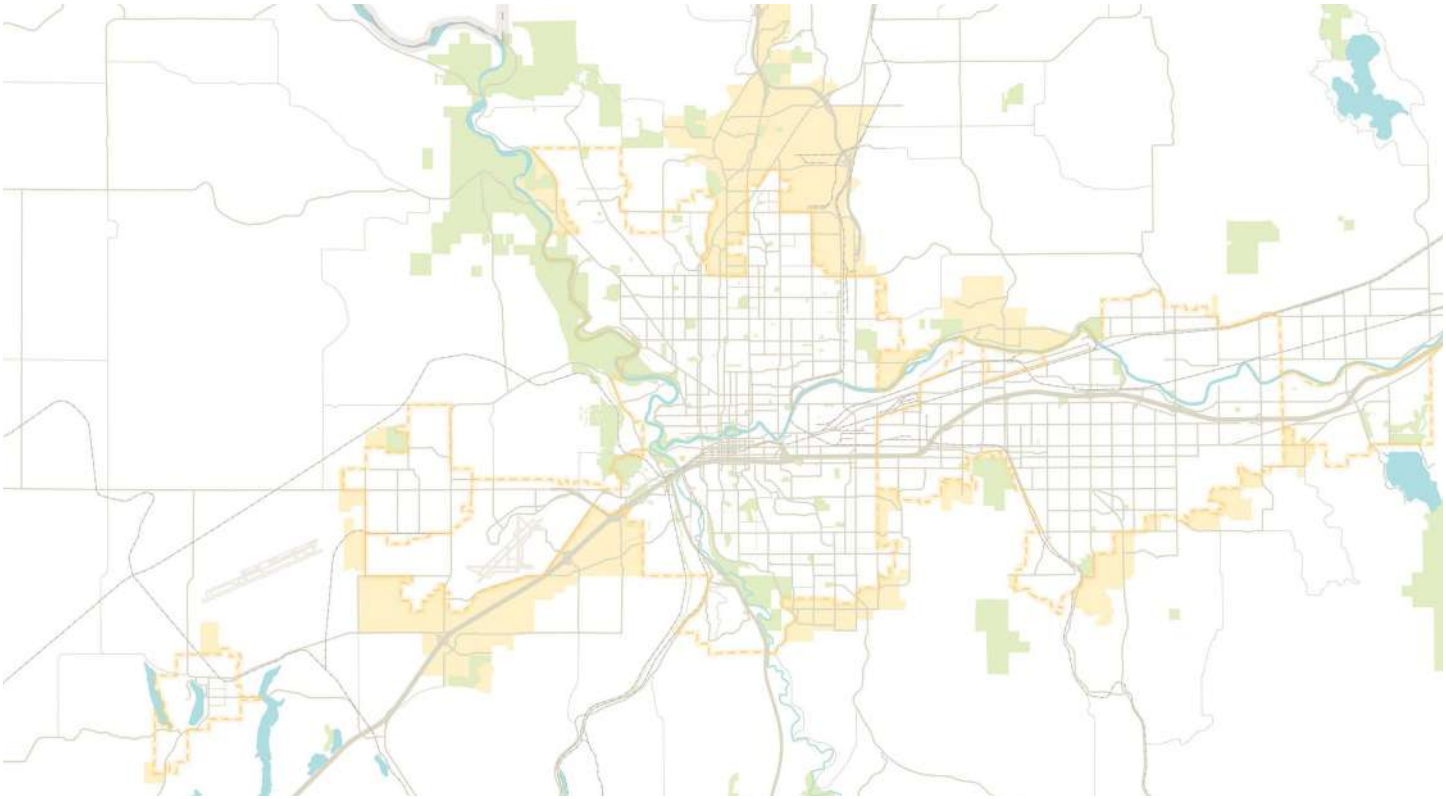


CHAPTER 2
WHERE WE ARE

Existing Conditions

How the demographic, natural, and built environments impact the existing transportation system.

This chapter is an overview of the region's demographics and existing conditions including employment trends, commute patterns, the condition of area roads and bridges, traffic volumes, and the movement of freight. This information is essential for evaluating the region's transportation needs and establishing priorities for transportation infrastructure.

Regional Profile

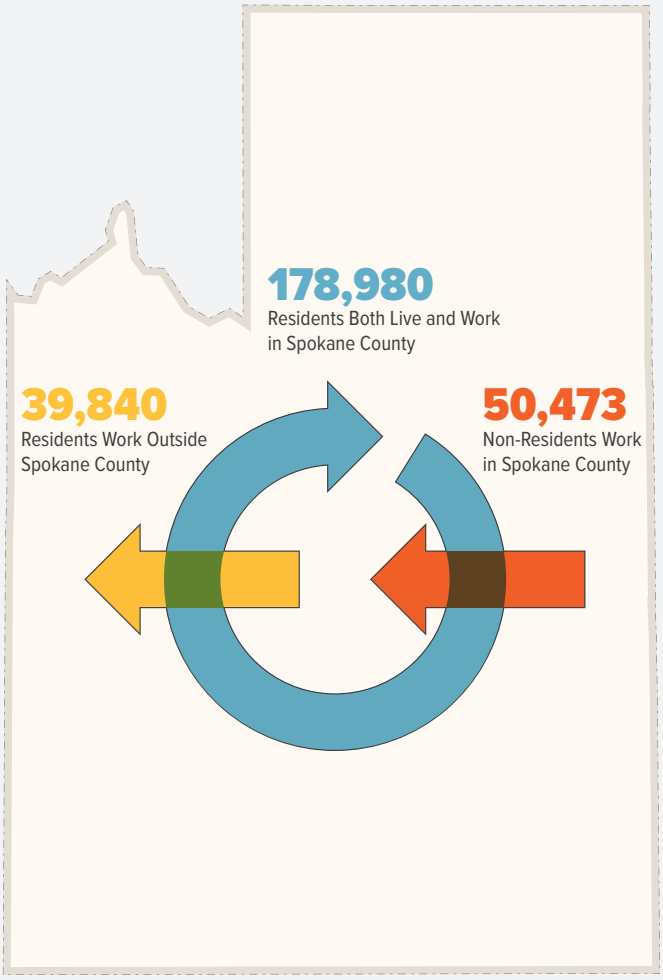
SRTC's planning area (shown in figure 1.2) is 1,781 square miles in size. It has a total land area of 1,764 square miles with a population density of 292 persons per square mile in 2019.[1] The Spokane Urbanized Area has a total land area of 164 square miles and a population of 420,440 in 2019, resulting in a population density of 2,560 persons per square mile.[2]

Spokane serves as a regional employment hub for Eastern Washington and North Idaho. Approximately 22 percent of the region's employees live outside of the planning area. The number of those that live outside of the planning area but are employed inside has increased approximately 33 percent over the last 20 years. The region's commute flows are shown in figure 2.1.

Like Washington state and the nation overall, Spokane County has undergone demographic shifts over the past few decades that impact the regional transportation system. As illustrated in figure 2.2, the most recent American Community Survey (ACS) indicated that nearly two-thirds of the region's households are single-person or two-person households, a slightly higher percentage than both the Washington state and national averages.

Overall, households are getting smaller and the population older. Policy choices and investment decisions in Horizon 2045 consider these trends and how they impact regional transportation systems and services.

Figure 2.1: SRTC Planning Area Commute Flows



U.S. Census Bureau, LEHD Origin-Destination Employment Statistics, 2018

1 OFM Estimates of April 1 Population Density and Land Area by County.

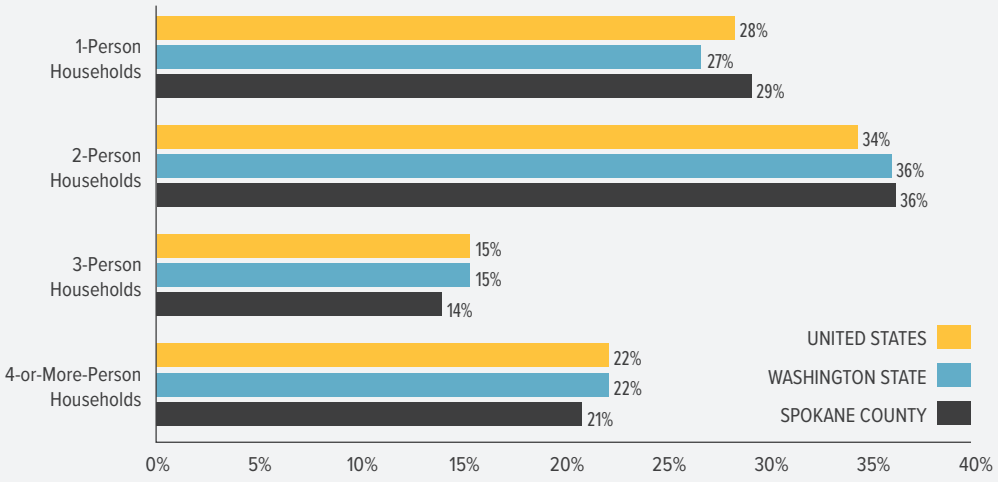
2 OFM Small Area Estimates Program.

Indicators of Potential Disadvantage

Low income, limited English proficiency, minority status, vehicle access, age dependency, and disability status are all indicators of potential disadvantage when it comes to transportation. These groups may face disproportionate negative health, safety, and quality of life impacts related to the transportation system. In January 2021, the new presidential administration announced intent to achieve Justice 40, an initiative to deliver 40 percent of the overall benefits of federal investments (including transportation investments) to disadvantaged communities and track performance toward that goal. The administration began pursuing that initiative with an executive order designed to advance racial equity and support for underserved communities through the federal government.

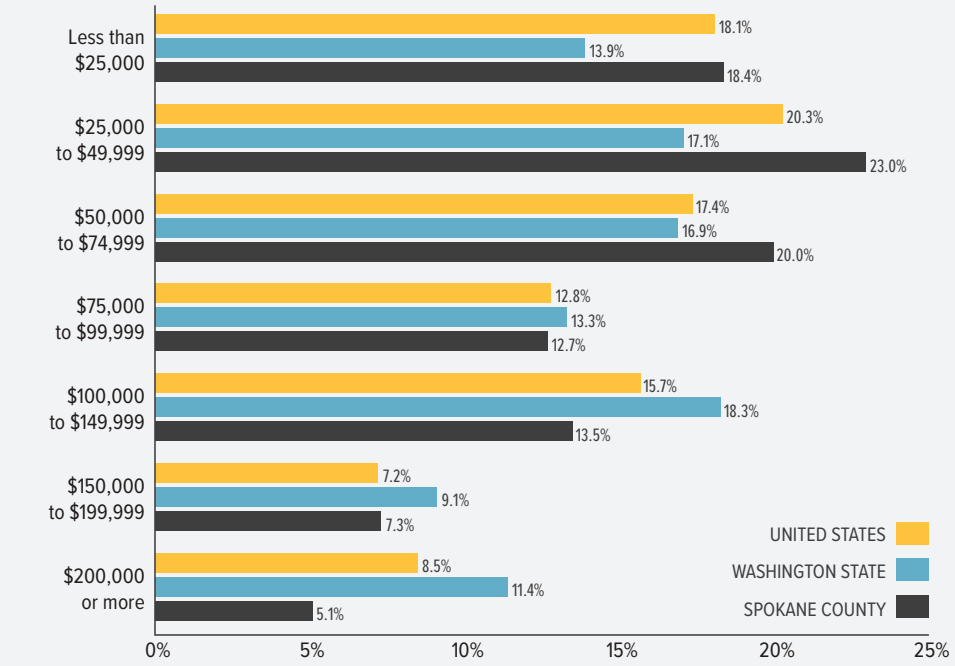
To ensure these considerations inform its planning processes, SRTC tracks data pertaining to these indicators. This section of the plan provides a brief description of these indicators, along with maps showing the geographic distribution of these populations. Monitoring these indicators is an initial step to address the intent of the Justice 40 initiative. Moving forward, SRTC intends to continue expanding on this effort by analyzing how the region's transportation investments are impacting potentially disadvantaged communities.

Figure 2.2: Household Size in SRTC Planning Area Compared to Washington State and the United States



2019 ACS 1-Year Estimates

Figure 2.3: Household Income in SRTC Planning Area Compared to Washington State and the United States



2019 ACS 1-Year Estimates

Age Dependent Populations

The population outside of the normal working age—youth and seniors—is considered age dependent. In Spokane County, age dependent populations tend to be concentrated along both the northern and southern fringes of the Spokane Urbanized Area. The region's outlying areas, such as Deer Park, north of Francis Avenue, and in the Dishman-Mica area, also tend to have high concentrations of age dependent residents. This suggests the need for public transportation services in these areas, which could result in their support for increased transit funding. Figure 2.4 shows the geographic distribution of age dependent populations in Spokane County.

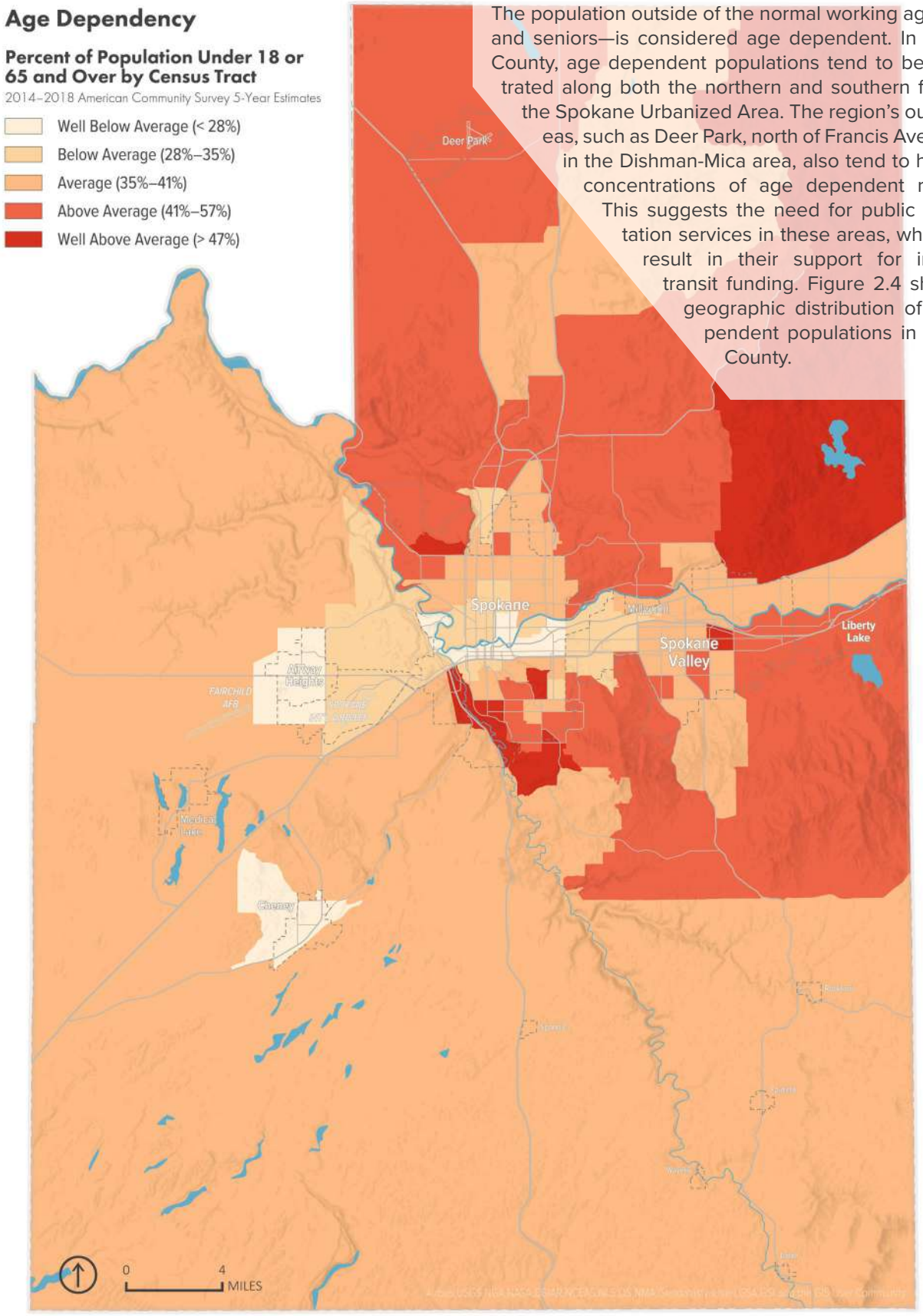


Figure 2.4: Age Dependent Population

Disabled Populations

Disabilities can make transportation a challenge and many people with disabilities rely on public transit to access health and other needed services. Unlike age dependent population, residents with disabilities are much more concentrated in and around the region's urban core. Figure 2.5 shows that Spokane's northeast quadrant, along with several areas scattered throughout Spokane Valley, have concentrations of disabled residents that are significantly higher than the regional average.

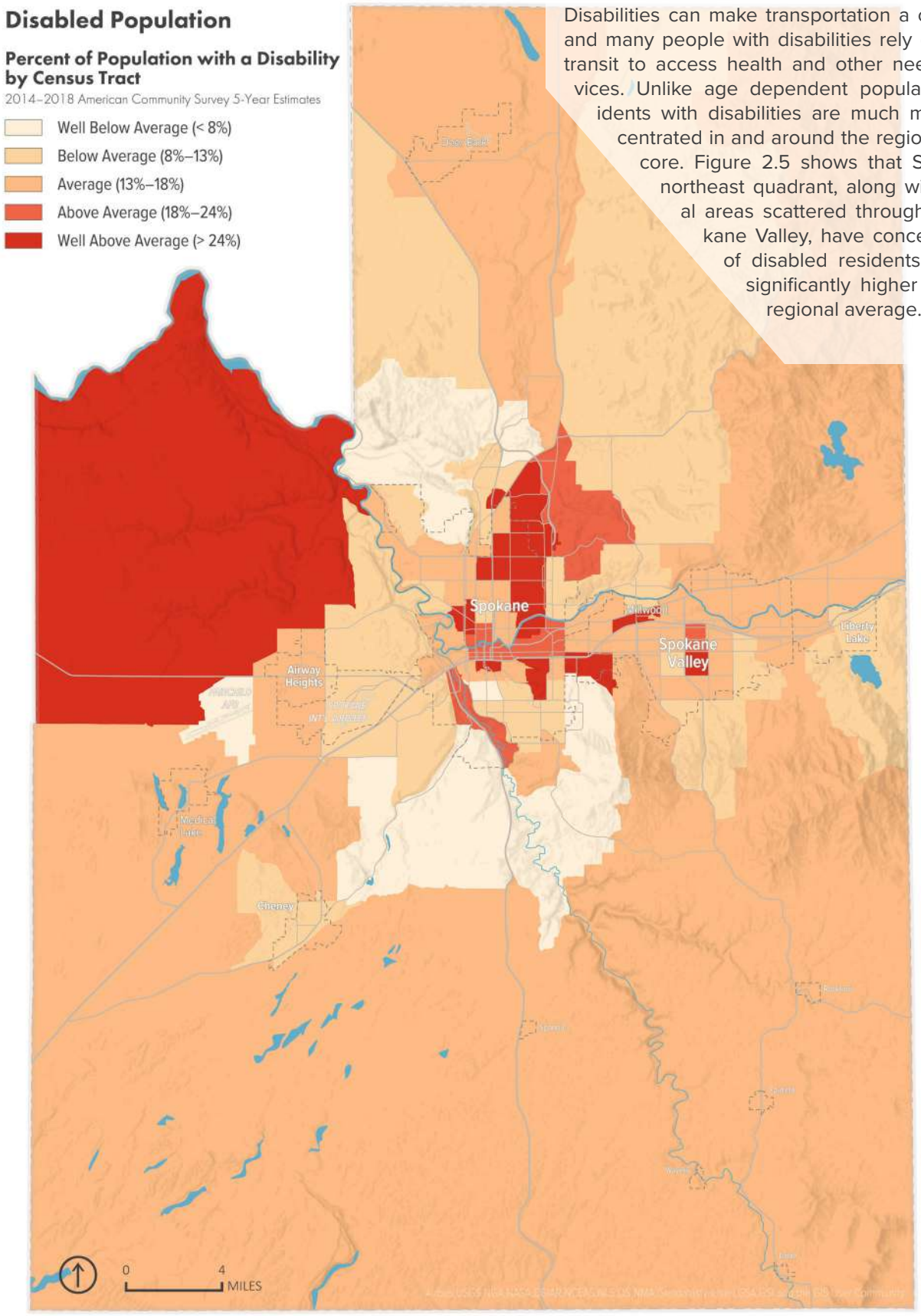


Figure 2.5: Disabled Population

Low-Income Populations

Poverty can also be a barrier to efficient transportation. In 2019, the median household income in Spokane County was $56,904, significantly lower than the Washington state and national averages of $78,687 and $65,712, respectively.[3] Figure 2.3 shows the share of households, by income bracket, in the SRTC planning area compared to Washington state and the U.S. as a whole. Figure 2.6 illustrates that the highest concentrations of individual with low incomes are generally located around the region's urban core—central, east central, and northeast Spokane all have sizable low-income populations. However, there are also areas in and around Airway Heights, Deer Park, Cheney, and Spokane Valley that have concentrations of low-income individuals that are above the regional average.

3 2019 ACS 1-Year Estimates

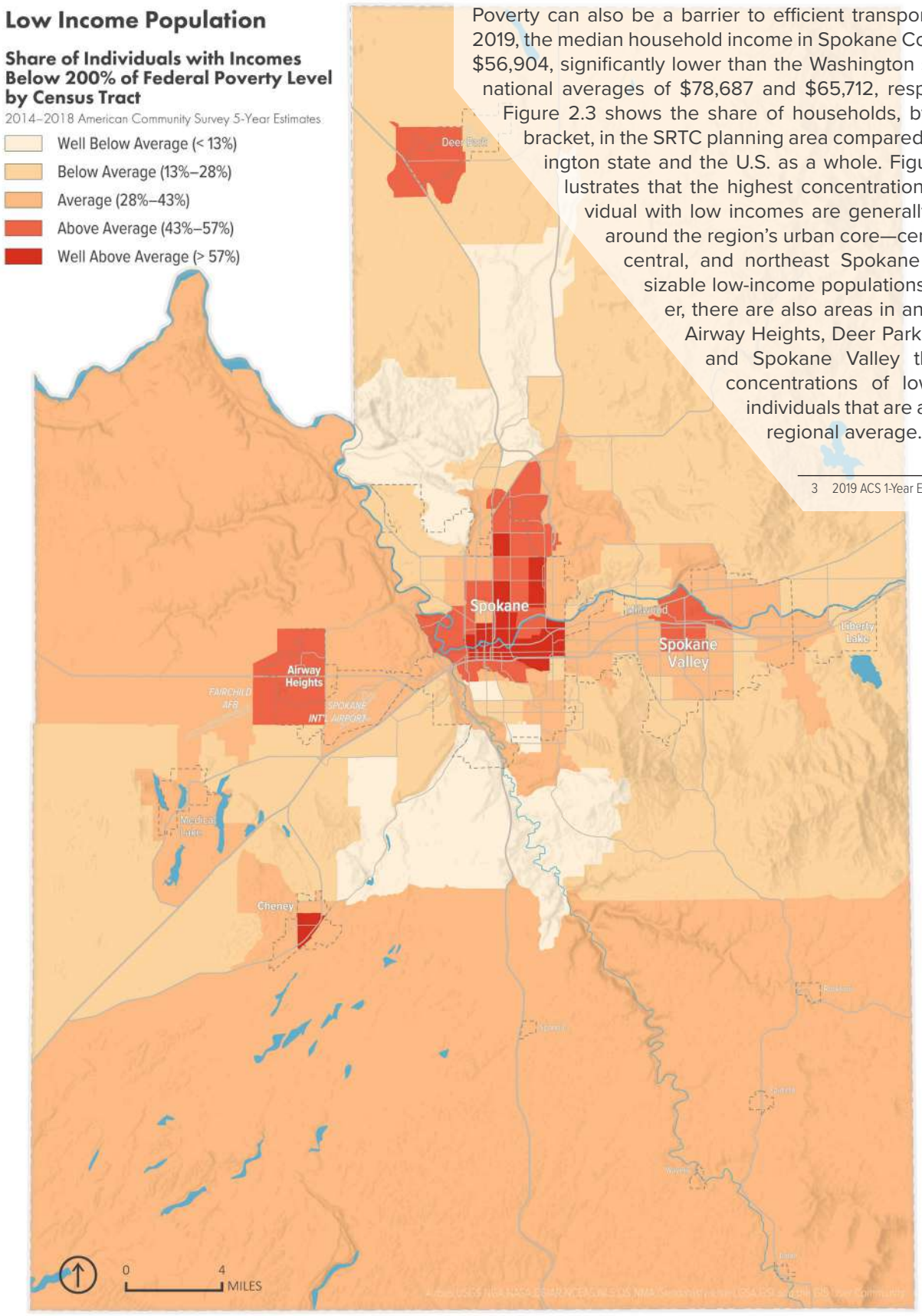


Figure 2.6: Low-Income Population

Vehicle Access

Whether due to poverty or by choice, 7.4 percent of area households have no vehicle available. Figure 2.7 shows that high concentrations of these households exist near the City of Spokane's downtown and lower north side, which is a similar pattern to the region's low-income residents. There is also a concentration of homes without vehicle access in the far north part of Spokane.

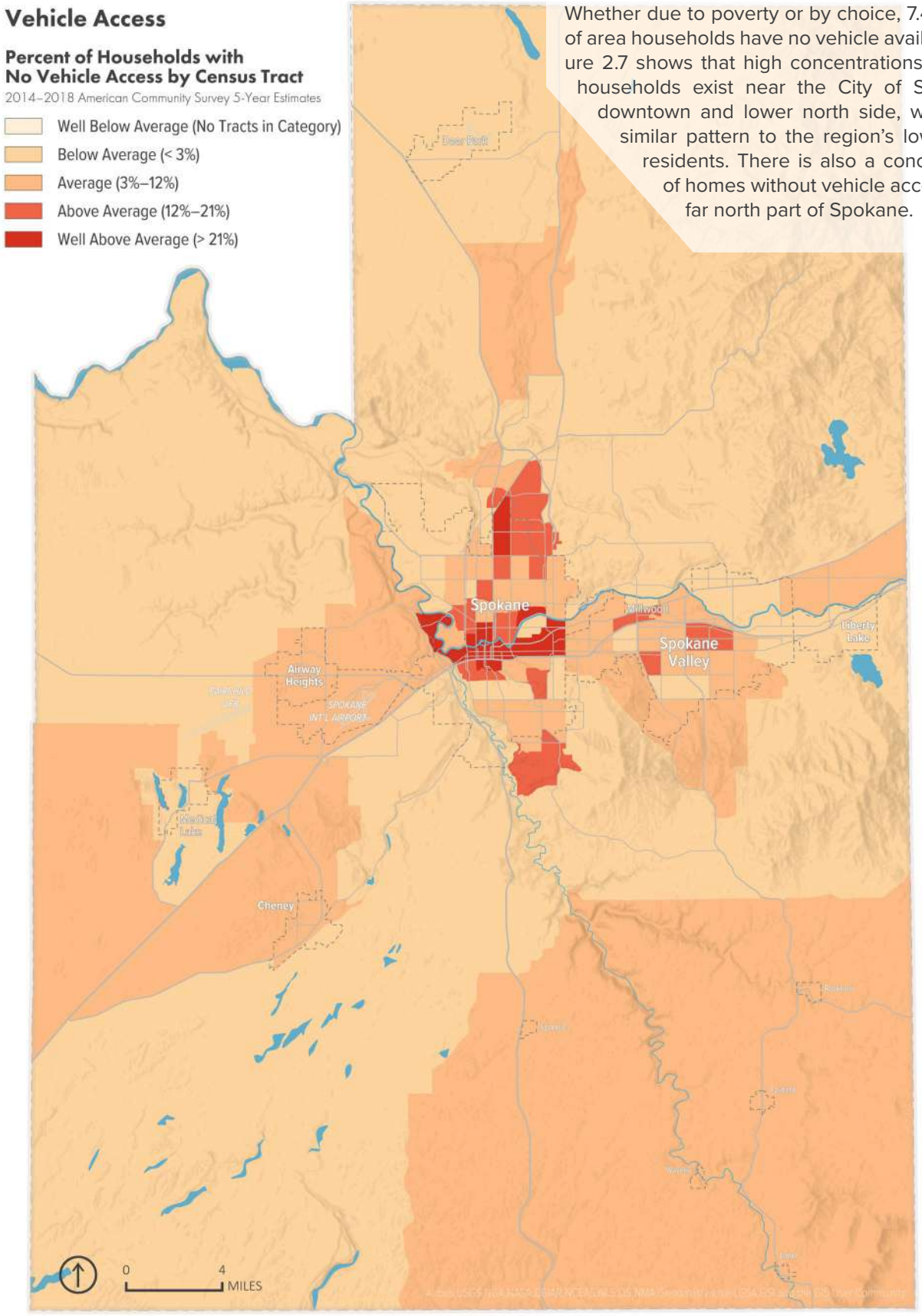


Figure 2.7: Carless Households

Limited English Proficiency

North Spokane is home to a concentration of residents with limited English proficiency (LEP). Figure 2.8 shows the location of concentrations of LEP households, which exist throughout the eastern half of the City of Spokane, in Spokane Valley along the Pines Road corridor, and the rural western part of the county.

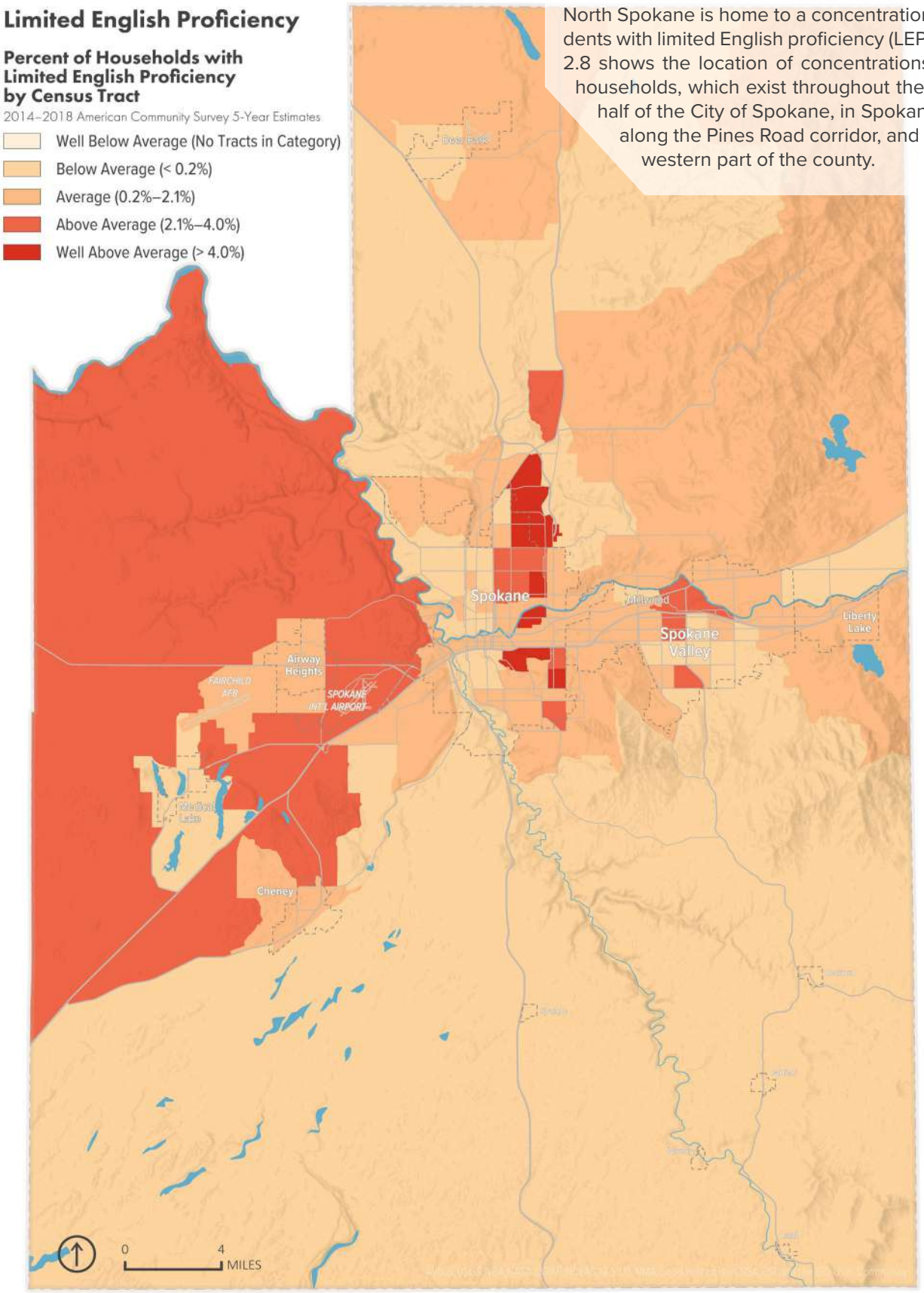


Figure 2.8: LEP Households

Racial & Ethnic Minority Populations

Overall, just over 16 percent of the region's residents identify as a racial or ethnic minority. Figure 2.9 shows the geographic distribution of these populations, which are concentrated throughout north and central Spokane, the west plains area around the cities of Cheney and Airway Heights, and parts of Spokane Valley.

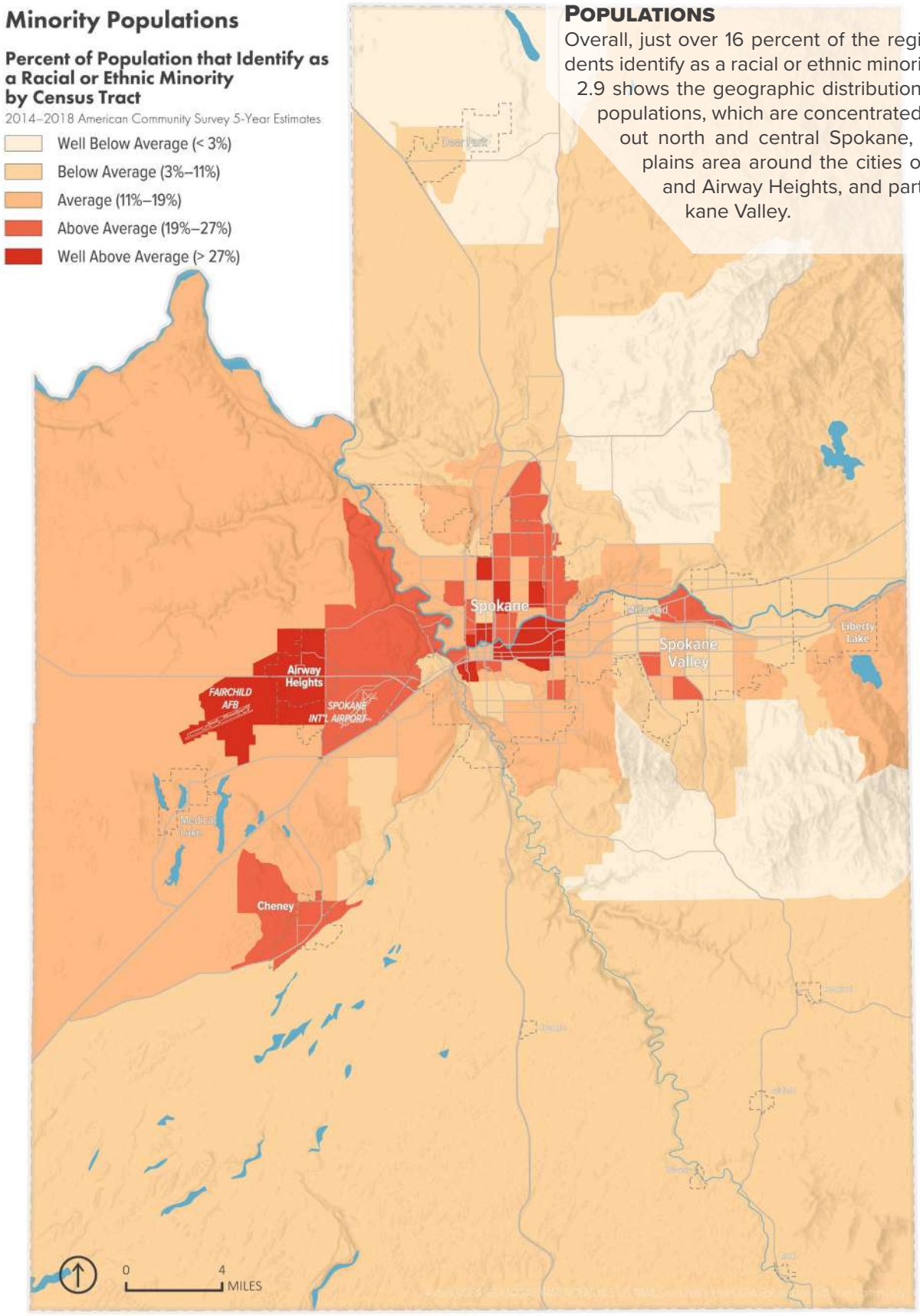


Figure 2.9: Population Identifying as a Racial or Ethnic Minority

Areas of Potential Disadvantage

Areas of Potential Disadvantage in the Spokane region, which are areas with above average concentrations of potentially disadvantaged populations, were identified by overlaying all six indicators. These are shown in figure 2.10.

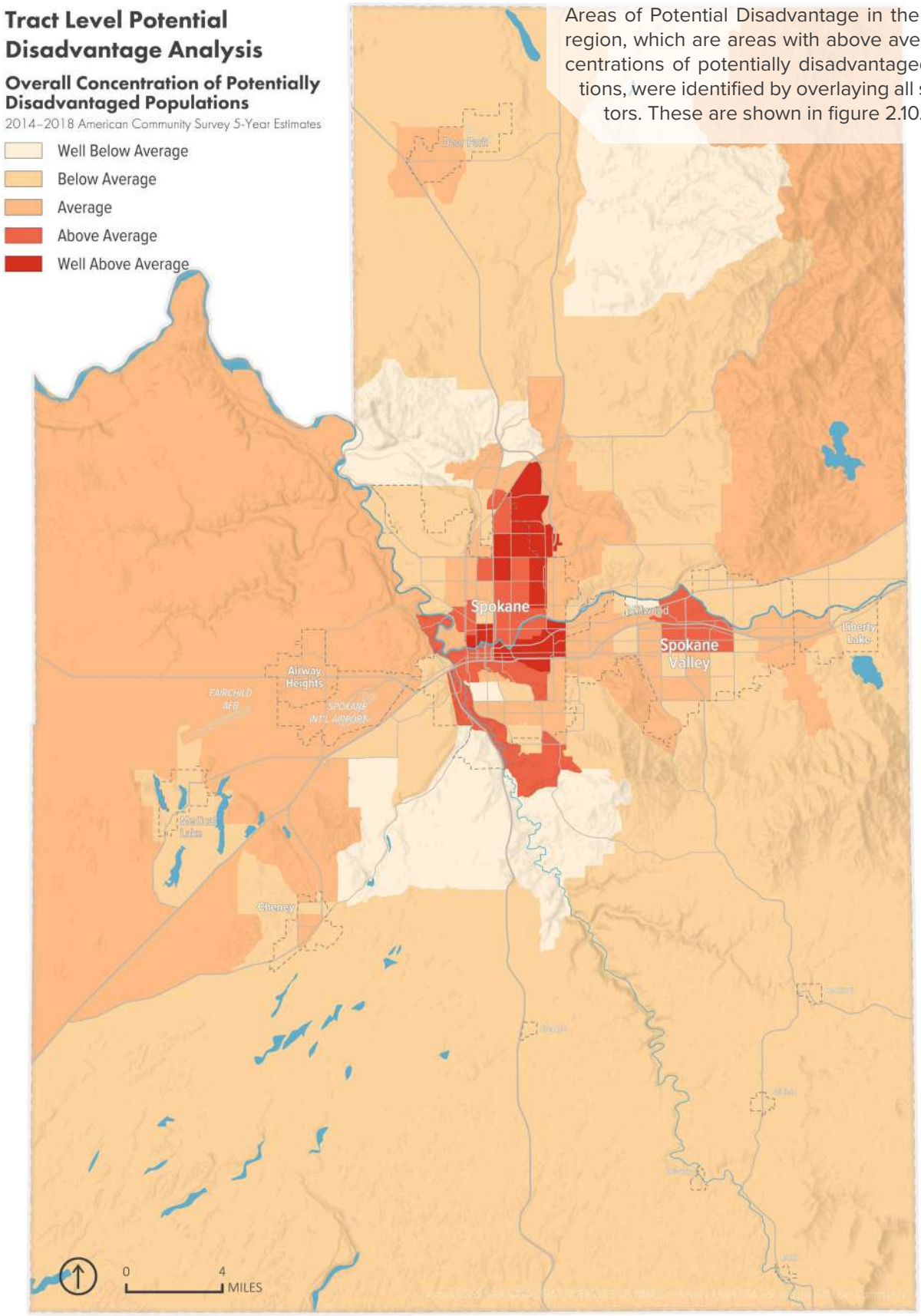


Figure 2.10: Areas of Potential Disadvantage

Labor Force

In 2019 the county labor force was 228,353 workers, with an average unadjusted unemployment rate of 5.25 percent. The total number of employers in the SRTC planning area is 15,478.[4] 64 percent of these employers have less than five employees, and an additional 13 percent employ between five and nine individuals. However, employers with less than ten employees account for only 13 percent of the region's total employment. Conversely, less than two percent of employers in the region employ 100 or more individuals. However, these account for approximately 45 percent of the region's total employment.[5] Health care and government are the region's two largest industries. Combined, they account for over a third of its total employment, with just under 18 percent of workers employed in heath care and social assistance and 17 percent working for federal, state, or local government. An additional 11 percent are employed in retail trade, while manufacturing accounts for just over seven percent of the region's employment.[6]

The primary mode of commute to work, driving alone, has not significantly increased or decreased since 2015. Figure 2.11 shows the Spokane-Spokane Valley Metropolitan Statistical Area's (MSA) commute shares by mode of travel. The Spokane-Spokane Valley MSA's median travel time to work is 21.1 minutes. Figure 2.13 offers travel time comparisons to other areas around the country.

4 Washington State Employment Security Department (ESD), Quarterly Census of Employment and Wages (QCEW)

5 ESD, Establishment Size Report, March 2019

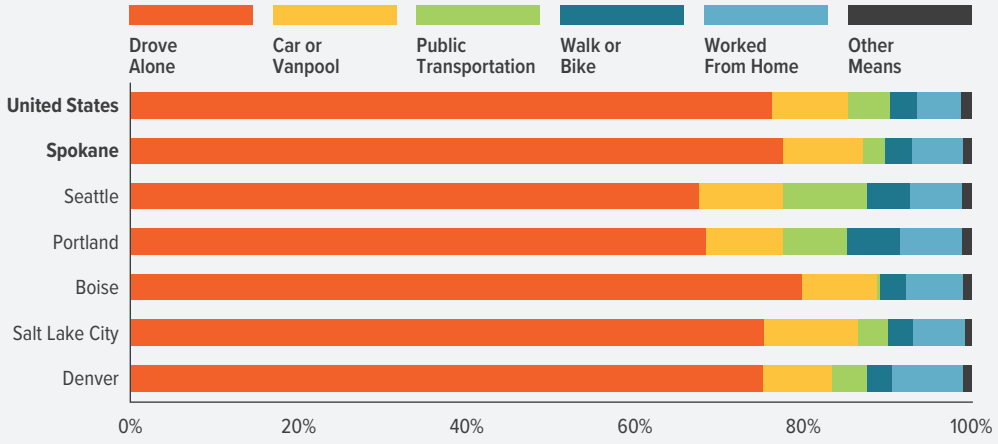
6 ESD, Spokane County Profile

Figure 2.11: SRTC Planning Area Demographics Compared to Washington State

	Spokane County	Washington State
Total Population*	515,250	7,546,410
Average Household Size**	2.39	2.55
% of Individuals with Incomes Below 200% of Poverty Level**	30.2%	23.5%
% of Population Identifying as a Racial or Ethnic Minority**	16.1%	32.7%
% of Households with Limited English Proficiency**	1.1%	3.8%
% of Households with No Vehicle Access**	7.4%	7.1%
% of Population Under Age 18**	22.0%	21.8%
% of Population Over Age 65**	16.5%	15.9%
% of Population with a Disability**	14.1%	12.7%

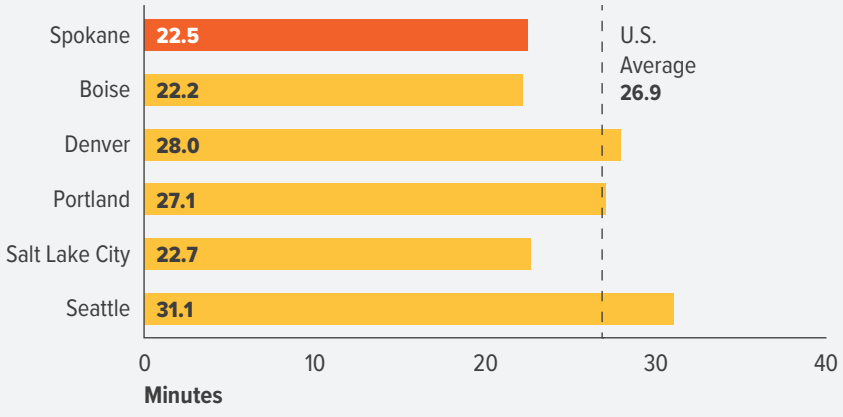
*OFM April 1 Population Estimates
**2019 ACS 1-Year Estimates

Figure 2.12: Mode to Work in Spokane Metro Area Compared to Other Selected Metro Areas and the United States



2015–2019 ACS 5-Year Estimates

Figure 2.13: Mean Travel Time to Work for Workers Who Did Not Work from Home



2015–2019 ACS 5-Year Estimates

Technical Tools for Transportation Analysis

As part of the development of Horizon 2045 and other planning processes at SRTC, staff assessed existing transportation systems and region-wide programs. This includes tools used for technical analyses, which are reviewed below.

Regional Travel Demand Model

Modeling is a method of evaluating the performance of the transportation system and predicting how the public will use it in the future. This is done using computer software to represent how travel choices are made.

SRTC's travel demand model contains inventories of existing roadway and public transit facilities and all existing and planned housing, shopping and employment in the area. Currently, bike lanes and pedestrian facilities are not represented but could be in the future. Using the model, future traffic volumes and transit ridership can be estimated in order to be proactive in managing traffic congestion and building transportation facilities to accommodate demand.

Federal transportation planning regulations require documentation of the input assumptions and methods used for developing forecasts (23 CFR 450.316). SRTC Travel Forecasting Documentation includes an inventory of the current state of transportation in the planning area, key planning assumptions used in developing forecasts, and descriptions of the methods used to develop forecasts of future travel demand.

Regionally Significant Projects

SRTC uses the model to evaluate regionally significant projects. For Horizon 2045's purposes, a transportation project is defined as regionally significant if it:

- Cannot be grouped in the TIP and/or Statewide TIP (STIP),[7] and/or it is not listed as an exempt project type in EPA's regional transportation conformity regulation (40 CFR. Part 93);[8] and
- Is on a facility which serves regional transportation needs (federally classified as a principal arterial or higher) and alters the number of through-lanes for motor vehicles for a distance greater than a half mile, or impacts a freeway or freeway interchange (other than maintenance projects); or
- Is a new or extended fixed guideway transit service (dedicated bus lanes, vehicle track or wires) or capital expenditures related to a new fixed-route transit service on a facility which serves regional transportation needs (federally classified as principal arterial or higher); or
- Is determined by the SRTC Policy Board or the Interagency Consultation Group to have the potential for adverse emissions impacts.

The model can also be used to evaluate potential transportation scenarios. FHWA encourages scenario planning in the transportation planning process to help anticipate future growth trends while prioritizing how limited resources will be used. Scenario planning is the process of developing a range of possible futures to facilitate public decision-making on land use policies and transportation investments. This involves identifying major sources of change, considering how driving forces could interact to determine different future conditions, creating scenarios that consider the implications of different strategies in different environments, modifying assumptions to see how scenarios react, and evaluating scenario outcomes. Various measures can be used to evaluate scenarios, such as the extent to which the scenario impacts vehicle miles of travel, average trip length, transit ridership, amount of available land, air quality, or energy consumption.

Macroscopic Transportation Modeling

Macroscopic models, such as SRTC's, are used for high-level, regional travel analysis. Travel demand models are limited in their ability to estimate changes in operational characteristics (such as speed, delay, and queuing) down to the individual transit route, road segment or intersection level. The SRTC model uses specific analytical processes that consider choices based on destination, mode, time of day and route and then represents the resulting traffic flow at the macroscopic level. Macroscopic models can be used to predict the extent of congestion caused by traffic demand or incidents in a network. The SRTC model assesses current conditions and forecasts demand based on projections of future employment and household demographics.

Land Use

A key aspect of SRTC's travel demand model is land use. Spokane's land use is a mosaic of past economic conditions and development philosophy. At the turn of the 20th century, higher density neighborhoods with homes and parks showed that quality neighborhoods were an important part of Spokane's fabric. Neighborhood retail centers saved residents long trips to fill routine needs. With the post-war era, however, the car found a more dominant role and increased access to distant areas and family mobility. This resulted in the desire to move outside the city limits to areas with less expensive land and larger lots.

7 2 U.S.C. 135(g)(4)(C)(ii) states that projects that are categorically excluded from the National Environmental Policy Act (NEPA) process and are not regionally significant can either be identified individually or grouped with other projects of the same funding source in the STIP.

8 40 CFR § 93.126 states that certain highway and transit projects are exempt from conformity requirements (highway safety, transit, bike and pedestrian facilities, travel demand management programs, and other activities that do not lead directly to construction of a project), unless it is determined by the Interagency Consultation group that the project has potentially adverse emissions impacts for any reason. 40 CFR § 93.127 identifies several project types that are exempt from regional emissions.

Figure 2.14: SRTC Land Use Categories

Code	Description	Land Use Type	Measure
LU1	Single-family, duplex, triplex, manufactured or mobile home	Population	Housing units
LU2	Four our more residential units on a single parcel	Population	Housing units
LU3	Hotel, motel, or campsite	Other	Rooms/campsites
LU4	Agriculture, forestry, mining, industrial, manufacturing, wholesale	Employment	Employees
LU5	Retail trade (non-central business district [CBD])	Employment	Employees
LU6	Services and offices	Employment	Employees
LU7	Finance, insurance and real estate services (FIRES)	Employment	Employees
LU8	Medical	Employment	Employees
LU9	Retail trade (CBD)	Employment	Employees
LU10	College and university commuter students	Other	Students
LU11	Education employees (K–12)	Employment	Employees
LU12	Education employees (college and university)	Employment	Employees

Lower density suburban developments had lower cost infrastructure requirements, making urban density developments in the city less competitive. Residential and commercial development inside the City of Spokane became stagnant, demonstrated by the slow growth rate in the city between 1960 and 1990. By the 1990s, changes in water quality and road standards increased the cost of developing low-density residential developments. Factors such as sewer system requirements, stricter road standards, and higher land values caused increased dwelling unit densities in order to economically afford continued growth and development.

Now, infilling with smaller but higher density residential developments is becoming more commonplace. Commercial and retail land uses have also changed. Neighborhood stores have given way to shopping centers and big box retailers. Strip commercial development has flourished along principal arterials due to easy access, visibility, and a constant flow of traffic.

Land Use Categories

For modeling purposes, the land uses in figure 2.14 are broken down into categories and associated with different travel behaviors. For employment based land uses, industrial classification codes are used to differentiate establishments into the various categories. There are distinct differences between these categories. For example, a commercial establishment such as a fast food restaurant generates more traffic than an office. The type of trips and time of day they are taken differ as well.

Each land use category has a value for the number of housing units, employees, hotel/motel rooms, or higher education commuter students. All land uses are geocoded by SRTC staff. Geocoding assigns a location to all data, based on information such as an address. Using Geographic Information Systems (GIS), the land use totals are grouped by areas known as Transportation Analysis Zones (TAZ), which are the primary units of analysis in SRTC's travel demand model. There are 519 TAZs in Spokane County as shown in figure 2.15.

2019 Land Use Development

A variety of data sources were used to establish land use values for the 2019 base year model and ensure their accuracy. This section provides an overview of the process used to develop SRTC's 2019 base year land use.

Population

SRTC uses housing units as a substitute for population in the regional travel demand model. However, staff does use the Washington State Office of Financial Management's (OFM) population estimates for Spokane County and the jurisdictions within, to validate its base year housing unit figures.

The SRTC model uses occupied single-family (SF) and multifamily (MF) housing units to represent where people live as part of the trip generation process. For both categories, staff used housing unit counts directly from the 2010 Decennial Census. Local building permit data is used to account for new or removed housing units between the decennial census and the 2019 base year, which is shown in figure 2.16.

SRTC uses housing unit occupancy rates from OFM's Small Area Estimates Program (SAEP) data. The 2019 rate was applied to the SF and MF housing units in each TAZ, allowing the model to reflect a higher level of accuracy when determining trip generation.

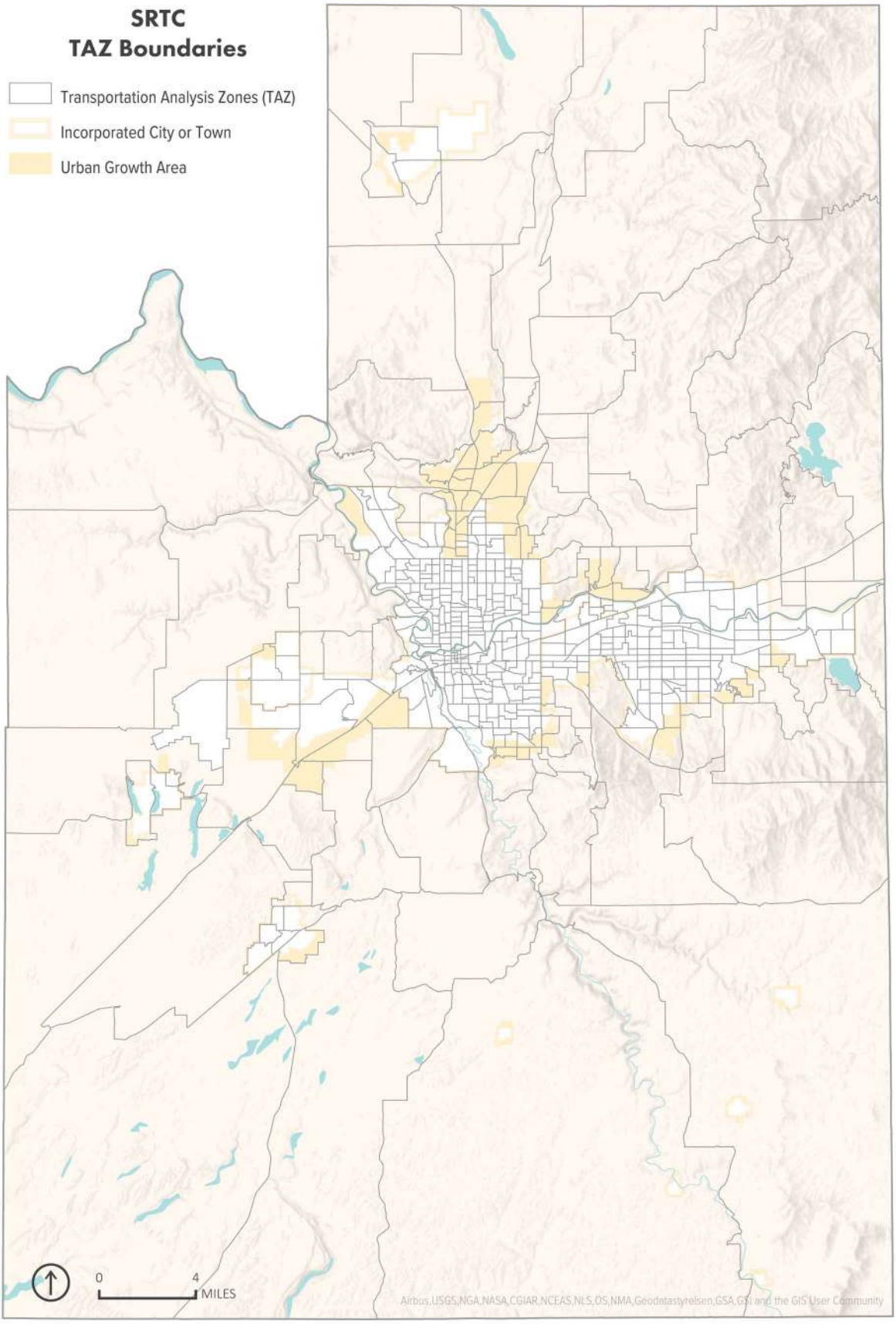


Figure 2.15: Map of SRTC TAZs

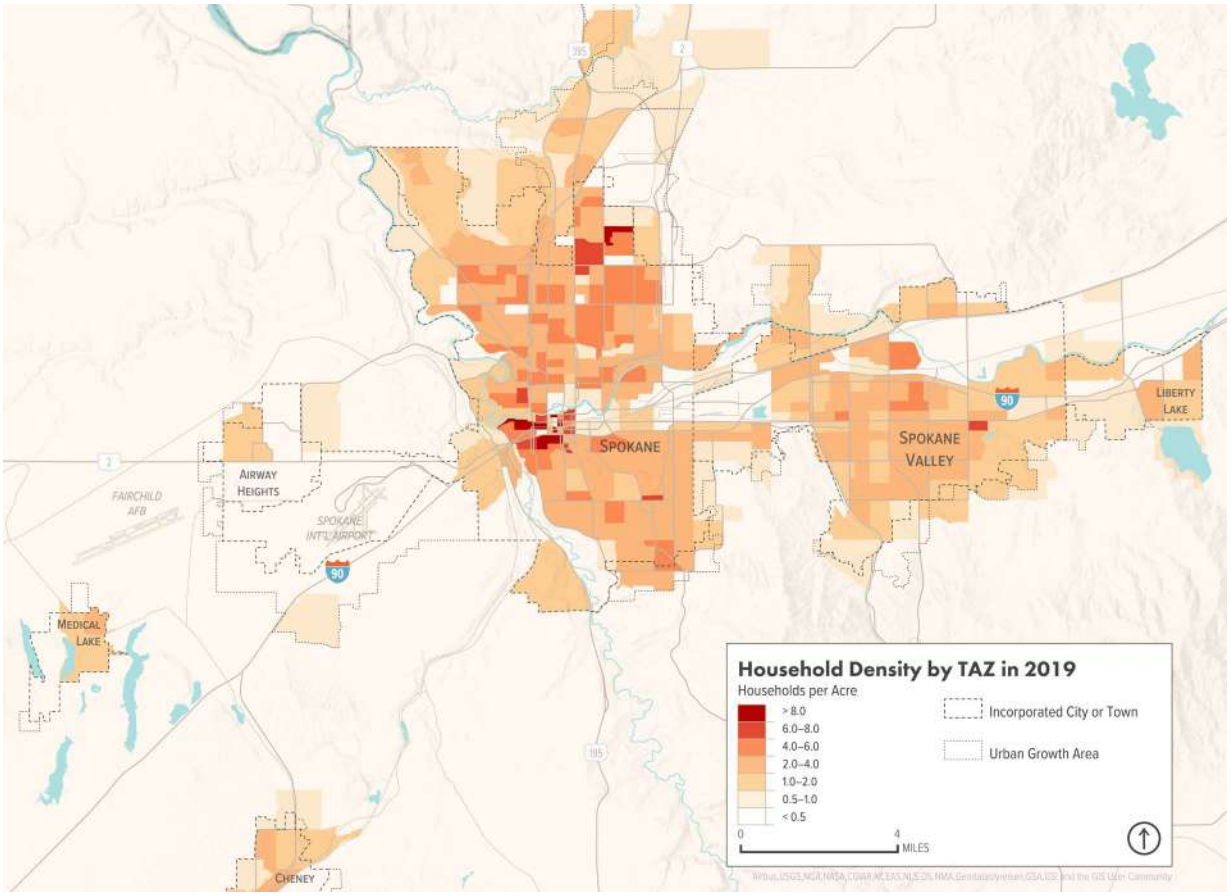


Figure 2.16: Household Density by TAZ in 2019

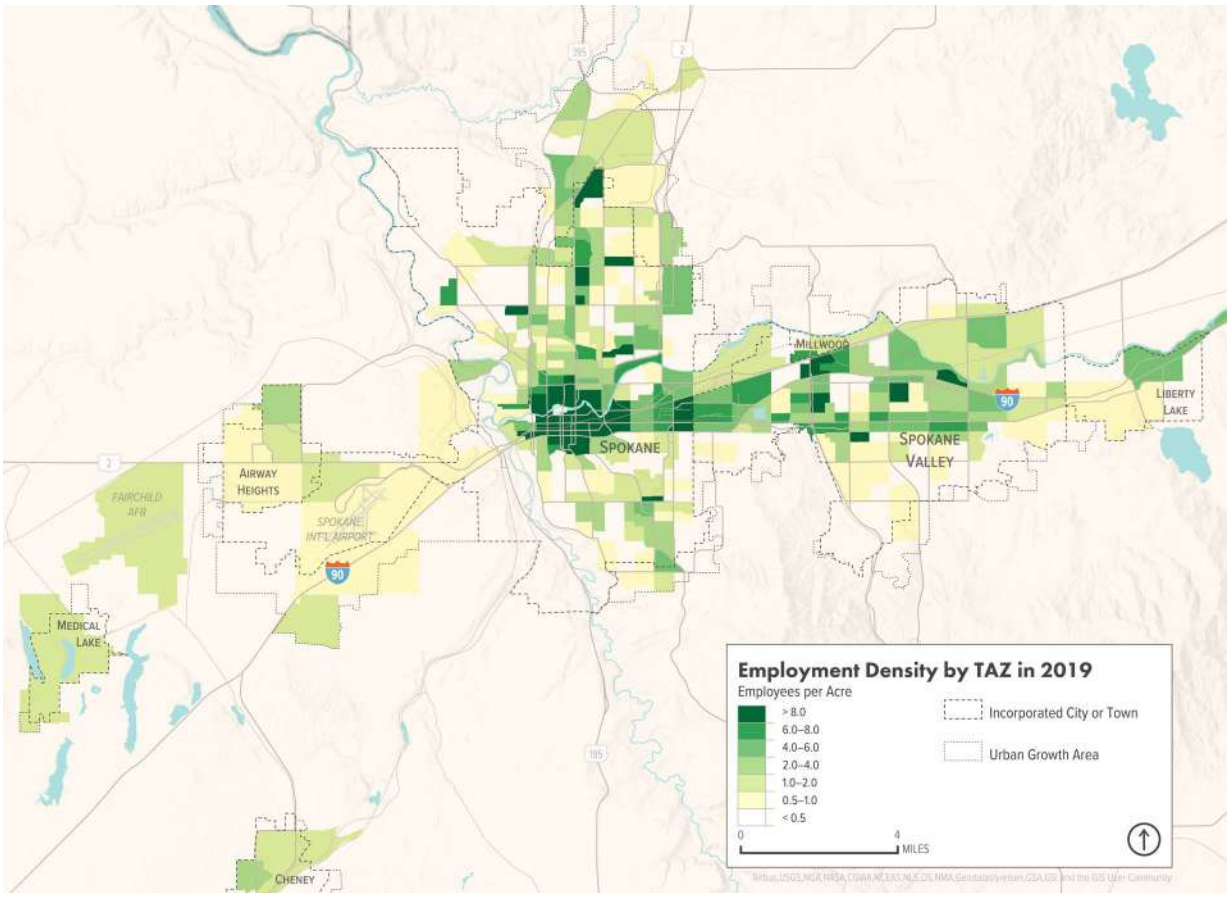


Figure 2.17: Employment Density by TAZ in 2019

Figure 2.18: Summary of SRTC 2019 Base Year Land Use Totals

Description	Code(s)	2019 Base Year Total
Total Population	-	515,250
Occupied Single-Family Housing Units	LU1	155,442
Occupied Multifamily Housing Units	LU2	51,938
Total Employment	LU4–LU9, LU11, LU12	228,559
Hotel Rooms/Campsites	LU3	7,860
High Education Commuter Students	LU10	30,791

Employment

The primary source for employment data is Washington State's Employment Security Department's (ESD) Unemployment Insurance (UI) data. It is utilized to determine business locations, number of employees, and industrial classifications.

Significant staff research supplements the ESD data. A number of additional data sources, including the U.S. Census Bureau's Longitudinal Employer-Household Dynamics (LEHD) data, are used to confirm and, as needed, revise the UI data.

Various additional checks and validation techniques are also performed to increase the accuracy of the data. This includes utilizing GIS software to review the employment data against land use, zoning, and Spokane County Assessor parcel data to confirming the correct location and industrial classification. Moreover, SRTC staff contacts the region's larger employers directly to confirm the number of employees and other data. Figure 2.17 illustrates the 2019 employment density in the greater Spokane area.

Hotel and Motel Rooms

For hotel and motel rooms (LU3), SRTC uses transient accommodations data from the Washington State Department of Health. This data includes employee counts and number of rooms.

Higher Education Commuter Students

The LU10 category consists of higher education commuter students. Staff calculates the totals for this category by contacting higher education institutions throughout Spokane County directly, to request enrollment and resident student population totals by campus. The resident student population is subtracted from enrollment to determine the commuter student population. When available, other non-commuting populations such as online students are removed from the commuter student population as well. A summary of the 2019 totals for the generalized land use categories is provided in figure 2.18.

Photo Credit: Spokane International Airport

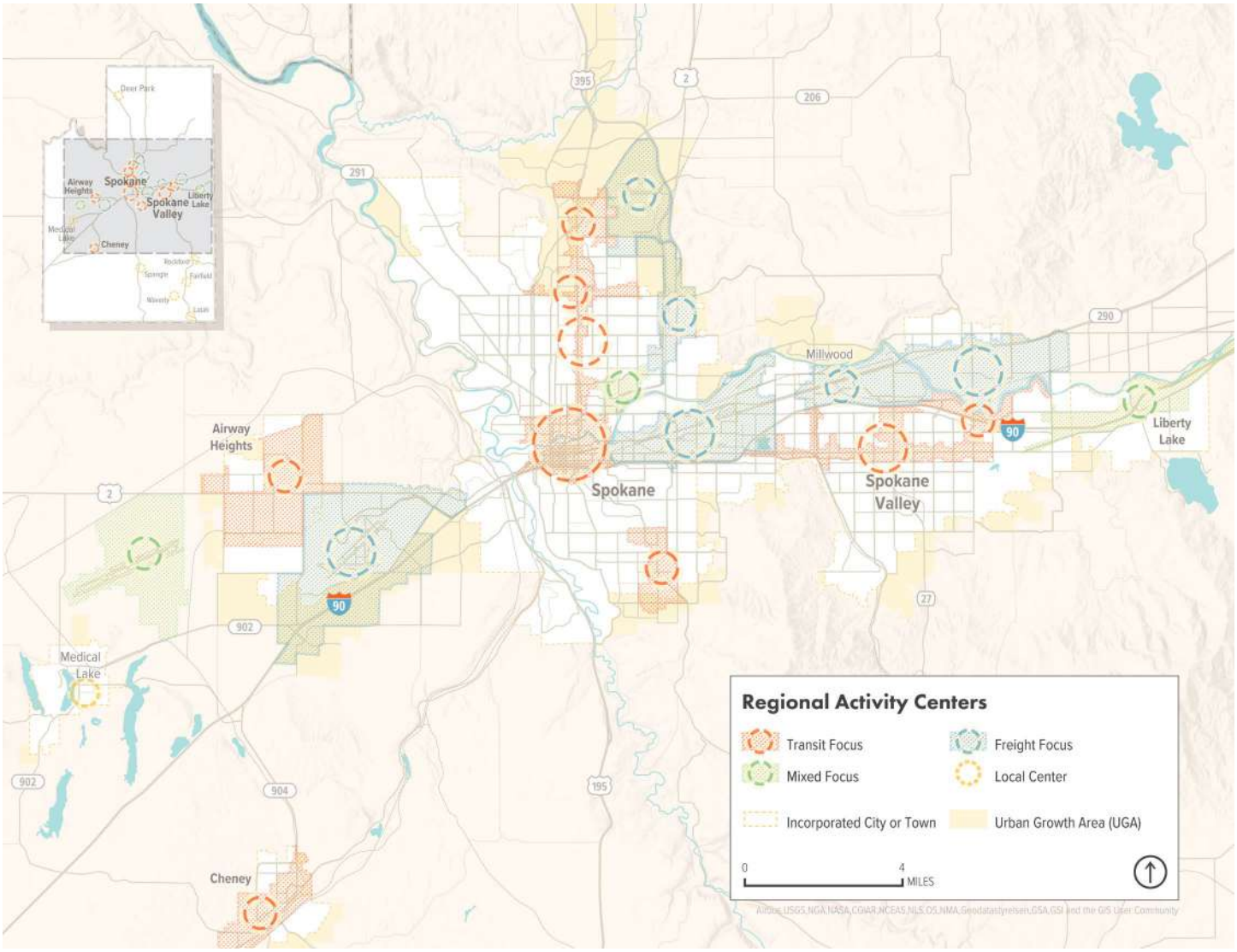


Figure 2.19: Regional Activity Centers

Activity Centers & Vacant Lands

Through analysis of current employment concentrations, densities, and types, SRTC identified employment activity centers throughout the Spokane region. These activity centers are areas of regional significance with high concentrations and densities of employment. Centers were designated one of three types: transit focused, freight focused, or mixed focus. Identifying these centers aids SRTC and other agencies in planning for transportation needs and investments.

The methodology used was developed as part of SRTC's Spokane Regional Truck Freight Profile, which includes an analysis of freight flows to and from these activity centers. The region's activity centers correlate with major industrial and commercial areas. They are generally situated close to highways; with most located near I-90 or the north Division corridor. A map of the activity centers is provided in figure 2.19.

SRTC staff also performed a basic analysis on vacant lands in the region. Using GIS technology, properties that were vacant and more likely to be developed were identified. Figure 2.20 displays these areas. They do not account for already existing developments or buildings that are vacant. However, the analysis does indicate major areas of available lands in a variety of locations throughout the region, as shown in the map. As infrastructure is built, and development occurs, these tools are used to support local decision makers in shaping the transportation system.

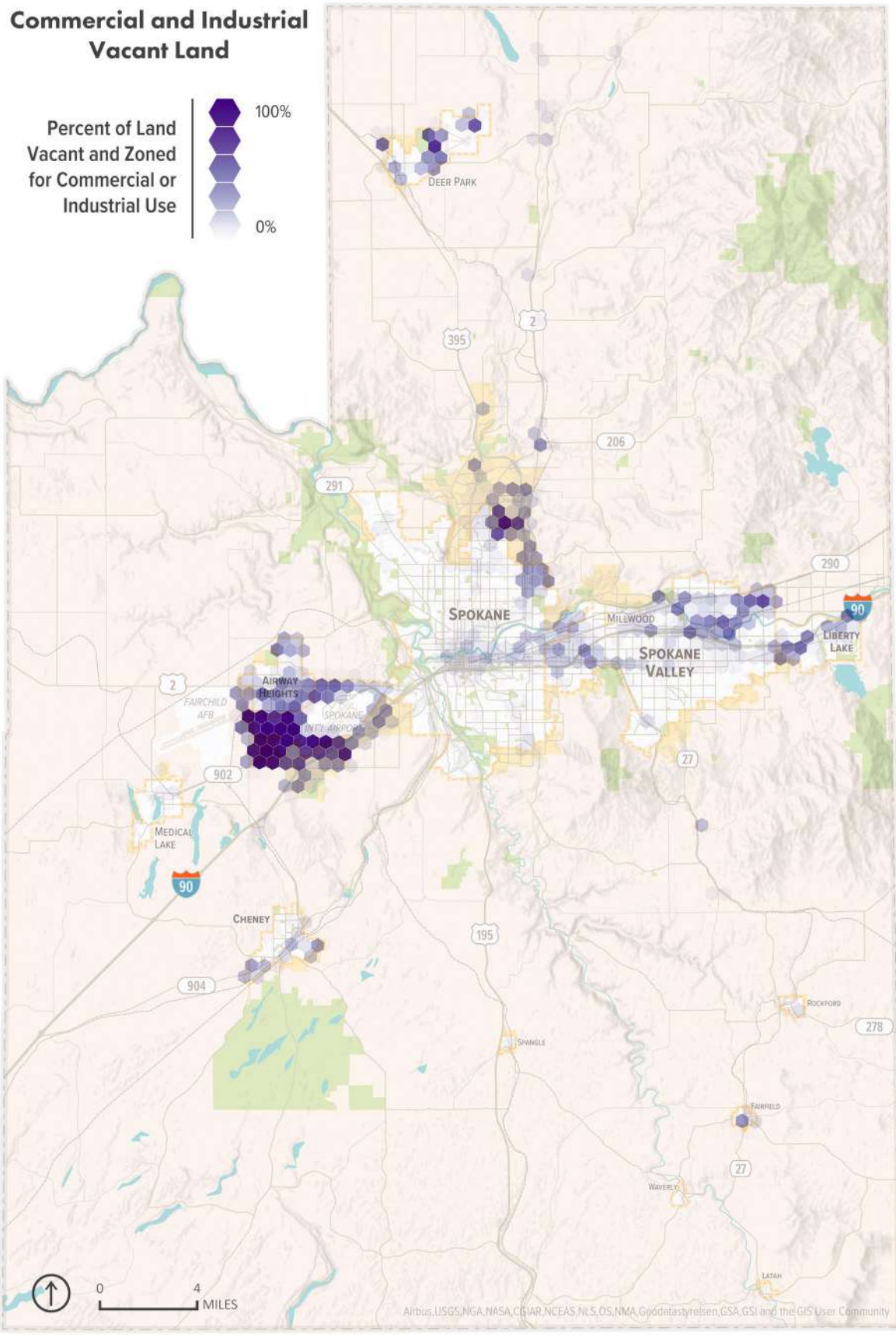


Figure 2.20: Commercial and Industrial Vacant Lands

Regional LOS Performance Measure Analysis

SRTC uses the travel demand model to analyze regional Level of Service (LOS) for area transportation facilities. Regional LOS is evaluated for the following modes: vehicular, transit, and non-motorized (combined biking/walking). The regional LOS analysis is based on changes to land use and the transportation system that will occur as a result of comprehensive plan updates or amendments.

Air Quality Modeling

Although the Spokane planning area is in compliance with clean air standards, the region continues to work to maintain and improve air quality. Pollutants pose a range of health impacts such as respiratory ailments, heart disease and cancer.

Spokane is designated as an attainment area for Carbon Monoxide (CO) and Particulate Matter (PM_{10}), operating under limited maintenance plans. On August 29, 2005, EPA re-designated the Spokane area from nonattainment to attainment for carbon monoxide (CO) with an approved maintenance plan.[9] On August 30, 2005 EPA re-designated the Spokane area from nonattainment to attainment for particulate matter-10 (PM-10) with an approved Limited Maintenance Plan (LMP).[10] On April 12, 2016 the EPA approved the Second 10-year limited maintenance plan (LMP) for PM_{10}.[11]

The second 10-year LMP for CO was approved August 15, 2016. These LMPs demonstrate the minimal risk that PM_{10} or CO from motor vehicles would contribute to a PM_{10} or CO violation. For this reason, no motor vehicle emission budget (MVEB) or paved road dust budget is established. While an area with an LMP does not need to do a regional emissions analysis, it still retains other conformity requirements as detailed in 40 CFR 93.109, such as consultation,[12] timely implementation of transportation control measures[13] and project level analysis.[14] While much of the improvements in air quality in the region are due to automobile technological advances (fuel efficiencies, emissions equipment), several strategies in the region have been used as well, including:

- Vehicle Inspection and Maintenance programs
- Commute Trip Reduction (CTR) programs
- Street sweeping
- Chemical de-icing applications
- School bus diesel retrofit program
- Traffic signal optimization and signal timing progression
- Traffic flow improvements
- Park and ride lots
- Pedestrian and bike facility improvements
- Parking management programs

Performance Management

In 2016 SRTC, with the assistance of stakeholders, completed the Horizon 2040 Implementation Toolkit Study, which designed options and implementation activities for SRTC to move toward a performance management approach to regional decision-making. Federal regulations for long-range transportation planning in MAP-21 and the FAST Act required SRTC to begin integrating performance management into regional planning and programming decisions.

In Horizon 2045 you will find the System Performance Report (Appendix D), which details each of the performance measures SRTC monitors. SRTC also used other performance measures that were linked to decision making for selecting regionally significant projects.

Project Selection Process

Figure 2.21 details the criteria that were developed to assist the SRTC Board and link performance and regional decision-making for project selection. The tool includes both federal and regional performance areas. When appropriate, the tool criteria reflect future conditions to evaluate projects. Forecasted data are represented by bold green text in the figure.

As performance measures are developed and targets are set, this process will need to evolve. While this effort is intended to reflect project attributes that are connected to data, it is still important to evaluate the projects from other aspects that currently cannot be measured by current data; an example would be a projects impact on potential job growth. The SRTC Board has the ability to deliberate on projects to reveal these potentials where performance measures data is not available to assist with project evaluation.

9 70 Federal Register (FR) 37269

10 70 FR 38029

11 81 FR 21470

12 40 CFR 93.112

13 40 CFR 93.113

14 40 CFR 93.116

Figure 2.21: Evaluation Tool Criteria by Performance Area

ECONOMIC	STEWARDSHIP	QUALITY	OPERATIONS	SAFETY
Economic Development Potential	2045 HOUSING UNIT DENSITY	LOCATED ON NHS SYSTEM	VHT REDUCTION	Serious Injury and Fatal Collision Rates
2045 EMPLOYMENT DENSITY		IMPROVES BICYCLE PRIORITY NETWORK		
On Freight Corridor	AIR QUALITY IMPACTS		CMP Corridor Priority	
Truck Volumes		IMPROVES TRANSIT PRIORITY NETWORK	Bridge Condition	Bicycle and Pedestrian Collision Rates

The Regional Transportation Network

Spokane County's transportation system is made up of a multimodal network including an interstate, several highways, arterials, collectors, local roads, public transportation bus routes, paratransit service, vanpools, intercity/interstate bus service, railroads, airports, bike lanes, sidewalks, and multi-use paths.

Roadway Infrastructure

Roadways are characterized by their function in a community as well as in the overall transportation system. Based on their function, roadways are designed and constructed to ensure the movement of people and goods in a safe and efficient manner. Federal Functional Classification (FFC) data is collected on an annual basis and imported into SRTC's travel demand model with each model update. The model also includes a number of local roads to better capture local travel patterns and transit operations.

There are 4,568 centerline miles and 9,673 lane miles of public roadways in Spokane County. Figure 2.22 shows the distribution of centerline and lane miles by FFC in the region.

Another way to evaluate the region's roadway infrastructure is to look at how well it is utilized. Using Highway Performance Monitoring System (HPMS) data to calculate VMT, one can see that the region's Principal Arterials account for only seven percent of the region's total lane mileage, but carry the largest share of total VMT, at 31 percent (see figure 2.23).

Federal Functional Classification

Local governments are struggling to fund the maintenance and preservation of our transportation system. Funding eligibility is based on functional classifications, as required by the Federal-Aid Highway Act of 1973, to update and modify the Federal-Aid Highway systems. (Functional class determination is developed within the framework of Section 134 of Title 23, U.S. Code, Metropolitan Planning.) The following facilities make up Spokane's roadway system and are shown in figure 2.25.

- **Freeways and Divided Highways:** These roadways carry a large amount of traffic at high speeds. They have limited access with freeway interchanges typically spaced at least one mile apart.
- **Principal Arterials:** These roadways carry large volumes of traffic to major destinations throughout the metropolitan area. They often connect to outlying areas via state highways or county roads. Typically, principal arterials have at least two lanes in each direction, with curbs and sidewalks. Most major intersecting streets are controlled with traffic lights and they generally have public transportation service.
- **Minor Arterials:** These roadways connect residential and business districts to the larger transportation system by accumulating traffic from lower classification roadways. They can have a variety of design characteristics, depending on which part of a community they serve and the amount of activity in their vicinity. Minor arterial corridors generally have a mix of residential and commercial activity. Their classification is based primarily on how they contribute to connecting the transportation system, as opposed to their traffic volumes.
- **Collectors:** These roadways funnel traffic generated by a variety of local land uses onto a single roadway that connects to either a minor or principal arterial. They typically have one lane in each direction and traverse neighborhoods at slower speeds. They generally have lower volumes and are not designed to carry trips through a community. Unless located in a commercial or industrial area, they are not designed for heavy vehicles.
- **Local Streets:** These roads provide direct access to individual properties and are designed to meet the specific needs of their local neighborhoods. They have slower speeds and lower volumes, with traffic control limited to stop and yield signs. They may or may not be paved or have curbs and sidewalks.

Indian Reservation Roads

The Indian Reservation Roads (IRR) are public roads which provide access to and within Indian reservations, Indian trust land, restricted Indian land, and Alaska native villages. The IRR Inventory is a database of all transportation facilities eligible for IRR Program funding by tribe, reservation, Bureau of Indian Affairs (BIA) agency and region, Congressional district, state, and county. Other specific information collected and maintained under the IRR Program includes classification, route number, bridge number, current and future traffic volumes, maintenance responsibility, and ownership.

The IRR Program addresses transportation needs of tribes by providing funds for planning, designing, construction, and maintenance activities for all public roads. It is jointly administered by FHWA's Federal Lands Highway Office and the BIA's Division of Transportation, in accordance with an interagency agreement.

Area Roadway Conditions

FHWA has instituted federal measures to assess the condition of pavement and bridges on the National Highway System (NHS). The NHS consists of the Interstate Highway System, as well as other significant roadways. These include principal arterials, intermodal connectors, the Strategic Highway Network (STRAHNET), and major STRAHNET connectors.

States are required to set targets for these measures. In Washington, WSDOT has the responsibility to gather this data. Conditions for pavement, regardless of ownership is reported as follows:

- **Interstate NHS Routes:** Percent of pavement in good condition and percent of pavement in poor condition.
- **Non-Interstate NHS Routes:** Percent of pavement in good condition and percent of pavement in poor condition.

The minimum requirement for WSDOT is that they must maintain no more than five percent of lane miles on the Interstate System in poor condition. Figure 2.24 shows the condition of NHS routes in the Spokane region. A map of the region's

Figure 2.22: Centerline Miles, Lane Miles, and Daily VMT by FFC in SRTC Planning Area

FFC	Centerline Miles		Lane Miles		Daily VMT	
Interstate	45	1%	214	2%	2,592,096	24%
Other Freeway/Expressway	58	1%	195	2%	694,776	6%
Other Principal Arterial	203	4%	681	7%	3,362,194	31%
Minor Arterial	259	6%	548	6%	1,716,363	16%
Major Collector	604	13%	1,222	13%	1,107,426	10%
Minor Collector	306	7%	653	7%	194,340	2%
Local Access	3,095	68%	6,161	64%	1,087,932	10%
Total	**4,568**	**100%**	**9,673**	**100%**	**10,755,126**	**100%**

Figure 2.23: Share of VMT and Lane Miles by FFC in SRTC Planning Area

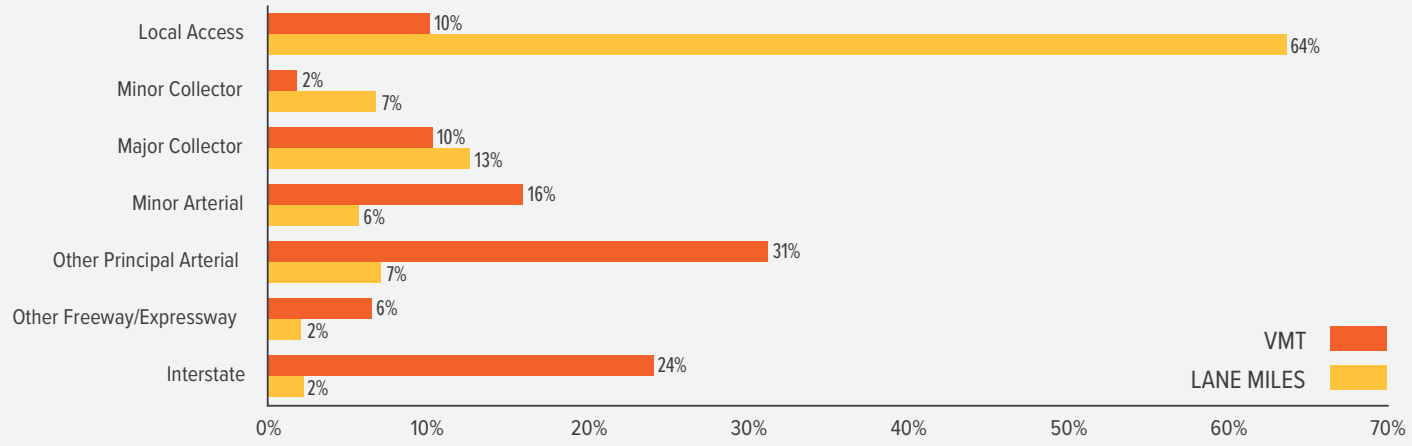
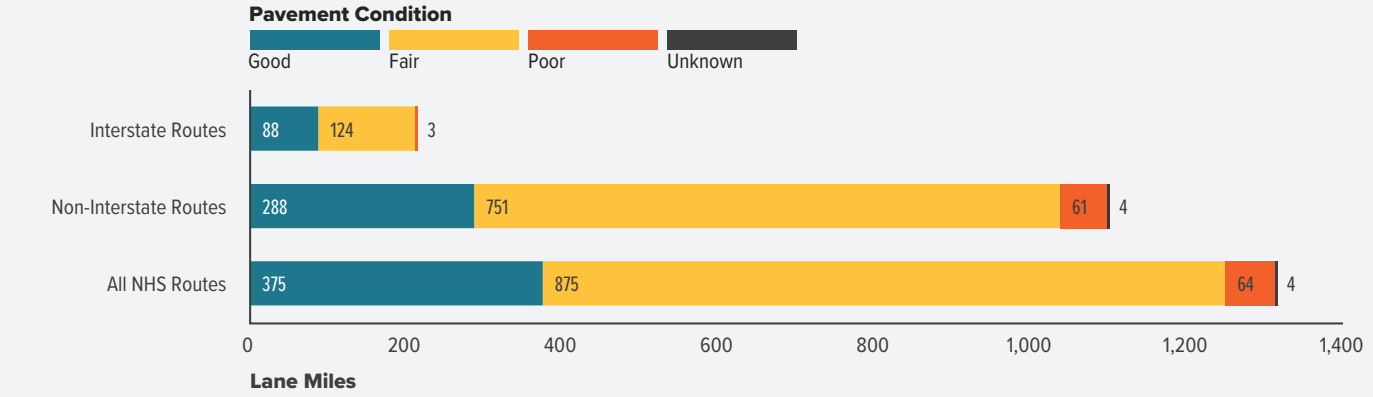


Figure 2.24: Condition of NHS Pavement by Lane Mile



WSDOT Pavement Office, 2019/2020

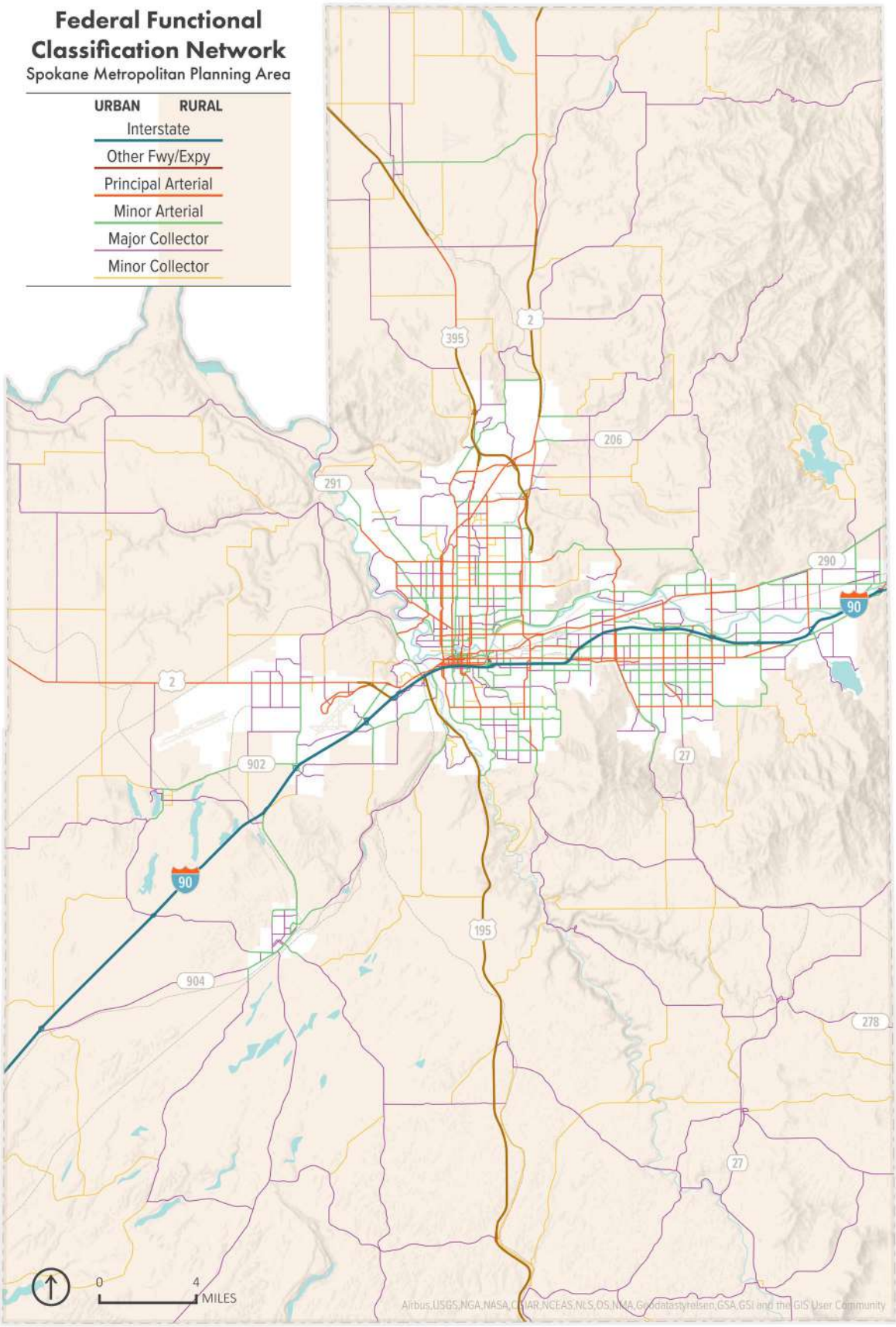


Figure 2.25: FFC Network

NHS routes is provided in figure 2.28. The map includes all roadways that the proposed pavement rule applies to. More information on pavement condition and associated performance can be found in the System Performance Report (Appendix D).

Aside from the interstate system, much of the region's local infrastructure was built over half a century ago and it is showing its age. The freeze-thaw cycle every winter causes extensive potholing that grows into more serious damage if not repaired quickly. Plowing each winter scrapes off roadways striping and markings. Pavement conditions continue to decline due to budget shortfalls. Further discussion on the state of decline of pavement is included in the following Maintenance and Preservation section of this chapter.

VMT

VMT is a measure of the number of miles traversed by a number of vehicles for a given time period (usually measured daily or annually). It is another indicator of usage of transportation facilities, most often motor vehicles on interstates, highways, and other road or street systems. Washington state uses the HPMS to estimate VMT. HPMS mileage is calculated annually. The number of miles traveled on the regional transportation network is impacted by factors such as population of the region, age distribution of the users, and the number of vehicles per household. However, the greatest factor, by a significant margin, is how land uses are designated.

Figure 2.26 illustrates historical daily VMT per capita growth in SRTC's planning area in comparison to the state of Washington as a whole. This per capita VMT indicator divides VMT by population to account for population growth or loss. This is important to track since our region is experiencing population and economic growth. Reducing per capita VMT can help a region achieve air quality goals and congestion goals.

Congestion

It has been the general practice of state and local transportation departments to mitigate congestion for purposes of improving travel times and reducing the costs generated by vehicle delay. "The underlying assumption is that congestion relief is an unmitigated good" because vehicle delay costs Americans billions of dollars in wasted fuel and time each year.[15] However, "the common misinterpretation of such statistics is that our cities would be so much more economically productive if only we could eliminate the congestion that occurs on urban streets." In fact, studies show that increased travel delay generally means a higher gross domestic product (GDP) per capita for cities across the United States. Simply stated, the presence of more automobiles stuck in traffic indicates that more people are traveling to or from work, meetings, shopping, and recreation, "indicating the presence of a vibrant, economically-productive city." Congestion can also encourage people to change travel behaviors by traveling shorter distances, living closer to work, traveling less or shifting travel modes.

To balance the conversation, congestion does have its share of problems. Certain industries would rather not develop in congested areas, such as freight shippers, trucking firms or warehousing businesses. Congestion can add costs to goods and services. It may also impacts residents' quality of life if too much time is spent in congestion. It's important to understand the cause of congestion and if it is negative (i.e., delay from a poorly designed traffic signal) or positive (i.e., an event being held at an activity center).

Congested roads can be defined in various ways. One way to evaluate congestion is to look at the annual delay per auto commuter, which is the extra time spent during the year traveling at congested speeds rather than free-flow speeds by private vehicle drivers and passenger who typically travel in the peak periods. Figure 2.27 includes data from the Texas A&M Transportation Institute (TTI) that indicates how annual delay has changed per auto commuter over the past twenty years. Our annual delay congestion levels compare

Figure 2.26: VMT per Capita Growth in the SRTC Planning Area and Washington State, 2010–2019

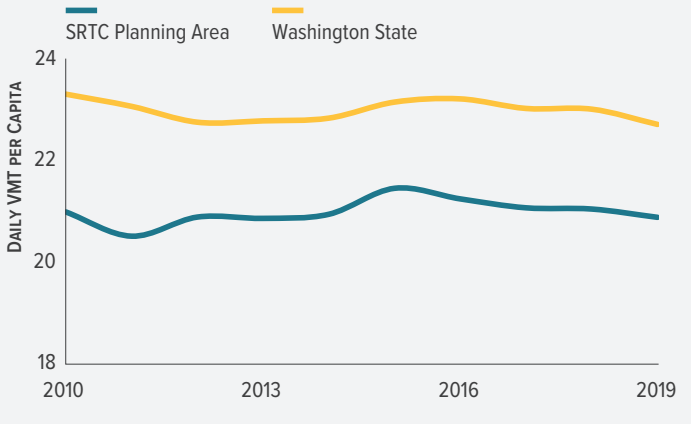
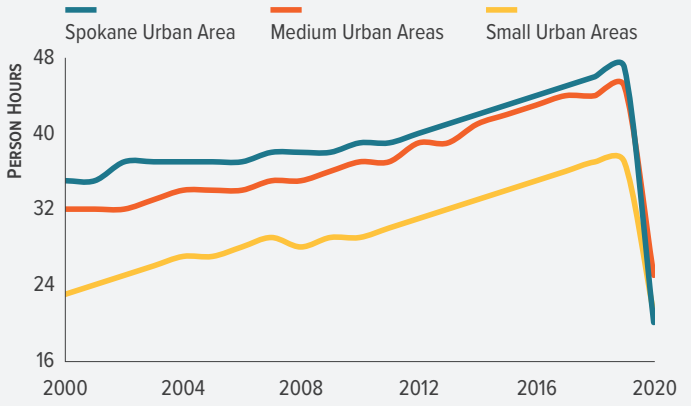


Figure 2.27: Delay per Peak Hour Auto Commuter, 2000–2020



2015–2019 ACS 5-Year Estimates

15 Dumbaugh, E. (2012, June 1). Rethinking the Economics of Traffic Congestion. Retrieved September 23, 2014, from City Lab : http://www.citylab.com/commute/2012/06/defense-congestion/2118/

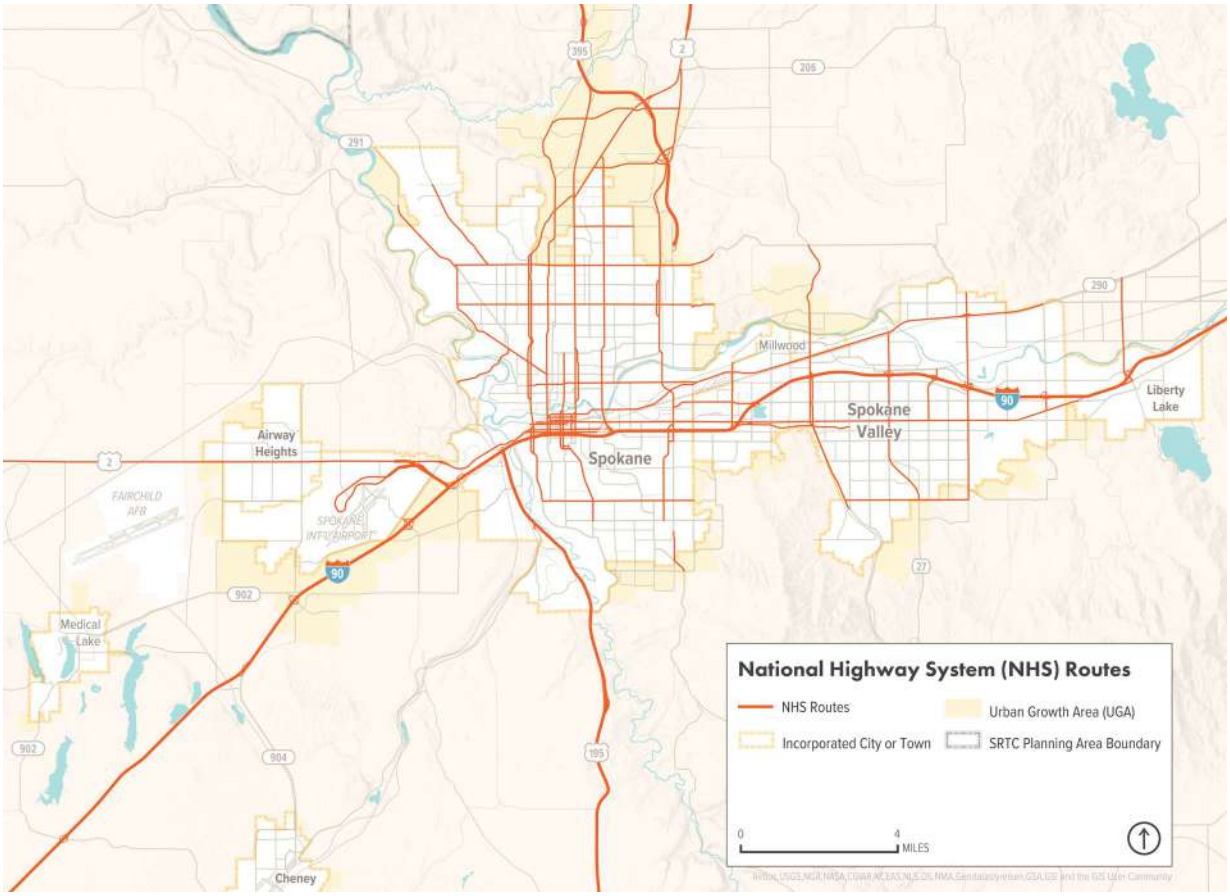


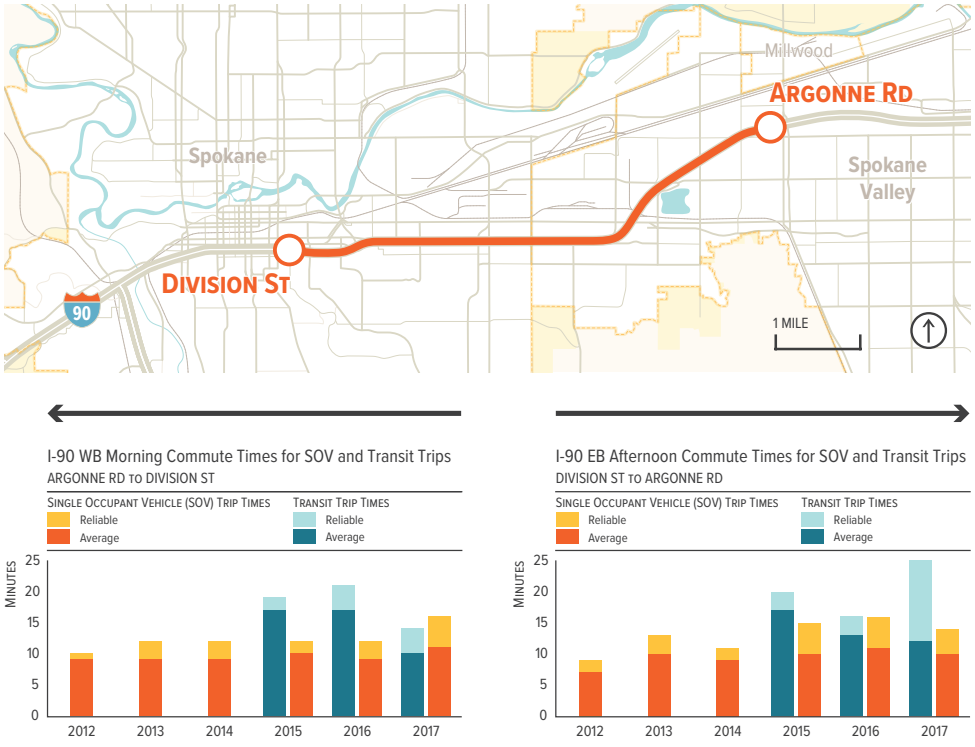
Figure 2.28: NHS Routes

similarly to other medium-sized urban areas.

Another gauge for traffic congestion is the WSDOT Corridor Capacity Report. WSDOT uses its own data collection methods for the report, which was last published in 2018. It shows I-90 eastbound morning travel times, from Argonne Road to Division Street, increasing over time (see figure 2.29). In 2013 travel times on this segment were nine minutes. By 2017 they had increased to 11 minutes. For the same segment, travel time reliability decreased by four minutes. Reliability is used for planning purposes. It measures how long a trip would take to be on-time 90 percent of the time and indicates non-recurring congestion problems like collisions and bad weather. Travel times, meanwhile, suggest everyday congestion conditions. Commute time for transit is ten minutes.

On the westbound I-90 segment

Figure 2.29: Travel Times and Reliability on I-90



WSDOT, 2018 Corridor Capacity Report

from Division to Argonne, evening commute times for vehicles stayed at ten minutes from 2013 to 2017. However, reliability changed from 13 minutes to 14 minutes. Commute time for transit on this segment is 12 minutes.

There is general recognition that the Spokane region has regular congestion that occurs for a limited period during peak AM and PM commute times. It is often heightened in the construction season. SRTC has more strategies regarding congestion and managing congestion in the Congestion Management portion of this chapter.

Maintenance and Preservation

Maintenance and operations activities include inspections, repairs, preventive maintenance and overall operation of the system. Routine maintenance involves cleaning, maintenance of pavement markings and signs, crack filling, pothole patching, and surface treatments. Other operational activities can include winter snow plowing, de-icing or sanding as well as dust control and street sweeping.

Preservation involves proactive maintenance to reduce expensive and disruptive rehabilitation or replacement of infrastructure before the end of its useful life. According to FHWA, pavement preservation programs are beneficial because they "preserve investments, enhance pavement performance, ensure cost-effectiveness, extend pavement life, reduce user delays, and provide improved safety and mobility."[16] As is the case for regions across the country, funding for preservation programs in the Spokane region continues to lag behind need.

Pavement rehabilitation is defined as a structural or functional enhancement of pavement, which produces an extension in service life by substantially improving pavement condition and ride quality.[17] This can also include improving the load-carrying capacity. Reconstruction usually involves replacing most if not all of the pavement surface or structure.

Roadway Infrastructure Challenges

The biggest challenge the Spokane region faces when it comes to roadway infrastructure is a lack of funding for maintenance and preservation. Many jurisdictions report that it would take millions more dollars to catch up and keep up with street maintenance needs. With VMT expected to grow, roadways continuing to age and conditions declining, combined with the benefit of relatively steady mild congestion levels; the opportunity for improved maintenance and preservation of the Spokane roadways should be prioritized.

In 2021, Spokane County reported a road preservation backlog of over $290 million, while Spokane Valley reported a $100 million backlog. One approach to address the maintenance backlog is to increase funding through taxes, levies or vehicle license tab fees. The City of Spokane utilized another tool, establishing a Transportation Benefit District (TBD), in 2010. According to the City's definition, a TBD is "a quasi-municipal corporation and independent taxing district created for the purpose of acquiring, constructing, improving, providing, and funding transportation improvements within a defined area, or district." The district boundary is the City limits. The TBD assesses a $20 annual fee on vehicles registered within city limits to help fund maintenance and preservation activities for existing transportation facilities and programs. Ten percent of TBD funding also goes to the City's pedestrian program. These activities are detailed in the City's Six Year Pavement Maintenance Program. More information on the TBD can be found on the City's website.[18]

Bridges

Since the 2007 tragedy of the I-35W Mississippi River bridge collapse in Minneapolis, bridge safety has become an even higher priority in transportation planning and programming. According to the American Society of Civil Engineers 2021 Infrastructure Report Card, 7.5 percent of the nation's highway bridges are structurally deficient (i.e., in poor condition) or are functionally obsolete (not suitable for its current use and is not able to handle current traffic volume, speed, size or weight). Additionally, an estimated $125 billion in investment is needed to fix the backlog of bridge deficiencies in the United States. Bridge inspections, maintenance, repair, and reconstruction, or replacement if necessary, is an emphasis area in Horizon 2045.

Under new federal performance management rules aimed at improving bridge condition, FHWA measures are applicable to all NHS bridges regardless of ownership or maintenance responsibility. States and MPOs must track bridge condition and set bridge condition targets for the following two FHWA bridge condition measures:

- **NHS Bridges:** (1) Percent of bridge deck area in good condition and (2) percent of bridge deck area in poor condition.

Federal rules for bridge condition are based on an assessment of the deck, superstructure, and substructure. For NHS bridges, states must ensure that the overall percentage of bridge deck area classified as poor condition does not exceed ten percent. States have established statewide targets for each of the pavement and bridge condition measures for a 4-year performance period. The targets were established in coordination with relevant MPOs to the maximum extent practicable. WSDOT and SRTC were involved in these discussions. More information can be found in the System Performance Report (Appendix D).

Bridge Condition

Data regarding the condition of the 140 NHS bridges in the region is in figure 2.30. Updated data will be evaluated each year. Targets will be set for bridge performance and those goals will be monitored as required every two years.

16 http://www.fhwa.dot.gov/pavement/preservation/091205.cfm

17 http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_w35-a.pdf

18 https://my.spokanecity.org/streets/maintenance/transportation-benefit-district/

Bridge Maintenance and Preservation

Bridge preservation is defined as actions or strategies that prevent, delay or reduce deterioration of bridges or bridge elements, restore the function of existing bridges, keep bridges in good condition and extend their life. This is also a safety concern for users in our region.

Effective bridge preservation delays the need for costly reconstruction or replacement by applying preservation strategies on bridges while they are still in good or fair condition and before the onset of serious deterioration. Bridge preservation encompasses preventive maintenance and rehabilitation activities.

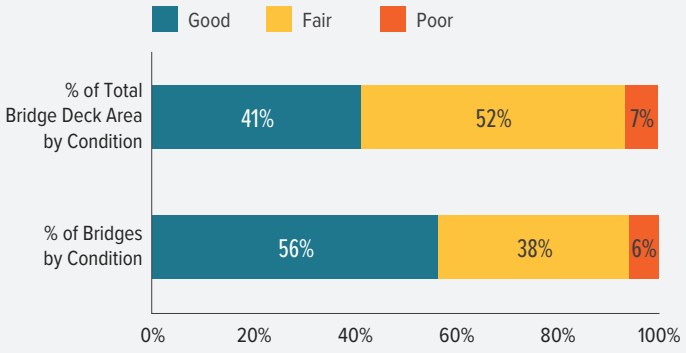
Maintenance is a planned strategy of cost-effective treatments to an existing roadway system that preserves the system, slows deterioration, and maintains or improves the functional condition of the system (without substantially increasing structural capacity). For bridges, maintenance elements are applied to elements or components of structures with significant remaining useful life. Examples of maintenance activities include but are not limited to:

- Bridge washing, cleaning and painting
- Sealing deck joints
- Facilitating drainage
- Sealing concrete
- Removing debris
- Lubricating bearings

Bridge Challenges

As with roadway conditions, the biggest challenge with area bridges is funding expensive maintenance and preservation needs. According to FHWA's National Bridge Inventory (NBI) in 2019, there were a total of 304 bridges in Spokane County. This total includes the region's 140 NHS bridges. Of those, 8 are in poor condition and 79 are in good condition.

Figure 2.30: NHS Bridge Condition in SRTC Planning Area



NBI ASCII Files, 2020

ITS

SRTC and its regional partners have worked to develop a Transportation Systems Management and Operations (TSMO) strategy for Spokane County and surrounding areas. TSMO is a way to integrate multi-modal, cross-jurisdictional systems, services, and projects to improve the efficiency and performance of the existing infrastructure. TSMO includes systems, services, and projects designed to preserve capacity and improve security, safety, and reliability of transportation systems.[19] Regional TSMO projects can include signal coordination, traffic incident management, emergency preparedness, security programs, data collection, traffic management centers as well as many other examples of Intelligent Transportation Systems (ITS).

The Spokane region updated the Regional ITS Plan in 2019. Some of the strategies and projects in the plan include deploying transit signal priority and bus-only signals at key intersections, developing real-time traveler information and multimodal planning tools, and deploying operational data collection and information exchange networks. ITS plan's strategies are discussed in more detail in *Chapter 4: How We'll Get There*.

The Spokane Regional Transportation Management Center (SRTMC) is an example of an ITS strategy. It is a multi-jurisdictional control facility to support transportation management capabilities. The SRTMC coordinates day-to-day operations of the transportation system and responds to events and incidents on area roadways to maximize efficiency and facilitate, through communication, better route choices for travelers. Additional services of the SRTMC include data collection and management for uses of performance measurement, facilitating public transportation, and facilitating emergency response.

The SRTMC operates 24 hours a day, 7 days a week. It uses closed circuit cameras, dynamic message signs, highway advisory radio stations, traffic measurement stations, and signal monitoring to keep traffic flowing smoothly. SRTMC staff monitors the status of these systems and the data gathered can be used for the measurement of system performance. You can watch real-time traffic cameras, check traffic flow rates, and find more information on the SRTMC website.[20]

ITS Challenges

The SRTMC continues to face financial challenges when it comes to staffing, updating, and coordinating technology across the region.

19 http://plan4operations.dot.gov/reg_trans_sys.htm

20 http://www.srtmc.org/

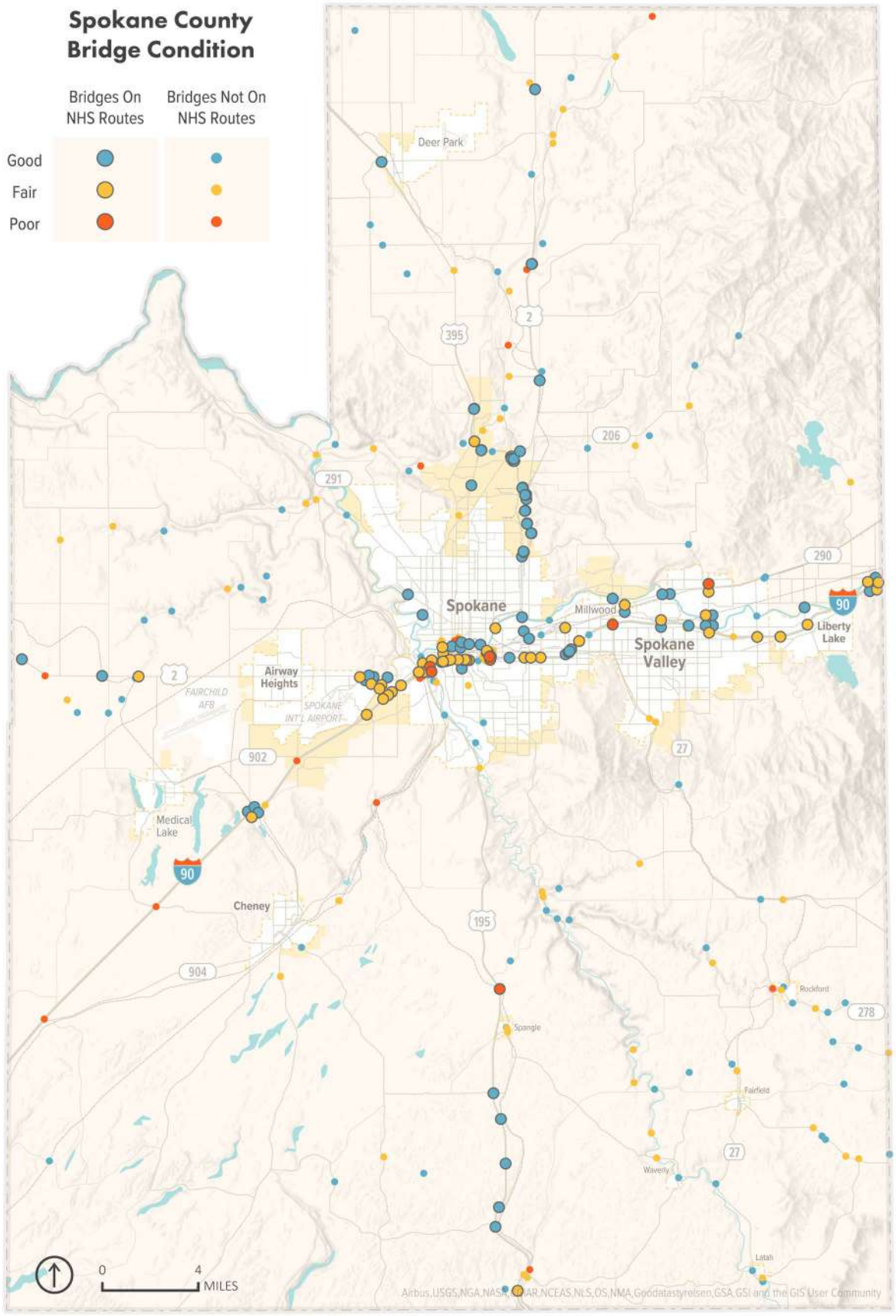


Figure 2.31: Bridge Condition in SRTC Planning Area

Transportation Modes

The Spokane region's transportation system is made up of a variety of modes. These include private vehicles, transit, walking, bicycling, and freight. This section reviews those modes, their usage levels in our area, and challenges with each.

Freight

Trucking is the main mode of freight transport in the Spokane area. 54 percent of the volume of goods that travels through the area is transported by truck while 43 percent is moved by rail. However, 79 percent of the total value of freight is transported by trucks. This illustrates a common characteristic of products transported by truck (electronics, apparel, food, and other consumer goods) which have a higher cost per pound and may often have more time-sensitive delivery schedules. Freight moving by rail, on the other hand, is often heavier, has less time-sensitive delivery, and therefore lower unit costs.

The top commodities exported from the county are lumber/wood products, food and related products, chemicals or allied products, clay/concrete/glass/stone, farm products, fabricated metal products, machinery, transportation equipment, and electrical equipment. Major commodities imported into the county are similar to those exported along with pulp, paper or allied products. Secondary traffic is also a major part of freight activity. Secondary traffic is the movement of goods within the area such as pick up and deliveries, transloading, warehousing, and inventory handling.

Inland Pacific Hub

The Spokane region has been proactive in studying transportation-related freight assets and movements and developing strategies to raise the competitive profile of the area. The Inland Pacific Hub (IPH) is a partnership established by and composed of public and private sector representatives from Idaho and Washington. In two phases between 2009 and 2012, the IPH project examined the possibility of establishing the Inland Pacific region as a multimodal global gateway to increase domestic and international commerce.

Phase 1 looked at economic development and regional freight movement in an effort to move shipments safely and efficiently and obtain the most economic-development benefit from the improvements. The idea behind the study was to examine the potential of integrating transportation and technology systems with an over-arching economic development effort. The Phase 1 study identified the need to address the large percentage of through-freight. Through-freight creates costs in terms of using road and rail capacity and from wear and tear on the transportation system but generates relatively small economic benefits; mostly from support services (lodging, truck stops, etc).

Phase 2 involved the development of a Transportation Investment and Project Priority Blueprint based on the findings and recommendations from the Phase 1 study. This task resulted in a list of potential transportation investments designed to support the economic opportunities identified in Phase 1. The Blueprint provides a phased implementation plan that incorporates potential funding options including federal, state, local, international, and private sectors. The recommended strategies in the Blueprint serve as the foundation for freight related investments in Horizon 2045. More information on the IPH can be found on the SRTC website.

Trucking

The Washington State Freight and Goods Transportation System (FGTS) classifies state highways, county roads and city streets according to the average annual gross truck tonnage they carry. The FGTS identifies highways and roads most heavily used by trucks and provides data to support funding for projects that improve conditions for freight transportation. This information also supports planning for pavement upgrades, traffic congestion management and other investment decisions. Jurisdictions are responsible for submitting updated tonnage and classification data to WSDOT, which is why some streets and roads change classifications at jurisdiction lines. The FGTS classifies roadways using five freight tonnage classifications: T-1 through T-5, see figure 2.32.

Semi-tractor combinations and trucks with trailers over 10,000 gross pounds vehicle weight used in intercity or interstate hauling are required to use truck routes throughout Spokane County. These routes are to be used to the point

Figure 2.32: FGTS Classes

Route Class	Freight Tonnage Classification Criteria
T-1	More than 10,000,000 tons per year
T-2	4,000,000 to 10,000,000 tons per year
T-3	300,000 to 4,000,000 tons per year
T-4	100,000 to 300,000 tons per year
T-5	At least 20,000 tons in 60 days and less than 100,000 tons per year

nearest the pickup or delivery if the destination is not located on a truck route. Trucks that cannot avoid using non-truck routes are asked to call the jurisdiction they will be traveling through in advance, so officials can plan for disruptions to other traffic or facilities.

Truck Freight Challenges

A significantly larger portion of freight movement is outbound than inbound, particularly for trucks. This leads to a back-haul problem as many trucks travel back empty. This imbalance becomes an issue for many shippers, as it raises average per unit costs, and can be a barrier to increasing truck movements and attracting new shippers. At the same time, empty loads present an opportunity to ship other commodities back into the region and potentially lower costs for some products.

More commodities flow outbound via truck (32 percent) than inbound via truck (21 percent). This means empty trucks are likely returning to the area. Through-traffic accounts for 33 percent of tonnage. Combined, inbound and outbound truck flows are concentrated to the west and south of Spokane County. Flows to and from the north represent only two percent of tonnage for all inbound and outbound movements.

Rail

Over the years, rail industry bankruptcies, acquisitions, and mergers have reduced the number of operating railroads in Spokane County. Today, BNSF and UP are the two mainline operators serving the region. Spokane County also has several short lines and branch lines. UP provides rail service to Canada through Eastport, Idaho as well as general freight rail operations in eastern Washington and northern Idaho. UP operates an average of six to ten scheduled trains a day through Spokane between Oregon and Canada. UP operates one dedicated pair of trains per day between Spokane and the connection to the UP east/west mainline at Hermiston, Oregon. BNSF does market intermodal service in the Spokane area, but it is typically trailer on flatcar (TOFC) service that is marketed through an IMC (Intermodal Marketing Company) like Swift or JB Hunt. Containers are loaded at the BNSF yard. Service is currently offered between Spokane and St. Paul, MN or Chicago.

Spokane is situated on the BNSF mainline between Portland/Seattle and Chicago. With increased international trade activity between the United States and pacific-rim countries, rail service provides an efficient method of transporting freight from deep-water ports in Puget Sound and Portland to the east coast and mid-west. Presently, BNSF operates approximately 60 trains per day through the Spokane metropolitan area. With trains between 4,000 and 7,500 feet long, their impact on the transportation system can be significant, by blocking at-grade crossings for long periods of time.

Spokane County has one transload facility, Inland Empire Distribution Systems, Inc. (IEDS) in the Spokane Industrial Park. Both BNSF and the UP serve the IEDS facility. According to the TRANSEARCH™ database, rail traffic accounts for 43 percent of all tonnage (72 million tons) and 20 percent of the value ($95 billion) for all commodity flows in the area. In 2007, carload freight movements in the IPH study area accounted for 12.7 million tons. Intermodal freight tonnage in 2007 was at 530,760 tons.

Rail Freight Challenges

Operations on mainlines to west coast ports that pass through Spokane are approaching capacity and face constraints including at-grade crossings and single track sections. Spokane County has 213 at-grade railroad crossings that are occasionally blocked by long trains. Residents of some neighborhoods also complain about noise from train horns.

A recent study evaluated the impacts of prominent road–rail conflicts and developed a corridor-based prioritization process for addressing the impacts of these conflicts.[21] A resulting list of crossing priorities is meant as a first step to assist policy makers, state agencies, RTPOs and local jurisdictions to understand crossing impacts, leading the next step of project identification and evaluation of solutions. This report will help assist SRTC in efforts to resolve road-rail conflicts.

Bridging the Valley

Some of the challenges above could be addressed by the Bridging the Valley (BTV) series of projects. BTV is a proposed program of safety improvements and projects that would separate trains from automobiles with under or overpasses to improve public safety by reducing the potential for train-vehicle and train-pedestrian collisions, reduce wait time at railroad crossings, and mitigate noise pollution from train whistles. The BTV projects stretch from the City of Spokane to Athol, ID.

The priority of BTV projects continues to be evaluated by regional decision makers, especially in light of limited transportation funding resources and the need to secure commitment from the railroads. More information on Bridging the Valley can be found on the SRTC website.

Air Transportation

The Spokane area is served by public and private airports that provide access to the national aviation system. Publicly-owned airports and privately-owned airports open for public use are included in the National Plan of Integrated Airport Systems (NPIAS), meaning they are eligible for Federal-aid funding and state funding to ensure they are maintained and developed in accordance with federal and state standards. Spokane International Airport (SIA) and Felts Field are two key airports, which together provide scheduled and non-scheduled passenger and freight service as well as corporate and general aviation access to the community. The City of Spokane and Spokane County jointly own SIA, Felts

21 Joint Transportation Committee, Prioritization of Prominent Road-Rail Conflicts in Washington State, January 2017

Field Airport, and the Airport Business Park. The Spokane Airport Board, consisting of seven appointees from the two governmental bodies, operates these facilities which are funded with airport-generated revenue and grants. The facilities are financially self-sufficient from revenues generated from leases, fees, and concession agreements. No funding for these facilities comes from local public tax dollars.

SIA's 2014 20-year master plan includes existing conditions, a forecast of future operations, an environmental review, a financial plan and planned facilities to meet future needs.[22]

The Airport Board has pursued safety, capacity and efficiency investments aimed at maximizing the two Airports' contributions to the regional economy as well as enhancing passenger customer experience through upgrades and modernization. These improvements include an extension of the inbound roadway leading to the terminal, acquisition of new snow removal and aircraft rescue and firefighting equipment, construction of new parking lot facilities, aircraft parking ramp expansion, taxiway and taxilane rehabilitation, site preparation for a convenience store and gas station, airport surface roadway access development, terminal building upgrades, security and IT infrastructure upgrades, and baggage handling system upgrades. Additionally, the airport is embarking on a Terminal Renovation and Expansion Project, which will modernize and add additional gates, passenger screening area, ticketing, and concessions in the existing C Terminal facilities constructed in the early 2000's and ultimately, create a consolidated checkpoint and baggage claim area for passengers to enter and depart the airport. Passengers will benefit from the convenience and efficiencies they enjoy at a modern, state-of-the-art terminal with added amenities.

Several airfield and landside improvements have been made at Felts Field as well, which has stimulated additional private investment in hangar development and aviation services. A new aviation fueling facility was recently completed to improve aircraft self-fueling safety and convenience. In addition, Northwest Flight Service constructed a 13,000 square foot hangar to house their flight school, aircraft maintenance and flight rental business, and Historic Flight Foundation relocated their classic and antique aircraft collection from Everett's Paine Field into a new 21,000 square foot hangar. Continued investment in hangar capacity, continuation of the contract tower services provided by the FAA as well as investments in surface access and terminal area infrastructure will be critical to the continued success and growth of the Airport. The Felts Field Master Plan will be updated to guide capital improvements over the next 20 years.

Local airports such as Mead, Deer Park, and the Coeur d'Alene Airport also contribute to the regional air transportation system. These general aviation airports allow private and business aircraft to be based closer to their homes or businesses. While general aviation airports typically do not have the same level of facilities, amenities, and navigational aids, their ability to reduce air traffic for practice operations and general aviation activity at SIA makes them an important part of the overall transportation system.

In 2017 SIA, in collaboration with the City of Spokane and Spokane County, formed the S3R3 Solutions Public Development Authority (PDA) to provide physical infrastructure and a revenue sharing model within the PDA's 9,000-acre boundary that provides the PDA with revenue for investment in infrastructure development and other related initiatives to retain and expand commerce in the immediate vicinity of SIA. In October 2021, S3R3 completed the construction of a 34,000 square foot airside sorting facility for Amazon Air on land leased from SIA, which is the realization of the vision for the creation of the PDA. Additionally, the Spokane Airport Board serves as the Grantee for Foreign-Trade Zone No. 224, and SIA property includes an 1,800 acre qualified Opportunity Zone and a Community Empowerment Zone.

The Spokane Region is home to over 100 aerospace firms and represents the largest assemblage of aerospace companies in the State of Washington outside of the Puget Sound Region. The region also has one of the State's premier aerospace industry clusters, the Inland Northwest Aerospace Consortium (INWAC), which was formed in 2005. INWAC's membership is comprised of Original Equipment Manufacturers (OEMs) including tier one, two and three suppliers.

In addition to the aforementioned airport infrastructure improvements, WSDOT has programmed improvements to I-90's Geiger Boulevard (Exit 276) and Medical Lake (Exit 272) Interchanges. $26 million was included in the 2015 Transportation Package approved by the Washington State Legislature which improves access and efficiency to the Interstate highway system. Improvements to the Medical Lake Interchange and Geiger Boulevard were completed in 2021. In 2018, Spokane County was awarded a $14.3 million BUILD Grant from the USDOT for infrastructure improvements along Geiger Boulevard, including reconstructing a section of the road and adding new utilities infrastructure to support the addition of commercial and industrial development in the West Plains. Additional emphasis is being placed on rail infrastructure to complement this area's extensive transportation infrastructure and respond to the demand for industrial development. The airport is building a rail-truck transload facility, funded in part by an $11.3 million USDOT BUILD Grant, which will provide multi-modal freight movement services for the area's commercial and industrial sectors. The facility is expected to be complete in 2022.

Spokane County is also home to Fairchild Air Force Base (FAFB), the largest employer in Eastern Washington. Over 6,000 military personnel and civilian employees work at FAFB; home to the 92nd Air Refueling Wing of the Air Mobility Command's Eighteenth Air Force. The Base supports over 60 KC-135s. The community and Washington's Congres-

22 https://business.spokaneairports.net/airport-master-plan/

sional delegation has been working diligently to establish Fairchild as a Center of Excellence for the KC-135 to ensure their viability until there are sufficient KC-46A refuelers in the national fleet.

Airport Usage

In 2019, SIA processed 4,112,784 total passengers and 69,001.1 U.S. air cargo tons. The Airport encompasses 6,400-acres of land. SIA is the second busiest passenger airport in the State of Washington and is classified by the FAA as a small hub. Passenger service is provided by seven major carriers including Alaska, Allegiant, American, Delta, Frontier, Southwest and United. The Airport currently supports nonstop service to Atlanta, Boise, Chicago O'Hare, Dallas Fort Worth, Denver, Everett, Las Vegas, Los Angeles, Minneapolis, Oakland, Orange County, Phoenix, Phoenix-Mesa, Portland, Sacramento, Salt Lake City, San Diego, San Francisco, San Jose, and Seattle as well as seasonal service to Chicago's Midway Airport. FedEx, UPS and Amazon Air provide scheduled, daily air cargo service. While SIA also serves private and business aircraft needs, its primary role is air passenger and air cargo transportation. Historical passenger and cargo data for SIA is shown in figure 2.33.

Felts Field is a 400-acre general reliever airport that had 56,894 aviation operations in 2020 and is home to over 200 aircraft and nine commercial tenants. Felts Field has a Fix Based Operator and avionic services available, and consists of two paved runways and a turf landing strip as well as the ability to accommodate water landings on the adjacent Spokane River.

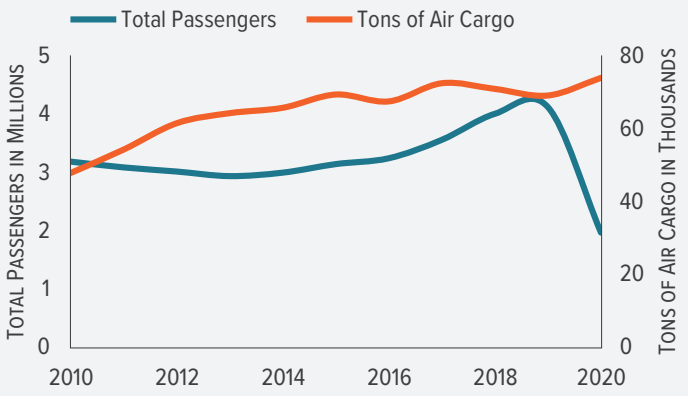
Economic Impact of Air Transportation

SIA is the work site for over 3,000 people serving a variety of aviation and non-aviation related businesses, and a WSDOT study indicated that the airport provides the region with $1.8 billion in annual economic impact. INWAC currently supports a workforce of over 8,000 and has an annual payroll of nearly $325 million and FAFB's annual economic impact is estimated at $523 million.[23] That adds up to an economic impact of well in excess of $2 billion for the in-air transportation contributions.

Air Transportation Challenges

Federal policy issues regarding chronic underfunding of the Airport Improvement Program (AIP) and lack of action to modernize the Passenger Facility Charge (PFC) as well as the continued economic regulation of airports pose substantial financial challenges for the industry and has limited, truncated or caused deferral of capital improvement projects at SIA and Felts Field. Additional issues of incorporation of Unmanned Aerial Systems (UAS) into the National Air Transportation System, preservation of Contract Weather Observers and the Contract Tower Program, complex regulatory activities and overreach at the federal and state level and lack of a National Aviation Policy all create ongoing challenges to the air transportation industry. Operating under extensions of Federal law and Continuing Resolutions make long-term systemic change difficult to achieve. Preserving the long-term viability of the Airport Improvement Program and an increase of the Passenger Facility Charge (PFC) are significant priorities. The current PFC level of $4.50 is a cap set by Congress. To the extent that this cap is not eliminated or increased, the Airport's ability to implement projects on a pay-go basis will continue to be diminished which may require the issuance of more debt than would be necessary. More debt issuance will directly impact airline rates and charges and limit the ability of the Airport to implement its full capital improvements and asset preservation programs.

Figure 2.33: Spokane Int'l Airport Passengers and Cargo



SIA

Contract Weather Observers provide human weather observations that augment automated systems and correct current and forecasted weather conditions. Protection of Contract Air Traffic Towers, such as the one at Felts Field, and the other 257 across the country is an ongoing concern.

Public Transportation

In the Spokane region there is one fixed route public transportation system, operated by STA, and several other providers of transit services. These include charter bus operators, regularly scheduled inter-city bus providers, taxi/shuttle services, tribal transit, and specialized transportation providers. Each of these transit services contributes to access and mobility for all persons regardless of age, ethnicity, income, or ability.

STA provides fixed route, paratransit, and vanpool services in the Public Transportation Benefit Area (PTBA). The PTBA, shown in figure 2.34, is 248 square miles encompassing 14 percent of the county area and 85 percent of the population.[24] STA currently operates 35 fixed routes with a fleet of 134 buses. There are 12 park & ride lots throughout the region. Paratransit is a shared ride, wheelchair accessible service for those eligible under ADA guidelines. STA's paratransit service area is generally within ¾ of a mile of all fixed

23 "Team Fairchild". Economic Impact Statement Fiscal Year 2020. https://www.fairchild.af.mil/Portals/23/FINAL-6_FY20_Economic_Impact_analysis.pdf?ver=hx6fZvqpED4mNQegddpfZw%3D%3D

24 OFM, PTBA population estimate 2012.

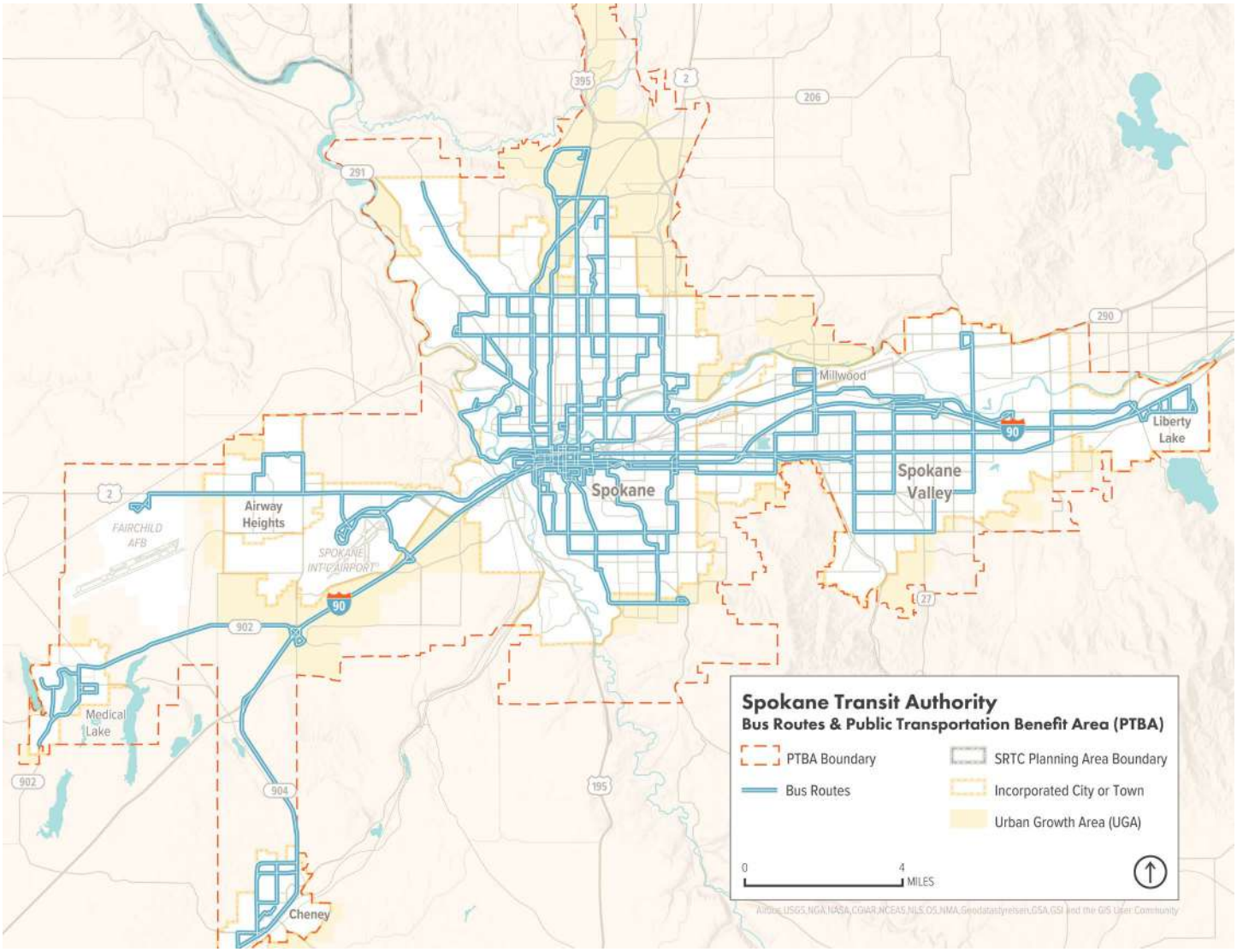


Figure 2.34: PTBA and STA Bus Routes

routes. STA's vanpool program is a service for commuters that provides a 7, 12, or 15 passenger van for a group of 5 to 15 persons. Users pay a fee based on the number of passengers and mileage traveled.

The Kalispel Tribe developed a tribal transit system (KALTRAN) that serves the Kalispel Indian Reservation in Pend Oreille County and tribal lands in Airway Heights. KALTRAN was designed to provide service to tribal members who work or live in Spokane, deliver tribal members to appointments on Reservation lands in Airway Heights, improve transportation from the Reservation near Usk and Cusick to Spokane and vice versa, and provide transportation between rural areas and job centers. Special Mobility Services, Inc. (SMS) provides some rural and intercity services to/from and within Spokane County. The Spokane Tribe of Indians operates the Moccasin Express, which has three regular, daily routes: service from Wellpinit – West End, Wellpinit – Ford, and Wellpinit – Spokane. The Spokane Tribe also operates a paratransit service available to the elderly and low-income individuals. It provides service from the Spokane Reservation and the surrounding area to Wellpinit, Spokane, Airway Heights, Cusick, Colville, Chewelah, and Inchelium. A detailed listing of public transportation and intercity bus facilities in the region is provided in figure 2.35.

Public Transit Ridership

Almost 10 million passenger trips are provided on the STA bus route system annually. 9,971,798 passenger trips were taken on fixed route buses in 2019. The average fixed route weekday ridership was 33,776, average Saturday ridership was 15,656, and average Sunday ridership was 9,744. Paratransit in 2019 provided 441,097 passenger trips and vanpool service provided 155,262 passenger trips. SRTC works with STA to develop and update the Spokane County Coordinated Public Transit-Human Services Transportation Plan, which is updated every four years. A list of public transportation providers can be found in that document on the SRTC website.

Figure 2.35: Public Transportation and Intercity Bus Facilities

COMMUTER VANPOOL PROVIDER:
Spokane Transit Authority

PUBLIC TRANSPORTATION FACILITIES:

STA Administration Offices and Maintenance Facilities

STA Plaza
Served by STA, WSDOT Gold Line, Spokane Tribe Moccasin Express

Park and Rides:

- Country Homes
- Five Miles
- Hastings
- Fairwood
- The Arena
- Jefferson Street/I-90
- South Hill
- Liberty Lake
- Pence-Cole Valley Transit Center
- Mirabeau Point
- Airway Heights
- Cheney K Street Station
- Moran Station
- West Plains Transit Center

INTERCITY BUS FACILITIES:

Spokane Intermodal Center
Served by WSDOT Gold Line, Greyhound, Northwestern Trailways, Amtrak (including Amtrak Thruway Motorcoach), STA, Spokane Tribe Moccasin Express

Spokane International Airport
Served by STA, WSDOT Gold Line

Public Transit Economics

STA's current annual budget reflects $95 million in revenues with the bulk from local sales tax ($57 million) and operating revenues ($10 million). STA receives FTA Section 5307 funding totaling $7.9 million, a major source of revenue for preventive maintenance. Operation of the fixed route system alone is a $44.5 million undertaking. Sales tax provides about 74 percent of the agency's operating revenue. Paratransit operations are nearly $13 million annually, more than 19 percent of STA's budget. STA is over 16% more cost efficient than the average urban system in Washington state.

Upcoming Public Transit Initiatives

In 2021, Spokane Transit updated its comprehensive plan called Connect Spokane. Connect Spokane reflects principles for public transportation in the PTBA. The plan lists policies to guide decisions for the future of transit service and strategies STA will undertake to meet goals.

One of the major strategies is the implementation of a High Performance Transit Network (HPTN). STA defines the HPTN as "a network of corridors providing all-day, two-way, reliable, and frequent service which offers competitive speeds to the private automobile and features improved amenities for passengers. The HPTN defines a system of corridors for heightened and long-term operating and capital investments."[25] For more information about Connect Spokane, see the STA website.[26]

City Line is the first Bus Rapid Transit (BRT) route planned to be fully implemented. The currently operating Monroe-Regal line is part of the HPTN. A tax increase approved by voters in November 2016 to fund *STA Moving Forward*,[27] a ten-year plan to maintain, improve and expand transit services has secured funding for the operation of City Line. A FTA grant was awarded for the capital costs of the projects. The Central City Transit Alternatives Analysis was completed in 2011 with a locally preferred alternative (LPA) approved by regional stakeholders. The LPA identified BRT vehicles using electric propulsion as the preferred mode along a corridor from Spokane Community College, through the Gonzaga University campus, through the University District and the downtown Spokane central business district (CBD) to the Browne's Addition neighborhood. The City Line is scheduled for completion in 2022. The full or partial implementation of the Cheney, the Monroe-Regal, Division, Sprague and I-90 HPTN corridors are also included in *STA Moving Forward*. *STA Moving Forward* and the HPTN are described in more detail on STA's website.[28]

Division Connects

Division Connects is a multi-agency transportation and land use study of the Division Street corridor. The first phase of the study was completed in Spring 2021 with identification of an LPA for BRT, detailed in figure 2.36. The second and final phase of the study will refine transportation options, particularly for those walking and rolling through the corridor, and also focus on land use opportunities. Final study recommendations will conclude in Spring 2022.

Support for Intercity Bus and Vanpools

The FAST Act requires the MTP and TIP to provide for facilities that enable an intermodal transportation system, including pedestrian and bicycle facilities. It adds to this list other facilities that support intercity transportation (including intercity buses, intercity bus facilities, and commuter vanpool providers). The FAST Act also requires that the metropolitan long-range plan include identification of public transportation facilities and intercity bus facilities.[29] More of this information support can be found in the SRTC Coordinated Public Transit-Human Services Transportation Plan developed in collaboration with the STA to improve transportation services for persons with disabilities, older adults, and those with lower incomes in Spokane County.[30]

Public Transit Challenges

In order to fully implement the HPTN additional federal fund-

25 www.spokanetransit.com/files/content/Connect_Spokane2010_Amended2012_OP.pdf

26 www.spokanetransit.com/projects-plans/comprehensive-plan

27 http://stamovingforward.com/

28 www.spokanetransit.com/projects-plans

29 23 U.S.C. 134(c)(2) & (i)(2)

30 https://www.srtc.org/human-services-transportation-plan/

Figure 2.36: Division Street Locally Preferred Alternative for BRT

Element	Description
Mode	Fixed guideway BRT using zero-emission 60' buses
Service Level	Weekdays: 10-minute frequency or better Nights and Weekends: 15-minute frequency during most hours of the span
Northern Termini	Short-term: Current Route 25 to Hastings Park and Ride Long-term: New transit center at Farwell and US2
Southern Termini	Spokane CBD near the STA Plaza
Alignment	Downtown: To be refined in Preliminary Engineering Couplet: Right-side along Ruby Street and Division Street Mainline: Right-side along Division Street North of "Y:" Short- and long-term phased approach
Station Locations	Major intersections and destinations. All stations will meet ADA accessibility requirements
System Operations	Operating techniques for speed and reliability, such as Transit Signal Priority (TSP), all-door boarding, and near-level platforms
Lane Configuration	Side-running, dedicated BAT lanes for a majority of the alignment, primarily between North River Drive and the "Y"
Other Multimodal Treatments	Protected bicycle facilities, including cycle tracks where practicable, along Ruby Street with pedestrian, ADA, and bicycle improvements throughout the corridor

ing is needed. Another challenge is the expectation of STA service in areas that have been developed without pedestrian- or transit- supportive infrastructure. This type of development limits the ability of transit to provide meaningful service. A desire for additional transit services is commonly heard from stakeholders. Requests include higher frequency, later hours, additional routes, and new park & rides. A need for improved coordination of services has been heard from the public repeatedly. The need for a central source of information on available transit services has also been clearly identified.

With several organizations providing some form of public transit, there is still a need for additional transportation services for the elderly, disadvantaged, disabled, and those who live outside public transit service areas. In particular, there is a need for public transportation between Spokane and Coeur d'Alene and smaller, outlying towns. Besides KALTRAN, Moccasin Express, and SMS, there are few services (especially ones affordable to people on fixed incomes) that provide transportation between Spokane and outlying areas.

Passenger Rail

Amtrak's long distance Empire Builder route provides daily passenger rail service to the region via the Spokane Intermodal Center in downtown Spokane. It connects Spokane with Portland, OR and Seattle, to the west, and with cities as far east as St. Paul and Chicago.

Passenger Rail Challenges

Westbound Empire Builder trains passing through the region en route to Seattle depart from Spokane at 2:15 a.m. Those passing through en route to Portland, OR depart Spokane at 2:45 a.m. Eastbound trains depart Spokane at 1:25 a.m. en route to St. Paul, MN and Chicago. The inconvenience of these late night and early morning schedules is frequently expressed at public meetings.

WSDOT's 2019 State Rail Plan calls for the state-owned Cascades service to be extended to connect Spokane with Seattle, via the Tri-Cities, WA and Stampede Pass. This service would run more than once a day and provide Spokane with more convenient hours than the what the Empire Builder currently offers.

An initial study commissioned by the WA Legislature's Joint Transportation Committee found that introducing a Spokane to Seattle service via the Stampede Pass was technically feasible and, despite long journey times, could generate ridership above or comparable to some other Amtrak state supported services. According to the final study report, travel time from Spokane to Seattle could take 8 hours and 35 minutes with ridership near 200,000 passengers annually.[31] Coordination with the Washington State Transportation Commission regarding the concept is expected to continue in the Spring of 2022.

31 https://leg.wa.gov/JTC/Documents/Studies/East%20West%20Rail/EastWestRail_FinalReport-June2020.pdf

Active Transportation

Active transportation choices like biking and walking help create a complete transportation system. Using active transportation can:

- Reduce out-of-pocket costs for residents, especially for short trips less than five miles
- Impact obesity rates by providing more options for physical activity
- Support the use of public transit
- Increase community safety and perception of safety by putting more eyes on the street
- Increase community cohesion by providing opportunities for community members to interact positively
- Reduce air and water pollution and conserve land by providing alternatives to using motorized vehicles
- Aid planning for future population growth and transportation demand by offering alternatives

Overall, connectivity of active transportation networks and safety of its users are of primary importance to SRTC, local agencies and the responsible jurisdictions.

Safe and Complete Streets

In 2012, SRTC adopted a Safe and Complete Streets Policy and Checklist to ensure that all users are routinely considered during the planning, designing, building, and operating stages of roadways. It also ensures elements of the Safe and Complete Streets policy are incorporated into Horizon 2045.

Complete Streets are roads designed and operated with all users in mind, including drivers and passengers, bicyclists, public transportation riders, and pedestrians of all ages and abilities.

The Safe and Complete Streets Checklist is the mechanism to implement the Policy. SRTC conducts occasional “calls for projects” when transportation funding is available. Local jurisdictions are invited to submit applications for projects they would like to see funded. The projects are ranked and prioritized and the ones determined to be top priorities receive funding. The Safe and Complete Streets Policy requires that these project applications be accompanied by a Safe and Complete Streets Checklist to show that the needs of all users have been considered in the design of the project. Also, any new project seeking inclusion in the annual TIP has to be submitted with a Safe and Complete Streets Checklist.

Walking

Walking is the oldest and most universal form of travel. It requires no fare, no fuel, no license and no registration. Besides devices such as wheelchairs and walkers for the disabled, walking demands no special equipment and is the most affordable and available form of transportation.

While the majority of pedestrian trips are less than a mile, walking trips that connect to transit greatly increase the distance a person can travel without relying on an automobile. Pedestrian connections to transit are important in increasing the use of active transportation and transit as an alternative to the automobile. The last region-wide measurement in 2010 indicated walking mode share is nine percent of all person trips in Spokane Region, an increase from seven percent in 2006.

To walk safely, conveniently, efficiently and comfortably, people require an environment and facilities designed to meet their needs. With this in mind, SRTC and the Spokane Regional Health District created the Spokane Regional Pedestrian Plan with a goal to increase walking in our community. The plan is a resource for local jurisdictions and can be found on the SRTC website. It provides the following recommendations:

- Incorporate attributes of a pedestrian-accessible environment
- Incorporate complete street polices designed to enable safe access for all users
- Build sidewalks with design elements encouraging use
- Maximize access to, and use of, shared use paths and trails
- Follow crosswalk designs and education programs to enhance crosswalk safety
- Evaluate traffic calming measures to improve quality of life in our communities, and infill gaps in the existing sidewalk system

Bicycling

Bike travel is a low-cost transportation alternative for meeting the needs of the young, the elderly, persons with disabilities, and others who do not have an automobile or choose not to use one.

Nearly half the trips in the United States are three miles or less and can be accomplished in a twenty minute bike ride. It is these shorter trips that are most achievable by bike. However, with the addition of bike-friendly transit, bicycle trips in the Spokane region can be extended beyond the length of a typical bicycle trip. Our last region-wide measurement in 2010 indicated bike transportation accounted for two percent of all person trips, which is an increase from one percent in 2006.

In Washington state bicycles are, by law, vehicles. Therefore, they are allowed on all public streets and roads, except those specifically excluded because of safety considerations. In the City of Spokane, bicycling on sections of I-90 is prohibited due to safety issues related to high volumes and speeds of traffic. Out of the nearly 1,458 miles of functionally classified roadway in Spokane County, approximately 18 miles have bicycling prohibitions.

Active Transportation Facility Inventory

Consistent with the 2008 Spokane Regional Bike Plan and the 2009 Spokane Regional Pedestrian Plan, jurisdictions have developed a series of inter-related trails and paths to create a regional active transportation system. Recent improvements include enhancements to existing trails such as the Ben Burr Trail in southern Spokane connecting to downtown, the Appleway Trail in Spokane Valley, and the Centennial Trail in Spokane County along the Spokane River from Lake Spokane and continuing into Idaho.

Several jurisdictions have also updated their bicycle plans to include the potential for more bicycle facilities and amenities. Key bicycle corridors have been established to guide and direct public investment in the system, such as the Centennial Trail that provides a backbone route by which bicyclists can avoid high volume arterials and congested intersections from Spokane Valley to the Spokane CBD. Also, the Children of the Sun Trail, part of the US 395 North Spokane Corridor, is another example of a newer regional bike and pedestrian facility. SRTC's planning area includes approximately 1,267 miles of Class I through IV bicycle facilities. These classifications are defined as follows:

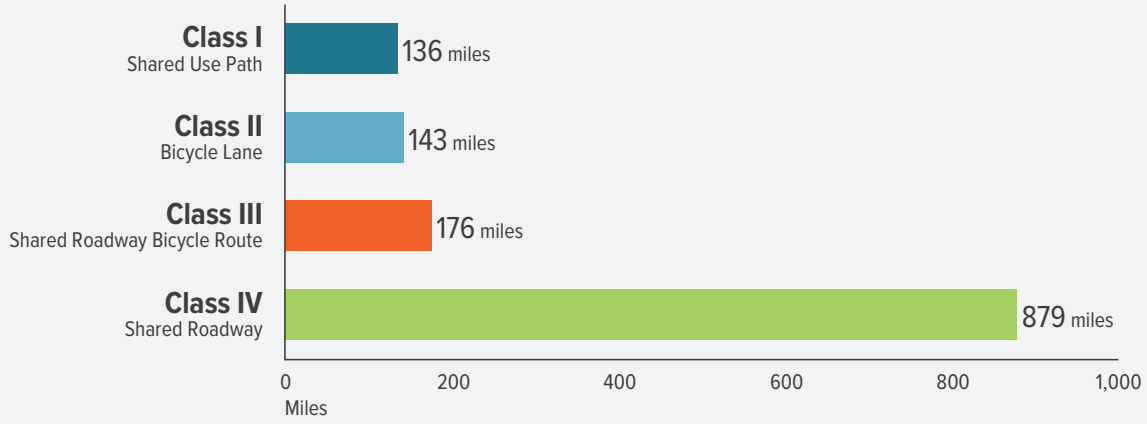
- **Class I - Shared Use Path:** Facilities on separated right-of-way and with minimal cross flow by motor vehicles. Minimum width of 6 feet.
- **Class II - Bike Lane:** Portion of the roadway, which has been designated by striping, signing, and pavement marking for the preferential or exclusive use of bicycles. Minimum width of 5 feet with an additional 8-inch stripe.
- **Class III - Shared Roadway Bicycle Route:** Bicyclists and motorists share the travel lanes. Roadway may have bicycle signage or road markings. Class III routes typically exhibit lower traffic volumes and speed; however, this will vary.
- **Class IV - Shared Roadway:** Bicyclists and motorists share the travel lanes. Class IV routes exhibit varying levels of traffic volume and speed.
- **Class X - Bicycles Prohibited:** Bicycles are prohibited from using the roadway.

In Spokane County there are 204 miles of paved bike lanes and paths (41 miles per 1,000 residents). Additional secondary paths and bike routes are being established to continue the network throughout the community. Figure 2.37 shows how the facility inventory has been growing. More information regarding the location of the bike facilities mentioned in this section can be found on SRTC's Spokane Regional Bike Map, available online via SRTC's website and as a traditional paper map, which is available free of charge at various locations throughout the region or by contacting SRTC directly.

Sidewalk construction was fairly consistent during neighborhood and business construction, within the City of Spokane. In unincorporated areas, sidewalk development is intermittent. Spokane County road standards historically did not require sidewalks along arterials or in residential neighborhoods. As a consequence, developing suburban areas often have minimal pedestrian facilities. This severely limits access and mobility for elderly or wheelchair-bound individuals. Latest sidewalk inventory analysis indicates approximately a 60 percent gap in available sidewalk network in the PTBA, which covers the public transit service area.

The City of Spokane Valley has newer sidewalks as many areas were developed more recently than in the City of Spokane or Spokane County, but many arterials and most local streets are missing sidewalks altogether. The City of Liberty Lake requires separated sidewalks with appropriate lighting on public streets in all new residential subdivisions. All ju-

Figure 2.37: Tracking Mileage by Bicycle Facility Type in the SRTC Planning Area



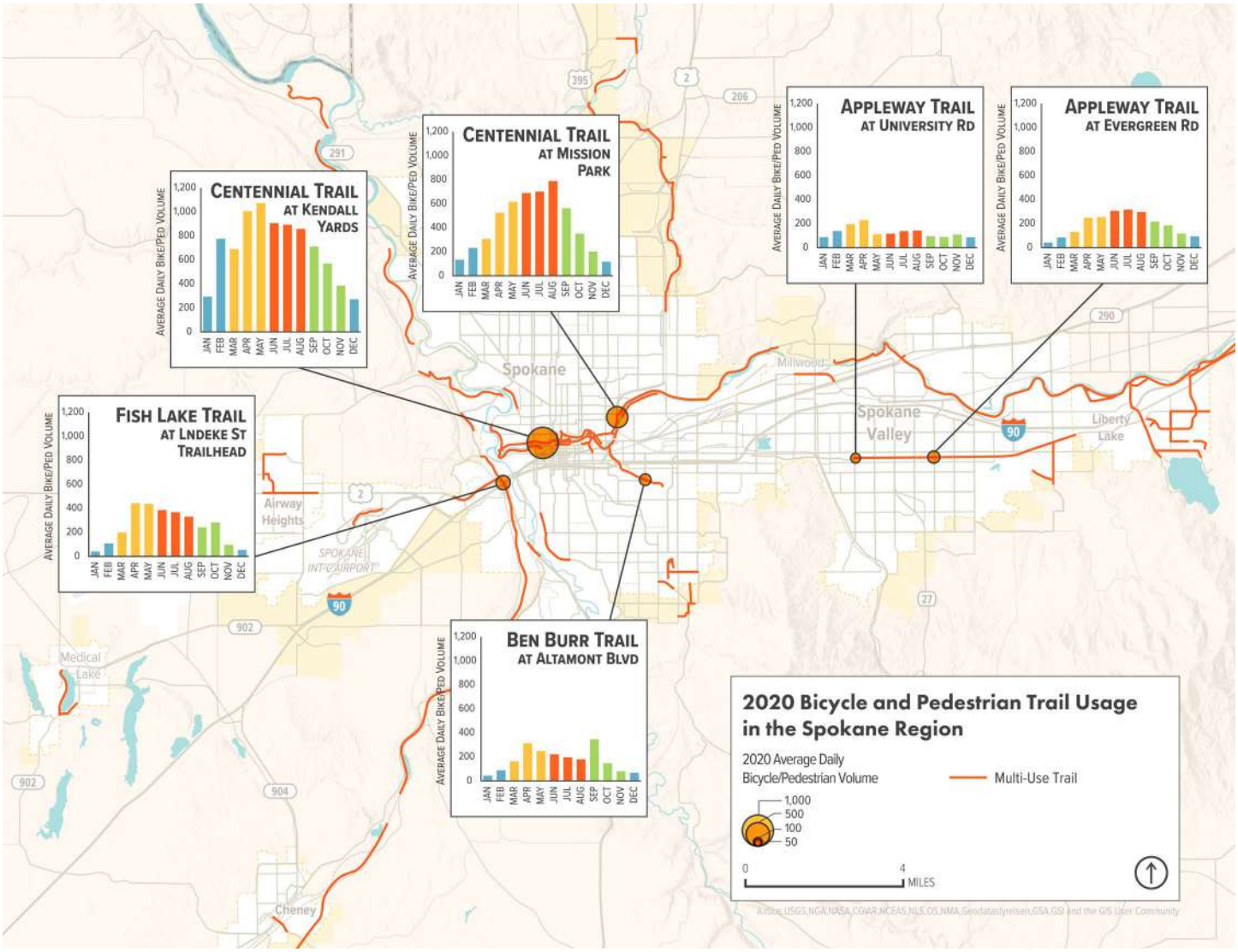


Figure 2.38: Bicycle and Pedestrian Trail Usage

risdictions within the region include land use and transportation policies that seek to provide the quality and quantity of infrastructure, the connectivity, the land use patterns, the density, and the education, encouragement, and enforcement programs that would make walking a convenient and safe option. Approximately 3.2 percent of Spokane County workers rely on active transportation to travel to and from work.[32]

Active Transportation Usage

As part of the Washington state bicycle and pedestrian documentation project, the region uses several permanent counters to monitor multi-use trail usage. Counter locations include the Centennial, Children of the Sun, Fish Lake, and Appleway trails. The counters analyze the flow of both pedestrians and cyclists at these locations. Figure 2.38 shows monthly usage at counter locations for which 2020 data is complete. While a counter is located on the Children of the Sun Trail, near Freya Street, it was omitted from the map due to significant gaps in the data.[33]

Active Transportation Challenges

The region's pedestrian system is in various stages of condition. Where neighborhoods and business districts have been established since the early 1900s, many sidewalks have deteriorated to the point of needing replacement or serious repairs. Unfortunately, there is no systematic program to keep sidewalks maintained or replaced after their useful life; although comprehensive and modal plans across the region deal with the need to address this issue. Removal of snow and ice from sidewalks in winter is another challenge faced by all jurisdictions across the region and is often raised to SRTC staff as a major concern by members of the public. Year-round access to sidewalks and transit stops is of particular concern to members of the community with mobility impairments. SRTC is continuously engaged in discussions

32 2015–2019 ACS 5-Year Estimates

33 Eco-Counter, Ecovisio, 2020

with jurisdictions, agencies, and the public to develop solutions to address year-round access, particularly as it relates to serving the needs of the disability community.

Bicycle connections need to be completed in the regional bicycle network. There are many existing trails, lanes, and other bicycle facilities, but many do not connect to other bike facilities. Another major concern for active transportation users is safety. In 2019 there were 6,205 pedestrians killed in traffic crashes, a 2.7 percent decrease from the 6,374 pedestrian fatalities in 2018 . This is the highest number of pedestrians killed annually since 1996. As for bicyclist fatalities, in 2019 there were 846 bicyclists killed in motor vehicle traffic crashes, a decrease from 871 in 2018. Though bicycle and pedestrian fatalities have declined since 2015, the proportion of traffic fatalities "outside the vehicle" – such as cyclists, pedestrians, and motorcyclists – has risen to an all-time high of 34 percent from a low of 20 percent in 1996.

Impact of Transit and Active Transportation on Quality of Life

Transit and active transportation positively impact a community's quality of life. The promotion of transit and active transportation along with supportive land uses can help achieve quality of life-related goals such as:

- Clean air, water, and soils
- Improved public health and safety
- Improved social cohesion
- Climate change mitigation
- Local economic development and community revitalization
- Affordable access to employment, housing, education, recreation health care, and other vital services


Photo Credit: Spokane International Airport

Performance-Based Planning & Programming

Performance-Based Planning and Programming (PBPP) is the use of agency goals and objectives and performance trends to drive the development of strategies and priorities. PBPP is a system-level, data-driven process to identify strategies and investments that provides a link between management and long-range investments SRTC makes in its transportation system. Several programs contribute to SRTC's ability to make investment decisions based on performance.

Transportation Safety

Horizon 2045 addresses the federal safety planning factor ("Increase the safety of the transportation system for motorized and non-motorized users") and the state's safety transportation goal ("To provide for and improve the safety and security of transportation customers and the transportation system"). SRTC coordinates with state and local agencies to develop strategies to ensure the safety and security of the regional transportation system, as well as monitoring certain parts of the transportation system including collision information, education initiatives and other safety and security efforts.

Additionally FHWA published a safety performance final rule with an effective date of April 14, 2016. The Safety Final Rule supports the data-driven performance focus of the Highway Safety Improvement Plan (HSIP). The Safety Performance Final Rule establishes five performance measures to carry out the HSIP: the five-year rolling average for: (1) Number of Fatalities, (2) Rate of Fatalities per 100 million VMT, (3) Number of Serious Injuries, (4) Rate of Serious Injuries per 100 million VMT, and (5) Number of Non-motorized Fatalities and Non-motorized Serious Injuries on all public roadways. The region's safety performance can be found in figure 2.39.

Safety Performance Measure

WSDOT will establish statewide targets for each of the safety performance measures. Targets will be established annually, beginning in August 2017 for calendar year 2018 for the following performance measures (number of fatalities, rate of fatalities and number of serious injuries). WSDOT is coordinating with MPOs and SRTC on establishment of targets. WSDOT will report targets to the FHWA in the HSIP report due in August of each year. WSDOT will have to make significant progress toward meeting its safety targets or obligation authority for WSDOT funding programs could be affected and redirected to HSIP funding.

MPOs will establish targets for the same five safety performance measures for all public roads in the MPO planning area. SRTC can either agree to support the WSDOT target or establish a numerical target specific to its planning area.

Target Zero

In an effort to increase safety and decrease collisions on area roads, MTPs are encouraged to be consistent with the State's Strategic Highway Safety Plan (SHSP) and other transportation safety and security planning and review processes, plans and programs. Simply put, the goal of the plan is zero deaths and serious injuries by 2030.

The Target Zero: Strategic Highway Safety Plan[34] is a data-driven plan developed to identify Washington state's traffic safety needs and guide investment decisions toward reductions in traffic fatalities and serious injuries. Target Zero provides a framework of specific goals, objectives, and strategies for reducing traffic fatalities and disabling injuries. It outlines three priority levels based on the percentage of traffic fatalities and serious injuries between 2012 and 2014.

Safety Challenges

SRTC will strive to reduce serious injuries and fatalities to reach a safety target. This has resulted in program funding for safety and to project evaluation criteria for safety in the project prioritization process. Traditional engineering and educational solutions will need to be improved. Many of the primary and secondary causes of collisions are behavioral in nature. As distracted driving becomes more contributory, new educational programs, and engineering solutions will need to be produced.

Transportation System Security

An important consideration of Horizon 2045 is the security of the regional transportation system, which can be defined as the freedom from intentional harm and tampering that affects motorized and non-motorized travelers, and may also include natural disasters. Security goes beyond safety and includes planning to prevent, manage, or respond to threats to a region and its transportation system and users.[35] Many jurisdictions have developed emergency preparedness plans to address emergencies that could impact the regional transportation network, including everything from blown tires to terrorist attacks and natural disasters.

34 More info is available at http://www.targetzero.com.

35 The Transportation Planning Process: Key Issues, A Briefing Book for Transportation Decision-makers, Officials, and Staff. Transportation Planning Capacity Building Program. Federal Highway Administration, Federal Transit Administration. Updated September 2007. Publication Number: FHWA-HEP-07-039.

Figure 2.39: Safety Performance Measures

Measure	5-Year Rolling Average 2015–2019
Number of Fatalities	33.0
Fatality Rate	0.86
Number of Serious Injuries	137.8
Serious Injury Rate	3.58
Non-Motorist Fatalities and Serious Injuries	47.4

WSDOT

WSDOT defines an emergency as a situation involving natural phenomena, disasters, casualties, national defense or security measures. WSDOT's *Emergency Relief Manual* details their response to such events.[36] The purpose is to reduce the vulnerability of the state transportation system from disasters, to respond effectively to them, and assist in the aftermath of any emergency involving damage to the transportation system.

Greater Spokane Emergency Management

Greater Spokane Emergency Management (GSEM) is the coordinating agency during major emergencies and disasters for citizens, response partners and elected officials. This includes synchronizing communication flow between federal, state and local governments as well as local agencies and the citizens of the Greater Spokane area.

GSEM provides a Greater Spokane Comprehensive Emergency Management Plan which has a section devoted to Essential Services, Infrastructure and Critical Facilities. In conjunction with the GSEM, the Greater Spokane Emergency Coordination Center (ECC) has an Operations Plan that provides standardized guidelines, procedures, duties and responsibility for the ECC during an emergency or disaster. More information on Greater Spokane Emergency Management can also be found online.[37]

STA

STA addresses compliance with Washington state's Safety Transportation Goal. STA's Security Coordinator facilitates resources to use in case of emergency or disaster, using an 'All Hazards' approach. That means there are basic response actions taken initially on most emergencies, regardless of the emergency or disaster. Once the situation is assessed and identified, individualized response guidelines particular to each emergency type—e.g., medical assistance, vehicle collisions, fire, severe weather, earthquake, hazardous materials spills, et cetera—are implemented.

The STA Operators Handbook has several sections devoted to emergency instructions, depending on the severity of the event. It covers emergencies ranging from collisions to disputes, intoxicated riders, those carrying weapons, and vehicle fires. It also includes general rules for ejecting passengers and a list of items not allowed on STA vehicles. In all cases of emergency, dispatch will call 911 or STA Security, as necessary.

STA has also installed security cameras at park and ride and operations facilities and annually evaluates customer security through rider surveys. STA also annually evaluates customer security through surveys asking for rider's assessment of their personal safety and the driver's safety on a scale of 1 to 5, with 5 being the highest. The average for both fixed-route and paratransit is 4.6 as of 2016/2015.

36 http://www.wsdot.wa.gov/Publications/Manuals/M3014.htm

37 http://www.spokanecounty.org/1921/Plans-Agreements

Travel Demand Management

At a regional level, SRTC relies on travel demand management programs like Spokane County's Commute Trip Reduction (CTR) to help with congestion management requirements.

CTR

The CTR program was created by the Commute Reduction Efficiency Act to encourage employees to ride the bus, vanpool, carpool, walk, bike, work from home, or compress their workweek.

In 1993, CTR was implemented in Spokane County at affected worksites with 100 or more employees. The program was recently re-branded as Commute Smart Northwest. The program supports voluntary worksite participants. As reported by the 2019 and 2020 worksite surveys, there were 39,135 employees at worksites in the CTR program. The program has established goals focused on the non-drive alone rate (NDAR) and VMT.

The CTR program goals are as follows:

- NDAR: 6 percentage point increase from baseline
- VMT: 13 percentage point reduction from baseline

21 worksites, which equates to 19 percent of all affected worksites, made both the NDAR and VMT goals. 22 worksites, equating to 20 percent of all sites, made at least one of the goals. Eight worksites, equating to seven percent of all sites, made 50 percent or more progress towards one of the goals.

With the population in Spokane County expected to grow, the importance of CTR and programs like Walk-Bike-Bus for managing demand on the transportation system is increased. The Spokane County CTR office works with hundreds of employers to match employees with alternative transportation methods to driving alone.

CTR Challenges

Challenges faced by the Spokane County CTR program include:

- A 2016 change in federal Congestion Mitigation and Air Quality (CMAQ) funding, which eliminate incentives as a reimbursable expense
- Infrastructure gaps near CTR worksites that make commuting by transit, bicycle, or foot more difficult (i.e. lack of bicycle lanes, sidewalks, or safe pedestrian crossings, and transit frequency, schedules, and proximity of stops)
- State funding that has not increased since 1993, which limits the amount of time CTR staff can spend on individualized program development for the CTR worksites and program expansion

- High Employment Transportation Coordinator (ETC) turnover, limited ETC time and resources to dedicate to the program, and difficulty convincing employers and employees to invest in and participate in the program

Congestion Management

Congestion can be defined in many different ways as identified earlier in this report. Congestion management is the use of strategies to improve transportation system performance by reducing congestion and its impacts on the movement of people and goods. A congestion management process (CMP) is an approach for managing congestion which includes multiple jurisdictions and agencies. SRTC has the responsibility of implementing this process, with the assistance of other area jurisdictions as dictated by federal requirements.

The CMP has special significance in metropolitan areas that are designated by EPA as air quality non-attainment, or maintenance zones, and have a population of 200,000 or more. Transportation projects that aim to significantly increase the capacity of single occupancy vehicles (SOVs)—i.e., widening roadways or constructing new facilities—may not receive Federal funding unless the project has been identified in the regionally-adopted CMP. Additionally, the feasibility of lower-cost travel demand and operational improvement strategies must be analyzed as potential alternatives prior to increasing roadway capacity.

The SRTC Board approved the most recent CMP in December, 2014. SRTC also maintains a multi-jurisdictional working group to continually coordinate and track the effectiveness of the process. The CMP includes:

- Congestion management objectives
- Multimodal transportation system performance measures
- Identification of congestion management corridors and least cost planning strategies
- A process for evaluating projects that increase Single Occupant Vehicle (SOV) capacity
- Ongoing evaluation of the process and strategies

Figure 2.40 depicts the sixteen CMP Corridors selected for the CMP process. Tier 1 corridors are the most congested and have identified strategies and Tier 2 corridors, which are less congested, are continually monitored because of the their regional importance.

To address compliance with the federal regulations, a decision tree process was created, called the CMP/MTP Compliance Process, shown in figure 2.41. This process ensures that regionally significant projects that appear in Horizon 2045 have gone through a least-cost planning process and a justification process if the project significantly increases the SOV carrying capacity of roadways. This process outlines what alternative low cost strategies have been evaluated and/or implemented, and in some instances, a Roadway Capacity Justification Report would be submitted before significant SOV projects are approved by the SRTC Board for Federal funding. This process brings the conversation of adding additional capacity to the decision makers so that they can discuss the projects in an open and transparent manner.

CMP Challenges

Data for the CMP is compiled from a variety of sources. Data sources and analytical tools have been changing every year. It will remain a question if the State DOTs or the MPOs and local jurisdictions will be tasked to gather the needed information.

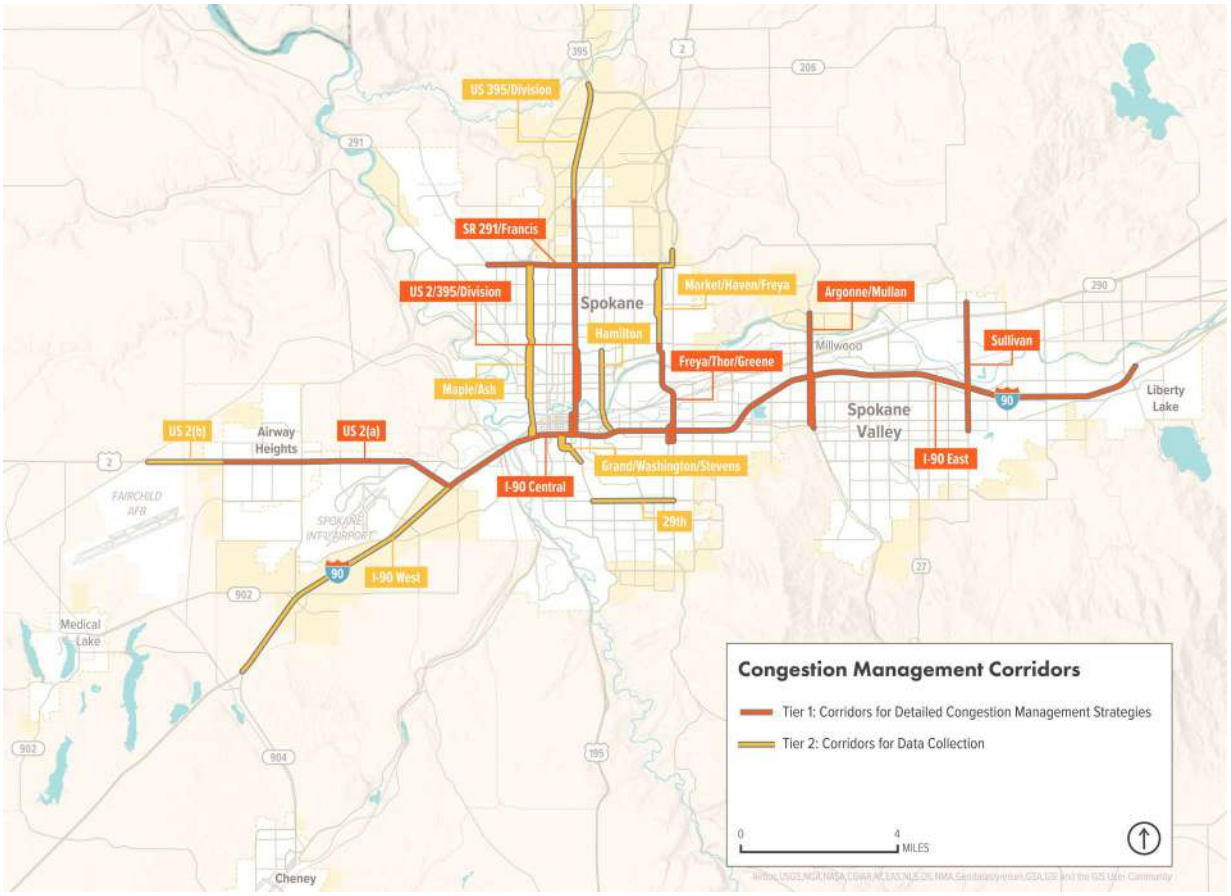
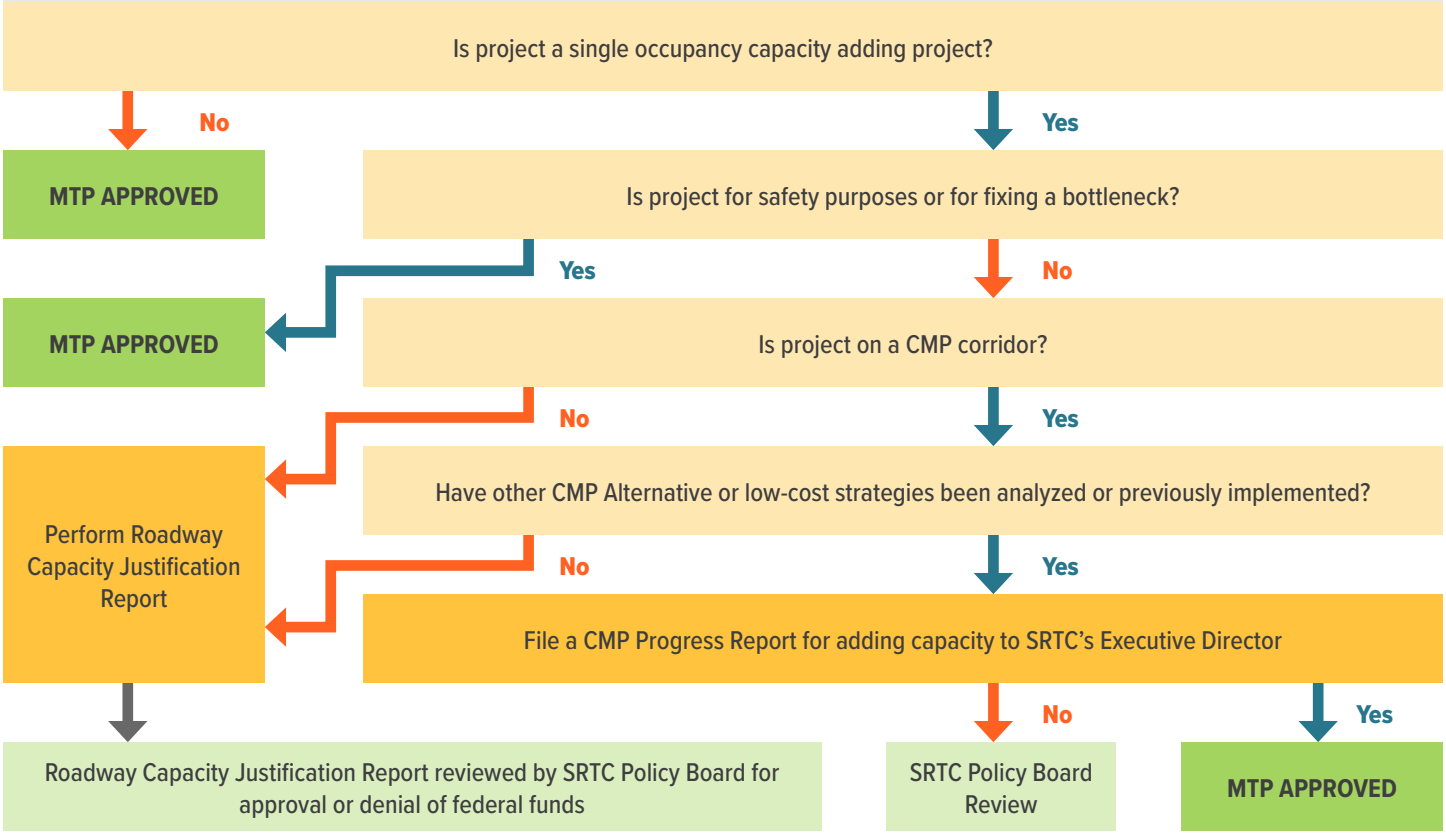


Figure 2.40: Congestion Management Corridors

Figure 2.41: CMP for the MTP



Summary of Existing Conditions

The Spokane region's transportation system is feeling the strain of age and population growth, as the road network experiences increasing issues related to wear and tear and congestion. With the region's population expected to grow by almost 100,000 people by 2045, will likely see more vehicle, increasing congestion, and the possibility of more traffic collisions. Public awareness campaigns have shown to be effective in reducing the number of fatal collisions in recent years. Increasing participation in CTR programs is also helping reduce congestion, by encouraging alternate ways to commute.

In 2016, voters approved an increase in sales tax to improve transit service. Since that time, transit ridership has remained level and additional federal funding for public transportation is needed. Some outlying areas do not have access to the STA system.

The active transportation system also needs improvements. Many users express concern regarding the safety and convenience of bicycling in the region. This is due to both inconsiderate drivers and a lack of bicycle infrastructure. Safety concerns have also been voiced by pedestrian. These concerns include sidewalks that are too close to fast moving traffic, stretches of roadway with no sidewalks, and existing sidewalks that are in poor condition. While there are limited funds available to fix sidewalks, a recent push by government agencies to increase active transportation usage could eventually remedy this. Most jurisdictions are either adding sidewalks, or repairing older ones, as part of road construction projects. Some agencies are also striping new bike lanes on existing roads and developing "bicycle boulevards" and greenways.

Like many areas nationwide, the Spokane region is struggling to retrofit its aging transportation system, in the face of tight budgets and stringent requirements. The good news is that local agencies are looking to the future and attempting to be proactive through measures such as Complete Street policies, increased numbers of park and ride lots, and alternative transportation methods. Based on analysis of the existing transportation system, the top issues currently in our region are:

Solutions to reduce serious injuries and fatalities

Safety was improving over the past several decades, but has recently declined. New performance rulings require reductions in serious injuries and fatalities. With the popularity of mobile devices, distracted driving is becoming more of a factor in serious injuries and fatalities. There are several priority areas for traffic safety but overall, roadway design and other efforts, such as education and enforcement, are needed.

Improving pedestrian and bicycle connectivity, accessibility, and safety

Many people are shifting from driving alone to walking or bicycling to work out of economic necessity or choice. Improvements targeting bicycle and pedestrian connectivity and accessibility are needed to accommodate these users. Projects and educational programs that improve bicycle and pedestrian safety are equally important.

Additional funding resources needed for operations, maintenance, and preservation

The region's aging infrastructure and pavement condition must be addressed. A shift in thinking in recent years has gone from building new facilities to spending available transportation funds on maintenance and operations instead. Following this line of thinking, local jurisdictions will have to consider how maintenance of new facilities will be paid for when approving funding for the initial construction of new projects. With very limited transportation funding available, decisions will have to be made on new performance measurement areas and how to spend money most effectively.

Addressing the region's structurally deficient and functionally obsolete bridges

Data shows that 29 percent of the area's bridges are considered structurally deficient or functionally obsolete. Nearly $2.1 billion in repairs are necessary for regional bridges, many of which are located in important freight and vehicular transportation corridors. This is another area of federal performance management.

Ensuring efficient freight movement while expanding freight mobility's role in economic development

The regional transportation system contributes significantly to the economic vitality and commerce of the region. Improving lane balance for freight movement by truck, addressing rail grade separation issues, and capitalizing on the region's existing freight transportation infrastructure are key strategies.

Support access and mobility to the region's airports and ensure the viability of Fairchild Air Force Base

SIA has a $754 million economic impact to the region. Also, in recent years, improvements to SIA and Felt's Field have increased the area's potential for growth and development in the aviation industry. Safe and efficient infrastructure to and from these airports is instrumental as the aviation and aerospace sectors continue to grow. Fairchild Air Force Base is the largest employer in Eastern Washington and supports critical KC 135 operations and the 92nd Air Force Refueling wing. SRTC understands the importance of maintaining transportation infrastructure to meet the needs and demands for FAFB to maintain its viability.

Increasing access to public transportation services

One size does not fit all when it comes to public transportation. High Performance Transit services are needed in the urbanized area to connect growing activity centers and to enhance the region's overall quality of life. At the same time, the population is aging and seniors in outlying areas are challenged by a lack of transportation options for accessing medical and other critical services.

Transportation-related measures to sustain and enhance the region's quality of life

The population of the Spokane region is expected to grow significantly by the year 2045. This growth, and the changing face of our population, will be reflected in transportation trends. For example, many in the aging senior population are giving up their cars due to health or other issues. Many younger people are deciding to live car free as well, and many commuters are turning to bicycling or walking as alternatives to driving alone. At the same time though, the sheer increase in the number of people in our area could increase the number of vehicles on the road.

Decisions made today will impact the conditions of the future and the demand on the transportation system.

Chapter 3: Where We're Going, looks at proposed facilities for the future, forecasted land use, and projected demand for the movement of people and goods through the year 2045.

Photo Credit: Spokane International Airport