Puget Sound Regional Council

Appendix F

Environmental Justice and Social Equity Analysis

ENVIRONMENTAL JUSTICE AND SOCIAL EQUITY ANALYSIS FOR THE DRAFT 2017-2020 REGIONAL TRANSPORTATION IMPROVEMENT PROGRAM

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INTRODUCTION

The following report presents the results of PSRC's environmental justice and social equity analysis conducted for the 2017-2020 Regional Transportation Improvement Program (TIP). The concept of environmental justice, derived from Title VI of the Civil Rights Act of 1964 and other civil rights statutes, was first put forward as a national policy goal by presidential *Executive Order No. 12898: Federal Actions to Address Environmental Justice in Minority Populations and Poverty Populati*ons, issued in 1994. It directs "each federal agency to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and poverty populations." This concept is distinct from Title VI, which provides legal protection from discrimination on the basis of race, color, or national origin in federal programs.

The U.S. Department of Transportation (USDOT) has renewed its commitment to assure that environmental justice is carried out in the programs and strategies funded through the Federal Highway and Transit Administrations, including the activities of metropolitan planning organizations. Specifically, the USDOT has committed to the following principles: avoid, minimize or mitigate disproportionately high and adverse human health or environmental effects on minority and poverty populations; ensure participation by all potentially affected communities in the transportation decision-making process; and prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and poverty populations.[1]

Transportation investments can have both positive and negative impacts on nearby communities, with outcomes varying on a project-by-project basis. Negative effects can include disruption in community cohesion, restricted access to publicly funded facilities, safety concerns, higher exposure to hazardous materials, raised noise levels, increased water and air pollution, and other adverse effects. Transportation projects can also benefit communities by reducing travel times, increasing travel options, and improving mobility through increased access to jobs, schools, shopping and other community destinations.

This appendix first provides an overview of how PSRC has integrated environmental justice and social equity considerations into the development of the regional TIP through public outreach efforts and the inclusion of specific criteria as part of the project selection process for PSRC's federal funds. In the next section, all projects in the Draft 2017-2020 Regional TIP[2] are examined in relation to their proximity to populations identified in PSRC's demographic profile.

[1] http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/

[2] The analysis was conducted on the Draft 2017-2020 Regional TIP, containing project data through August 31, 2016. The final TIP will incorporate additional project revisions through October 2016, through PSRC's normal routine amendment process and reflecting obligations of federal funds.

INCORPORATING ENVIRONMENTAL JUSTICE AND SOCIAL EQUITY THROUGHOUT THE TIP PROCESS

The TIP implements the region's long-range transportation plan, Transportation 2040. All projects in the TIP must first be included in Transportation 2040, either as explicitly identified regional capacity projects or as part of the plan's programmatic elements. PSRC has integrated environmental justice and social equity considerations into the development of the TIP in a number of ways.

Transportation 2040 Development

The development of Transportation 2040 included focused attention on evaluating potential burdens and benefits to communities of color and households experiencing poverty. The plan was developed with substantial input from community leaders representing these communities, and an analysis was performed on the projects in all draft alternatives of Transportation 2040 to estimate their relative benefits to different user groups in the region. A summary of the community outreach and analysis, can be found in *Transportation 2040 Appendix G.* The results showed benefits to communities of color and households in poverty for all alternatives, but with substantially higher benefits for the preferred alternative. Moreover, under the preferred alternative geographic areas with higher percentages of poverty and minority populations were found to have greater user benefits than the region as a whole. More information on this analysis can be found in the *2010 Transportation 2040 Final EIS, Chapter 17*.

Project Selection Process

Consideration of minority and poverty populations has been included in the regional project evaluation criteria used in PSRC's project selection processes since 2004. Additional populations have since been incorporated, including elderly and people with disabilities. These criteria were included as part of the regional evaluation criteria for PSRC's 2016 project selection process, which recommended projects to receive FHWA and FTA funds managed by PSRC for federal fiscal years 2018-2020. The regional evaluation criteria used during the project selection process cover a variety of topics and can be found in Appendix B of the Draft 2017-2020 Regional TIP.

DATA AND METHODOLOGY

Demographic Data

PSRC developed a baseline *Environmental Justice Demographic Profile* as an initial step toward better integrating environmental justice into its transportation work program. The demographic profile presents key demographic data describing the central Puget Sound region and identifies population groups and communities to be considered for EJ analyses and activities. PSRC updated its Environmental Justice Demographic Profile in 2016. The report is based on data from the US Census Bureau 2010 US Decennial Census and the 2010-2014 American Community Survey (ACS) 5-Year Estimates. It focuses on several population groups, including those pertinent to this TIP analysis. Further information on this demographic profile can be found on the PSRC website at *www.psrc.org/about/public/titlevi/*.

Executive Order No. 12898 directs federal agencies to specifically identify and address impacts on minority and poverty populations. However, discussions of other populations protected by Title VI and related nondiscrimination statutes are encouraged in addressing environmental justice in federally sponsored transportation programs, policies, and activities. In this appendix, PSRC has expanded on previous analyses, which only looked at minority and poverty populations, to also include elderly and disabled populations. These groups have been included because of their potentially unique transportation needs.

The demographic groups investigated in this appendix are defined as:

- ***Poverty*:** Any person whose annual income fell below the US Department of Health and Human Services Poverty Guidelines in the American Community Survey was counted as in poverty. These thresholds vary by family size and range. For example, the poverty threshold in 2010 for a family of four with two children, interviewed in January 2010, was $23,614.
- ***Minority:*** A person was counted as a member of a minority group if he or she claimed any of the following identities in their census return: Black, American Indian or Alaskan Native, Asian, Native Hawaiian or Other Pacific Islander, or Hispanic.
- ***Elderly***: Individuals were classified as elderly if they were aged 65 years or over.
- ***Disabled*:** Individuals were classified as having a disability if they claimed any of the following types of disabilities: hearing, vision, cognitive, ambulatory or self-care.

TIP Project Data

The analyses discussed in this appendix are based on the projects included in the Draft 2017-2020 Regional TIP.[3] This includes all projects with current funding within the 4-year time span, including those funded with PSRC funds, as well as those with other funding sources.

[3] See footnote on page 2

Of the 298 total projects, 239 could be assigned to a geographic location and are included in this analysis. The remaining 59 projects could not be mapped because their scope of work is not tied to specific locations. Examples include maintenance, transit operations, and others that are programmatic in nature.

Mapped projects were assigned one of eight "project type" classifications to reflect the primary scope of work included in the project. Table 1 lists these types and the number of projects included in each classification.

Table 1: Project Improvement Types

Improvement Type	Project Count
Bicycle & Pedestrian	47
Highway Capacity Improvement	9
Multimodal Capacity	21
Preservation	83
Safety & Efficiency	51
Transit Capital & Expansion	21
Vehicles & Equipment	3
Other	4
Total	**239**

The geographic location of projects included in this analysis can be viewed through PSRC's *Online TIP Web Map*, available on the website at *http://www.psrc.org/transportation/tip*. The web map provides a way to view the projects' locations in relationship to the different demographic groups included in this appendix, as well as other information. This interactive map allows projects to be displayed at a range of scales, and includes descriptions and funding information for each project.

GEOGRAPHIC PROXIMITY ANALYSES

The Environmental Justice Demographic Profile summarizes the data for various populations by two different Census Bureau geographies: census blocks and census tracts. For the purposes of clarity and consistency, this appendix summarizes data for all populations by census tracts. Census tracts are "small, relatively permanent statistical subdivisions of a county or equivalent entity" that generally have a population size between 1,200 and 8,000 people. Their spatial size varies widely, depending on the density of settlement, with boundaries generally following visible and identifiable features.[4] The PSRC region is made up of 773 census tracts, encompassing a total population of 3.81 million individuals.

PSRC established a set of regional population thresholds to determine whether a census tract has a regionally significant concentration of a population of interest, disregarding tracts with populations below zero. Each was then classified as an area of interest or not based on the comparison of the tract's minority, low income, elderly and disabled population percentages to the regional threshold.

Table 2: Regional Population Percentage Thresholds

	Poverty	Minority	Elderly	Disabled
Regional Thresholds	11.3%	33.6%	11.2%	11.4%
% of Total Tracts	38.9%	40.1%	55.4%	43.7%

For the purposes of this report, any tract that exceeds the regional threshold for a population group of interest will be categorized as an "EJ tract." For example, in the central Puget Sound region, minorities comprise 33.6% of the population. Therefore, any tract in which more than 33.6% of the population self-identifies as minorities is deemed a "minority tract." Table 2 above provides detail on the regional thresholds for all of the populations examined in this analysis, as well as the proportion of census tracts in the region deemed EJ tracts for each demographic group. In the analyses on individual populations, tracts that surpass the corresponding regional threshold may be referred to as "poverty tracts," "minority tracts," "elderly tracts," or "disabled tracts." However, an individual tract may appear under more than one of these groups if it exceeds the regional threshold for more than one population.

The analysis discussed in this appendix describes various summaries of tracts that are "touched" by one or more projects. A tract was said to be touched by a project if any part of that project was located within 100 feet of the boundary of the tract. Region wide, 425 tracts were touched by one or more projects, representing 55% of all populated census tracts. Around 1.98 million individuals reside in census tracts touched by one or more projects, comprising 51.9% of the total regional population.

[4] https://www.census.gov/geo/reference/gtc/gtc_ct.html

Geographic analysis is commonly used in these types of assessments because it is easily interpretable and provides a means for visualization of spatial patterns of different population groups. However, a limitation of this level of analysis is that it counts all tracts equally, regardless of the size of the population within each tract. This is because its unit of analysis is the tract rather than the individual. For example, a tract with 100 people, 24 of whom are poverty, and a tract with a population of 25, six of whom are poverty, would both be counted equally as a “poverty tract.” In both of these areas, the proportion of people experiencing poverty is 24%, but the actual number of people that are in poverty in each tract is very different.

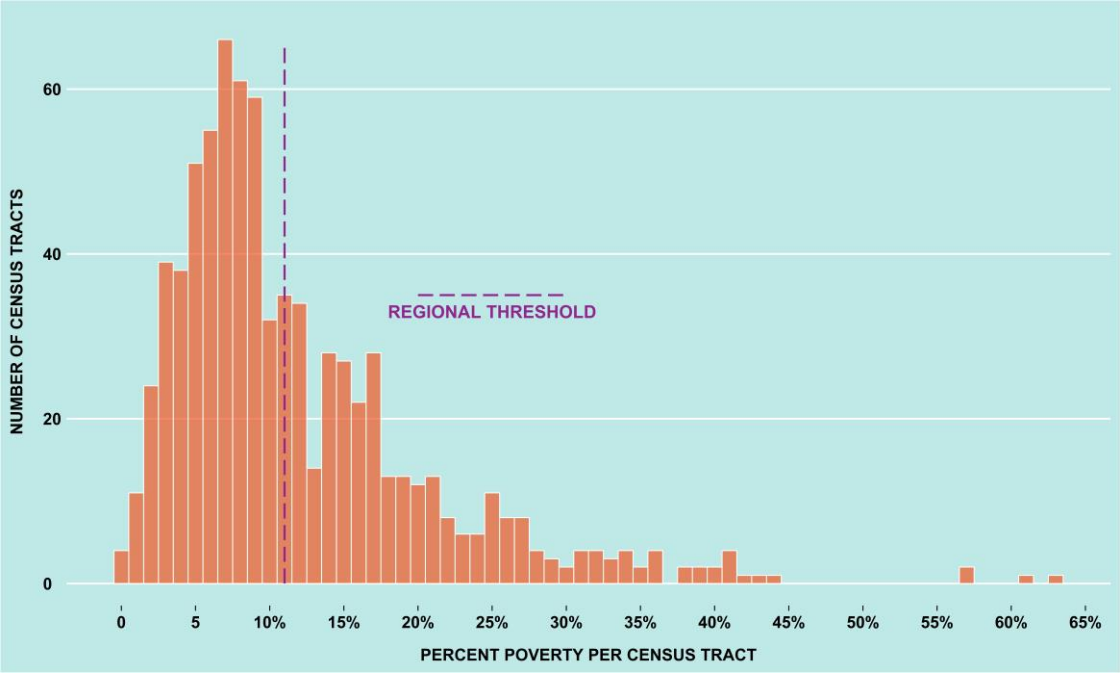
Another limitation of tract-level analysis is that it does not account for the relative proportion of populations of interest within census tracts. For example, a tract with 75% minorities and a tract with 35% minorities would both be counted equally as “minority tracts,” although there is wide variation in their proportionate minority population. For this reason, the analysis of each individual group includes a histogram chart that displays the distribution of the population percentages across every census tract in the region.

The following section first looks at each population of interest individually to determine which census tracts surpass the regional threshold for each group and how many of those tracts are touched by TIP projects. The individual maps are then aggregated into one map to determine which census tracts in the region surpass one or more group threshold, and which of those are touched by TIP projects. Finally, projects are broken out into project types and examined for their proximity to census tracts that contain various numbers of concentrations of populations of interest.

Poverty Population Analysis

Regionally, 11.3% of the population is living in poverty. Of all tracts region-wide with populations above zero, 38.9% were classified as poverty tracts. To get a better indication of the distribution of these populations, Figure 1 provides a graphic representation of the poverty population percentages for all individual census tracts in the region. The chart illustrates that there is a higher percentage of tracts below the regional threshold for poverty populations, and relatively modest numbers of tracts at varying degrees of percentages above the regional threshold.

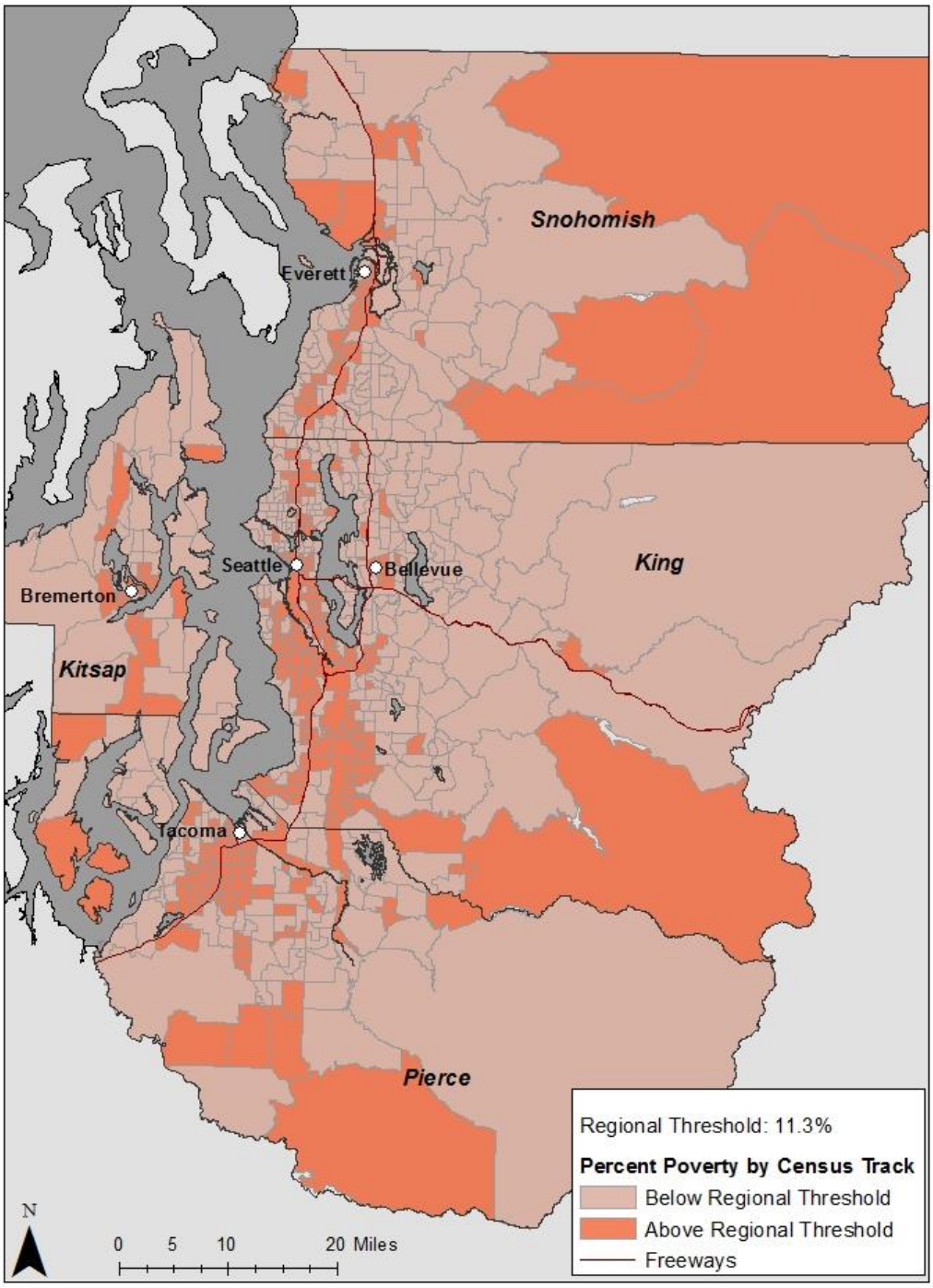
Figure 1: Distribution of Poverty Population Percentages of Individual Tracts



The map in Figure 2 displays the tracts throughout the PSRC region that fall below and above this regional threshold. Concentrations of poverty can be seen throughout the region's urban core, particularly along the Interstate 5 corridor and in central and south Seattle and the University District, south King County, Bremerton, and central and south Tacoma.

As mentioned previously, of all census tracts in the region, 425 tracts are touched by TIP projects. Of these, 44.47% are classified as poverty tracts, which is a moderately higher ratio than the 38.9% of all poverty tracts in the region.

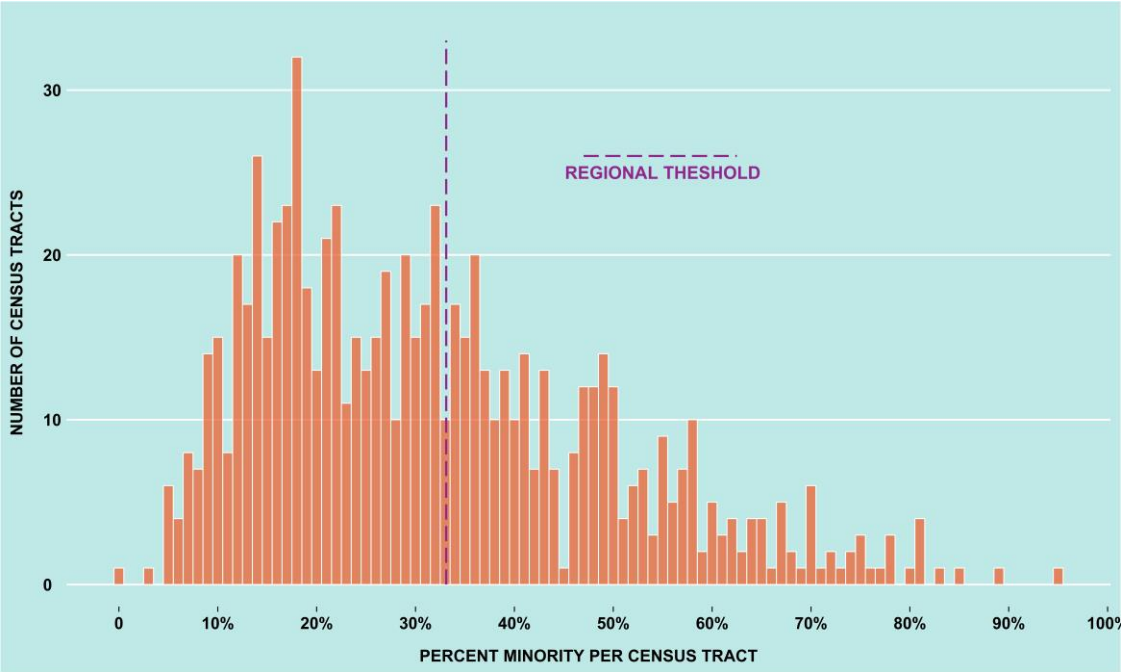
Figure 2: Poverty Tracts



Minority Population Analysis

Regionwide, 33.6% of the population are members of a minority group, as previously defined. Of all tracts region-wide with populations above zero, 40.1% were classified as minority tracts. Figure 3 provides a graphic representation of the minority population percentages for all individual census tracts in the region. The chart displays that minority population percentages for individual tracts are fairly broadly distributed above and below the regional threshold, with smaller numbers of tracts at varying degrees of percentages above the regional threshold.

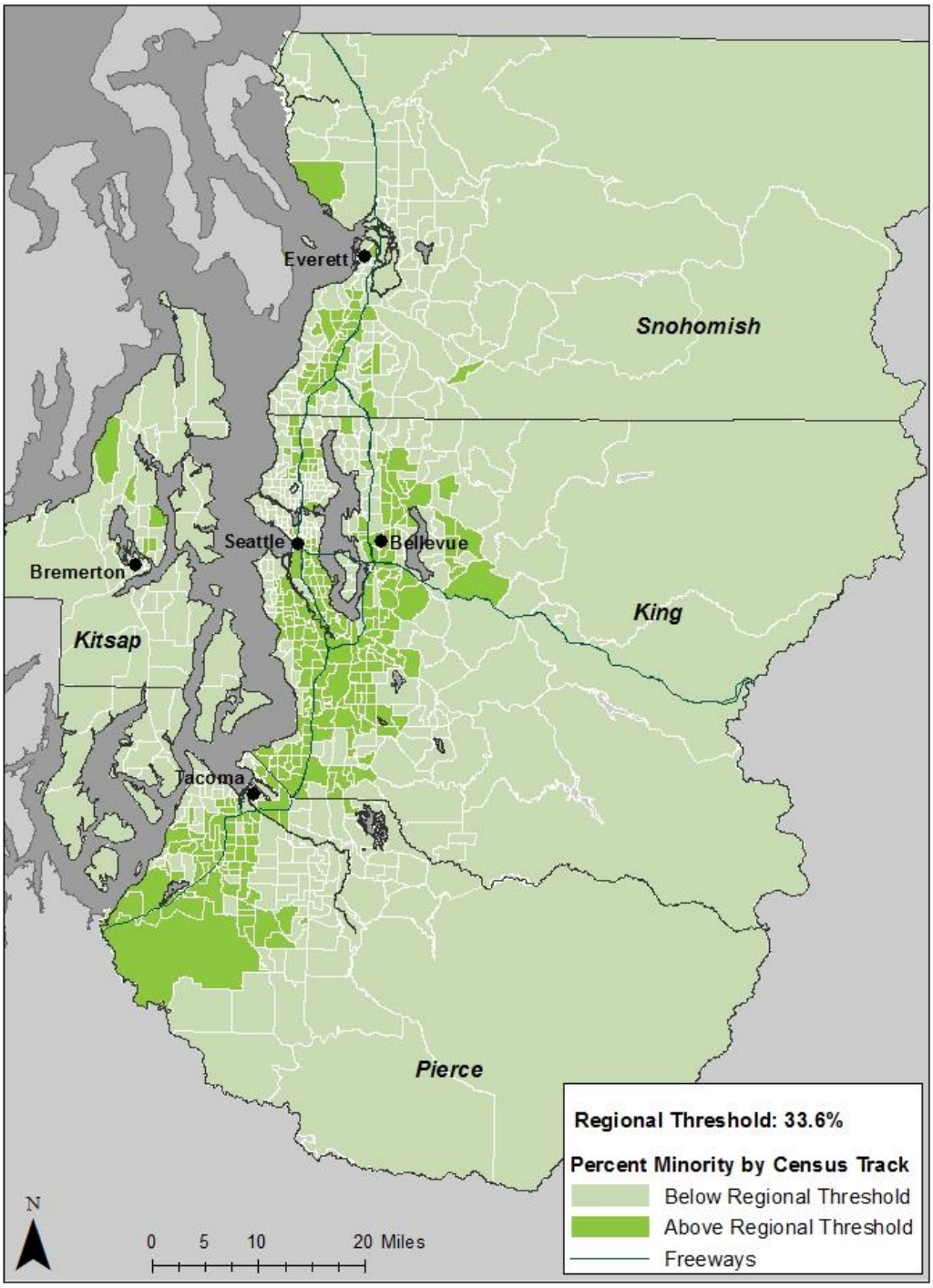
Figure 3: Distribution of Minority Population Percentages of Individual Tracts



The map in Figure 4 displays the tracts in the PSRC region that fall below and above the regional threshold for minority populations. Minority populations can be seen to be concentrated in the more urban areas of the region, particularly along the Interstate 5 and Interstate 405 corridors and in the Kent Valley, with an especially strong presence in central, south, and west Seattle and in central and south Tacoma.

Of all census tracts touched by projects, 45.65% are classified as minority tracts, which is a higher ratio than the regional percentage of minority tracts in total. Given that these tracts are concentrated in the urban population core, the presence of transportation investments in these locations seems logical.

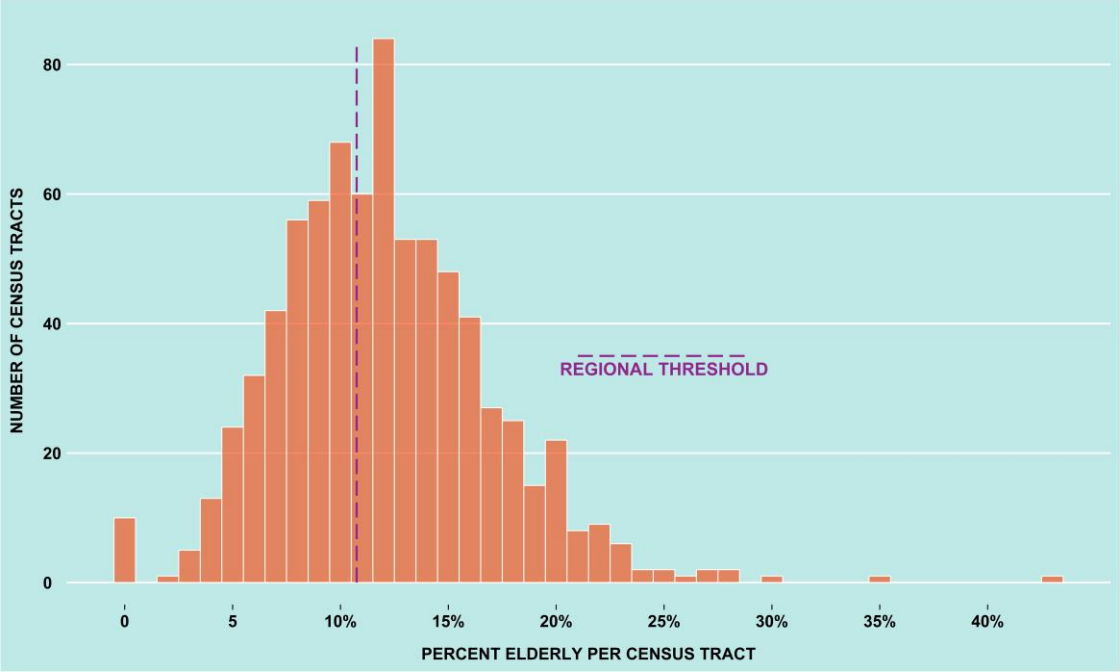
Figure 4: Minority Tracts



Elderly Population Analysis

Regionwide, 11.2% of the population is classified as elderly, defined as people 65 and older. Of all tracts region-wide with populations above zero, 55.4 percent were classified as having regionally significant concentrations of elderly populations. Figure 5 provides a graphic representation of the elderly population percentages for all individual census tracts in the region, illustrating the fairly even proportion of elderly tracts above and below the regional threshold.

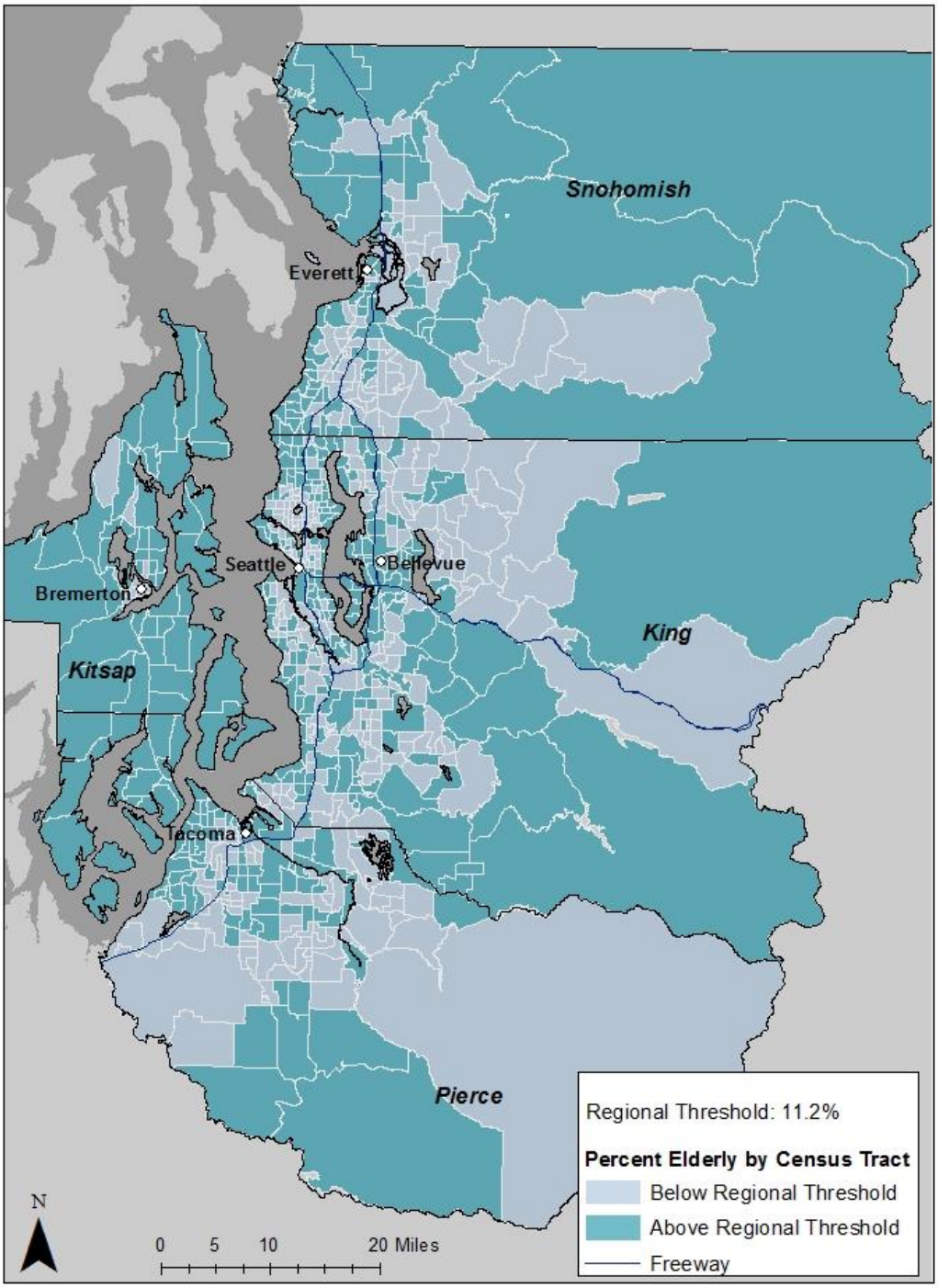
Figure 5: Distribution of Elderly Population Percentages of Individual Tracts



The map in figure 6 displays the tracts in the PSRC region that fall below and above the regional threshold for elderly populations. Unlike poverty and minority tracts, tracts with higher concentrations of elderly populations can be seen in large tracts in the more sparsely populated suburban and rural areas.

Of all tracts throughout the region touched by TIP projects, 22.1% are classified as elderly tracts. This is a much lower ratio than the total percentage of elderly tracts in the region, but is perhaps indicative of the large rural areas represented, outside of the more densely populated core.

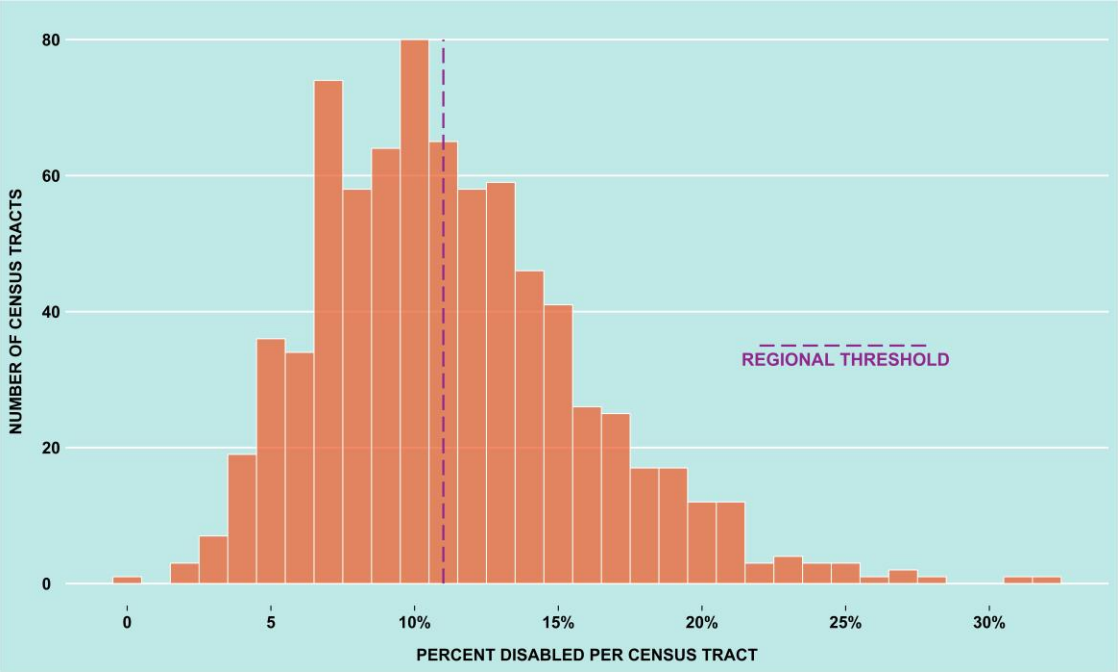
Figure 6: Elderly Tracts



Disabled Population Analysis

Regionally, 11.4% of the population is classified as disabled. Of all tracts region-wide with populations above zero, 43.7% were classified as surpassing the regional threshold for disabled populations. Figure 7 provides a graphic representation of the disabled population percentages for all individual census tracts. Similar to the elderly population analysis, the chart illustrates the fairly even proportion of tracts in the region with disabled populations above and below the regional threshold.

Figure 7: Distribution of Disabled Population Percentages of Individual Tracts



The map in Figure 8 illustrates the census tracts above the regional threshold for disabled populations. Similar to elderly populations, more tracts are found in the less populated areas of Kitsap, Pierce, and Snohomish counties.

Of all tracts in the region touched by TIP projects, 45.65% are classified as disabled tracts, which is a fairly close ratio to that of all disabled tracts in the region.

Figure 8: Disabled Tracts

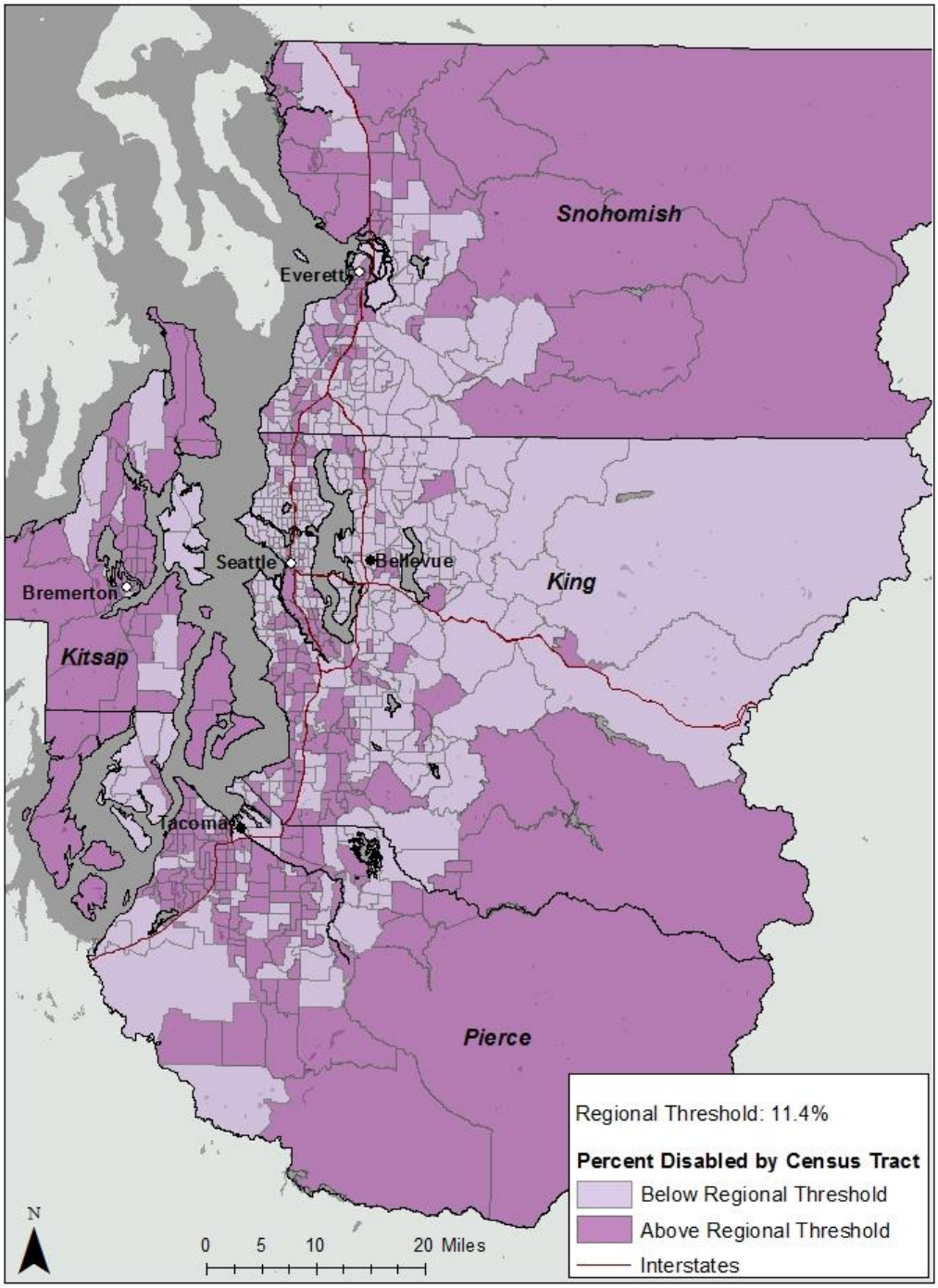
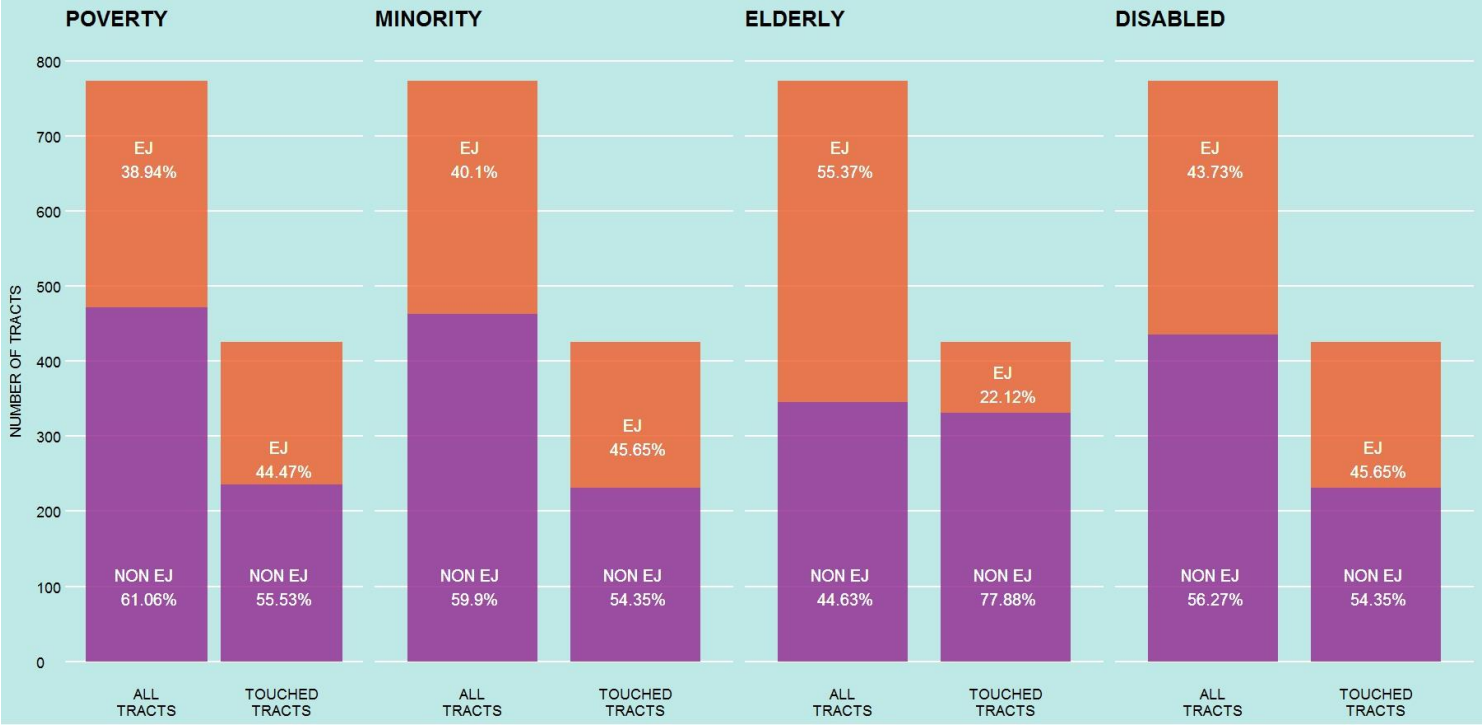


Figure 9 summarizes the data for each EJ group, illustrating the proportion of each group compared to the region as a whole, and the proportion of census tracts regionwide touched by TIP projects that are EJ tracts.

Figure 9: Ratio of EJ Tracts to Regionwide Tracts

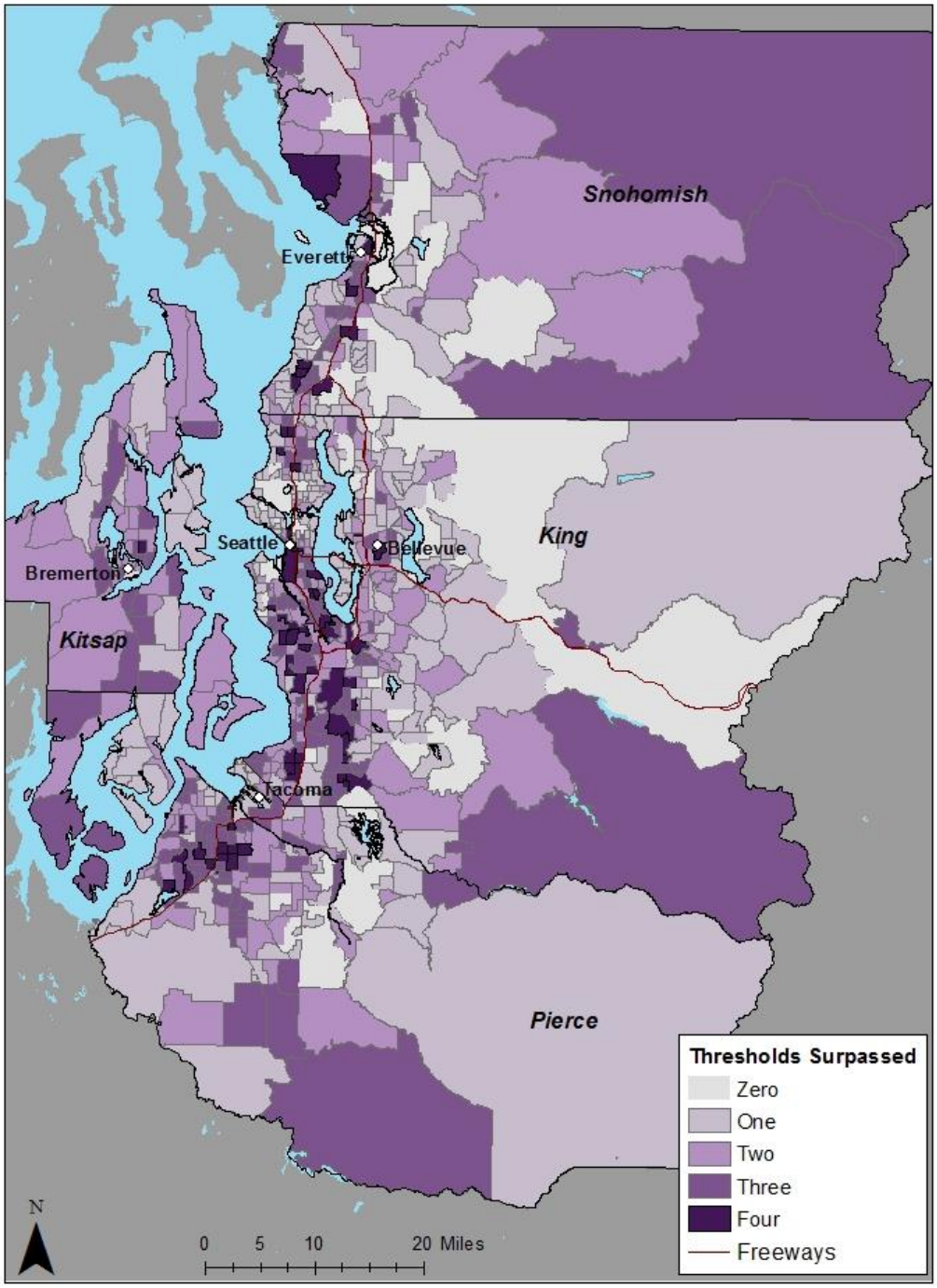


Aggregate Population of Interest Analysis

The map in Figure 10 shows the census tracts in the region classified according to how many regional thresholds they surpass. For example, if a tract surpasses regional thresholds for both minority and poverty populations, it is categorized as having a count of two. If a tract does not surpass any regional thresholds, it is categorized as zero. Tracts in which all four thresholds are surpassed are almost all located in the region's urban core.

Figure 11 summarizes the number of census tracts in the region that surpass between zero and all four regional thresholds, as well as the number of tracts touched by projects that surpass these thresholds. There appears to be a fairly even distribution, although there is a higher overall proportion of tracts touched by TIP projects that surpass three or more regional thresholds. Given that these areas are predominantly in the densely populated urban core, it seems logical that a higher proportion of transportation investments would be located there.

Figure 10: Tracts Surpassing Thresholds



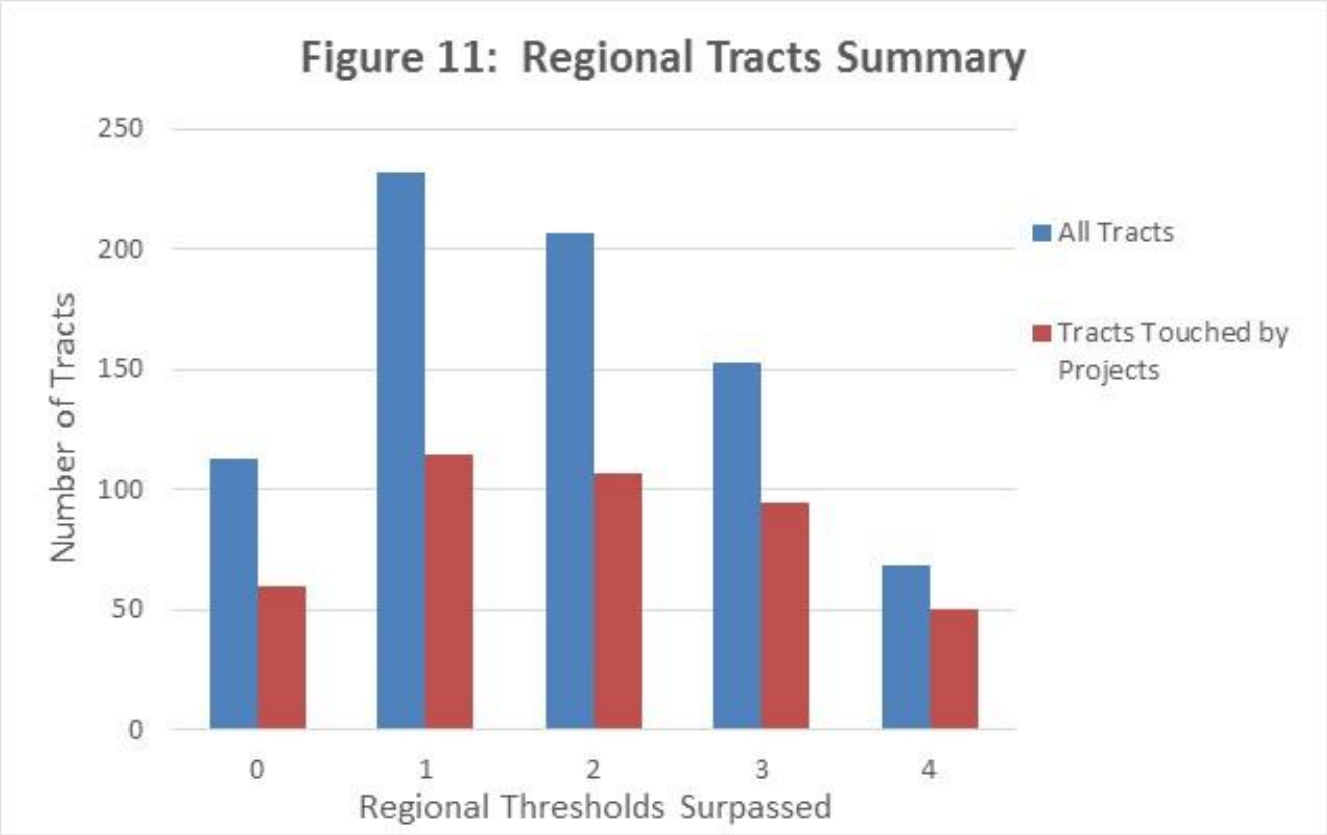


Figure 11: Regional Tracts Summary
250
200
150
100
50
0
Number of Tracts
0
1
2
3
4
Regional Thresholds Surpassed
All Tracts
Tracts Touched by Projects

Distribution of Projects by Type

Table 3: Distributions of Project Improvement Types by Thresholds Surpassed

Project Type	Number of Tracts Touched Regionwide	Zero	One	Two	Three	Four
Bicycle/Pedestrian *(47 projects)*	101	15%	23%	25%	27%	11%
Highway Capacity Improvement *(9 projects)*	39	8%	51%	21%	15%	5%
Multimodal Capacity *(21 projects)*	46	11%	26%	26%	28%	9%
Preservation *(83 projects)*	168	20%	27%	25%	21%	7%
Safety/Efficiency *(51 projects)*	197	12%	28%	23%	20%	17%
Transit Capital & Expansion *(21 projects)*	109	10%	26%	24%	27%	14%
Vehicles/Equipment *(3 projects)*	4	0%	50%	0%	25%	25%
Other *(4 projects)*	8	63%	25%	13%	0%	0%

Table 3 shows how many projects fall under each project improvement type and the total number of census tracts in the region touched by those projects. The census tracts touched by each project improvement type are then broken out by the percentage of tracts that fall under each of the EJ regional threshold categories previously defined.

As can be observed in Table 3, most project improvement types are fairly equally distributed across the different categories, particularly in census tracts that surpass between one and three EJ regional thresholds. The improvement types with fewer projects represented, such as Highway Capacity Improvement, Vehicles/Equipment and Other, are less evenly distributed, but given the small number of these projects that seems a logical outcome.

SUMMARY AND CONCLUSIONS

As previously described, the TIP implements the long range transportation plan, Transportation 2040, which itself underwent substantial environmental justice review, analysis and outreach. All projects in the TIP must first be included in Transportation 2040, either as explicitly identified regional capacity projects or as part of the plan's programmatic elements.

The overlay analysis discussed in this appendix is an investigation into the physical proximity of the projects in the Draft 2017-2020 Regional TIP in relationship to census tracts with regionally significant concentrations of populations of interest. Regional analyses of this kind do not directly assess benefits and burdens related to outcomes of specific projects or programs; that level of analysis would be made during the environmental analysis of individual projects.

Projects may be viewed via PSRC's *Online TIP Web Map*, and it is important to note a few points for consideration. First, the map does not account for the population density of the census tracts. Secondly, the Draft 2017-2020 Regional TIP only contains projects with funding over that four-year period. Some census tracts that are not currently touched by any projects may be touched by projects from previous TIPs, which do not appear on the map, or will have future investments made. Also, the map also does not portray current transportation services and conditions in census tracts.

The results of this analysis indicate for the most part a logical and fairly even distribution of projects across the region and areas with high concentrations of populations of interest. Given the location of many of these populations within the densely populated urban core, with higher regional concentrations of population and employment, it appears logical that transportation investments would be more heavily focused in these areas.