

Seattle Industrial Areas Freight Access Project

Future Conditions – Part II



Image Credit: Port of Seattle

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Freight Advisory Board
July 15, 2014



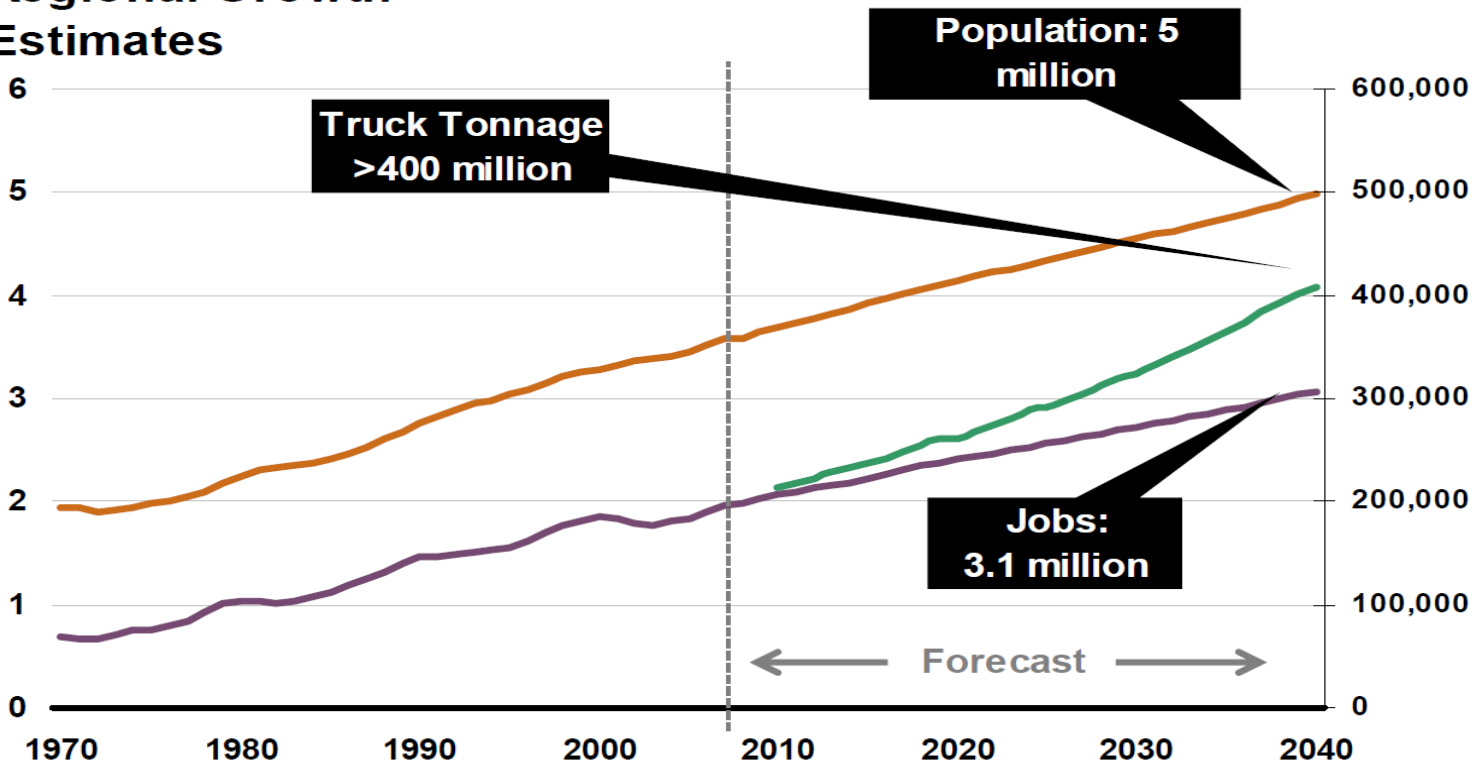
Presentation overview

- Future freight travel conditions
 - Congestion levels
 - Mobility constraints
 - Rail volumes
- Urban freight focus areas
- Freight toolbox



Regional growth and truck tonnage

Regional Growth Estimates



⁴ PSRC, Washington State Department of Employment Security

Future freight travel conditions

- Population and employment are expected to grow by more than 25% by 2035
- Truck activity will grow faster than regional traffic
- Port activity to significantly expand
- Future street network includes programmed projects to accommodate all modes

Future freight travel conditions

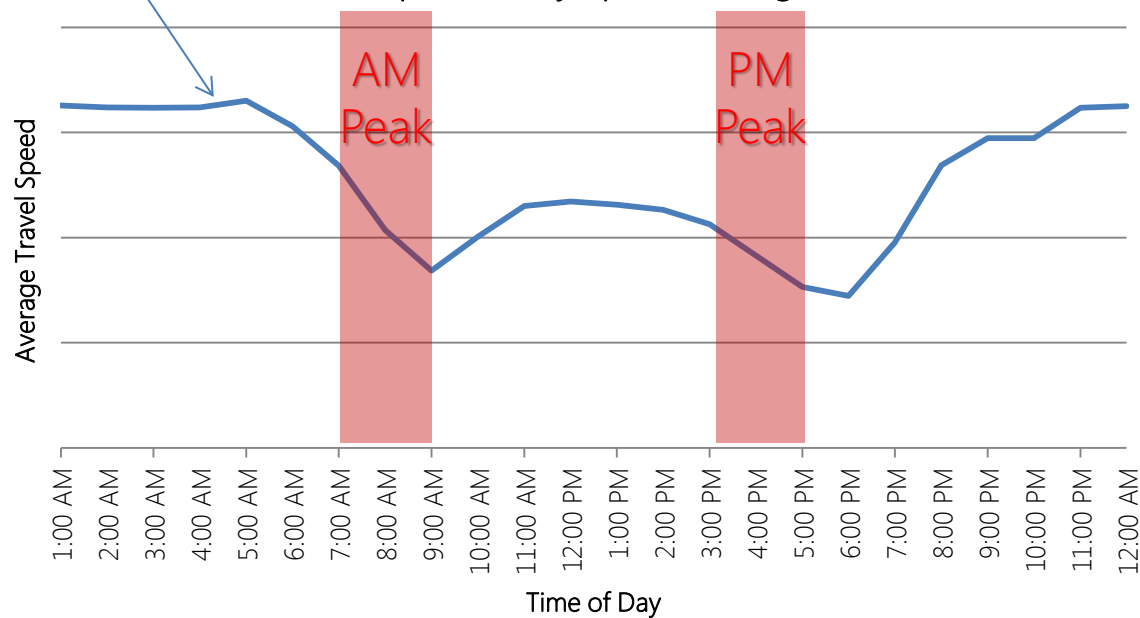
- Rising congestion and mobility constraints have the potential to increase:
 - Congestion for all modes
 - Delays in goods delivery
 - Transportation costs for consumers
 - Emissions of air pollutants
 - Truck and vehicle safety considerations

Travel speed methodology

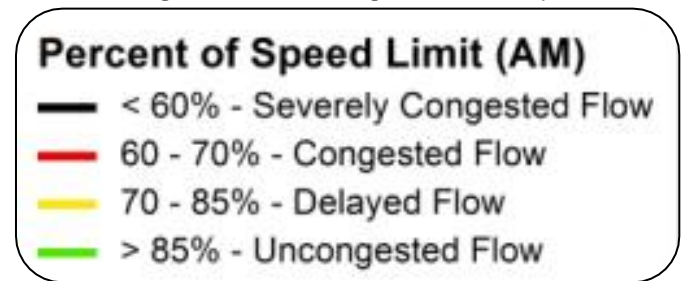
- Congestion measured as percent of posted speed limit
- Focus on peak periods
 - 7:00 to 9:00 AM
 - 3:00 to 5:00 PM

Auto and truck speeds

Example of Daily Speed Changes



Legend for Congestion Maps

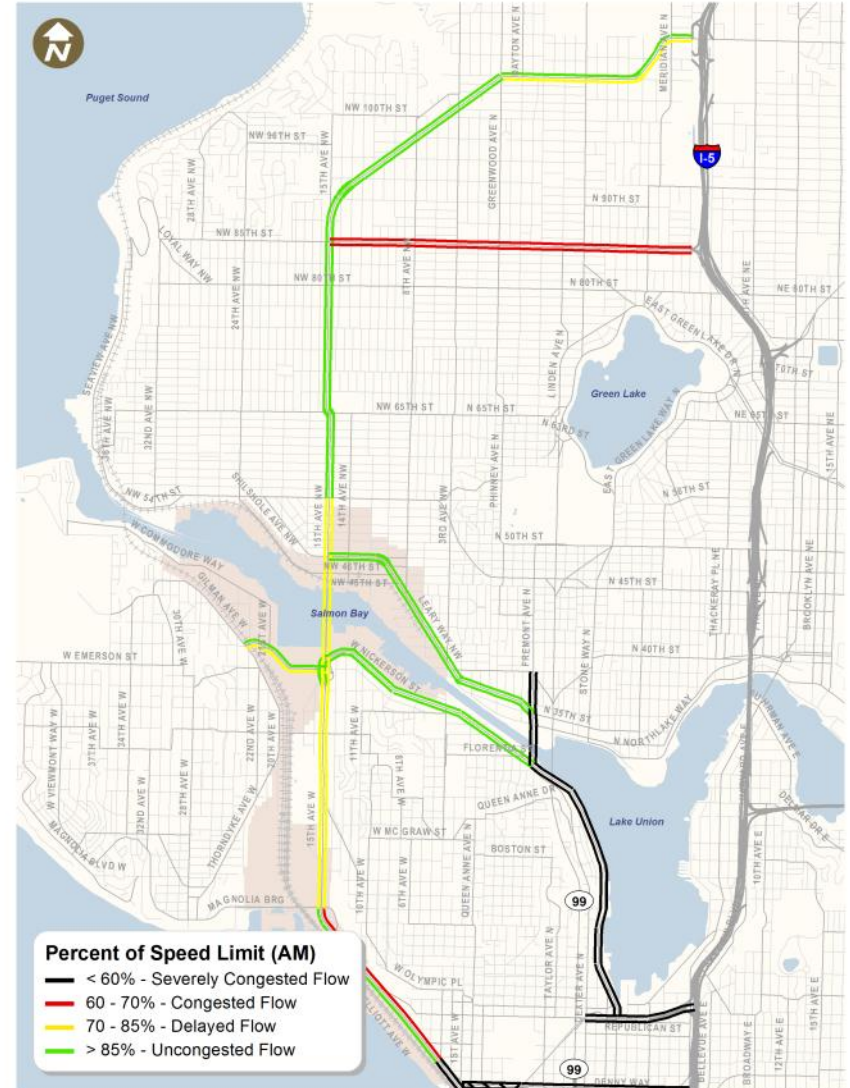


Congestion levels – north

AM Peak
7:00 – 9:00 AM



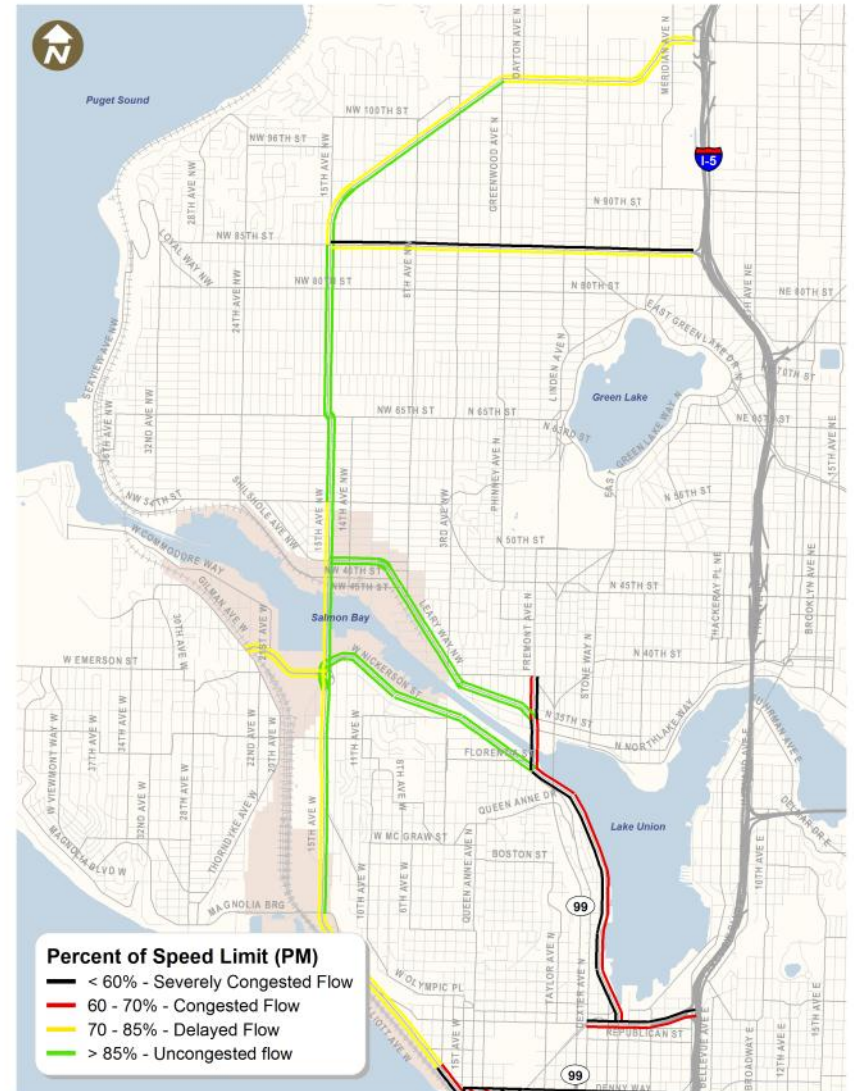
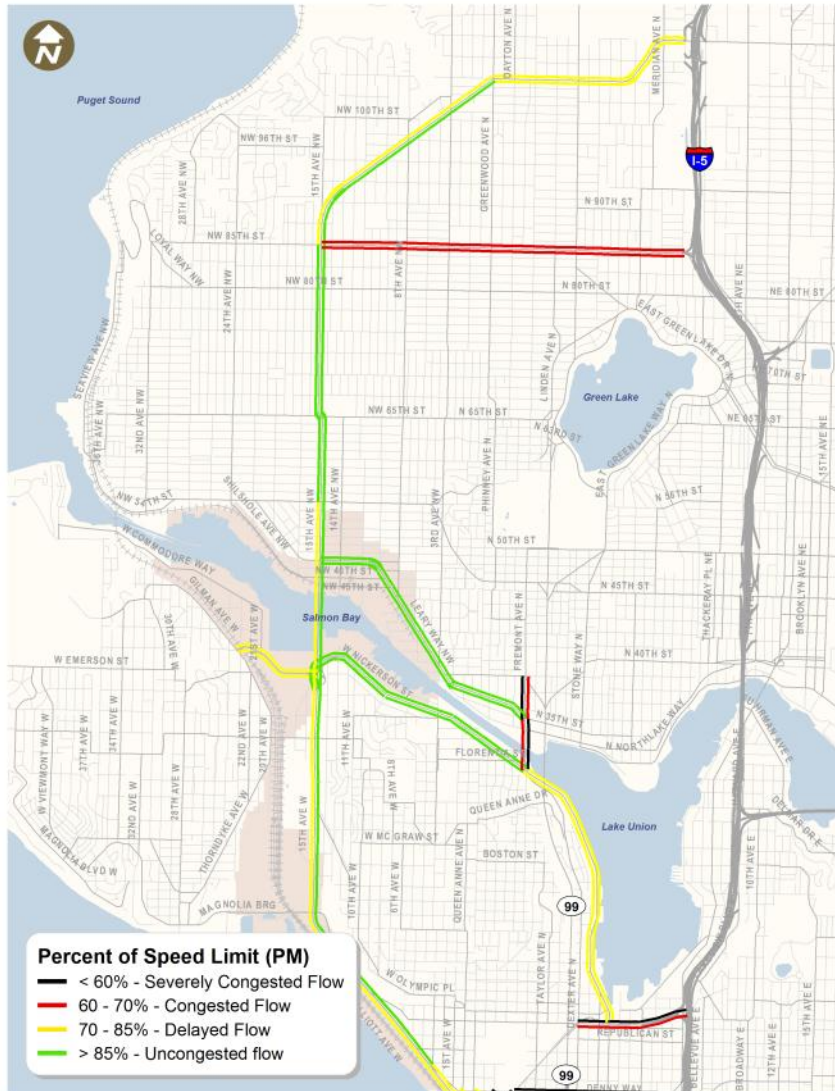
Existing



Future

Congestion levels – north

PM Peak
3:00 – 5:00 PM

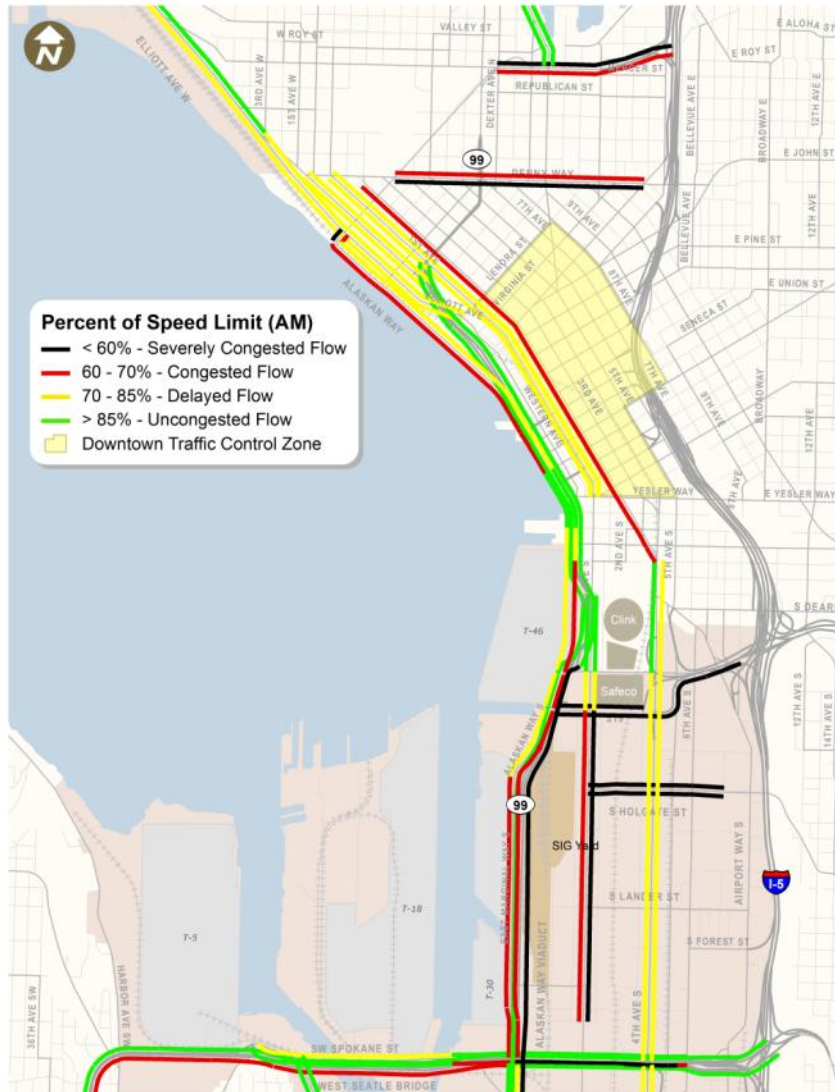


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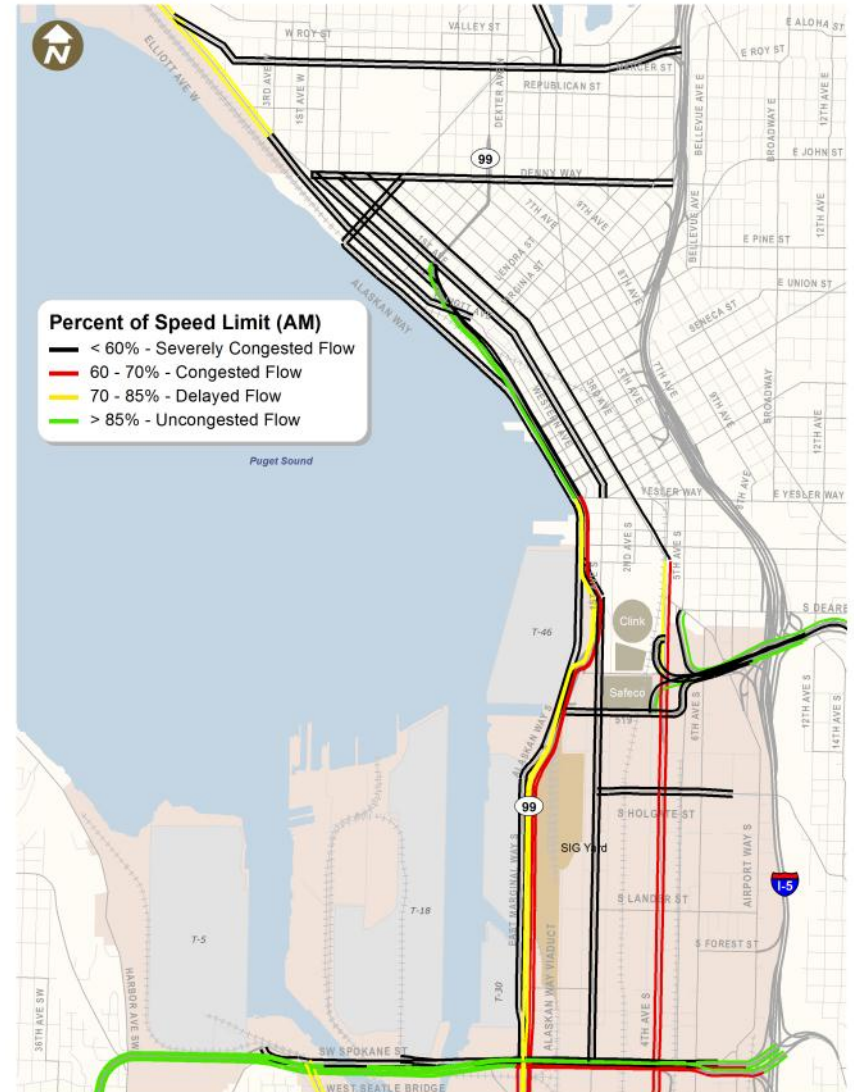
Future

Congestion levels – central

AM Peak
7:00 – 9:00 AM



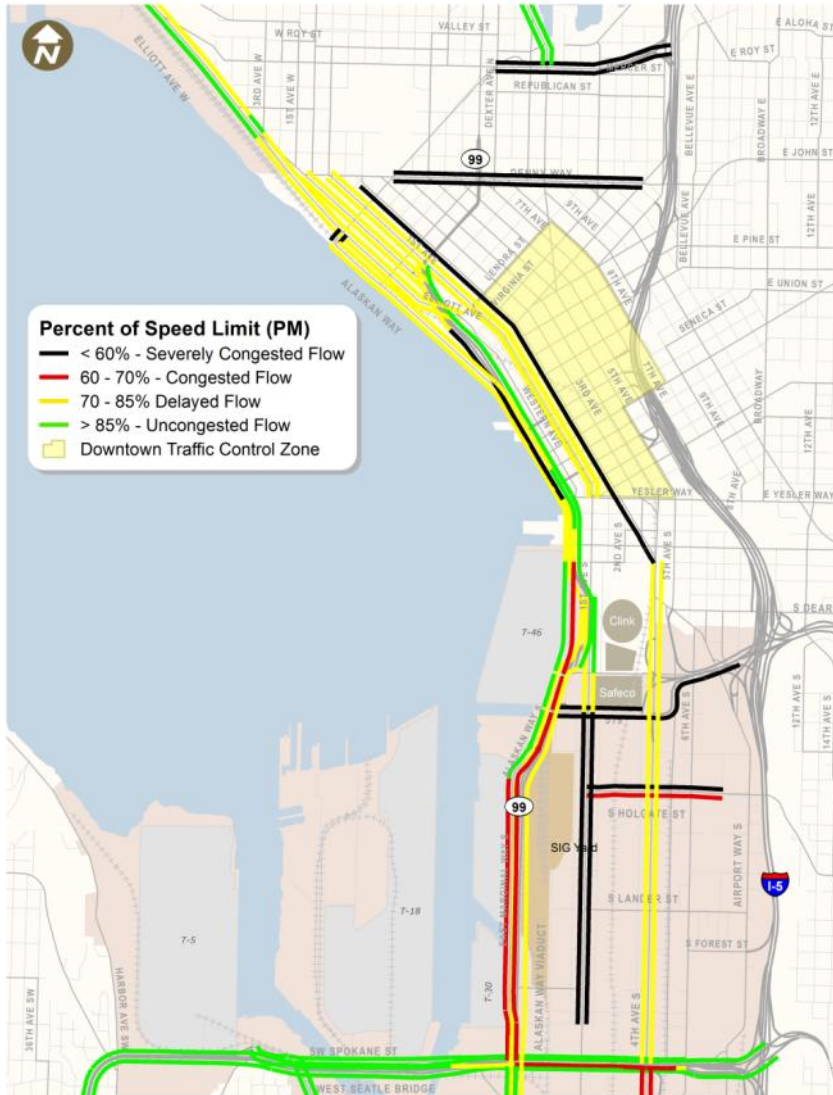
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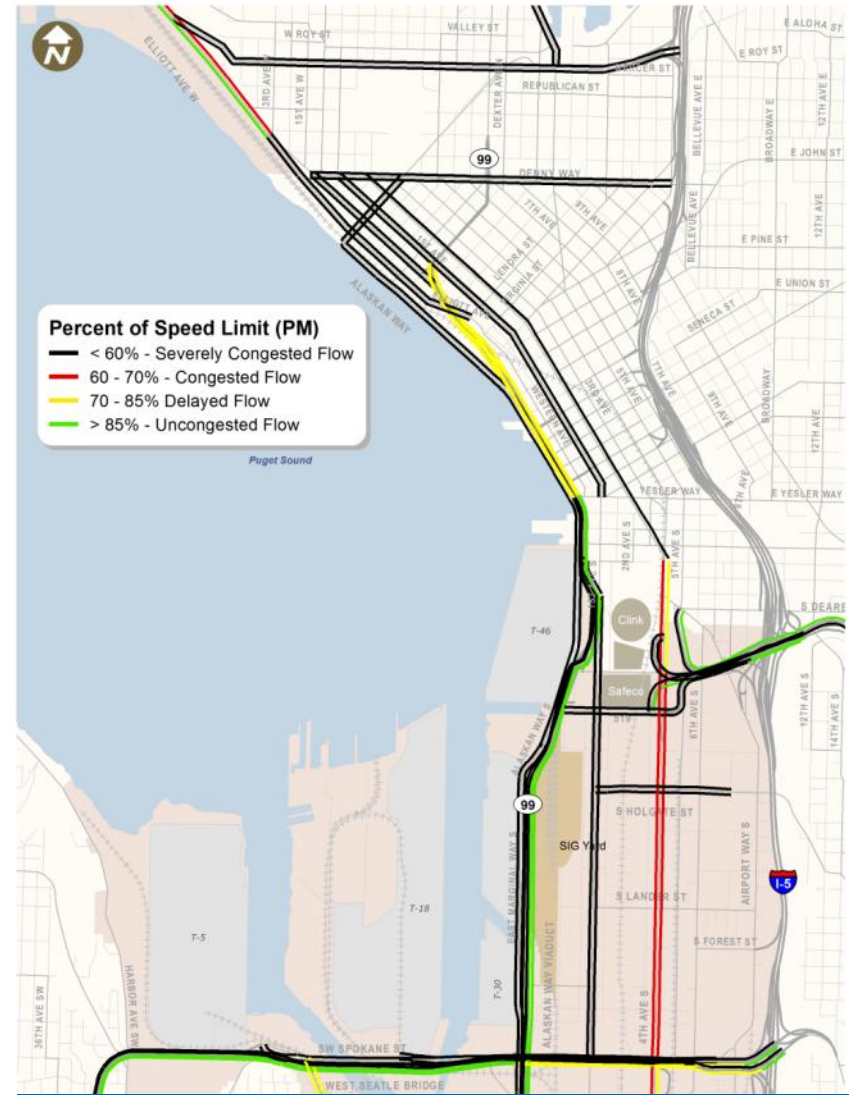
Future

Congestion levels – central

PM Peak
3:00 – 5:00 PM



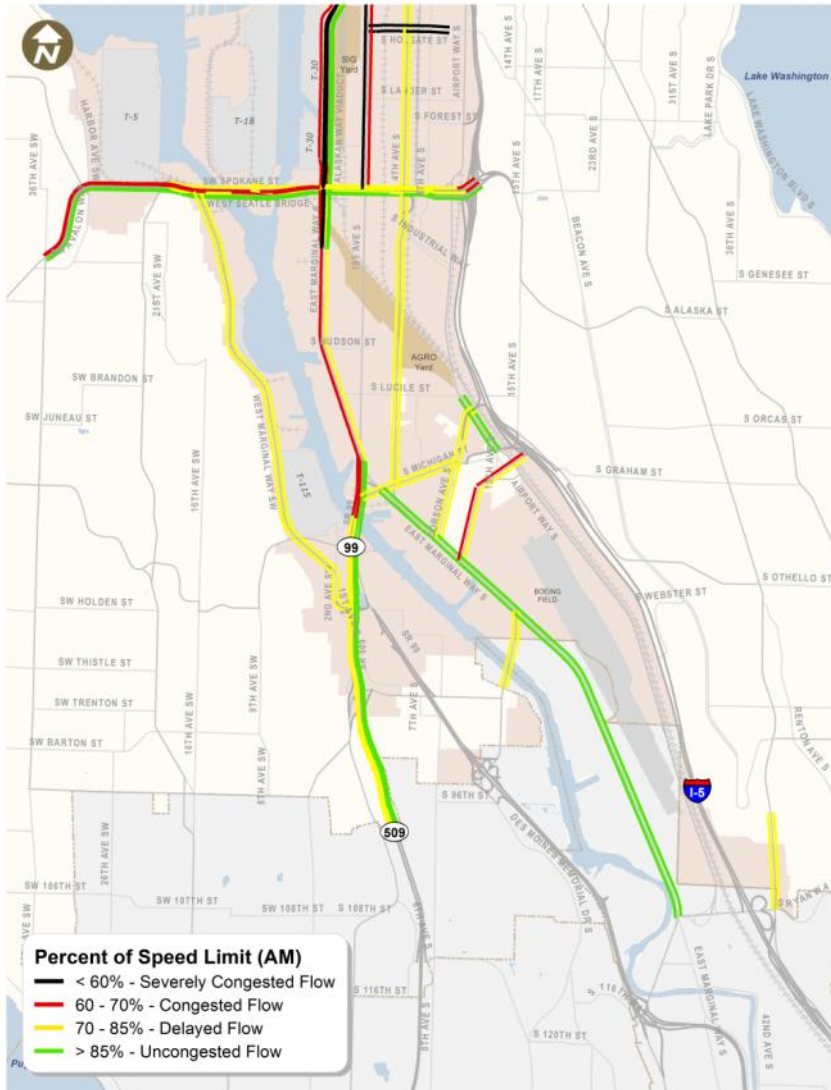
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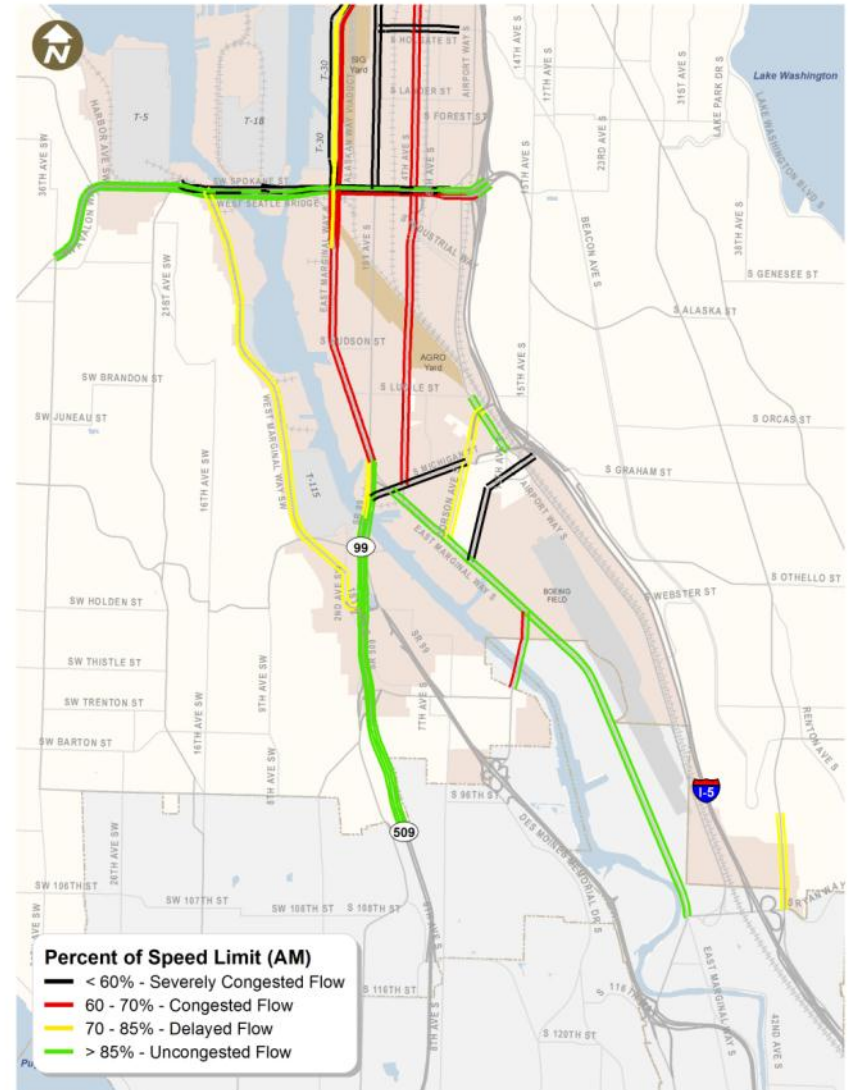
Future

Congestion levels— south

AM Peak
7:00 – 9:00 AM



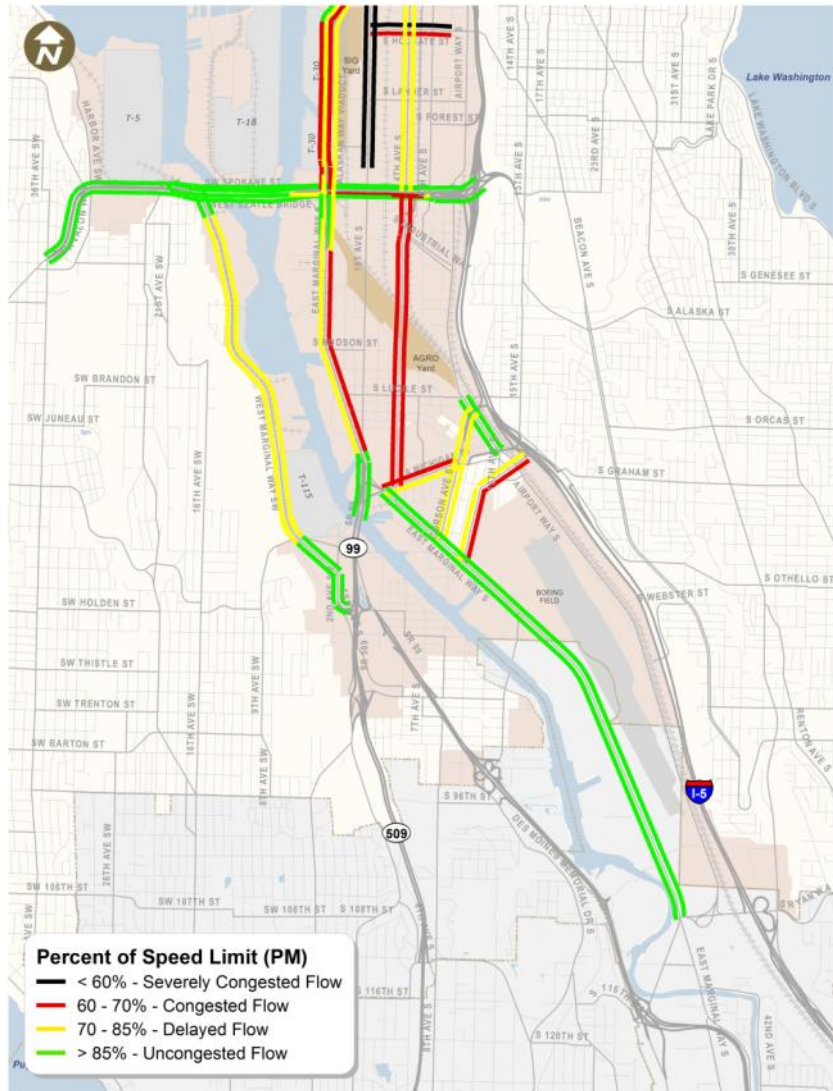
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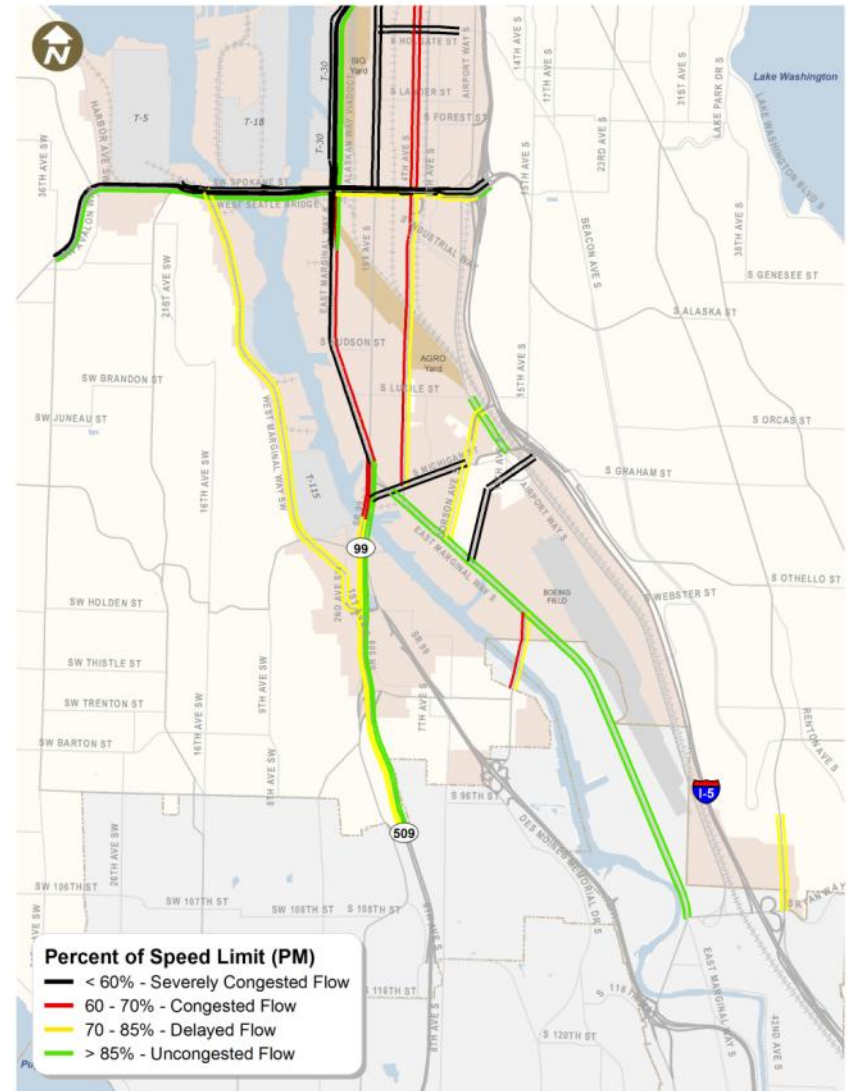
Future

Congestion levels– south

PM Peak
3:00 – 5:00 PM












Existing



Future










Mobility constraints

-  Height Restriction (Less than 14'0")
-  Geometric Constraint
-  Weight Restriction
-  Intersection Operations
-  At-Grade Rail Crossing
-  > 9% Slope
-  5-8% Slope
-  Moveable Bridge
-  Downtown Traffic Control Zone



Existing mobility constraints

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Future mobility constraints

Future rail volumes

- By 2035 freight trains are expected to grow to 104 trains daily along the I-5 corridor, a 94% increase over 2010 volumes

Washington State Rail Plan. WSDOT, 2014.



Future rail conditions

- Key trends affecting future freight rail conditions:
 - Continued growth in freight intensive industries
 - Continued growth in export/import trade
 - Shifts in fuel prices and oil trade
 - Larger container ships and expansion of the Panama Canal
- Passenger/freight rail conflicts along corridors will further limit capacity and access

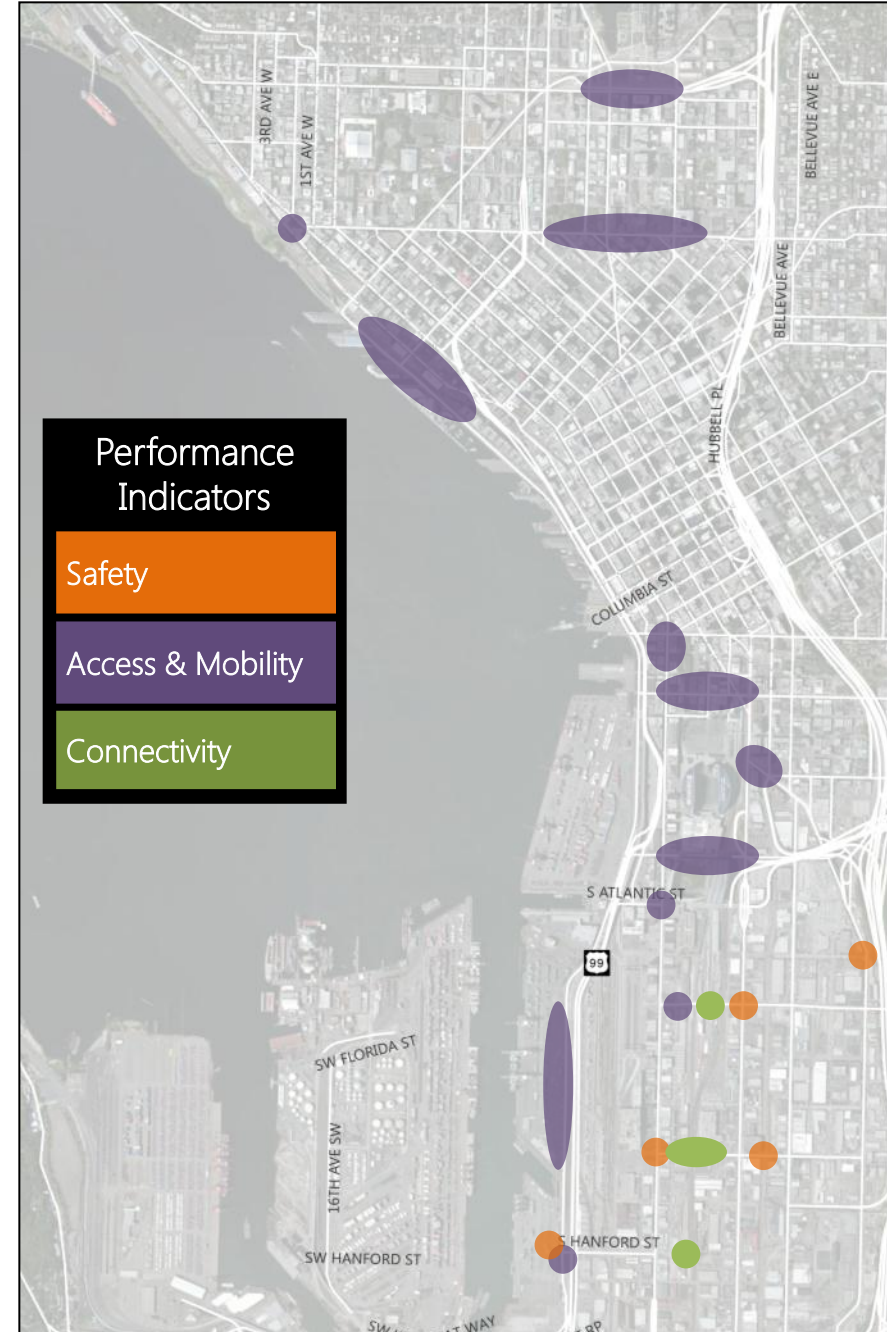
Urban freight focus areas

- Focus areas are the result of existing and future analysis based on performance indicators consistent with project objectives
- Toolbox solutions applied to targeted areas for developing a freight project list



Central connections

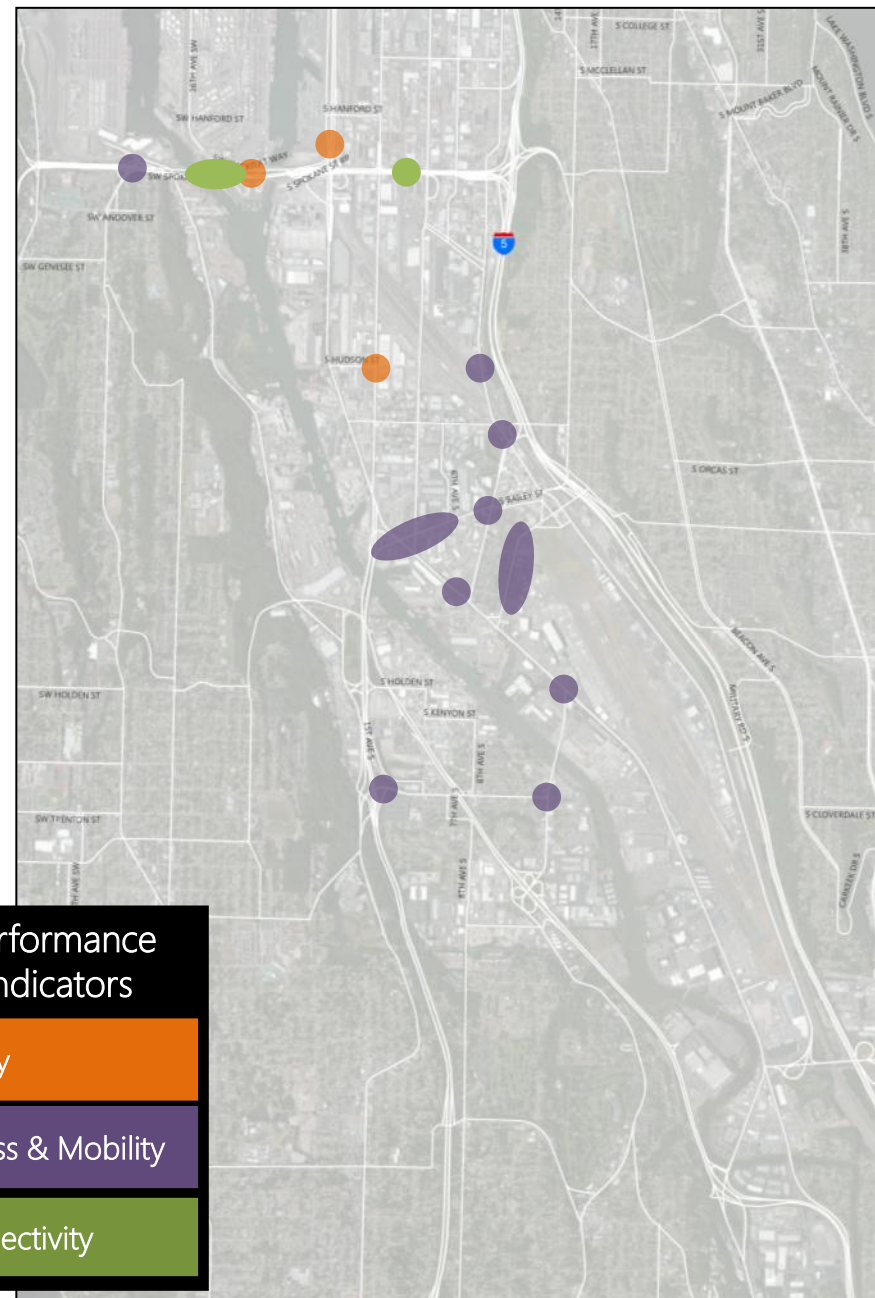
- Increased congestion on regional and arterial roadways
- Rail crossings on east-west connections
- Intersection operational issues



Focus areas - central

Duwamish MIC

- Intersection operational issues
- Historical safety incidents with cyclists and pedestrians



Performance Indicators

- Safety
- Access & Mobility
- Connectivity

Focus areas - south

Freight toolbox

- Toolbox treatments: range of strategies to address urban freight movement
 - Large scale improvements (game changers)
 - Small scale fast deploying solutions (quick wins)
- A mix of techniques can be used to address unique challenges
- Seek consistency with policy and planning efforts:
 - Complete Streets Checklist
 - Container Terminal Access Study
 - Freight Master Plan

ITS Applications

Toolbox Treatment #1

- Intelligent Transportation System (ITS):
 - Real-time freight traveler information
 - Dynamic route guidance and drayage options



Dynamic message sign. City of Seattle.

- Advantages
 - Improvements to mobility, safety, air quality, and freight operations .
 - Decision making tools for both system users and managers.
- Considerations
 - Implementation requires private and public collaboration and investment.

Freight Delivery Management Toolbox Treatment #2

- Management of traffic to prioritize freight movements during certain times of the day or to certain areas (e.g. delivery windows, off-peak delivery).



FedEx Deliver in downtown Seattle. City of Seattle.

- Advantages
 - Reduces traffic congestion and improve parking conditions on congested urban streets.
 - Does not require additional physical capacity or infrastructure.
- Considerations
 - Ensure strategies have minimal effect on business operations and traffic safety.

Capital Investments Toolbox Treatment #3

- Range of projects that could include:
 - new roadway connections
 - direct freeway access ramps
 - truck-only lanes
 - grade-separation



SR 519 under construction. WSDOT.

- Advantages
 - Implements large-scale truck mobility and access improvements.
 - Supports investments in major truck and over-dimensional routes.
- Considerations
 - Capital projects can include significant costs
 - Project implementation with smaller-scale projects.

Intersection Operational Changes

Toolbox Treatment #4

- Range of signal timing improvements on truck corridors that may include signal priority or adjusting signal timing to facilitate heavy truck movements.



Trucks waiting at an intersection. Transpo Group.

- Advantages
 - Includes small scale signal improvement strategies that can improve truck mobility and access in the short-term.
- Considerations
 - Signal operational improvements should maximize benefit for all roadway users.

Geometric Improvements

Toolbox Treatment #5

- Geometric design strategies:
 - improve turn radii
 - change curb widths
 - remove telephone poles or other obstructions
- Advantages
 - Includes small-scale spot improvements.
 - Improves truck mobility and access.
- Considerations
 - Geometric improvements should support goods movement and allow for harmonization with other modes.



Utility pole placed close to an intersection. Transpo Group.

Wayfinding for Trucks

Toolbox Treatment #6

- Signs, striping, and roadway markings to:
 - improve route decisions
 - reduce illegal movements
 - alert truck drivers when there are disruptions.
- Advantages
 - Quick, low cost strategy to help truck drivers identify truck routes, and avoid routes with height and weight restrictions.



- Considerations
 - Signs must be clear, intuitive, and standardized.
 - Signage should be consistent with of the truck route roadway system.

Directional and Vertical Clearance Signs. Transpo Group.

Maintenance and Repair

Toolbox Treatment #7

- Involves network analysis and design to prioritize pavement and bridge investment on routes with heaviest truck traffic.



Pavement cracking and spalling. Transpo Group.

- Advantages
 - System approach to prioritize maintenance and repair projects based on objective analysis and long-term need.
- Considerations
 - Determine construction activity priority based on freight network.

Next steps

September	Project Identification and Prioritization
October / November	Preparation of Draft Recommendations

Questions?

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www.seattle.gov/transportation/freight_industrialareas.htm

<http://www.seattle.gov/transportation>

