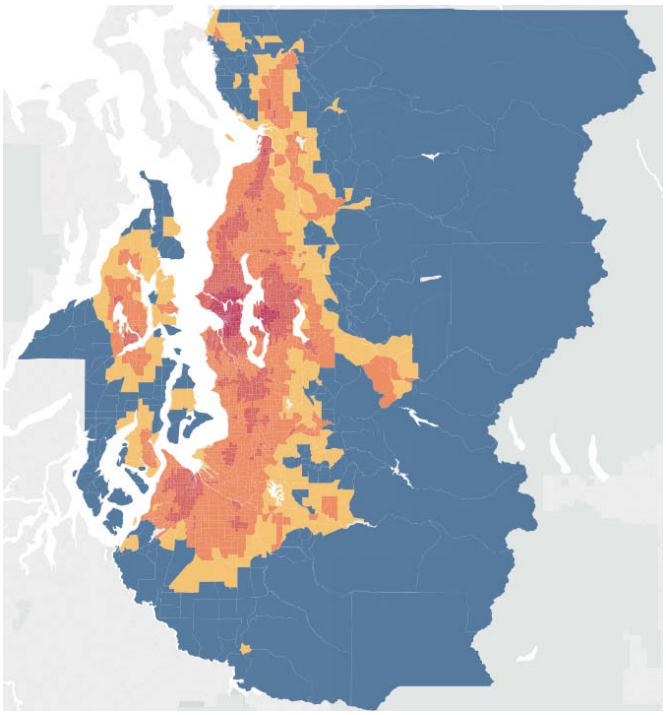
To determine how equitable the plan serves different groups, several measures were examined including accessibility, mode of travel, costs and travel times. These measures look overall at how the plan will impact populations in 2014 and how this will change when the plan is expected to be fully implemented in 2040.

Results in this section describe performance outcomes from 2040 forecasts compared to today, for the region and for the equity groups as defined above. The 2040 scenario represents all projects in the Regional Transportation Plan, along with land use inputs reflecting Land Use Vision and anticipated growth according to those policies.

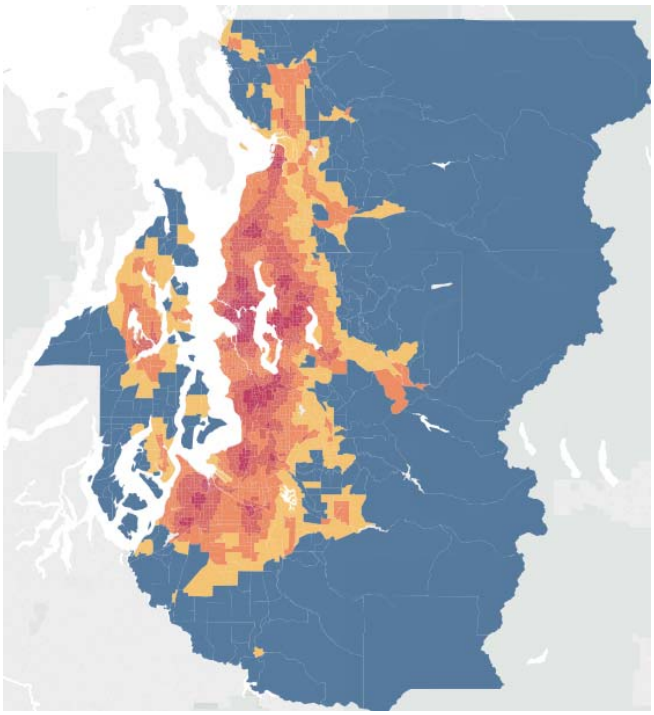
As will be presented in detail below, forecasts indicate that major investments in transit service and increased density lead to better accessibility, more walking and biking, and more transit ridership throughout the region. While many benefits increase overall on average, positive changes are usually greater than average for people of color and people with low income. As seen by improvements in accessibility, access to frequent transit, transit usage, active transportation, and costs, these groups are poised to experience greater than average benefits by 2040. Each section below describes some the measures and outcomes in detail.

A. *Accessibility*

PSRC has developed an index of transportation accessibility that expresses how easy it is for a person to reach destinations by any mode. This index represents the relative ease of reaching places to engage in activities like work, school, shopping, eating a meal, socializing, going to the doctor, or dropping off family members. The measure includes the time and cost involved by traveling by driving, walking, biking, and taking transit. This measure captures the aggregate impacts of transit improvements and land use changes, but also considers the role of vehicle access. Since this is a relative index, results are shown as color gradients, with darker red representing greater accessibility. Maps 10 and 11 below shows accessibility today as compared to accessibility resulting from the Regional Transportation plan.

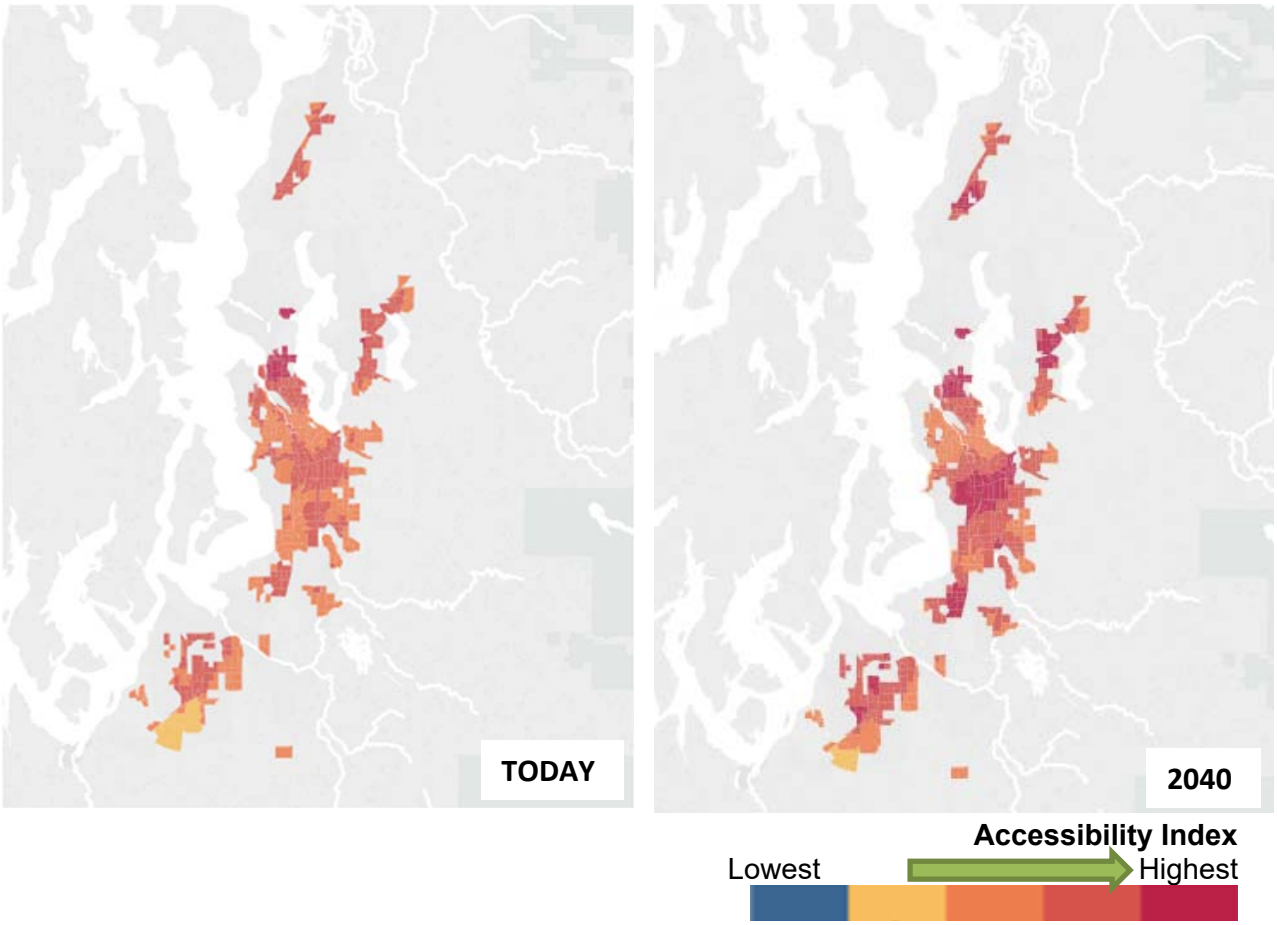


Map 10: Regional Accessibility Index Today



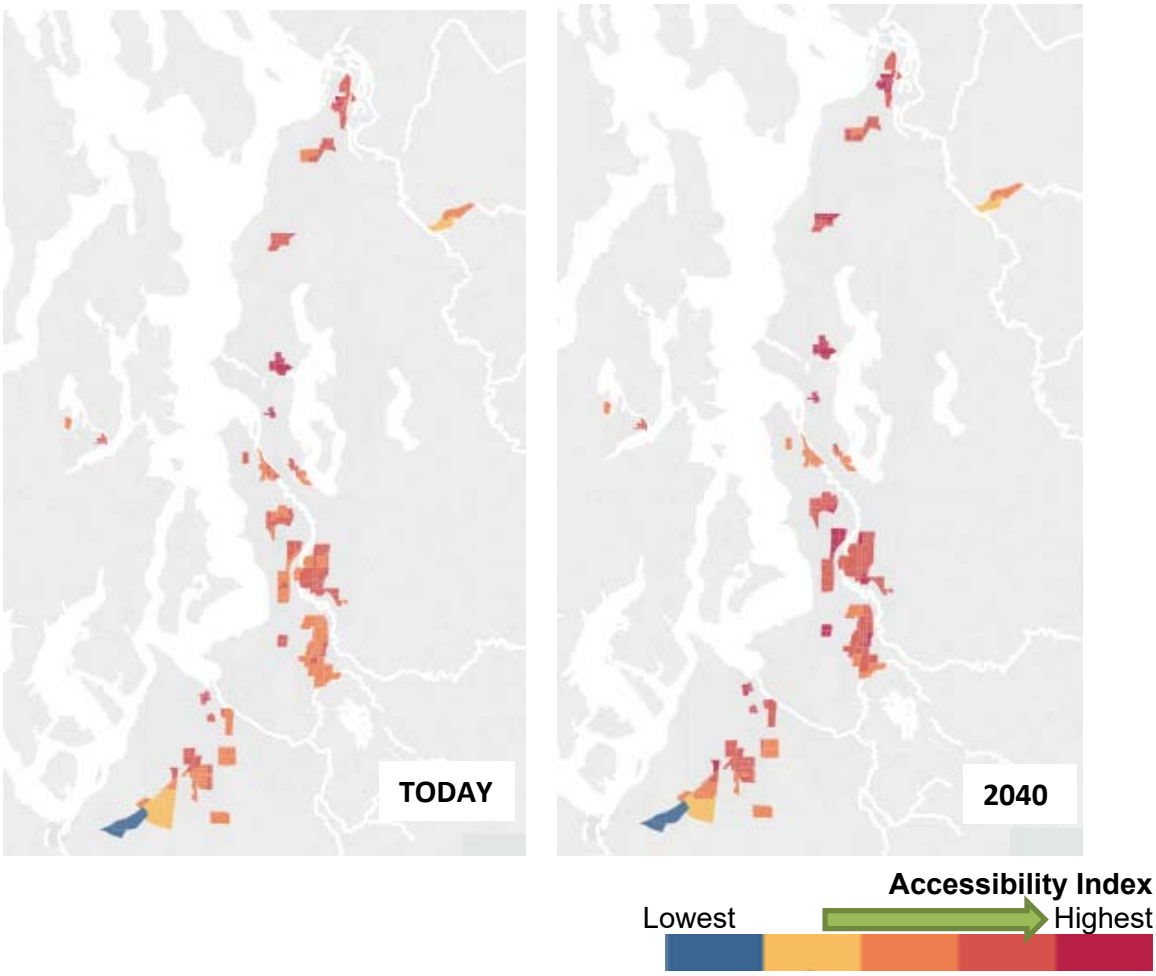
Map 11: Regional Accessibility Index in 2040

Maps 12 and 13: Accessibility Index for zones with more than 50% People of Color



For those living in areas with majority people of color, accessibility is seen to improve throughout, with especially noticeable gains in south King and Pierce counties. The relative accessibility of these areas becomes more apparent when considered against the entire region, such as in Map 13, for 2040, which shows that these areas are set to be within the most accessible locations in the region.

Maps 14 and 15: Accessibility Index for zones with more than 50% People with Low-Income

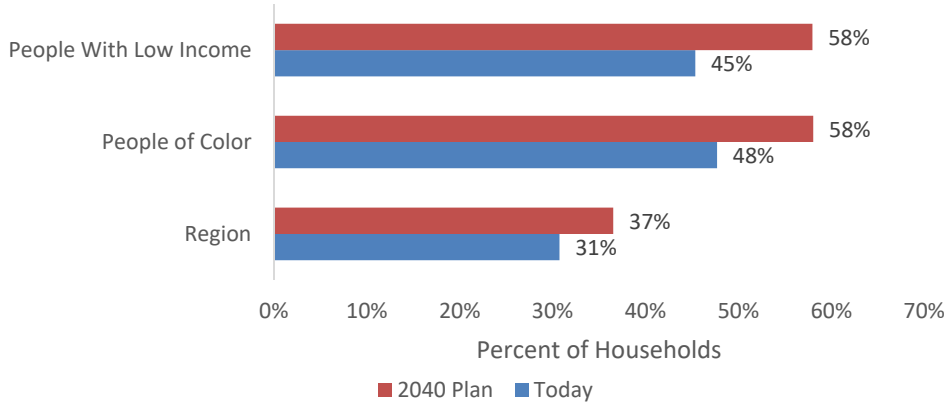


For those living in areas with majority people with low-income, accessibility is also seen to improve throughout, with especially noticeable gains in south King, north Pierce and in west Snohomish counties. The relative accessibility of these areas becomes more apparent when considered against the entire region, such as in Map 15, for 2040, which shows that these areas are set to be within the most accessible locations in the region.

B. Transit Access and Ridership

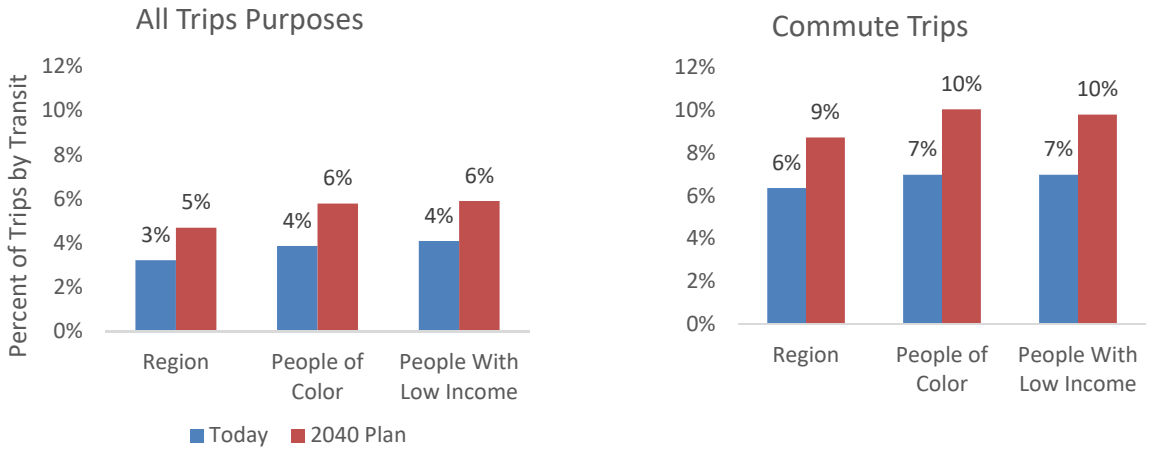
Similar to accessibility, a count of the households within a quarter mile walk to frequent transit provides a sense of how transit service coverage compares across equity groups over time. As seen below, 31 percent of the region has access to frequent transit today (vehicles arriving 15 minutes or better during morning and afternoon peak periods), rising to 37percent by 2040. The initial share of people with access to frequent transit is higher than the regional average for people of color and people of low income today, with nearly half of both groups within a quarter mile of high-quality transit. This increases for both groups to nearly 60 percent by 2040, which is a larger improvement compared to regional changes. These results suggest that transit investments, which make up a core of the plan, are already serving marginalized populations relatively well, and will improve service to these residents in the coming decades.

Chart 8: Households Within ¼ Mile of Frequent Transit



Improved transit access and performance will lead to increased transit mode shares, for all trip purposes but especially commute trips, as shown below.

Chart 9: Transit Mode Share for All Trip Purposes and Commute Trips Only



C. *Active Transportation*

In addition to transit improvements, more concentrated land use and investments in a regional bike network will provide more access through walking and biking, especially for the equity geographies considered here. By providing more opportunities to walk or bike to work, a friend's house, or to access transit, overall health and quality of life is improved. It is important to recognize that for some people, walking or bicycling may be the only transportation options due to the financial constraints of owning a car or the lack of transit access. For this reason, the walk and bike investments in the plan are important not only for improved health outcomes, but for the safety of people who may not have a choice.

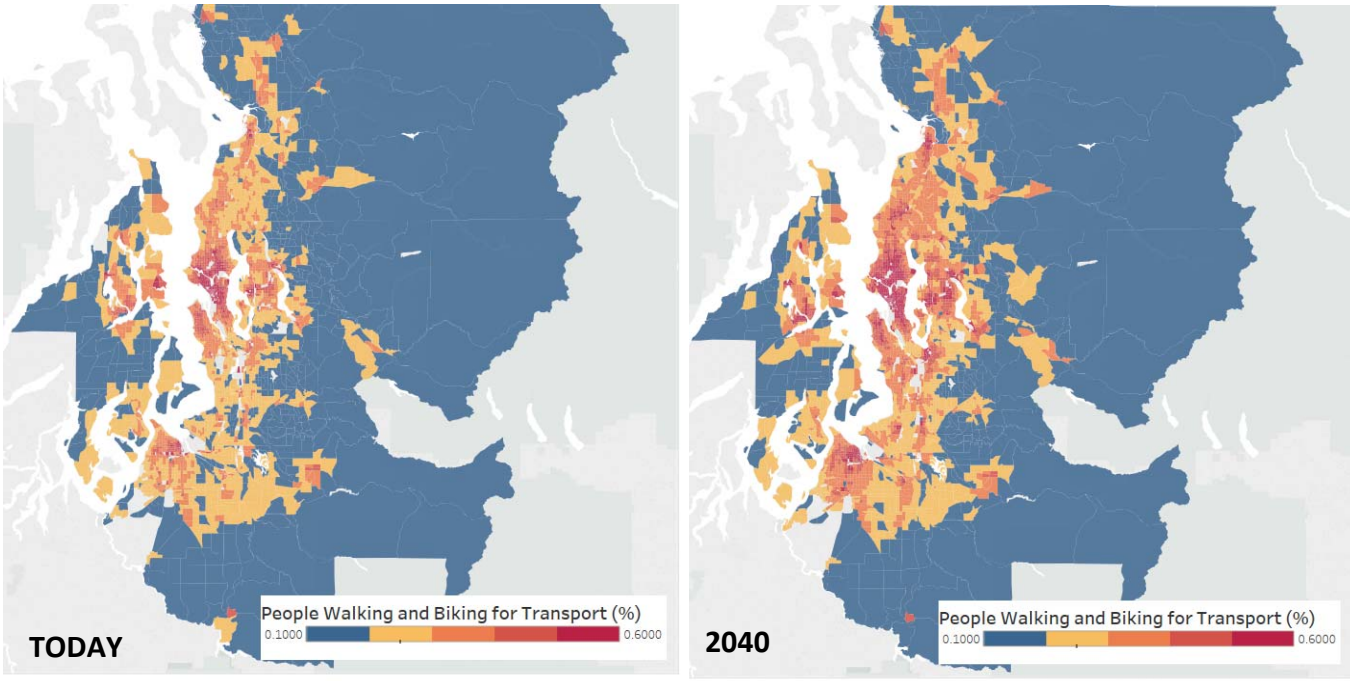
Table 6 below shows the percentage of people who walk or bike for transportation. This metric includes trips taken for transportation purposes such as going to work, school, to the grocery store or even the trip taken to get to a gym. It does not include reported trips for exercise such as going on a run, hike or for trips such as walking a dog (unless there is some other combined transportation purpose). The data comes from PSRC's household travel survey and is forecasted out to the year 2040. The percentage of people who walk or bike for transportation in the region is estimated to increase from 31 to 36 percent by 2040, an increase of about 16 percent. Today, people of color use active transportation just slightly more than the region on average, and people with low income slightly more than that.

The rate of change is highest for people in lower income areas, a 26 percent increase, and people of color not far behind at 22 percent.

Table 6: Percent of People walking and biking for transport

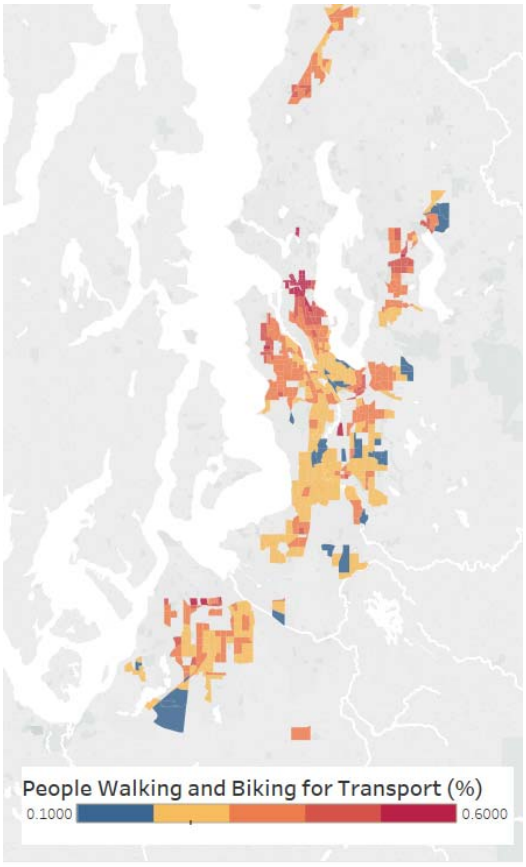
	Today	2040	Change
Region	31%	36%	+16%
People of Color	32%	39%	+22%
People with Low Income	35%	44%	+26%

Maps 16 and 17: Percent of People Walking and Biking for Transportation



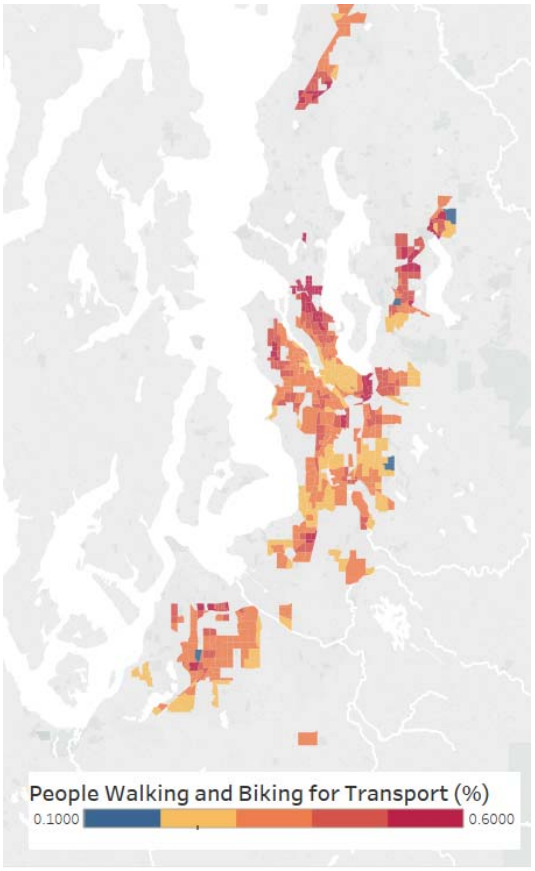
The geographical distribution of increases in active transportation for people of color are shown in the maps below.

Maps 18 and 19: Percent of People of Color Walking or Biking for Transport.



TODAY

Today in zones with more than 50% people of color

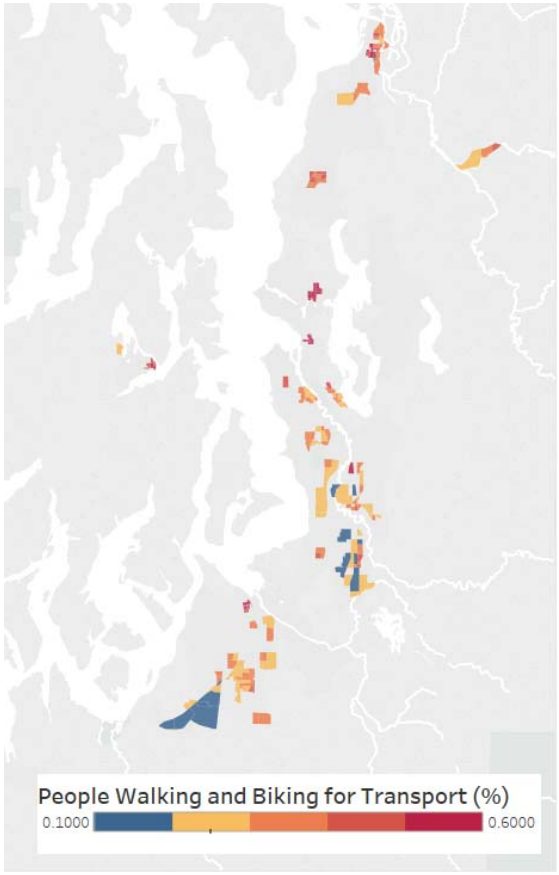


2040

2040 Plan in zones with more than 50% people of color

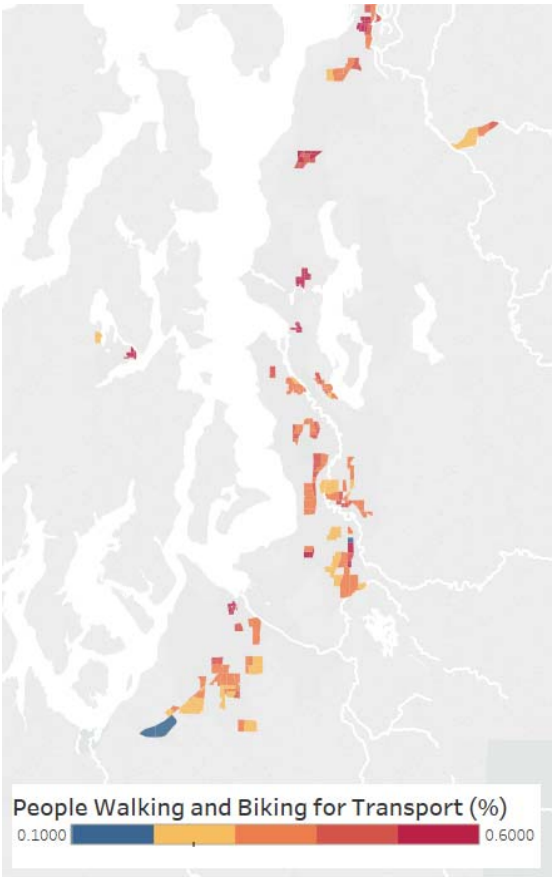
The geographical distribution of increases in active transportation for people with low-income are shown in Map 19, which also shows a significant increase in walking and biking rates for these geographies by 2040.

Maps 20 and 21: Percent of People Walking or Biking for Transport.



TODAY

Today in zones with more than 50% people of color



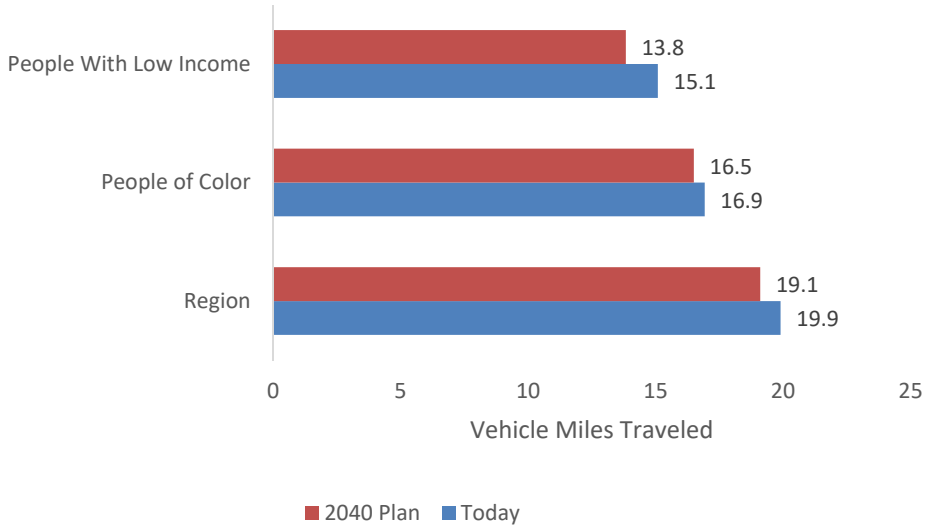
2040

2040 Plan in zones with more than 50% people of color

Delay and Vehicle Travel

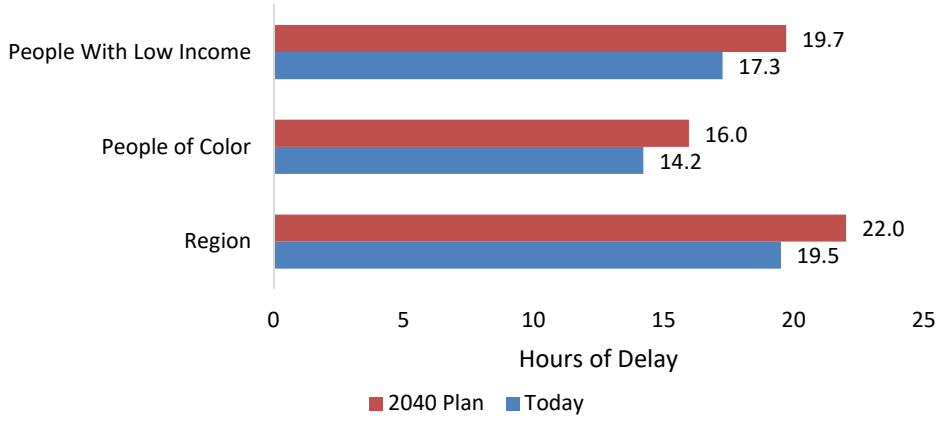
By providing more transit, walking, and biking opportunities, the average number of miles driven is forecast to decrease by almost a mile per day for the region on average. For people with low income and people of color, this drop represents even fewer miles driven in the future than today, which is considerably lower than the regional average, as shown in Chart 10. This reduction is due to an improved transit system in areas with high concentrations of people of color and people with low income combined with more opportunities to walk and bike and denser land uses for greater access to goods and services. Road usage charges also contribute to this reduction as this would be a disincentive for people to drive.

Chart 10: Average Daily Vehicle Miles Traveled per Person



Even with fewer miles traveled, by 2040 total vehicle delay is forecast to increase by about 2.5 hours more per year for the average person driving. This increase is however noticeably lower, especially for people of color, but also for low income households.

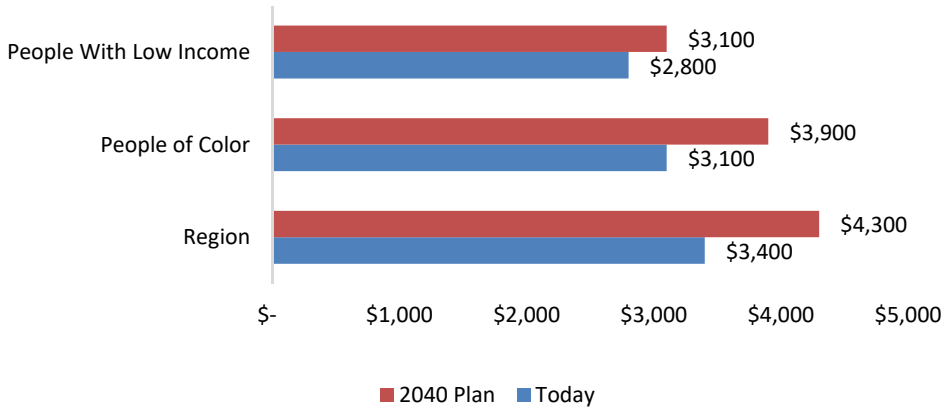
Chart 11: Average Annual Vehicle Delay in Hours



D. Transportation Costs

Projects and policies from the Regional Transportation Plan provide lower cost travel alternatives to driving. Though average costs are expected to generally rise by 2040 due to road pricing changes, the increase is much less for areas that have alternatives to driving. Chart 12 tallies average annual out-of-pocket costs between today and 2040. These costs include all immediate expenses like tolls, fuel, and transit fare. Though not considered here, fixed costs such as vehicle ownership and insurance are additional cost burdens associated with transportation.

Chart 12: Annual Out-of-Pocket Transportation



Of note is the relatively small increase in costs for low income households, which would pay about $300 more per year, versus an average household that would pay three times that amount. However, it is important to consider that $300 is an equivalent percentage of earnings for a household earning $20,000 as $900 is to a household earning $60,000 per year, so the magnitude of the increased costs can be misleading. Considering the 2040 average costs, a household earning $20,000 would be spending 15% of their income on transportation in 2040, while a household earning $60,000 would be spending less than half of that, at around 7% of their income. With this in mind, it is important to consider the role of low income discount programs like ORCA Lift and others to ensure the cost burden is fair across all levels of household income in the region.

POTENTIAL REGIONAL TRANSPORTATION PLAN BENEFITS AND BURDENS

As demonstrated in this report, implementation of the projects and programs in the Regional Transportation Plan is forecast to provide an array of benefits to the region. While many benefits accrue to the entire region, greater than average positive changes are generally seen for areas with higher concentrations of people of color and people with low incomes. Forecast improvements in accessibility, access to frequent transit, transit usage, active transportation, and relative costs, show these groups experience greater than average benefits through implementation of the plan. As discussed above, many potential burdens of transportation projects can be difficult to assess at the regional scale, and are more appropriately evaluated at the project level.

- Forecasts indicate that major investments in transit service and increased density lead to better accessibility, more walking and biking, and more transit ridership throughout the region.
- For those living in areas with majority people of color, accessibility is seen to improve throughout the region, with especially noticeable gains in south King and Pierce counties.
- Nearly half of areas with high concentrations of people of color and people of low income today are within a quarter mile of high-quality transit, greater than the regional average. Implementation of the plan's projects and services will put nearly 60 percent of these areas within easy range of high-quality transit, which is a larger improvement compared to the region as a whole.
- The percentage of people who walk or bike for transportation in the region is estimated to increase from 31 to 36 percent by 2040, an increase of about 14 percent. The rate of change is higher both for people in lower income areas, at 26 percent, and people of color at 22 percent
- By providing more transit, walking, and biking opportunities, the average number of miles driven is forecast to decrease by almost a mile per day for the region on average. However, with population growth, total vehicle delay will increase in 2040 by about 2.5 hours more per year for the average person driving. This increase is noticeably lower for people of color and low income households.
- Though average transportation costs are expected to generally rise by 2040 due to road pricing changes, the increase is much less for areas that have alternatives to driving. Of note is the relatively small increase in costs for low income households.
- However, it is important to consider how future fees and taxes could impact different household types and different parts of the region. When designing the implementation of future fees and taxes, decision makers should consider mitigation for lower-income areas or households. Successful mitigation programs for transit fare increases, for example, can be seen today in low-income come discount programs like ORCA Lift and regional Reduced Fare Permits for senior riders to ensure the cost burden is fair across all levels of household income in the region.

Chapter 5: Next Steps

FUTURE KEY TOPICS TO EXPLORE

- *Automated vehicles* and other transportation related technology is quickly evolving. Some aspects that should continue to be explored would the impact in terms of cost or access to new technology for different populations.
- As road pricing mechanisms, such as a Road Usage Charge (RUC), are implemented in the central Puget Sound region, policymakers should explore methods for how to mitigate potentially disproportionate impacts on lower income households or for people in more remote areas without other transportation (transit/rideshare) options.
- The rate of growth in the central Puget Sound region has brought increased pressure on the region's housing market and on its transportation system, with housing costs, congestion, and the need for more travel options are at the forefront of public concern. The cost burden of both housing and transportation is something that policymakers will need to closely monitor.
- Related to the increase in housing and transportation costs, displacement is a very considerable concern for many of the residents in the central Puget Sound region. PSRC is working on methods to evaluate displacement at a regional scale, and will continue to explore how to best evaluate and address displacement.

For more information on equity and Environmental Justice, see:

- Equity and Transportation Funding: Transportation Futures Outreach (PRR, 2015)
- 2016 Puget Sound Regional Council Title VI Plan
- Transportation 2040 Appendix I – Public Engagement (PSRC, 2010)
- Transportation 2040 FEIS Appendix M - EJ Public Outreach Summary Report (PSRC, 2010)
- Central Puget Sound Environmental Justice Demographic Profile (PSRC, 2016)