REGIONAL TRANSPORTATION PLAN

2026–2050

DRAFT

HEALTH

Final Draft - April 2026

Puget Sound Regional Council

Americans with Disabilities Act (ADA) Information
Individuals requiring reasonable accommodations may request written materials in alternate formats, sign language interpreters, physical accessibility accommodations, or other reasonable accommodations by contacting the ADA Coordinator, Thu Le, at 206-464-6175, with two weeks' advance notice. Persons who are deaf or hard of hearing may contact the ADA Coordinator, Thu Le, through TTY Relay 711.

Title VI Notice
PSRC fully complies with Title VI of the Civil Rights Act of 1964 and related statutes and regulations in all programs and activities. For more information, or to obtain a Title VI Complaint Form, visit https://www.psrc.org/about-us/title-vi.

Language Assistance
عربي Arabic | 中文 Chinese | Deutsch German | Français French | 한국어 Korean | Русский Russian | Español Spanish | Tagalog | Tiếng việt Vietnamese

Visit https://www.psrc.org/contact-center/language-assistance

Funding for this document provided in part by member jurisdictions, grants from the U.S. Department of Transportation, Federal Transit Administration, Federal Highway Administration and Washington State Department of Transportation.

Additional copies of this document may be obtained by contacting:

Puget Sound Regional Council
Information Center
1201 Third Avenue, Suite 500
Seattle, WA 98101-3055
206-464-7090 | info@psrc.org | psrc.org

Contents

Introduction

Promoting health and quality of life for all individuals through informed choices is an interest in every community. Transportation decision making at the state, regional, and local levels offers an opportunity to identify and consider the health implications of transportation options before making final decisions about infrastructure improvements. Specific health needs and priorities will vary by community. This means transportation practitioners should collaborate with related agencies, health professionals, and community partners, and engage in meaningful consultation with Tribal communities early and often to identify transportation solutions that will reduce environmental health disparities in overburdened communities and support community health to achieve shared goals.

Characteristics of land use and attributes of transportation systems have profound impacts on public health and health equity. Evidence shows increased risk of cancer, cardiovascular and respiratory disease, and obstetrical complications result from pollution exposure in highway-adjacent neighborhoods[1]. Additional health disparities include barriers to physical activity, excessive sedentary behavior from long commutes, and decreased social connectedness. [2]

Specific concerns related to active transportation, safety, air quality, and noise are some common connections between transportation and public health. However, there are other transportation-related health issues such as access to goods, services, and amenities.

Specific health needs and priorities will vary by community. This means transportation practitioners should collaborate with health professionals, stakeholders, and other community groups early and often to identify transportation solutions that will support community health and help achieve shared goals.

Health in the Regional Planning Framework

VISION 2050

Health is addressed throughout every aspect of PSRC's VISION 2050 plan as an important underlying priority, and is included as part of the overall vision statement for the region:

> *"Communities promote physical, social, and mental well-being so that all people can live healthier and more active lives."*

[1] "The Polluted Life Near the Highway", Urban Institute https://www.urban.org/sites/default/files/2022-11/The%20Polluted%20Life%20Near%20the%20Highway.pdf

[2] "Public Transportation in the US: a Driver of Health and Equity", Health Affairs https://www.healthaffairs.org/content/briefs/public-transportation-us-driver-health-and-equity

One specific MPP to highlight is MPP-RC-3, "Make reduction of health disparities and improvement of health outcomes across the region a priority when developing and carrying out regional, countywide, and local plans."

Regional Transportation Plan

The Regional Transportation Plan (RTP) is the implementation document of VISION 2050 for transportation, identifying the actions and investments necessary to achieve the regional vision.

The RTP addresses public health in a variety of ways, including through protection of the environment and reducing harmful emissions to the air, promoting physical activity through active transportation, providing access to healthy food options, health care facilities and open spaces, and by improving physical safety on roadways.

While traditionally the issue of public health encompasses a broader set of factors and strategies—such as disease control, managing health conditions and improving access to health care—there has been increased emphasis on the relationship of public health to the built environment and how people travel. A lack of transportation choices, how neighborhoods are designed, the locations of services and other destinations, and the proximity to sources of pollution can all influence individual health. To advance public health throughout the region, risk factors, benefits, and protective features of the transportation system today need to reconcile with the social vulnerability of communities.

In the development of the 2026 RTP, PSRC considered the relationship of transportation to health through a variety of measures, including:

- **Active transportation** (infrastructure and time spent walking and biking)[.] Transportation choices can include increased sedentary time, stress, and reduced physical activity.
- **Proximity** to healthy food, health care facilities[, services,] and open spaces
- **Roadway safety** (proximity to the High-Injury Network, high volume truck routes, at-grade rail crossings) that can increase personal vulnerability to crashes and injury
- **Environmental impacts** ~~**Air quality**~~ including air and other harmful pollution burdens from system conditions.

Detailed metrics and data tables for all these factors at a variety of geographies of interest can be found in the System Performance Report. This report summarizes key findings related to public health.

Core units of analysis included in this report include:

- King, Kitsap, Snohomish, and Pierce Counties
- PSRC's Regional Geographies used for planning purposes (Metropolitan Cities, Core Cities, High Capacity Transit Communities, Cities and Towns, Rural Areas)
- Designated Regional Growth Centers
- Equity Focus Areas (areas with higher and significantly higher proportions of People of Color, People with Low Incomes, People with Limited English Proficiency, People with Disabilities, Older Adults, Youth)

RTP Health Analysis

The following sections present data and analysis of transportation's relationship to health and healthy outcomes for the measures and units described above. This information is intended to emphasize the importance of considering health when developing, implementing, and operating transportation projects and services. It provides useful data and factors related to improving public health for transportation agencies and operators.

Active Transportation – Walking and Biking

PSRC's planning efforts recognize the direct connection between active transportation and health. Active transportation requires increased physical activity, addressing guidance from the U.S. Department of Health and Human Services:

> "Regular physical activity is one of the most important things people can do to improve their health. Moving more and sitting less have tremendous benefits for everyone, regardless of age, sex, race, ethnicity, or current fitness level. Individuals with a chronic disease or a disability benefit from regular physical activity, as do women who are pregnant. The scientific evidence continues to build—physical activity is linked with even more positive health outcomes than we previously thought."[3]

Active transportation is a foundational component of both the RTP and PSRC's funding processes. Addressing bicycle and pedestrian infrastructure needs, accessibility, and disparities in availability of safe facilities is anchored in the project selection process overall, in addition to the funds that have been set-aside specifically for bicycle and pedestrian investments. PSRC's Bicycle Pedestrian Advisory Committee has further worked to improve the region's understanding of levels of stress, facility typologies and other key elements to improve the overall system.

[3] Physical Activity Guidelines for Americans, 2nd Edition https://odphp.health.gov/sites/default/files/2019-09/Physical_Activity_Guidelines_2nd_edition.pdf

As part of the 2026 RTP, PSRC has updated and refined its Active Transportation Plan, which contains information on the current and future system and key needs to encourage walking and bicycling and help the region to achieve its vision of having a safe, attractive, and well-connected bicycle and pedestrian network. It identifies planned bicycle and pedestrian improvements, areas with gaps in the existing system, and areas that connect priority locations. These planned improvements will support increased active transportation, with potential ancillary benefits of improved health outcomes.

Using the planned distribution of future population and jobs in the VISION 2050 Regional Growth Strategy and the planned 2050 regional transportation network, PSRC modeled the amount of time that people are estimated to spend walking and biking in the year 2050.

Trip activity across the region varies by county, by regional geography and in some case by different communities. Overall, between 2023 and 2050, with the RTP the number of trips taken in active transportation modes is forecast to increase both in total as well as overall share. The tables below show overall change in mode choice by county and by Equity Focus Areas.

Table 1: Minutes per Day a Person Spends Walking and Biking - County

Geography	Bike	Walk	Total
2023			
King	10	11	21
Kitsap	11	13	23
Pierce	11	12	23
Snohomish	11	13	25
Region	**11**	**12**	**22**
2035			
King	11	12	22
Kitsap	11	14	25
Pierce	12	14	26
Snohomish	12	15	27
Region	**11**	**13**	**24**
2050			

King	11	13	24
Kitsap	11	14	26
Pierce	12	16	29
Snohomish	12	17	29
Region	**12**	**14**	**26**

Table 2: Minutes per Day a Person Spends Walking and Biking – Regional Geography

Geography	Bike	Walk	Total
2023			
Metropolitan Cities	9	10	18
Core Cities	12	13	24
High Capacity Transit Communities	13	16	29
Cities and Towns	11	15	26
Urban Unincorporated Areas	14	20	34
Rural Areas	20	18	38
Region	**11**	**12**	**22**
2035			
Metropolitan Cities	9	11	20
Core Cities	12	15	27
High Capacity Transit Communities	13	17	29
Cities and Towns	11	15	26
Urban Unincorporated Areas	14	20	34
Rural Areas	20	19	39
Region	**11**	**13**	**24**
2050			
Metropolitan Cities	10	12	22
Core Cities	13	16	29
High Capacity Transit Communities	13	17	30
Cities and Towns	10	15	26
Urban Unincorporated Areas	13	20	33

Rural Areas	20	19	39
Region	**12**	**14**	**26**

Table 3: Minutes per Day a Person Spends Walking and Biking – Regional Centers

Geography	Bike	Walk	Total
2023			
In a Regional Growth Center	7	8	14
Not in a Regional Growth Center	13	15	28
Region	**11**	**12**	**22**
2035			
In a Regional Growth Center	7	8	15
Not in a Regional Growth Center	13	16	28
Region	**11**	**13**	**24**
2050			
In a Regional Growth Center	7	9	16
Not in a Regional Growth Center	13	16	29
Region	**12**	**14**	**26**

Table 4: Minutes per Day a Person Spends Walking and Biking – Equity Focus Areas Above Regional Average

Geography	Walk	Bike	Total
2023			

People of Color	10	11	21
People with Low Incomes	10	12	22
People with Limited English	11	11	22
People with Disabilities	11	12	23
Older Adults	11	12	23
Youth	13	15	28
Region	**11**	**12**	**22**
2035			
People of Color	10	12	22
People with Low Incomes	11	13	24
People with Limited English	11	12	24
People with Disabilities	11	13	24
Older Adults	12	13	24
Youth	13	16	29
Region	**11**	**13**	**24**
2050			
People of Color	11	14	25
People with Low Incomes	11	14	25
People with Limited English	12	15	27
People with Disabilities	12	14	26
Older Adults	12	14	26
Youth	13	17	30
Region	**12**	**14**	**26**

Table 5: Minutes per Day a Person Spends Walking and Biking – Equity Focus Areas Significantly Above Regional Average

Geography	Walk	Bike	Total
2023			
People of Color	10	11	21
People with Low Incomes	9	10	19

People with Limited English	11	12	23
People with Disabilities	9	10	18
Older Adults	11	11	22
Youth	13	17	30
Region	**11**	**12**	**22**
2035			
People of Color	11	12	23
People with Low Incomes	10	12	22
People with Limited English	12	14	26
People with Disabilities	10	11	21
Older Adults	12	13	24
Youth	13	18	30
Region	**11**	**13**	**24**
2050			
People of Color	12	14	26
People with Low Incomes	11	14	25
People with Limited English	12	16	28
People with Disabilities	11	13	24
Older Adults	13	14	27
Youth	13	18	31
Region	**12**	**14**	**26**

Some key highlights for time spent walking and biking:

- Trip activity across the region varies by county, by regional geography, and in some case by different communities. Overall, the number of trips taken in active transportation modes – walking and biking – is forecasted to increase both in total as well as overall share with the RTP.
- Regionwide, the percentage of trips made by walking will increase from 15% to 20%.
- Snohomish County residents spend the most time walking and biking for transportation.

- Youth (age 5-17) spent the most time biking of all equity focus areas.

Proximity to Grocery Stores

A lack of access to fresh, healthy foods can contribute to poor diets and higher levels of obesity and other diet-related diseases in children and their families. A growing number of children in the United States are overweight or obese. Overweight children may experience higher rates of heart disease, diabetes and other chronic conditions as adults.[4]

~~Access to healthy food is a key to long-term health. Having grocery stores in proximity to households is assumed to offer more opportunities to incorporate fresh and healthy foods into daily diets, with potential beneficial health outcomes~~.

Healthy eating is important in every stage of life and key to long term health. A healthy diet significantly reduces the risk of obesity, heart disease, type 2 diabetes, and other health problems. Having grocery stores in proximity to households is assumed to offer more opportunities and make it easier for community members to build healthy eating habits that result in positive health outcomes. Increasing access to healthy food and services is a vital public health intervention to reduce experiences of food insecurity driven by factors of affordability and proximity to nutritious foods.

To better understand the availability of healthy food to the region's households, PSRC obtained grocery store locations from Open Street Map and buffered the point locations of the stores by ¼ mile. This distance is generally considered easy walking distance, providing good access to a location. It should be noted that PSRC does not forecast the location of future grocery stores, so the same store layer is used in all years of analysis and compared with the household distributions for future years.

Table 6: Percentage of Households within ¼ mile of a Grocery store - County

Geography	2023	2035	2050
King	25%	29%	31%
Kitsap	6%	7%	8%
Pierce	8%	9%	11%
Snohomish	10%	13%	15%
Region	**18%**	**20%**	**22%**

[4] Healthy Eating Research website: https://healthyeatingresearch.org/focus-areas/food-access/

Table 7: Percentage of Households within ¼ mile of a Grocery store – Regional Geography

Geography	2023	2035	2050
Metropolitan Cities	31%	34%	35%
Core Cities	17%	21%	24%
High-Capacity Transit Communities	11%	13%	15%
Cities and Towns	10%	11%	12%
Urban Unincorporated Areas	4%	4%	4%
Rural Areas	1%	1%	1%
Region	**18%**	**20%**	**22%**

Table 8: Percentage of Households within ¼ mile of a Grocery store – Regional Centers

Geography	2023	2035	2050
In a Regional Growth Center	58%	56%	52%
Not in RGC	13%	14%	16%
Region	**18%**	**20%**	**22%**

Table 9: Percentage of Households within ¼ mile of a Grocery store – Equity Focus Areas

Geography	2023		2035		2050	
	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average

People of Color	21%	23%	25%	28%	27%	30%
People with Low Incomes	21%	24%	24%	27%	25%	28%
People with Limited English	20%	22%	24%	26%	27%	30%
People with Disabilities	18%	17%	21%	20%	23%	22%
Older Adults	14%	15%	16%	18%	18%	20%
Youth	9%	8%	11%	9%	13%	11%
Region	**18%**		**20%**		**22%**	

Some key highlights for proximity to grocery stores include:

- Between 2023 and 2050, the share of the region's future households within ¼ mile of grocery stores increased in all counties, potentially improving the availability of healthy food.
- People living in the five largest cities in the region have the greatest access to grocery stores with 35% of households being within ¼ mile of a store in 2050.
- More than half of the households in Regional Growth Centers are within ¼ mile of a grocery store.
- King County residents will have the highest share of proximity to a grocery store and Kitsap County, with fewer than 1 in 10 households within a ¼ mile of a grocery store, has the lowest.
- While access to grocery stores for all EFAs will improve by 2050, currently, older adults and youth EFAs have some of the lowest access to close grocery options compared to the regional average. People of color and people with limited English proficiency EFAs will have greater access to groceries by 2050.

Proximity to Health Care Facilities

Geographic proximity to healthcare and healthcare facilities is linked to increased use for preventive care and improved health outcomes for certain chronic conditions. The

association between proximity to healthcare facilities and improved disease management and population health has been well-documented.[5]

PSRC obtained health care points of interest from Open Street Map and buffered the point locations by ¼ mile. These facilities include hospitals, medical clinics and dental offices. It should be noted that PSRC does not forecast the location of future health care facilities, so the same layer is used in all years of analysis and compared with the household distributions for future years.

Table 10: Percentage of Households within ¼ mile of a Health Care facility - County

Geography	2023	2035	2050
King	4%	5%	6%
Kitsap	1%	1%	1%
Pierce	3%	4%	5%
Snohomish	2%	2%	3%
Region	**3%**	**4%**	**5%**

Table 11: Percentage of Households within ¼ mile of a Health Care facility – Regional Geography

Geography	2023	2035	2050
Metropolitan Cities	7%	8%	9%
Core Cities	4%	4%	4%
High-Capacity Transit Communities	1%	1%	1%
Cities and Towns	2%	2%	2%
Urban Unincorporated Areas	0%	0%	0%
Rural Areas	0%	0%	0%
Region	**3%**	**4%**	**5%**

[5] Drexel University Urban Health Collaborative

Table 12: Percentage of Households within ¼ mile of a Health Care facility – Regional Centers

Geography	2023	2035	2050
In a Regional Growth Center	17%	17%	15%
Not in RGC	2%	2%	2%
Region	**3%**	**4%**	**5%**

Table 13: Percentage of Households within ¼ mile of a Health Care facility – Equity Focus Areas

Geography	2023		2035		2050	
	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average
People of Color	4%	2%	5%	3%	5%	3%
People with Low Incomes	4%	5%	6%	7%	6%	7%
People with Limited English	2%	2%	4%	2%	4%	2%
People with Disabilities	5%	7%	6%	10%	6%	10%
Older Adults	3%	2%	4%	3%	5%	3%
Youth	1%	1%	1%	1%	1%	1%
Region	**3%**		**4%**		**5%**	

Some key highlights for proximity to health care facilities include:

- Around 1 in 20 households in the region will be within ¼ mile of a health care facility in 2050.
- Households with people with disabilities tend to be closer to health care facilities compared to the region as a whole. However, overall access remains very limited.
- The share of households in Regional Centers close to medical facilities is more than 3 times the regional average.
- Rural and unincorporated households will not be close to medical facilities.

Proximity to Open Space

According to Dr. Howard Frumkin, former Dean of the University of Washington School of Public Health, "If we had a medicine that delivered as many benefits as parks, we would all be taking it. Parks deliver cardiovascular benefits, fight loneliness, combat osteoporosis, counter stress anxiety, and more.[6]"

To evaluate access to parks for the region's households, PSRC buffered regional open space location data by 1,000 feet. It should be noted that PSRC does not forecast the location of new open space facilities, so the same layer is used in all years of analysis and compared with the household distributions for future years.

Table 14: Percentage of Households within 1000' of a Park - County

Geography	2023	2035	2050
King	63%	64%	65%
Kitsap	25%	26%	27%
Pierce	28%	28%	29%
Snohomish	34%	33%	34%
Region	**48%**	**48%**	**49%**

Table 15: Percentage of Households within 1000' of a Park – Regional Geography

Geography	2023	2035	2050
Metropolitan Cities	68%	67%	66%
Core Cities	52%	52%	52%

[6] The Trust for Public Land, "The Power of Parks to Promote Health: A Special Report"

High Capacity Transit Communities	38%	38%	38%
Cities and Towns	47%	47%	47%
Urban Unincorporated Areas	14%	13%	13%
Rural Areas	14%	14%	14%
Region	**48%**	**48%**	**49%**

Table 16: Percentage of Households within 1000' of a Park – Regional Centers

Geography	2023	2035	2050
In a Regional Growth Center	82%	78%	73%
Not in RGC	45%	43%	43%
Region	**48%**	**48%**	**49%**

Table 17: Percentage of Households within 1000' of a Park – Equity Focus Areas

Geography	2023		2035		2050	
	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average
People of Color	52%	54%	53%	54%	53%	54%
People with Low Incomes	47%	48%	47%	47%	48%	48%
People with Limited English	51%	53%	52%	51%	53%	51%
People with Disabilities	44%	42%	45%	45%	46%	46%

Older Adults	46%	45%	47%	47%	47%	50%
Youth	38%	34%	37%	33%	36%	32%
Region	**48%**		**48%**		**49%**	

Some key highlights for proximity to parks and open space include:

- Almost half of the region will live within 1,000 feet of a park, trail or open space, providing good access to recreational opportunities.
- King County residents have the highest share of households near parks while Kitsap and Pierce counties have the lowest, less than half the rate of King County households.
- People of color and limited English proficient EFAs have some of the highest shares of households located near parks, both of which are over 50%.
- Households in Rural areas tend to live farther from regional open space amenities which makes it less likely for them to be able to access them without a vehicle.

Roadway Safety

Roadway safety is a key policy focus area in the RTP, with emphasis on a Safe System Approach for transportation and addressing safety for all users. The RTP incorporates the recommendations and strategies of the Regional Safety Action Plan (RSAP) adopted in May 2025. Special attention in the RSAP is placed on improving bicycle and pedestrian safety as the most vulnerable users of the system, which, if addressed, would make active transportation a more attractive option. The RTP contains significant investment in multimodal transportation options, including bicycle and pedestrian infrastructure.

As part of the RSAP, PSRC developed an interactive High-Injury Network (HIN) Map that identifies parts of the region's road network that have higher rates of traffic-related serious injuries and fatalities. The goal of developing the map is to identify areas where investments in traffic safety measures and infrastructure will be most impactful. The RSAP also identifies a Pedestrian and Bicycle HIN, corridors with the highest concentration of traffic-related deaths and serious injuries of these vulnerable road users. The Active Transportation Plan includes more information specific to the Pedestrian and Bicycle HIN.

The following analysis examines the proximity of future population to the regional High-Injury Network, as well as to high volume freight routes and at-grade rail crossings.

High-Injury Network

PSRC buffered the regional HIN routes by 1000 feet and filtered out limited access facilities, such as freeways. It should be noted that the HIN definition does not change into the future, so the same layer is used in all years of analysis and compared with the household distributions for future years. Proximity to the HIN introduces a higher potential for deaths and serious injuries, so roadway safety projects should prioritize improvements on HIN locations.

Table 18: Percentage of Households within 1000' of the High-Injury Network - County

Geography	2023	2035	2050
King	44%	48%	51%
Kitsap	15%	16%	18%
Pierce	31%	36%	40%
Snohomish	30%	33%	37%
Region	**37%**	**41%**	**44%**

Table 19: Percentage of Households within 1000' of the High-Injury Network – Regional Geography

Geography	2023	2035	2050
Metropolitan Cities	58%	64%	67%
Core Cities	41%	44%	47%
High Capacity Transit Communities	31%	34%	36%
Cities and Towns	8%	8%	9%
Urban Unincorporated Areas	18%	16%	15%
Rural Areas	5%	5%	5%
Region	**37%**	**41%**	**44%**

Table 20: Percentage of Households within 1000' of the High-Injury Network – Regional Centers

Geography	2023	2035	2050
In a Regional Growth Center	82%	88%	85%
Not in RGC	32%	33%	35%
Region	**37%**	**41%**	**44%**

Table 21: Percentage of Households within 1000' of the High-Injury Network – Equity Focus Areas

Geography	2023		2035		2050	
	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average
People of Color	52%	60%	57%	64%	60%	67%
People with Low Incomes	52%	66%	57%	71%	60%	74%
People with Limited English	50%	58%	55%	61%	58%	66%
People with Disabilities	44%	47%	48%	55%	51%	57%
Older Adults	30%	26%	34%	31%	37%	36%
Youth	26%	22%	28%	24%	30%	26%
Region	**37%**		**41%**		**44%**	

Some key highlights for proximity to the HIN include:

- About 44% of households in 2050 will be near the HIN, up from 37% today, indicating that effort must be made to minimize unsafe conditions on these facilities.

- King County residents will have the highest share of households near the HIN with Pierce County the second highest in 2050 at 40%.
- People of color, low income and limited English proficiency EFAs will have some of the highest shares of households located near the HIN, all of which are over 50%. This rate is expected to further increase to nearly 60% by 2050.
- Over 80% of all households in Regional Growth Centers are near the HIN.

High Volume Truck Routes.

Historically, people in urban areas living near high-traffic roadways likely were exposed to higher levels of traffic-related air pollution in the air they breathe. Health problems are known to be linked to air pollution from vehicles. High-volume truck routes, particularly those involving diesel freight, disproportionately expose nearby communities to hazardous air pollutants, including particulate matter and nitrogen dioxide. These pollutants increase the risk of asthma, cardiovascular disease, and premature death.[7]

Diesel particle pollution from diesel engines is the top air quality toxics risk in the region and remains a top priority for public health, especially for overburdened communities (Puget Sound Clean Air Agency "Comprehensive Climate Action Plan," 2025).

Modeling of the RTP shows increased population in proximity to freight routes in 2050 for equity focus areas. Investments in the RTP provide multimodal improvements in these communities, and decarbonization efforts of the region's heavy duty vehicle fleet will continue, reducing emissions and mitigating long term negative health outcomes.

As described in the Current Transportation System Report, freight corridors for trucks are identified in different categories based on annual freight tonnage moved. Each type of freight corridor is classified into five tiers, with those designated as "1" (e.g. T-1 for truck corridors) moving the largest amounts of goods. Heavy volumes of large vehicles on these facilities may pose safety risks for other types of users.

PSRC buffered the region's T-1 and T-2 routes by 1,000 feet. It should be noted that the Freight and Goods Transportation System definition does not change into the future, so the same layer is used in all years of analysis and compared with the household distributions for future years.

[7] Washington State Department of Health (https://doh.wa.gov/data-and-statistical-reports/washington-tracking-network-wtn/traffic-air-pollution)

Table 22: Percentage of Households within 1000' of a Freight Route - County

Geography	2023	2035	2050
King	28%	32%	34%
Kitsap	8%	8%	9%
Pierce	19%	22%	25%
Snohomish	19%	24%	28%
Region	**23%**	**27%**	**29%**

Table 23: Percentage of Households within 1000' of a Freight Route – Regional Geography

Geography	2023	2035	2050
Metropolitan Cities	34%	39%	41%
Core Cities	26%	29%	33%
High Capacity Transit Communities	18%	22%	25%
Cities and Towns	12%	13%	14%
Urban Unincorporated Areas	16%	14%	13%
Rural Areas	7%	7%	7%
Region	**23%**	**27%**	**29%**

Table 24: Percentage of Households within 1000' of a Freight Route – Regional Centers

Geography	2023	2035	2050
In a Regional Growth Center	56%	59%	57%
Not in RGC	20%	21%	23%
Region	**23%**	**27%**	**29%**

Table 25: Percentage of Households within 1000' of a Freight Route – Equity Focus Areas

Geography	2023		2035		2050	
	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average
People of Color	31%	35%	35%	40%	38%	42%
People with Low Incomes	30%	36%	35%	41%	38%	44%
People with Limited English	29%	31%	33%	34%	37%	37%
People with Disabilities	24%	28%	29%	34%	32%	37%
Older Adults	18%	16%	21%	20%	23%	23%
Youth	18%	18%	20%	20%	22%	22%
Region	**23%**		**27%**		**29%**	

Some key highlights for proximity to freight routes include:

- About 29% of households in 2050 will be near a T-1 or T-2 freight route, up from 23% today, potentially increasing safety risks for some users.
- King County residents will have the highest share of households near major freight routes with Snohomish County the second highest in 2050 at 28%.
- EFAs with a significantly higher share of people of color, people with low income and people with limited English proficiency than the regional average have the highest shares of households located near freight routes, all of which are over 30%. This rate is expected to further increase by 2050.
- Households in Rural areas are and will be located farther from major freight routes, posing fewer safety, noise, and emission risks.

- Over half of all households in Regional Growth Centers will be near a major freight facility.

At-Grade Rail Crossings

According to the Federal Rail Administration, accidents at highway-rail grade crossings — intersections where roads cross railroad tracks at-grade — is the second leading cause of rail-related deaths in the United States. Nationally, more than 2,000 incidents and 200 fatalities at grade crossings occur each year.[8] Households within proximity to street and highway at-grade rail crossings may be exposed to more safety risks.

PSRC buffered the latest set of at-grade rail crossings by 1,000 feet. It should be noted that the location of the at-grade crossings does not change into the future, so the same layer is used in all years of analysis and compared with the household distributions for future years.

Table 26: Percentage of Households within 1000' of an At-Grade Rail Crossing - County

Geography	2023	2035	2050
King	2%	3%	3%
Kitsap	0%	1%	1%
Pierce	3%	5%	7%
Snohomish	2%	3%	4%
Region	**2%**	**3%**	**4%**

Table 27: Percentage of Households within 1000' of an At-Grade Rail Crossing – Regional Geography

Geography	2023	2035	2050
Metropolitan Cities	3%	5%	6%
Core Cities	3%	4%	6%
High Capacity Transit Communities	2%	2%	2%
Cities and Towns	3%	3%	3%

[8] USDOT Federal Rail Administration Highway-Rail Crossing Safety

Urban Unincorporated Areas	0%	1%	1%
Rural Areas	1%	1%	1%
Region	**2%**	**3%**	**4%**

Table 28: Percentage of Households within 1000' of an At-Grade Rail Crossing – Regional Centers

Geography	2023	2035	2050
In a Regional Growth Center	8%	11%	12%
Not in RGC	2%	2%	2%
Region	**2%**	**3%**	**4%**

Table 29: Percentage of Households within 1000' of an At-Grade Rail Crossing – Equity Focus Areas

Geography	2023		2035		2050	
	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average	Above Regional Average	Significantly Above Regional Average
People of Color	2%	1%	3%	2%	4%	2%
People with Low Incomes	3%	4%	5%	7%	7%	9%
People with Limited English	2%	1%	2%	1%	3%	2%
People with Disabilities	3%	4%	5%	7%	6%	9%
Older Adults	3%	3%	3%	5%	4%	5%

Youth	1%	1%	2%	1%	2%	1%
Region	**2%**		**3%**		**4%**	

Some key highlights for proximity to at-grade rail crossings include:

- About 5% of households in 2050 will be near an at-grade rail crossing, up from 2% today, potentially increasing safety risks for these households.
- Pierce County residents have the highest share of households near at-grade rail crossings.
- Over 8% of all households in Regional Growth Centers are near an at-grade rail crossing, four times higher than households outside of RGCs.
- Areas with significantly higher shares of people with low-income and people with disabilities than the regional average have the highest shares of households located near at-grade crossings, double the regional average. This rate is expected to further increase by 2050.

Air Quality

Air pollution is the presence of one or more contaminants in the atmosphere, such as dust, fumes, gas, mist, or smoke in quantities and duration that can be harmful to human health. According to the World Health Organization, breathing in these pollutants leads to inflammation, immunosuppression, and changes in cells throughout the body, impacting the lungs, heart, brain and other organs and ultimately leading to disease.[9]

Specific to transportation, the air pollutants analyzed for the RTP include carbon monoxide, particulate matter, nitrogen oxides, volatile organic compounds and greenhouse gases. Fine particulates, in particular those from diesel exhaust, present the greatest risk to public health in our region.[10] A major goal of the RTP is to reduce reliance on single occupancy vehicles while at the same time transitioning those vehicles to zero emission. Reduced exposure to emissions will improve public health outcomes and mitigate potential health impacts that are beyond the scope of the analysis in the plan, such as shorter-term local exposure to pollutants near individual pollutant sources or roadways. More information can be found in the Air and Climate reports, demonstrating the continued downward trend of all pollutants into the future, as well as the steps necessary to achieve a zero-emission transportation future. PSRC regularly includes estimation of regional emissions in its long-range planning

[9] World Health Organization, Air Quality, Energy, and Health

[10] https://pscleanair.gov/161/Air-Pollution-Your-Health

processes and acknowledges the needs surrounding exposures and mitigation issues at the local scale.

In developing the RTP, PSRC modeled future emissions from several vehicle types, including light, medium, and heavy duty vehicles. The outputs are generated using a combination of vehicle speeds and volumes from the regional travel demand model, and emission factors from the Environmental Protection Agency's MOVES4 model based on the latest fleet assumptions from the Washington State Department of Ecology and electric vehicle shares based on current trends and state and federal regulations.

As shown in the table below, the RTP forecasts a dramatic reduction in air pollutants, in large part due to the zero emission transportation future.

Table 30: Daily Tons of Pollutants – PSRC Region

	Total Daily Tons		
Pollutant	2023	2035	2050
CO	358.2	158.5	29.5
NOx	44.6	12.1	4.2
PM 2.5	1.7	1.0	0.8
PM 10	5.3	5.1	5.4
CO2 Equivalent	39,062	22,174	6,668
VOCs	11.8	4.0	0.9

Some key highlights for emissions reductions include:

- The RTP's emphasis on a sustainable, multimodal transportation system results in a significant reduction of nearly all pollutant emissions by 2050, lowering potential health impacts attributable to air quality.
- This includes significant reductions in emissions from heavy duty vehicles that are referenced in the earlier section regarding proximity to freight corridors.
- ~~*Hold for notes on PSCAA's PM2.5 data webmap*~~
- PSRC is working with the Puget Sound Clean Air Agency (PSCAA) to incorporate ambient (outdoor) fine particulate matter pollution (PM2.5) data throughout the

region. PM2.5 comes from a variety of sources and overwhelmingly drives health risk from air pollution in the region (over 90% of all lung and heart risk from air pollution is attributed to PM2.5). The highly-spatially resolved data that PSCAA provides will allow data users to explore how PM2.5 concentrations vary across the region, as well as how they vary based on factors like income and race. We anticipate inclusion in the PSRC Equity Tracker and transportation system visualization tools to help users view and understand how PM2.5 pollution is distributed in the region.

Summary and Conclusion

The data and analysis in this report have shown an increase in the amount of time that people will spend walking and biking through the projects and programs advanced by the RTP, likely resulting in better health outcomes. Similarly, modeling shows a substantial reduction of emissions, minimizing air pollutants that would negatively impact human health.

Other data sets and discussions, such as proximity to different land uses and amenities, as well as roadways with known or possible physical safety issues, is useful contextual information that can be used by transportation project designers for consideration as they develop projects and programs.

PSRC's Transportation System Visualization Tools map both current and proposed transportation infrastructure, along with community attributes and other data. These interactive maps can be used to see how transportation infrastructure intersects with the number of people, jobs, and what types of activities are in proximity to different types of infrastructure. This information can be helpful for the state, local jurisdictions, and other project implementers to develop any appropriate mitigation measures as they construct and operate projects.

These maps can also be used in conjunction with other sources of community information, such as the Washington State Environmental Health Disparities Map. This tool can be used in relation to existing and proposed infrastructure to help local agencies better understand current health conditions as they design and develop projects.

PSRC is working with the Puget Sound Clean Air Agency (PSCAA) to incorporate ambient (outdoor) fine particulate matter pollution (PM2.5) data throughout the region. PM2.5 comes from a variety of sources and overwhelmingly drives health risk from air pollution in the region (over 90% of all lung and heart risk from air pollution is attributed to PM2.5). The highly-spatially resolved data that PSCAA provides will allow data users to explore how PM2.5 concentrations vary across the region, as well as how they vary based on factors like income

and race. We anticipate inclusion in the PSRC Equity Tracker and transportation system visualization tools to help users view and understand how PM2.5 pollution is distributed in the region.

PSRC will continue to draw attention to and emphasize the relationship of transportation to public health outcomes and work with health agency partners on best practices, data collection, and inclusion of available relevant tools in PSRC's planning processes and programs.