Regional Transportation Plan

Current Transportation System

Streets & Highways, Freight, System Technologies

Transportation Policy Board

March 13, 2025

Puget Sound Regional Council

We are leaders in the region to realize equity for all. Diversity, racial equity and inclusion are integrated into how we carry out all our work.

psrc.org/equity

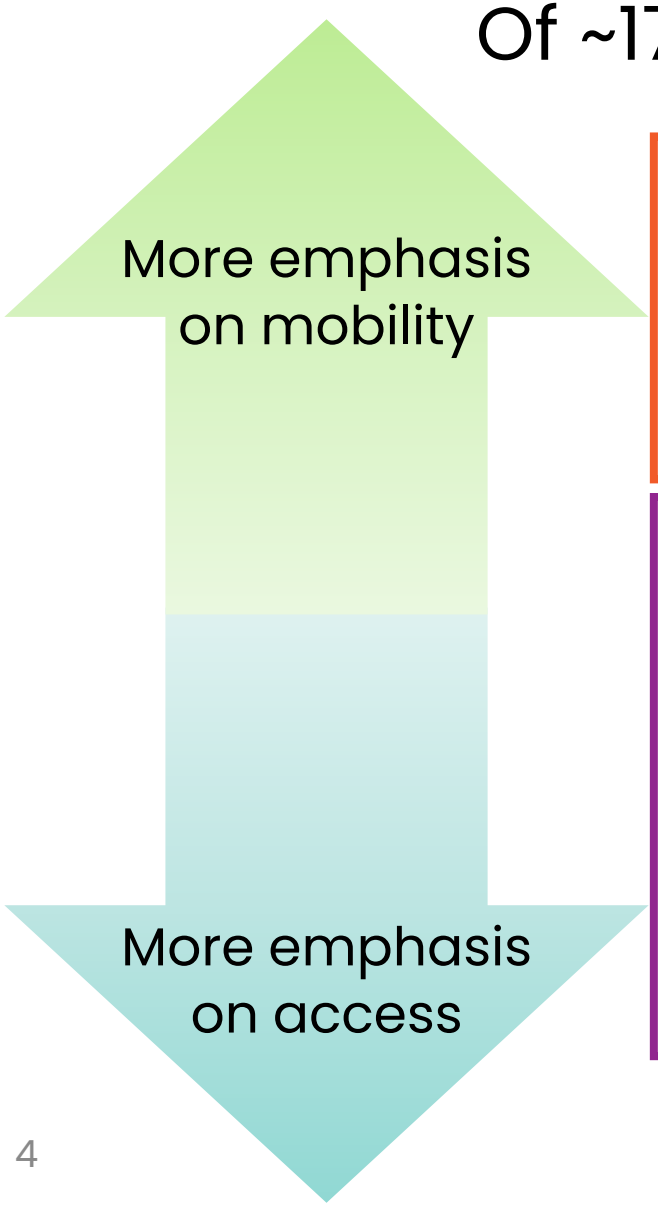
Today's Presentation

- Deeper dive into the current transportation system, focused on
  - Mobility for multiple transportation modes on streets & highways
  - Critical freight function
  - Technologies to improve efficiency

Street and Highway System

Existing Street & Highway System

Of ~17,000 miles of roadway in the region…



Freeway/Highway ~2%

Principal Arterial ~5%

Regional Network

Focus of the Regional Transportation Plan

Minor Arterial ~11%

Collector ~14%

Local Streets ~68%

Beyond the Regional Network

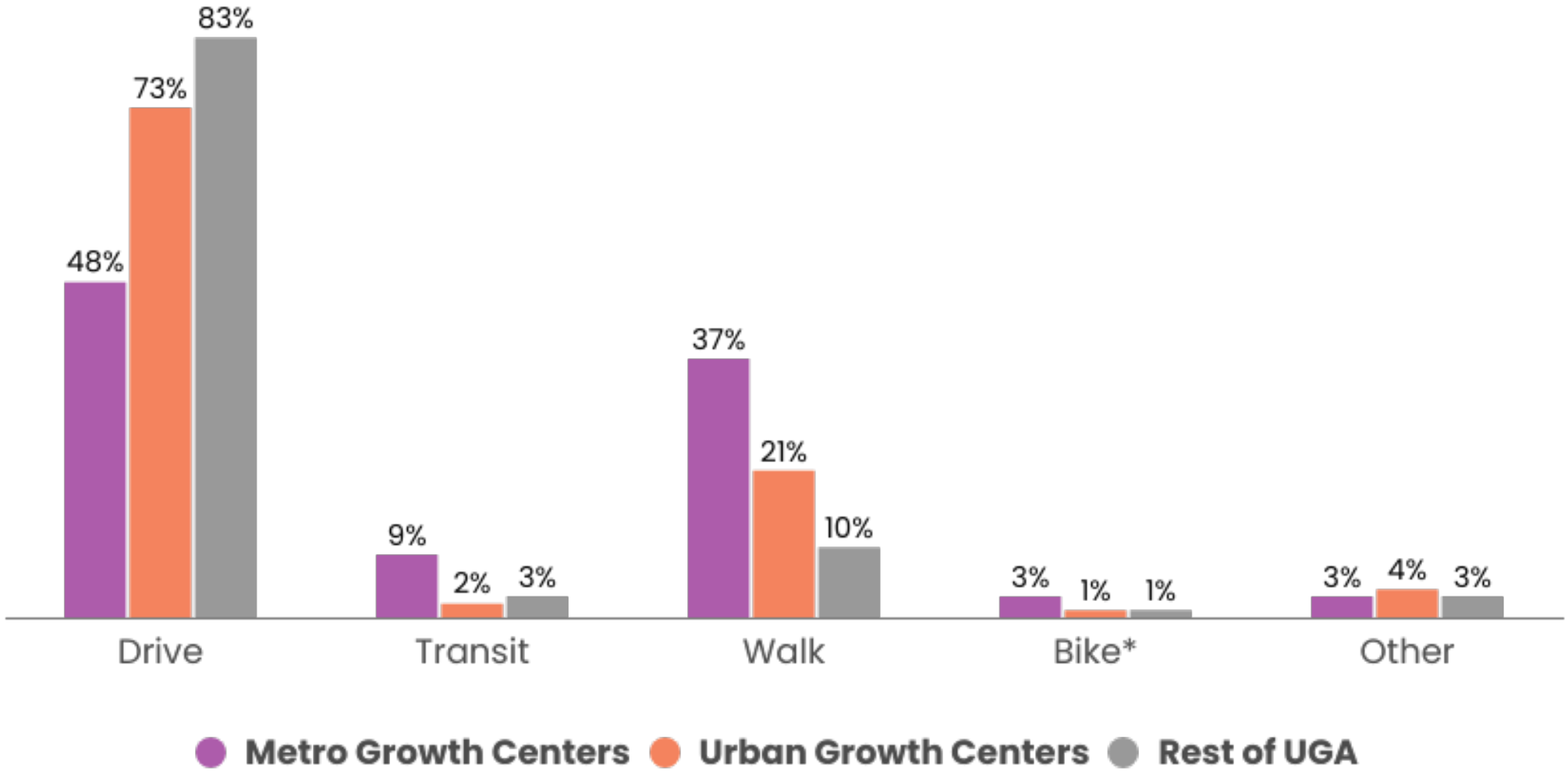
Provide primary access and mobility to homes, businesses, and services

Street & Highway Network

In addition to serving passenger vehicles, the network provides

- 2,537 miles of transit routes
- 2,590 miles of freight truck routes
- 1,117 miles of with bike facilities
- 1,672 miles of with sidewalks/walkways

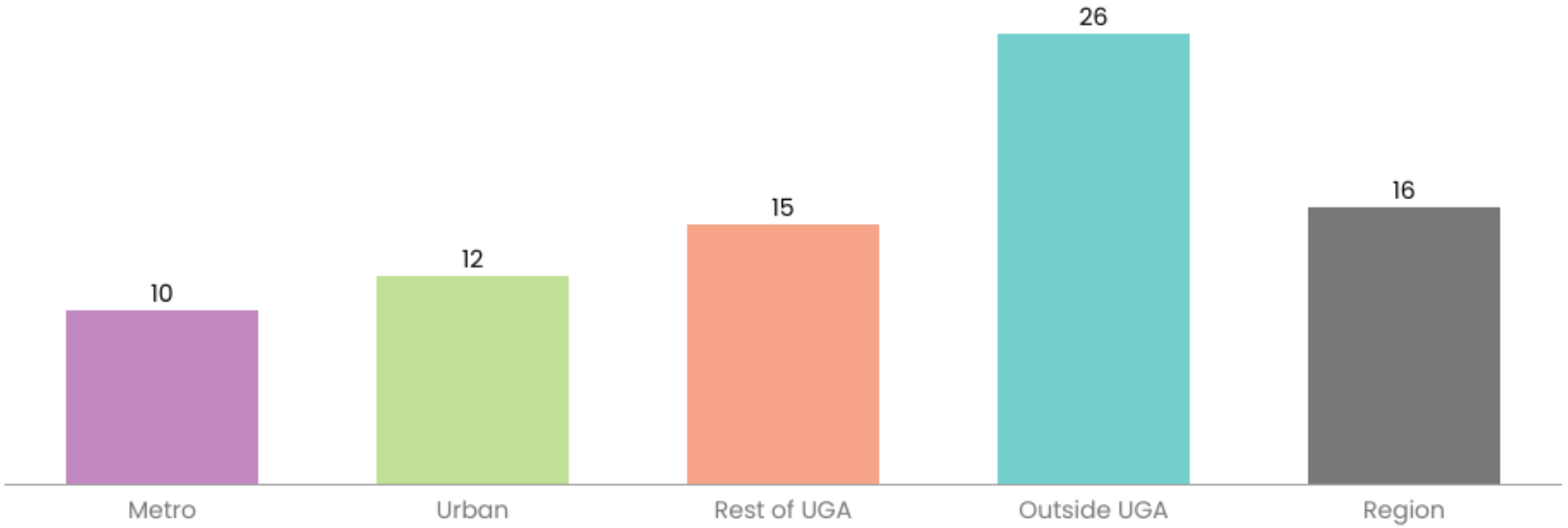
How are people traveling around the region?



Household Travel Survey, 2023

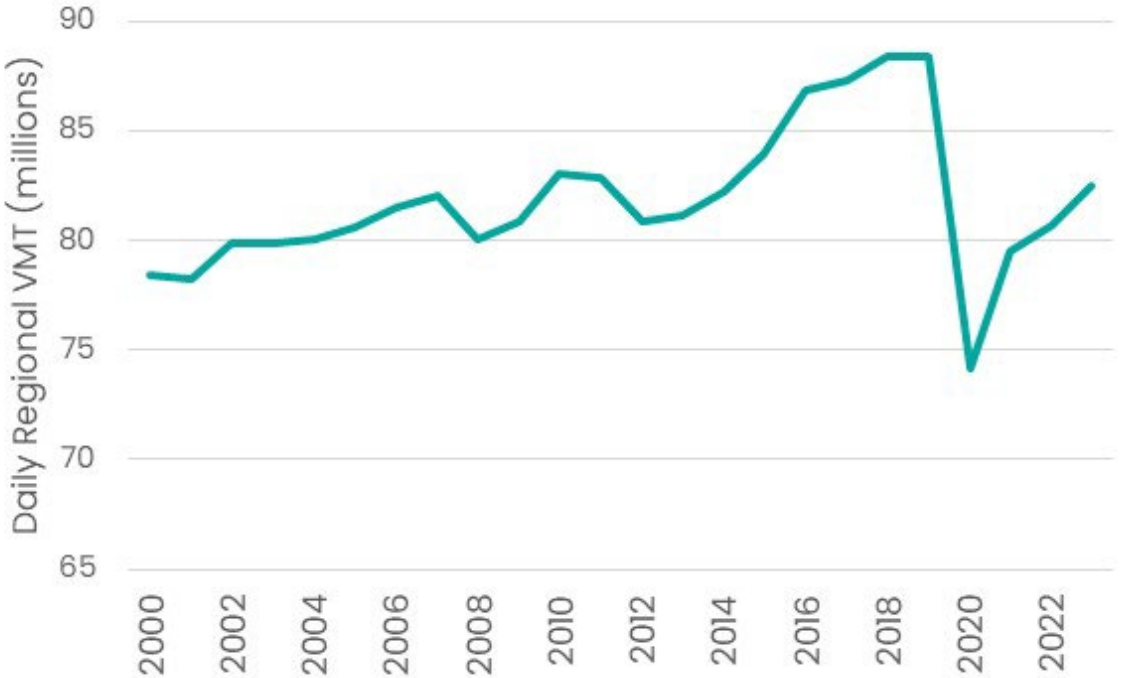
Vehicle Travel by Residents

2023 Vehicle Miles Traveled (VMT) per resident on average weekday by home location

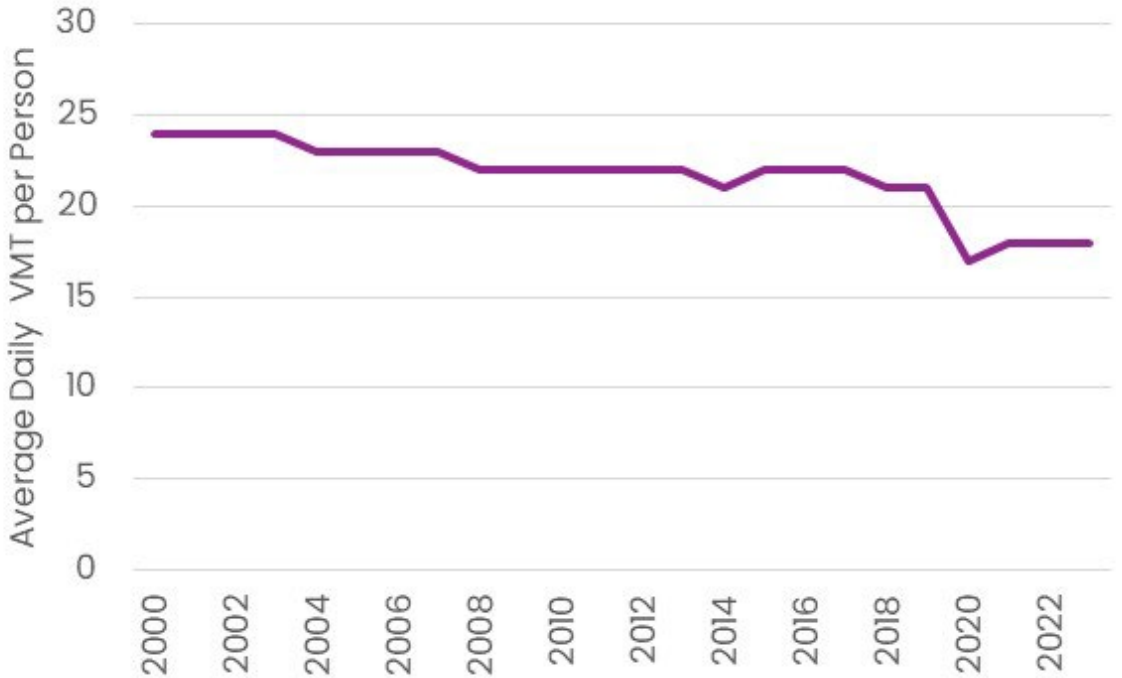


How has VMT changed over time?

Total VMT in Region

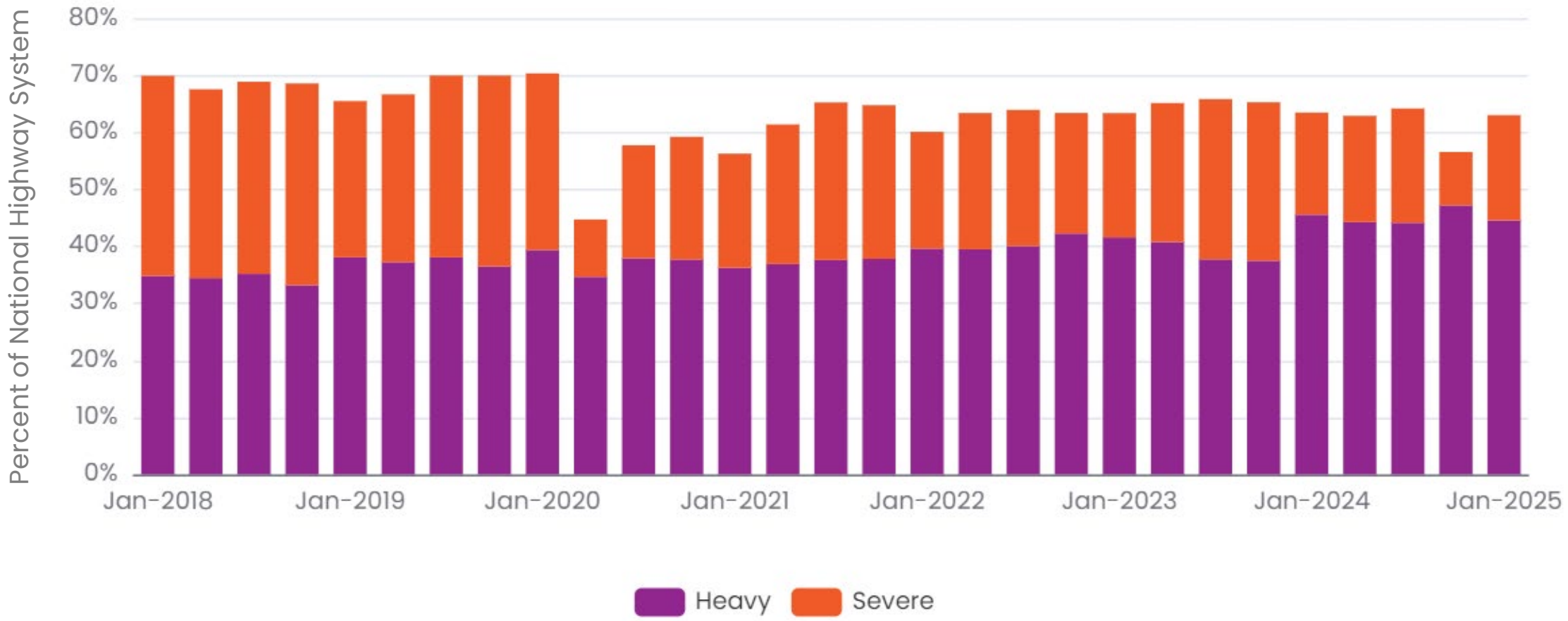


Average VMT per Person



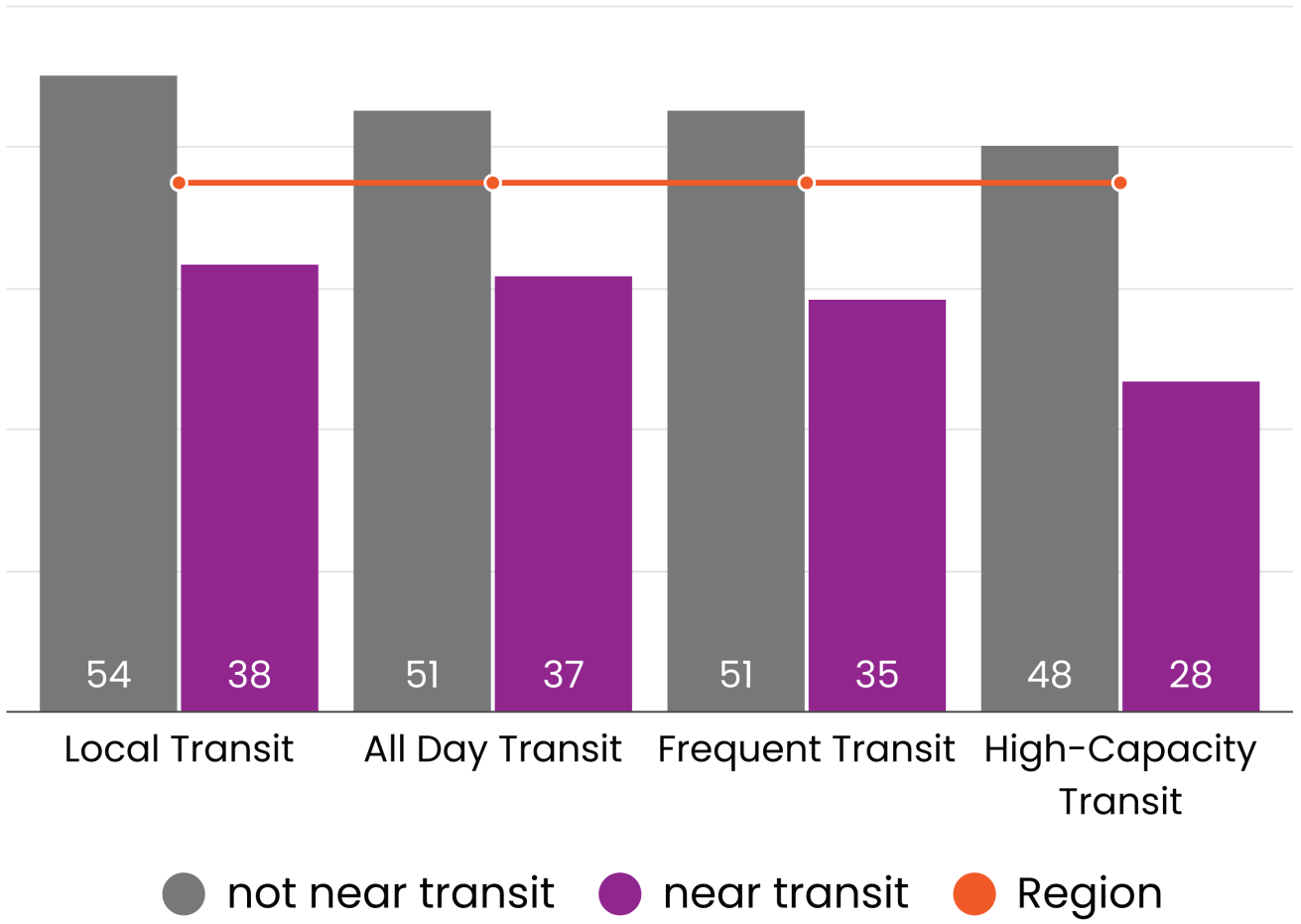
Roadway Congestion

How has roadway congestion changed over time?



Transit Effect on Average Delay

Annual Hours of Delay per Household: 2023 Base Year Model



Source: GTFS Transit Service & SoundCast Base Year Model

Assessment of Gaps

- Similar to other plan elements, staff is assessing the current streets & highways system for needs and gaps, to inform development of the future system
  - Looking into areas of heavy congestion and delay
  - Different contexts and availability of transportation options across the region
  - Possibly considering additional analyses such as intersection density

Freight

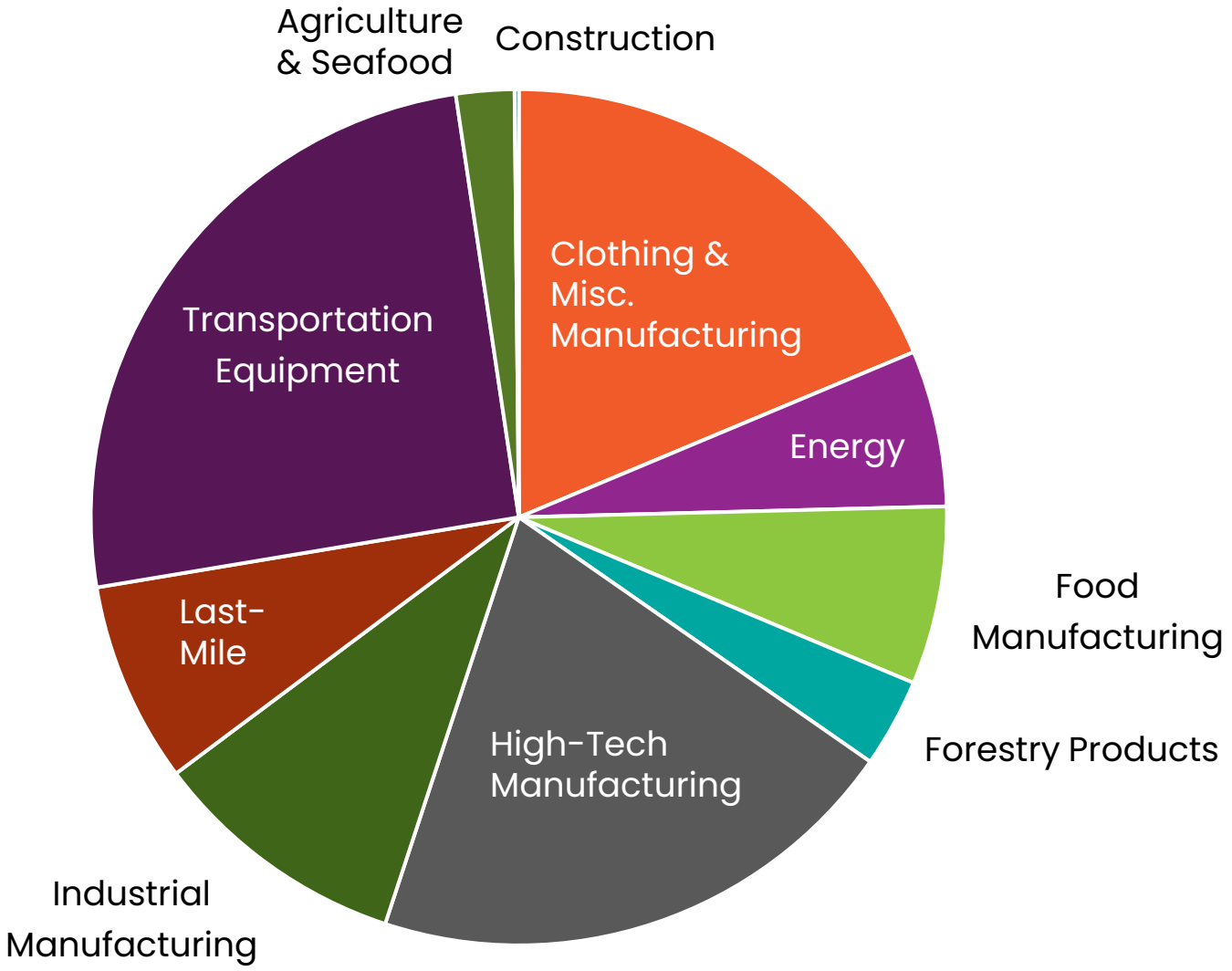
Long Haul Trucks

Ports & Waterways

Short Haul / Delivery Trucks

Rail

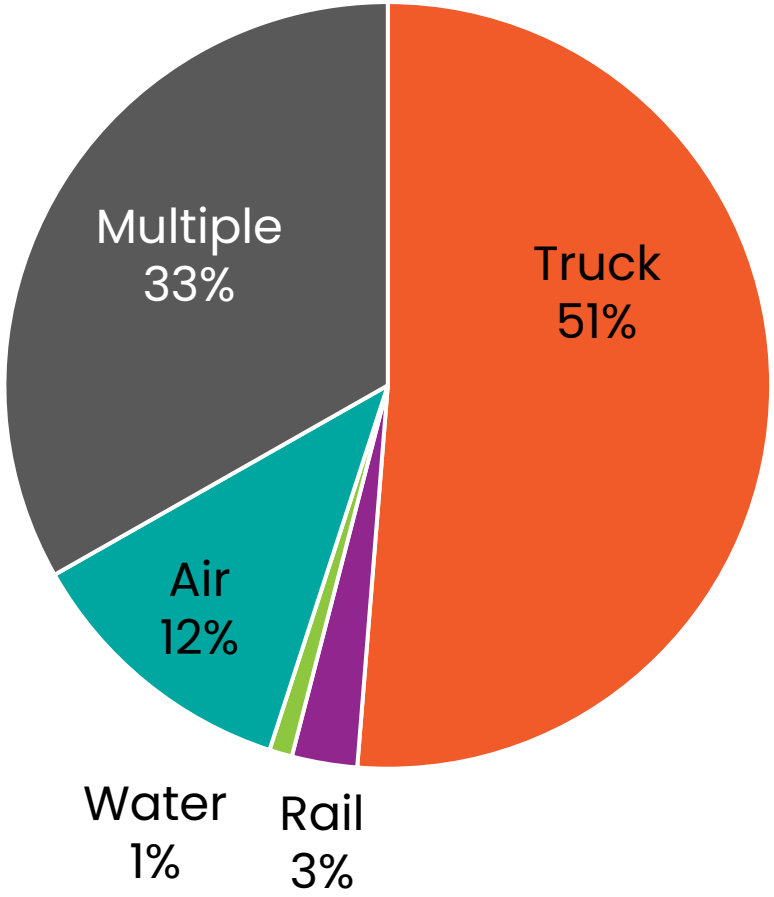
Major Commodities – Values by Industry



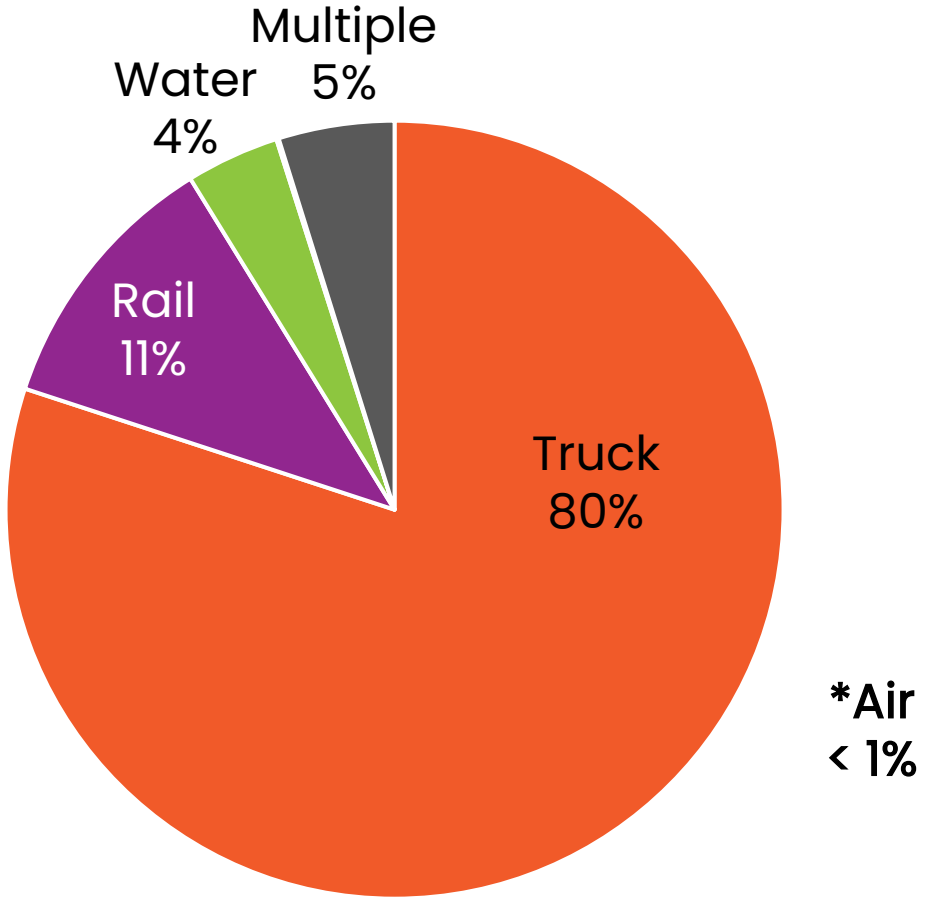
- 2022 total value of goods moving through region was $313.5 billion
- ~46% of statewide total

Source: WSDOT

Major Commodities – Shipping Modes



By Value

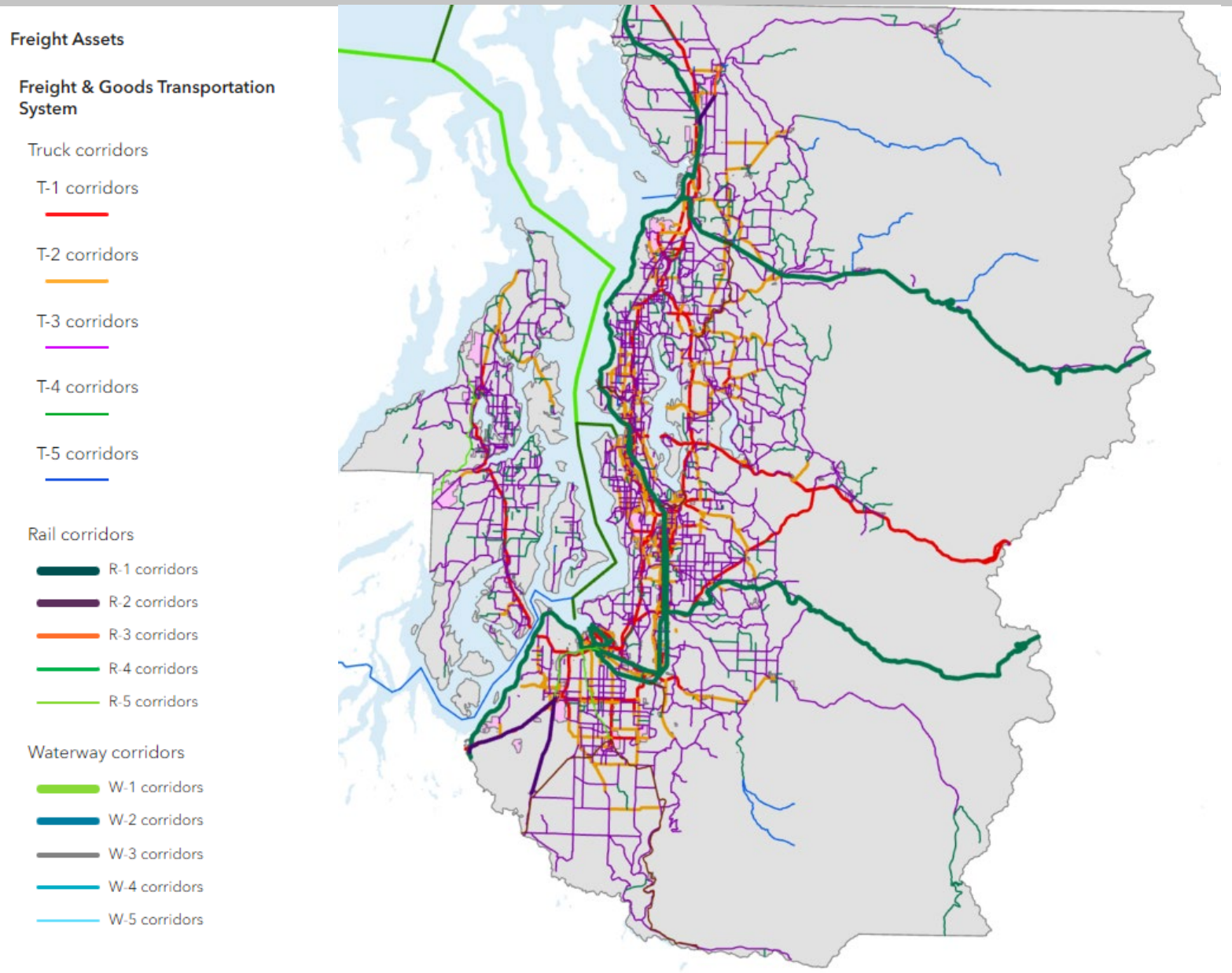


*Air
< 1%

By Volume

Source: WSDOT

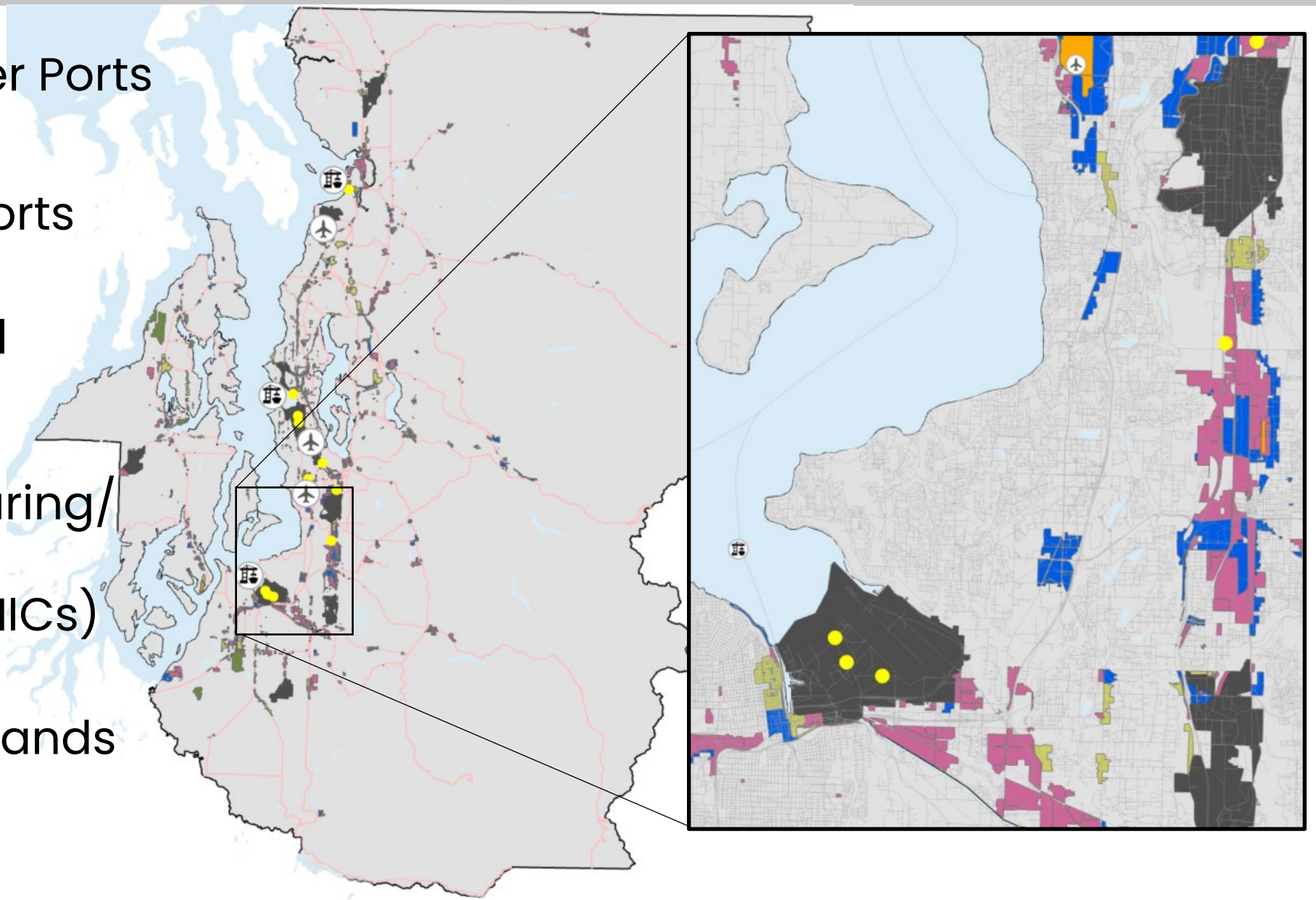
Freight Transportation Corridors



- Truck Routes
- Railways
- Waterways

Freight Intensive Land Uses

- Deep Water Ports
- Major Airports
- Intermodal Facilities
- Manufacturing/ Industrial Centers (MICs)
- Industrial Lands

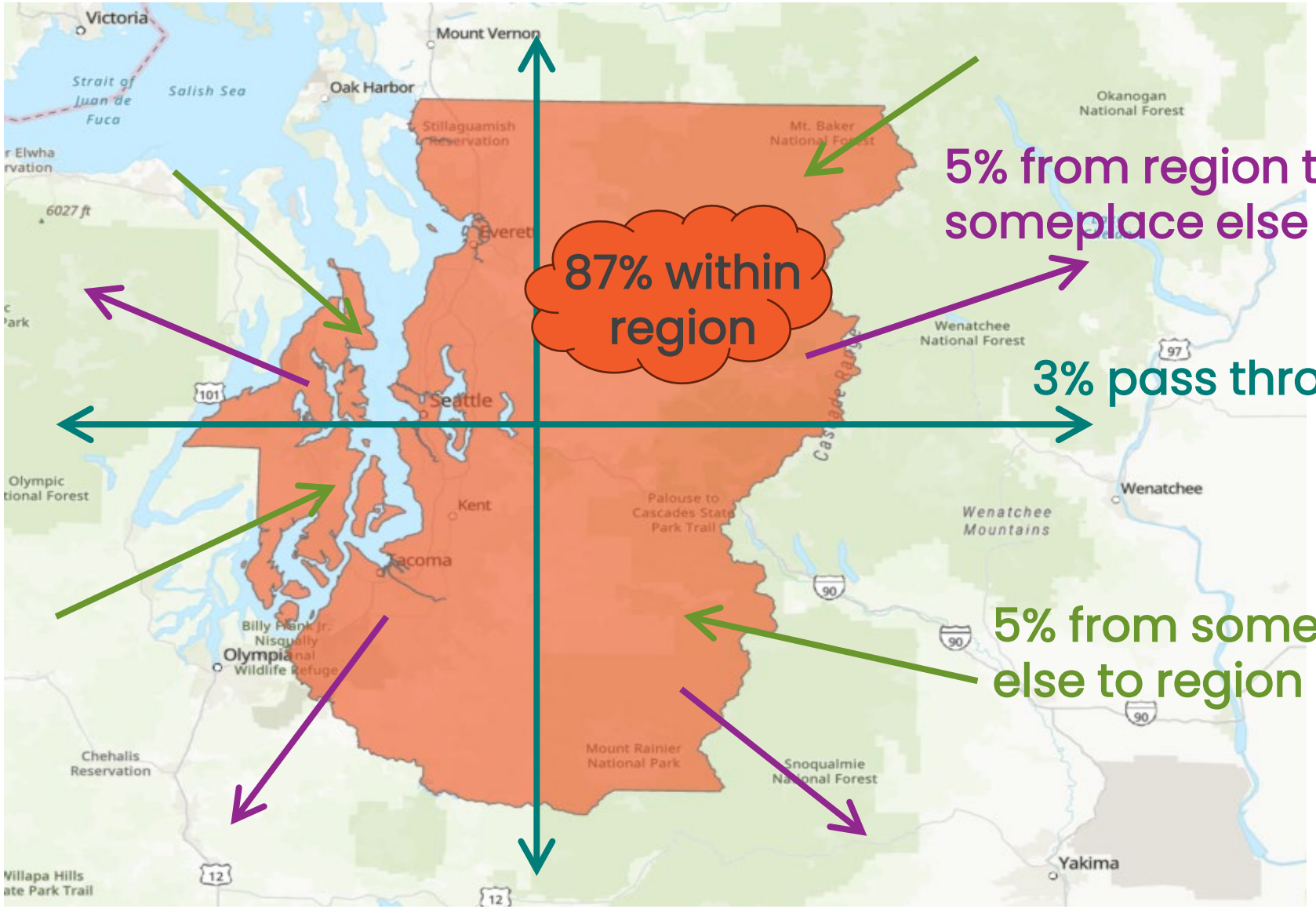


Existing Truck Operations

- Over 83 million total vehicle miles traveled (VMT) each day in the region
- Trucks account for 7.5% of total VMT
- Most truck VMT (78%) occurs on major freight routes (T-1 and T-2)
- Half of passenger VMT also occurs on major freight routes

Where are heavy trucks traveling?

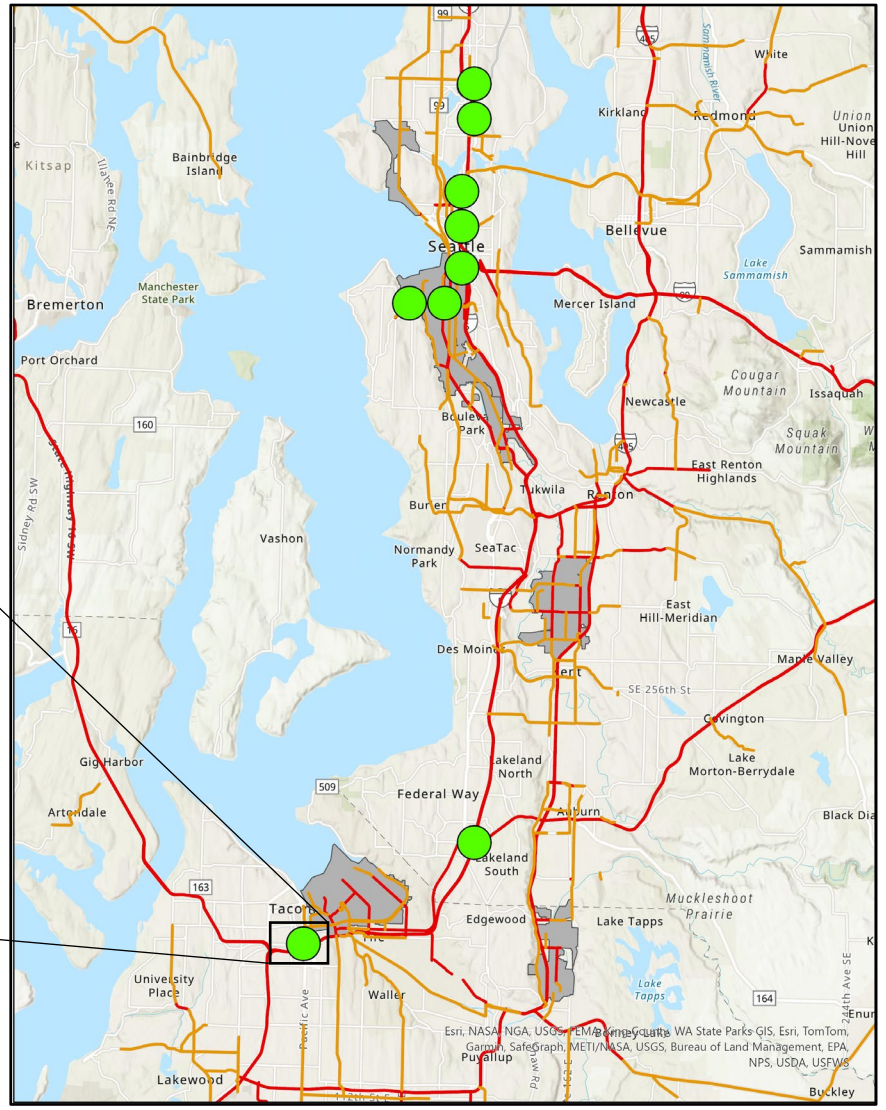
Average 135,000 heavy truck trips in the region each day



Truck Congestion

The top 10 truck bottlenecks in the state are in the PSRC Region

Source: Tacoma News Tribune



● = Top truck bottlenecks per 2023 WSDOT State Freight Plan (*locations are approximate*)

Freight Issues and Needs

- Maintenance & Preservation
- Safety strategies for MICs and major freight corridors
- Port + Truck electrification / decarbonization
- Truck Parking

Source: NWSA

Truck Parking

Source: FMSIB

Source: SDOT

- Hundreds of additional spaces needed each day
- Projects and Priorities outlined in *2024 Truck Parking Implementation Plan*
- Recent installations for drayage trucks in Seattle

Transportation System Technology

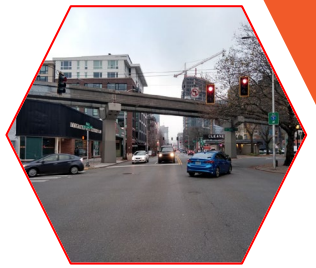
Coordinated Signals

Ramp Metering

Pedestrian Signals

Transit Signal Priority

Bike Signals



Emergency Signal Preemption

Variable Message Signs

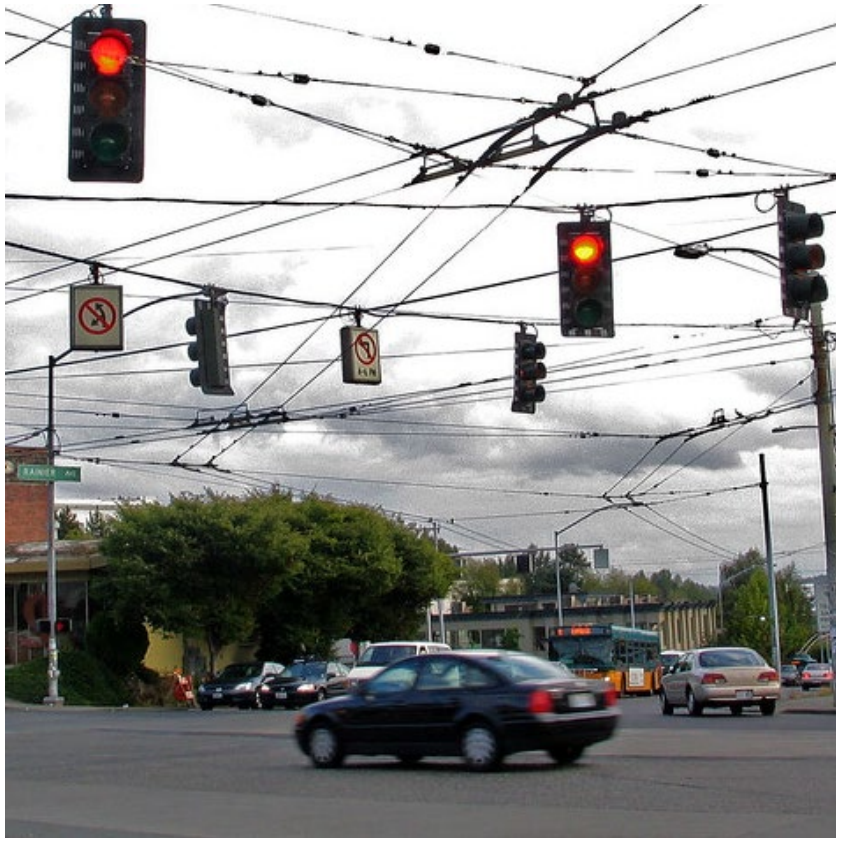
Transportation System Technology

Intelligent Transportation Systems (ITS) – Technologies that improve communications and traffic flow to enhance the safety, efficiency, and reliability of the transportation system. Examples include:

- traffic signal technology
  - *signal coordination*
  - *transit signal priority*
  - *pedestrian/bike signals*
  - *emergency vehicle preemption*
- ramp metering
- variable message signs

Transportation System Technology Survey

- Conducted ITS inventory of National Highway System in 2019 to understand where signals and other ITS assets are located
  - Signal Coordination
  - Adaptive Signal Control
  - Accessible Pedestrian Signals
  - Transit Signal Priority
  - Pre-timed Signals
  - Emergency Vehicle Preemption
  - Automatic Traffic Signal Performance Measures
- In 2023 updated ITS inventory to see how the landscape has changed



Highlights of Transportation System Technology Today

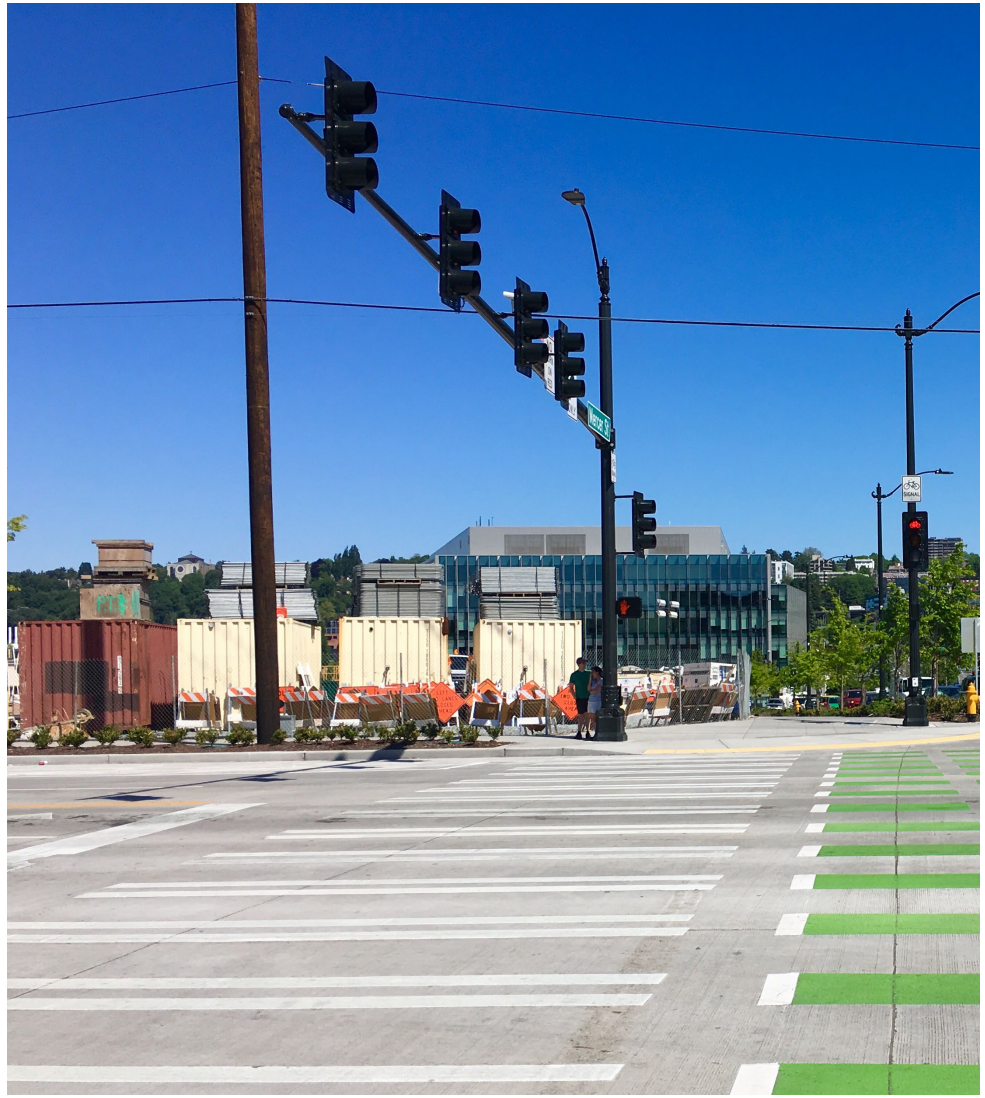
Accessible Pedestrian Signals allow people of all abilities to more safely utilize signal-protected crossings

- Upgrade of signals to include APS has increased by over a third (to 44% of total)

Automatic Traffic Signal Performance Measures (ATSPM) collect traffic data at intersections, allowing for more efficient and effective signal management

- 4% of signals have ATSPM, increasing from 1% during the previous survey

Highlights of Transportation System Technology Today



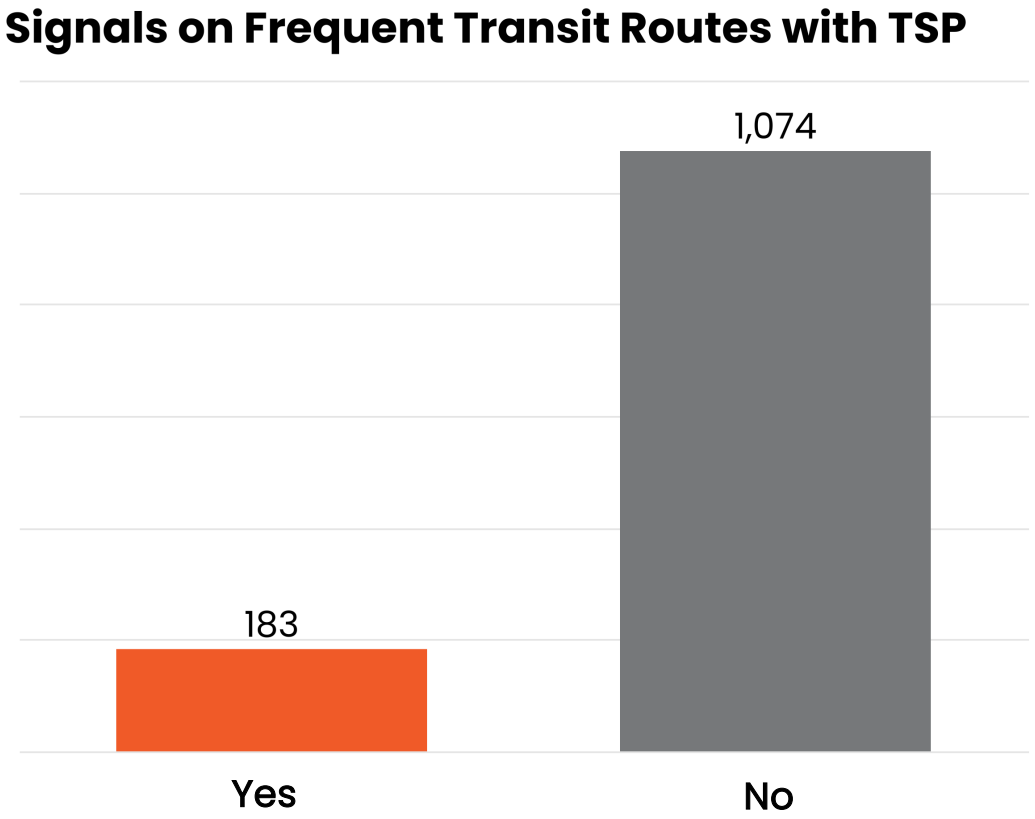
Adaptive Signal Control allows traffic signals to operate more efficiently by responding in real time to traffic conditions

- About 12% of traffic signals in the region operate with this technology, an increase from 9% in the previous survey

Additional Analyses to Identify ITS Gaps

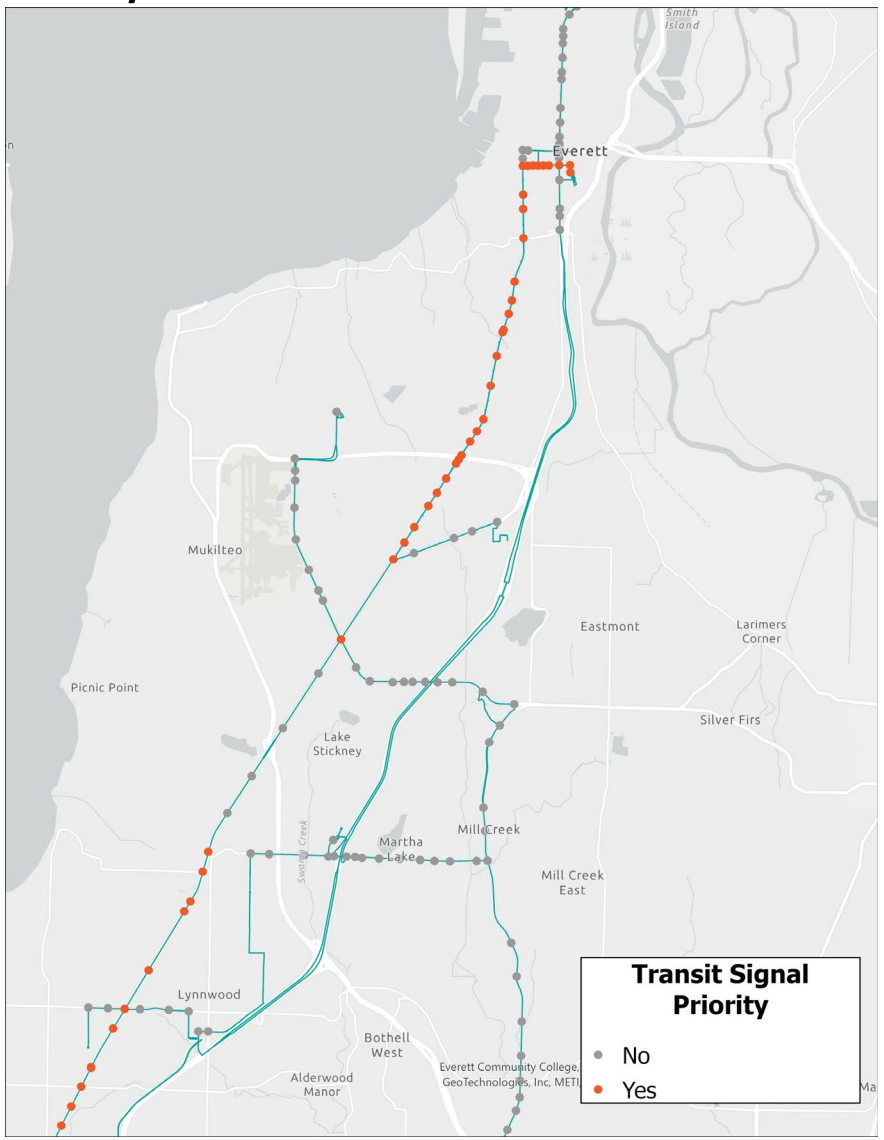
- To identify where ITS gaps may exist, we are overlaying this information with other key datasets
- Context is critical to identifying potential gaps – not every ITS feature is necessary at every location
- The Current Transportation System Report will include various ITS gap analyses, including identification of:
  - High-capacity transit routes where there is no Transit Signal Priority
  - Sections of the High Injury Network (HIN) where there are no Accessible Pedestrian Signals
  - Congested corridors that lack signal coordination or Adaptive Signal Control

Gap Analysis Example: Transit Signal Priority Opportunities

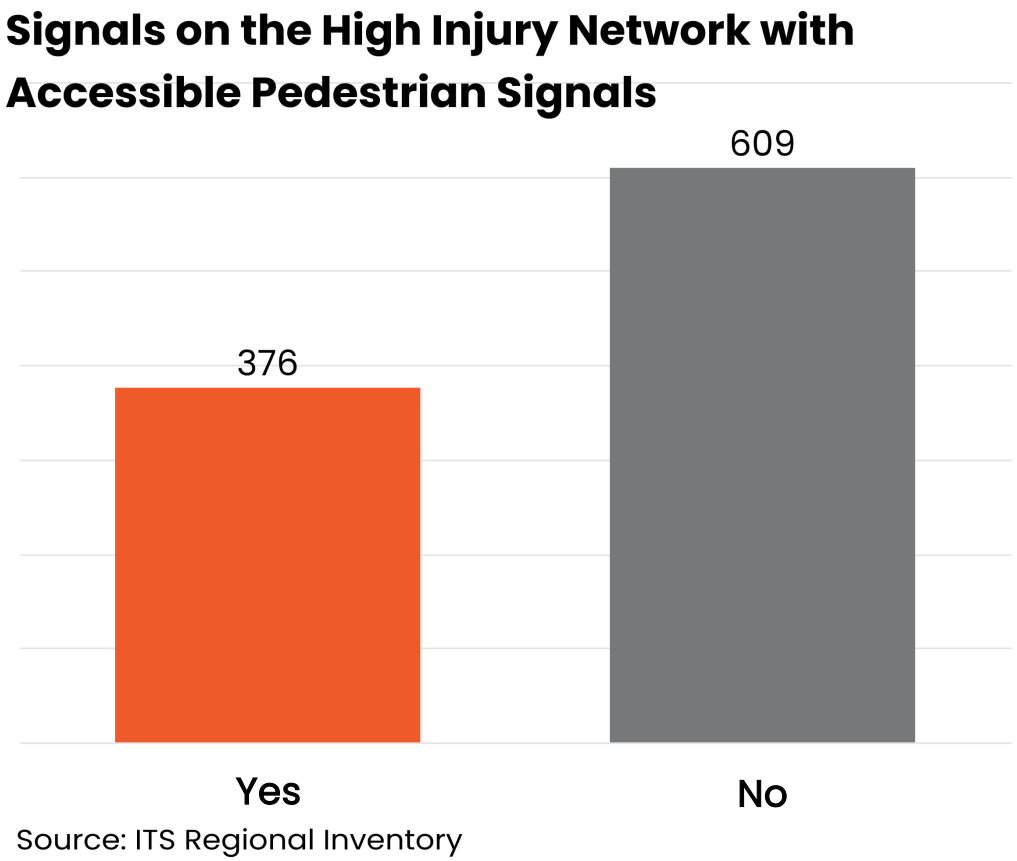


Source: ITS Regional Inventory

Frequent Transit Routes and TSP

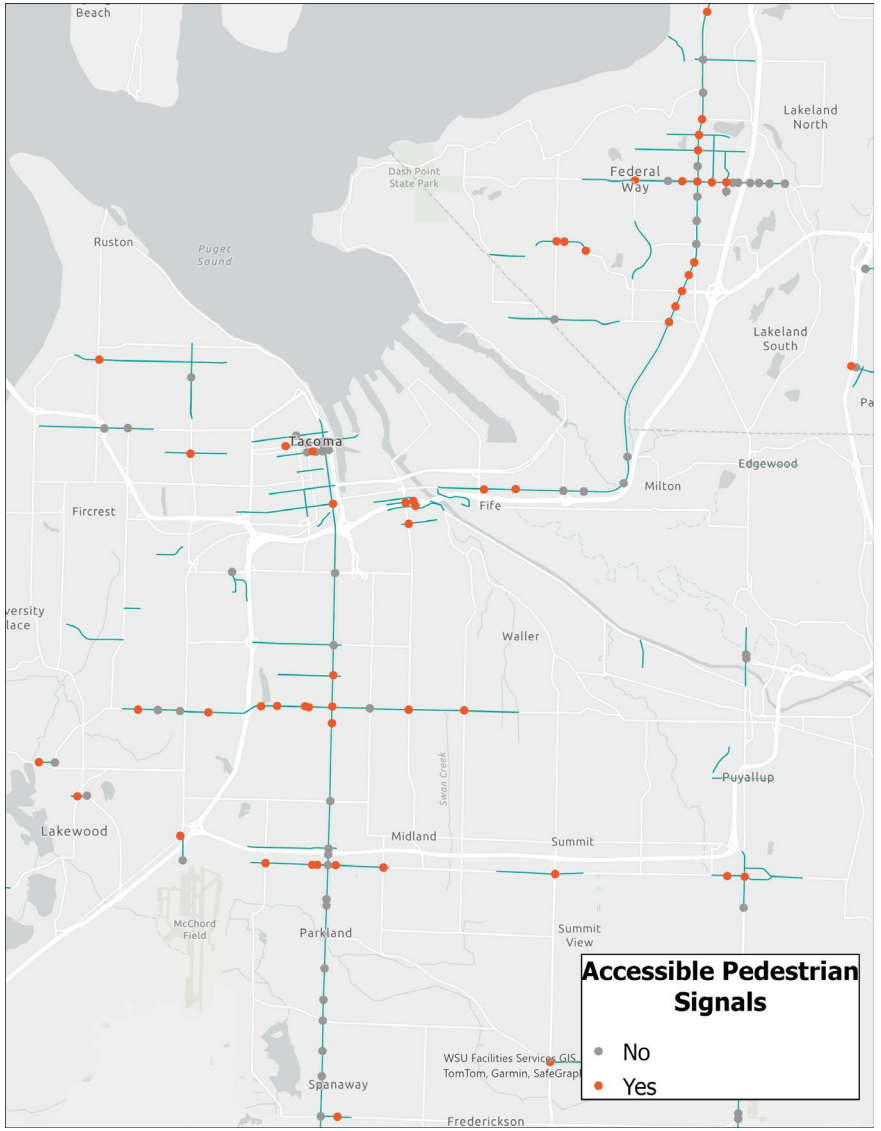


Gap Analysis Example: Accessible Pedestrian Signals

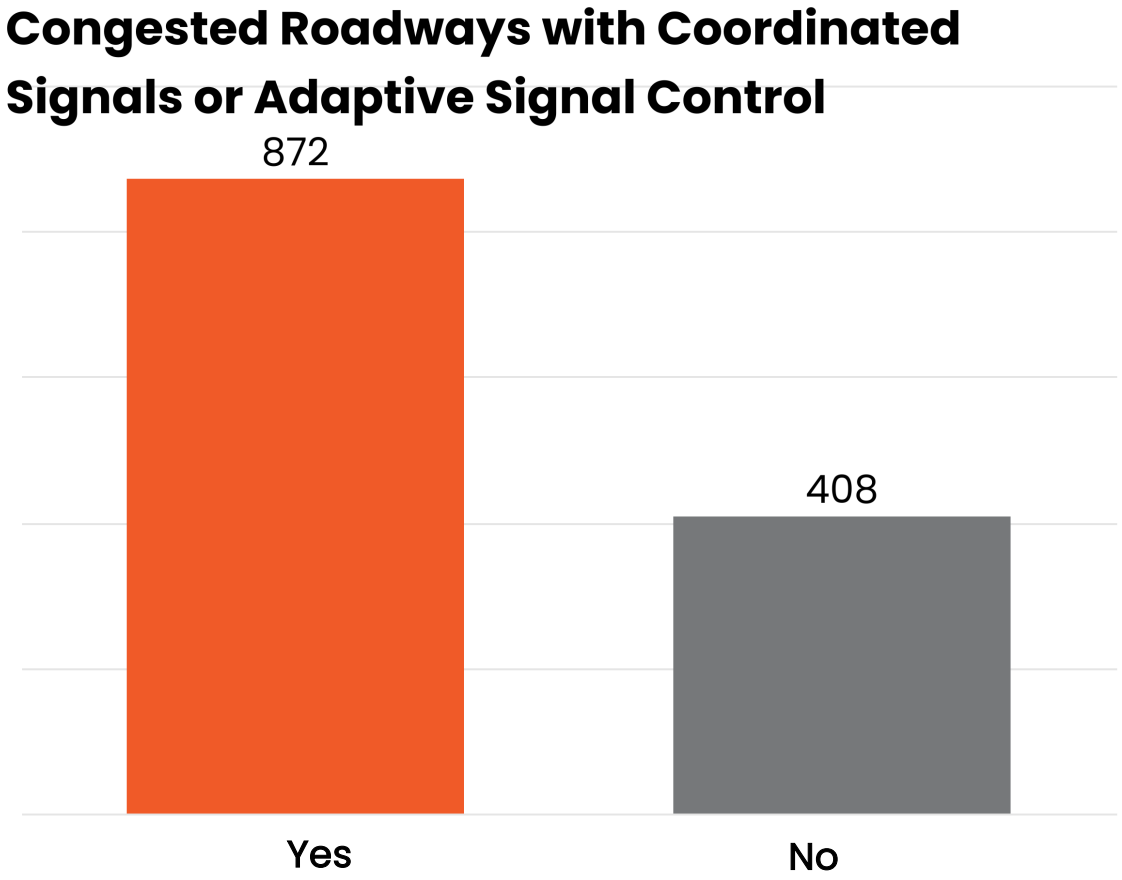


Source: ITS Regional Inventory

High Injury Network and APS

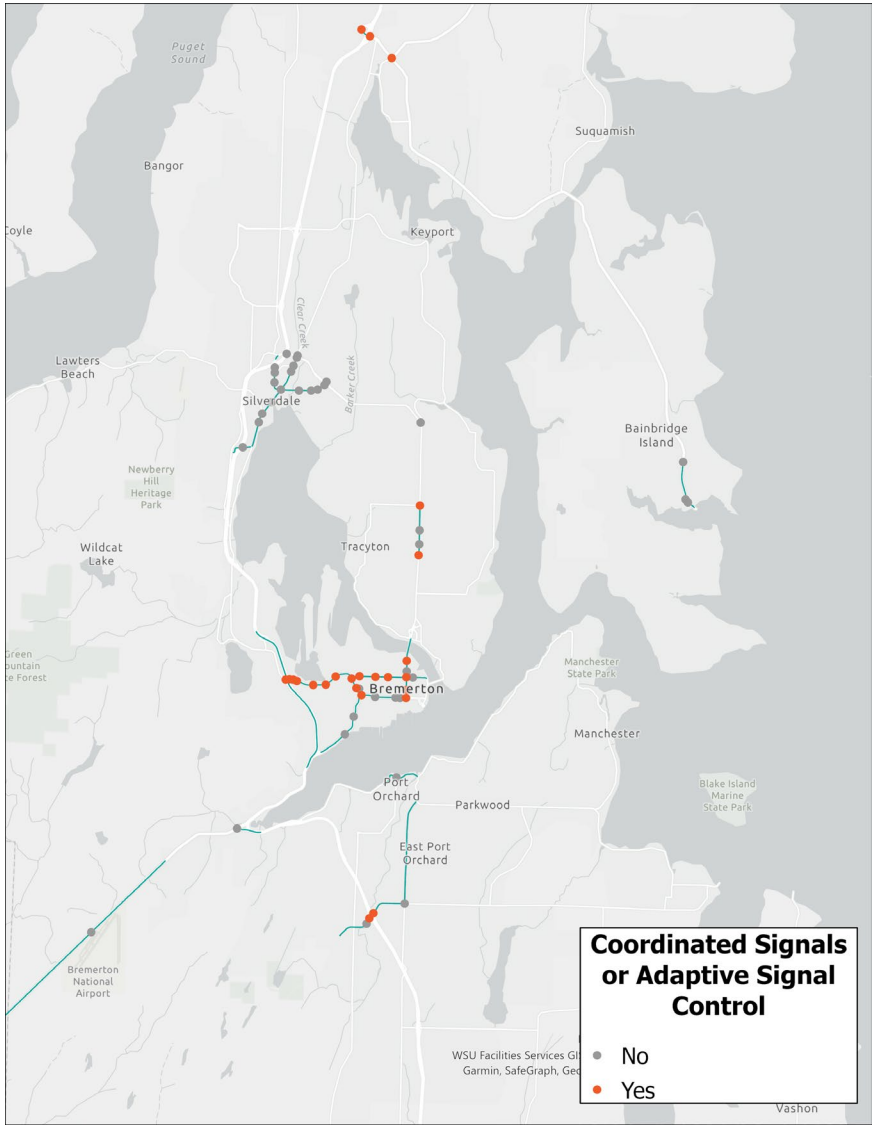


Gap Analysis Example: Coordinated/Adaptive Signals



Source: ITS Regional Inventory

Congested Roadways and Coord./Adaptive Signals



Summary and Discussion

- Analysis approach and key findings of the current streets & highways network, freight network and system technologies:
  - The regional streets & highways network supports all modes
  - Congestion and delay vary depending on location, activity levels, availability of transportation options
  - Multimodal freight system has unique needs
  - Technologies can support operations of the system and be tailored to specific circumstances
- *Final analysis and assessment will be published in late April*

Board feedback on approach for these system elements?

Thank you!

Puget Sound Regional Council