Seattle Industrial Areas Freight Access Project

Summary of Existing Conditions

Image Credit: Port of Seattle

May 2014

Port of Seattle®

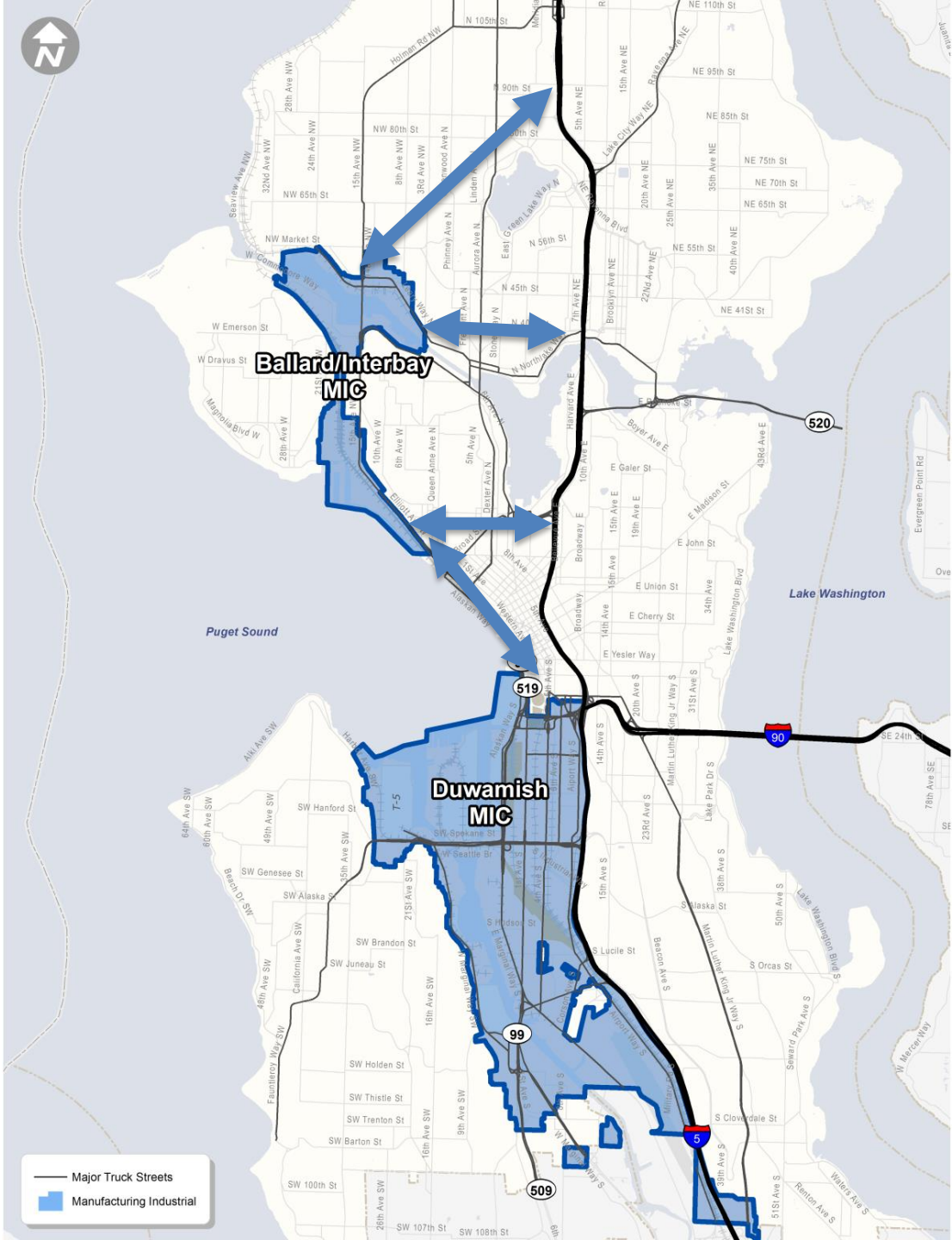
SDOT
Seattle Department of Transportation

Presentation overview

- Project area
- Project objectives
- FAB workshops
- Existing conditions
- Next steps
- Questions

Project area

- MICs
  - Ballard/Interbay
  - Duwamish
- Connecting Corridors between MICs
- Corridors from the MICs to the Regional Highway System



Project objectives

1. Increase safety for all travel modes

2. Maintain and improve truck mobility and access to accommodate expected general traffic, freight, and cargo growth

3. Ensure connectivity for major freight intermodal facilities

4. Reduce environmental impacts, including greenhouse gas emissions

FAB workshops

Issues, concerns, solutions	✓
Performance Measures	✓
Summary of Existing Conditions	May 20
Future Conditions	June 17
Draft improvement concepts	TBD
Final Draft improvement projects	TBD

Existing conditions for trucks

- Street network
- Mobility constraints
- Corridor volumes
- Corridor travel speeds
- Collision history
- Pavement and bridge conditions
- Multi-modal demands

Street network

- Arterial Streets – trucks are allowed
- Major Truck Street:
  - principal arterials
  - Complete Streets ordinance states “freight will be the major priority”
- Last mile connections

Arterial Map

Mobility constraints

Intersection Operations

Geometric Constraints

Height Restrictions

At-grade RR Crossings

Mobility constraints

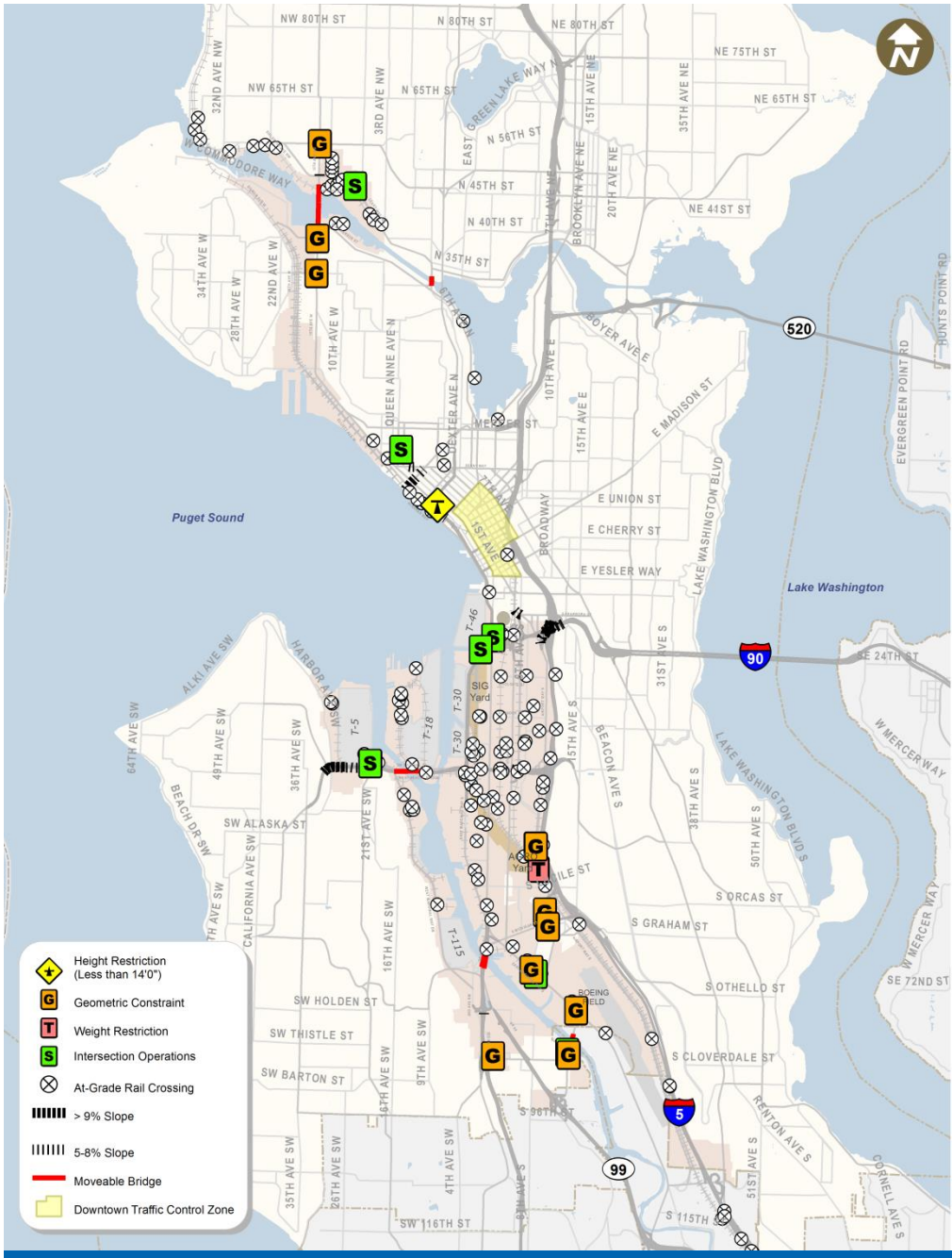
Weight & Width Restrictions

Port/Rail Yard Operations

Moveable Bridges

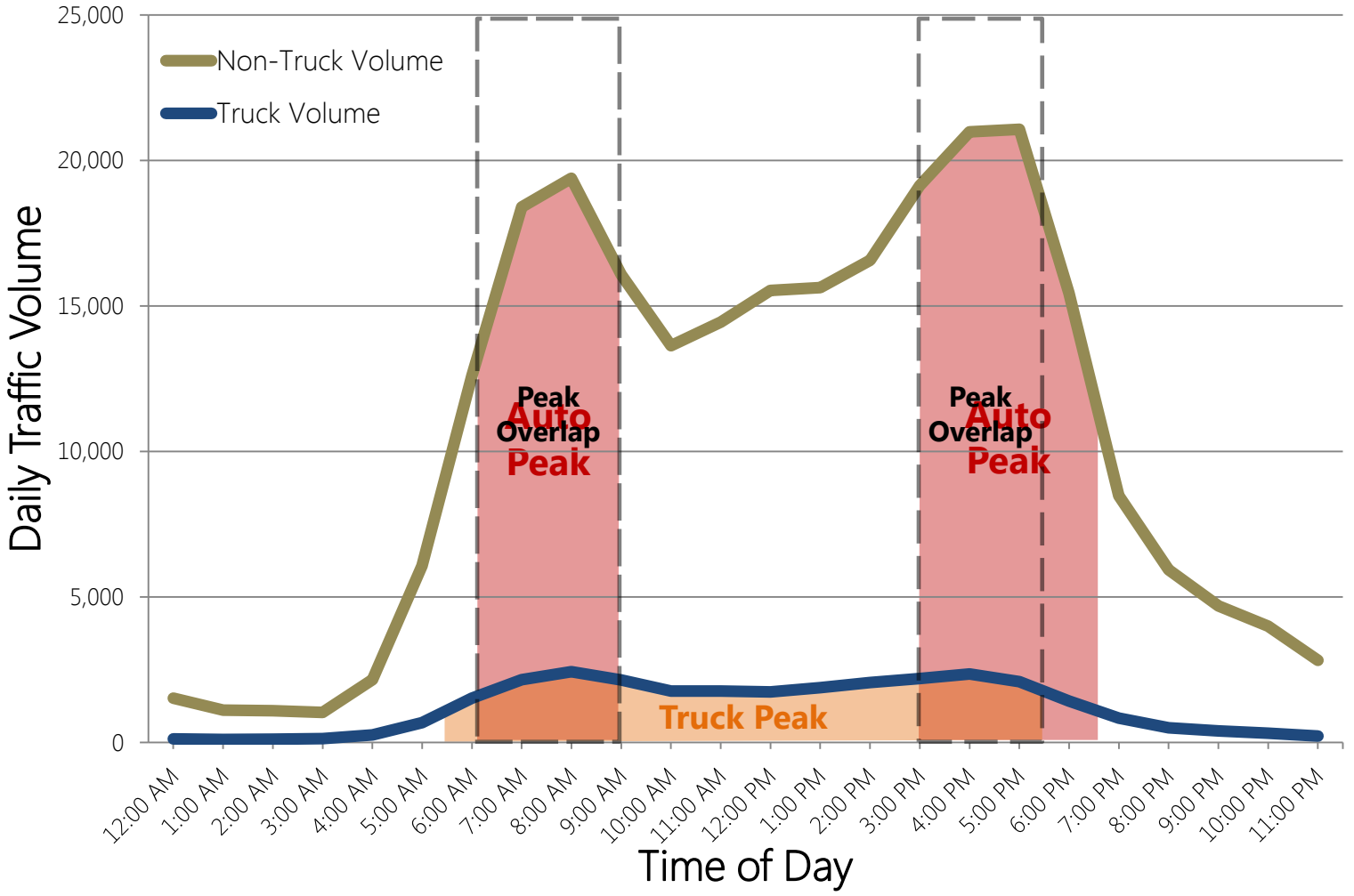
Mobility constraints

- 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



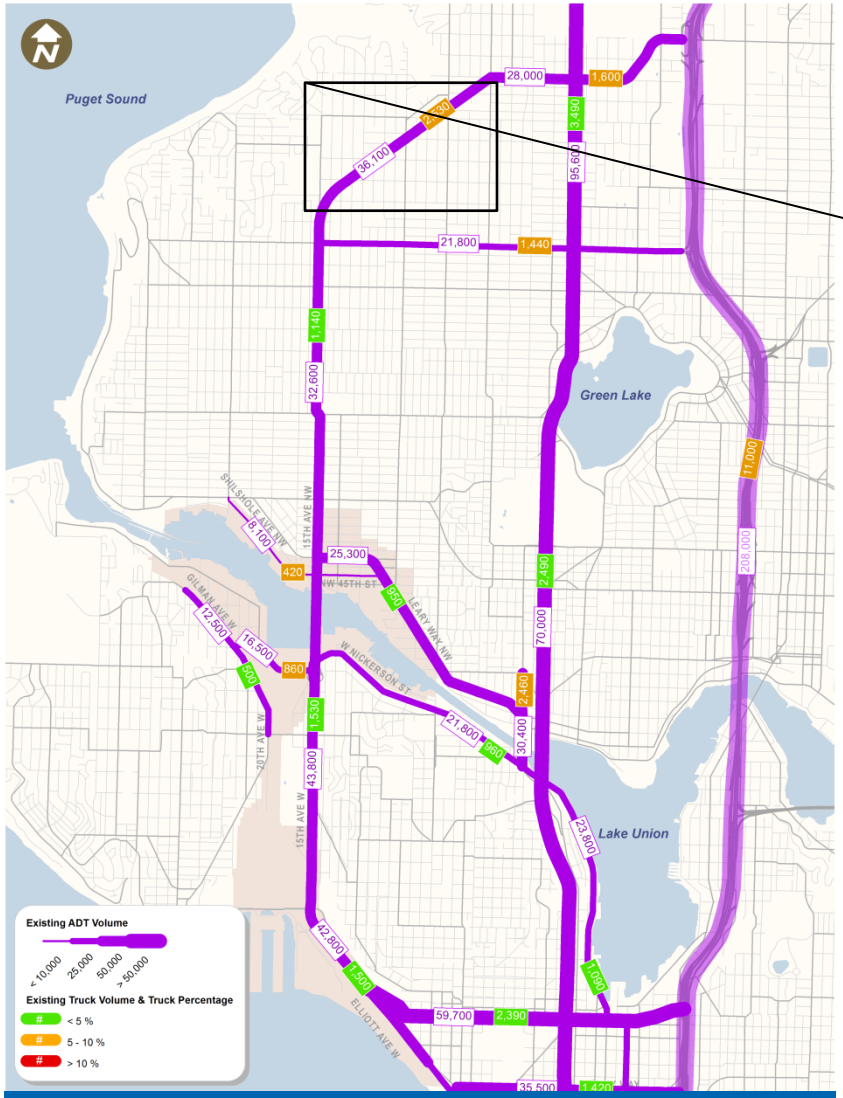
Map of Constraints

Average daily truck & auto volumes



Source: 24-hour tube counts from 14 locations in the Duwamish MIC.

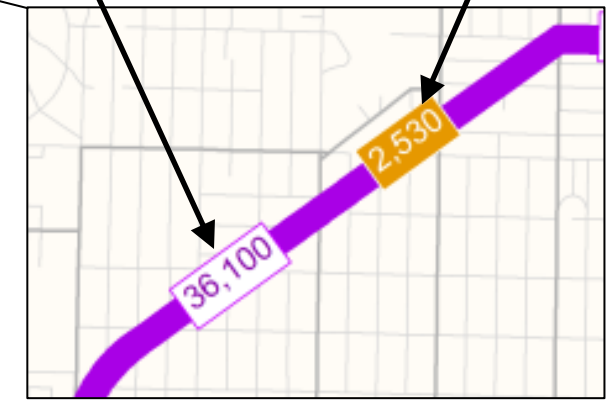
Truck volumes – reading the maps



Example Map

Average Daily Traffic Volume (ADT)

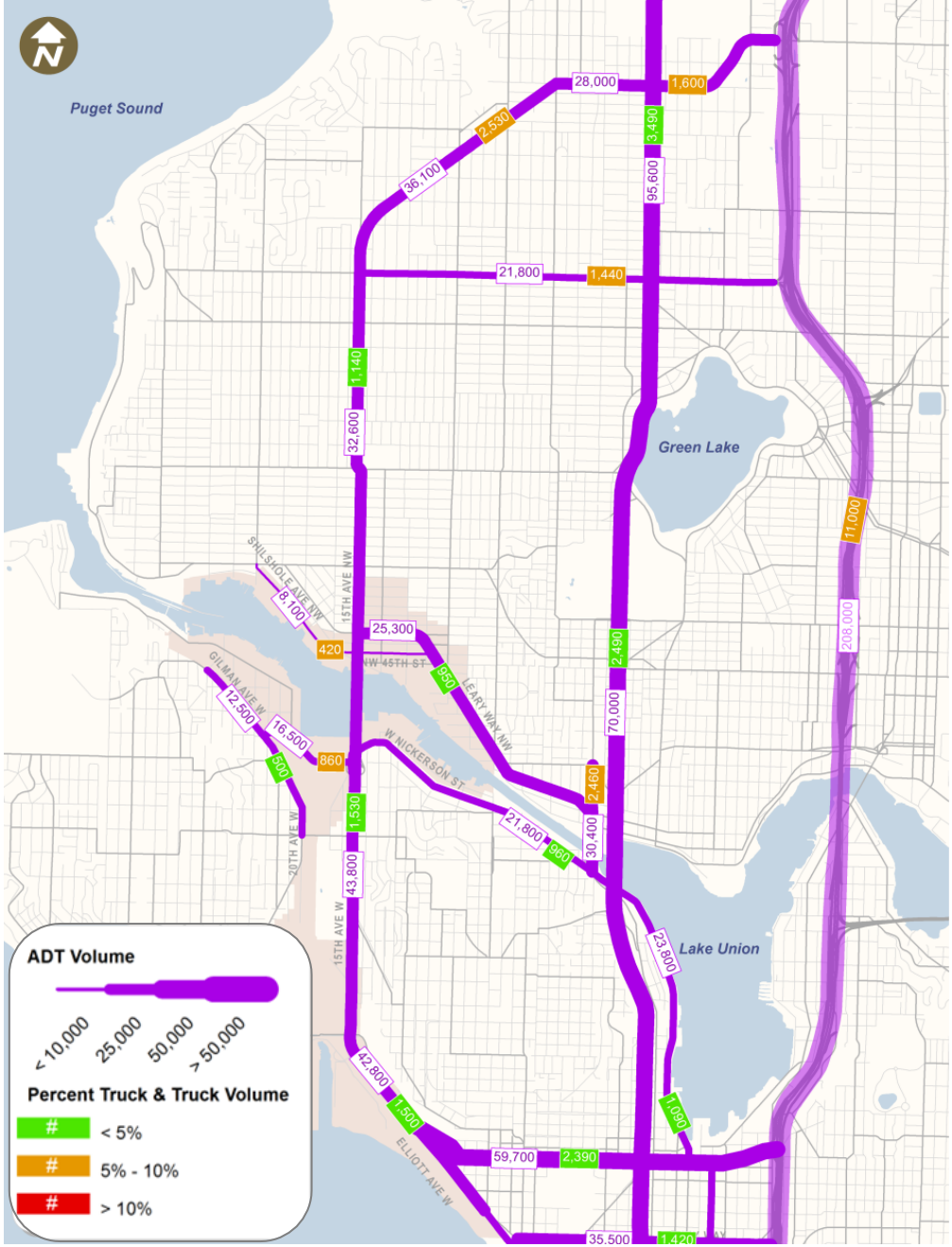
Average Daily Truck Volume



Color represents percent of trucks in the traffic stream

Truck volumes

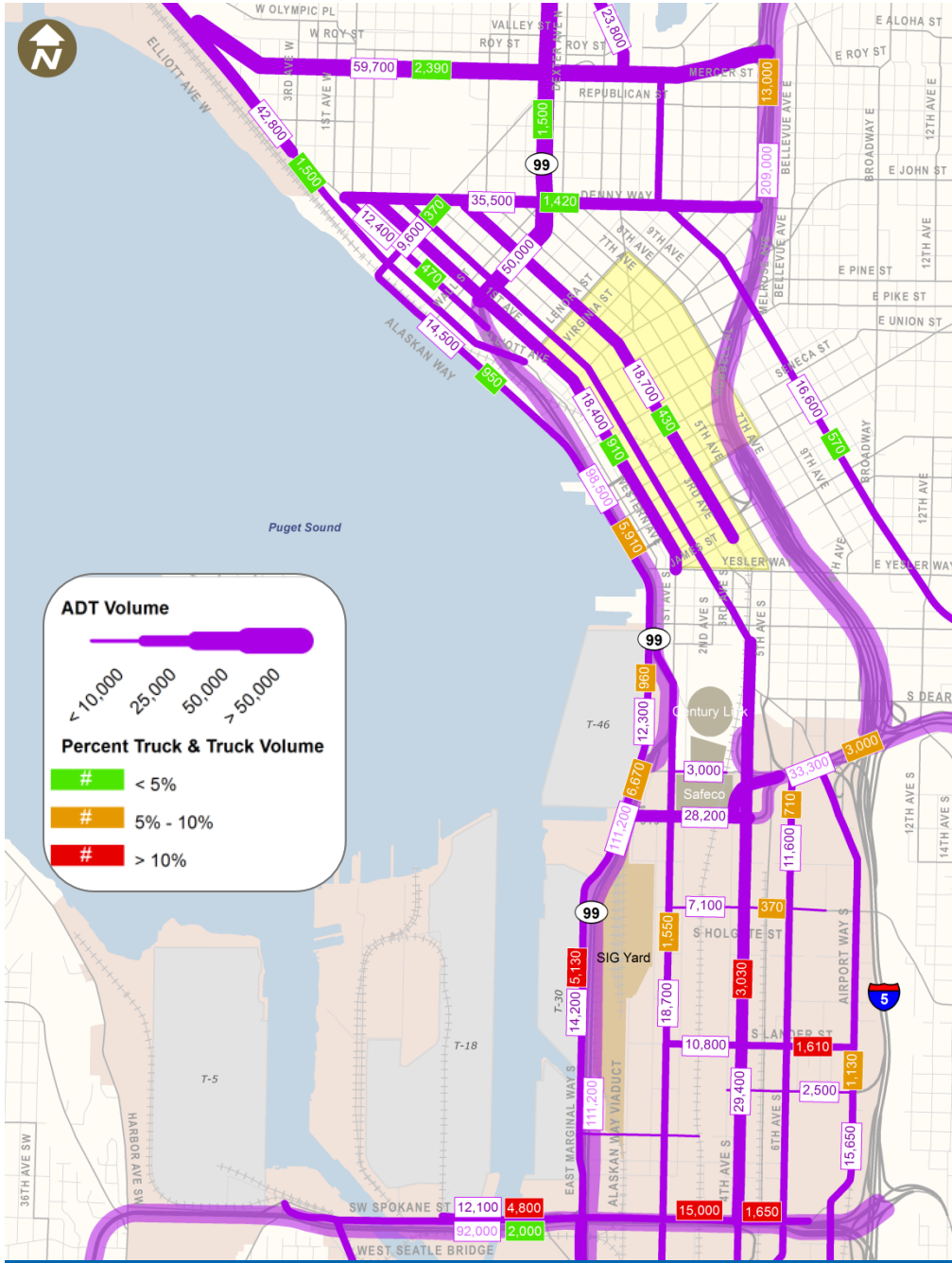
- 15th Avenue NW and Elliott Ave W have the highest daily percentage of trucks
- Limited east-west truck routes
- Data gaps still exist



North

Truck volumes

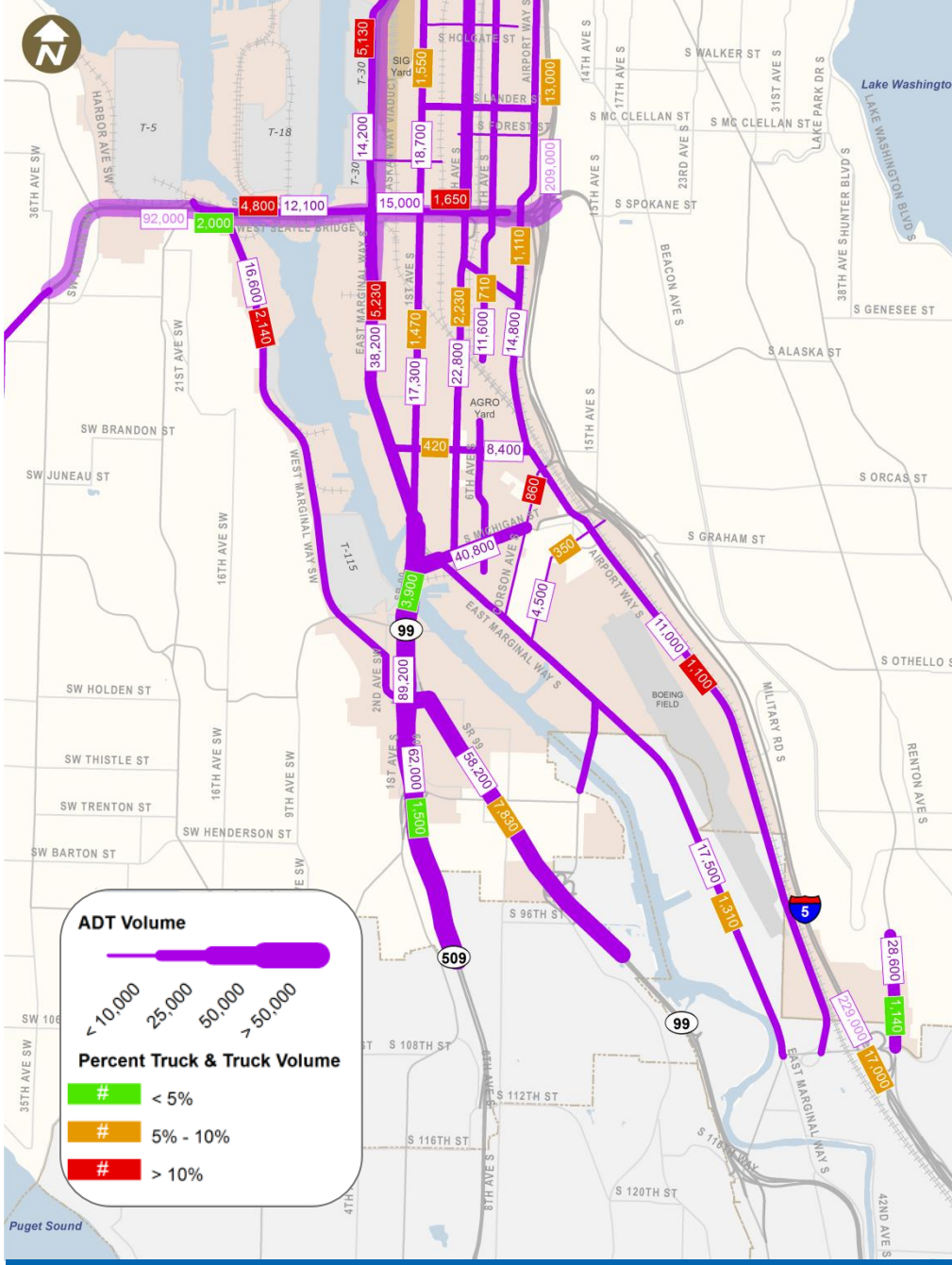
- Few surface street connections through Downtown



Central

Truck volumes

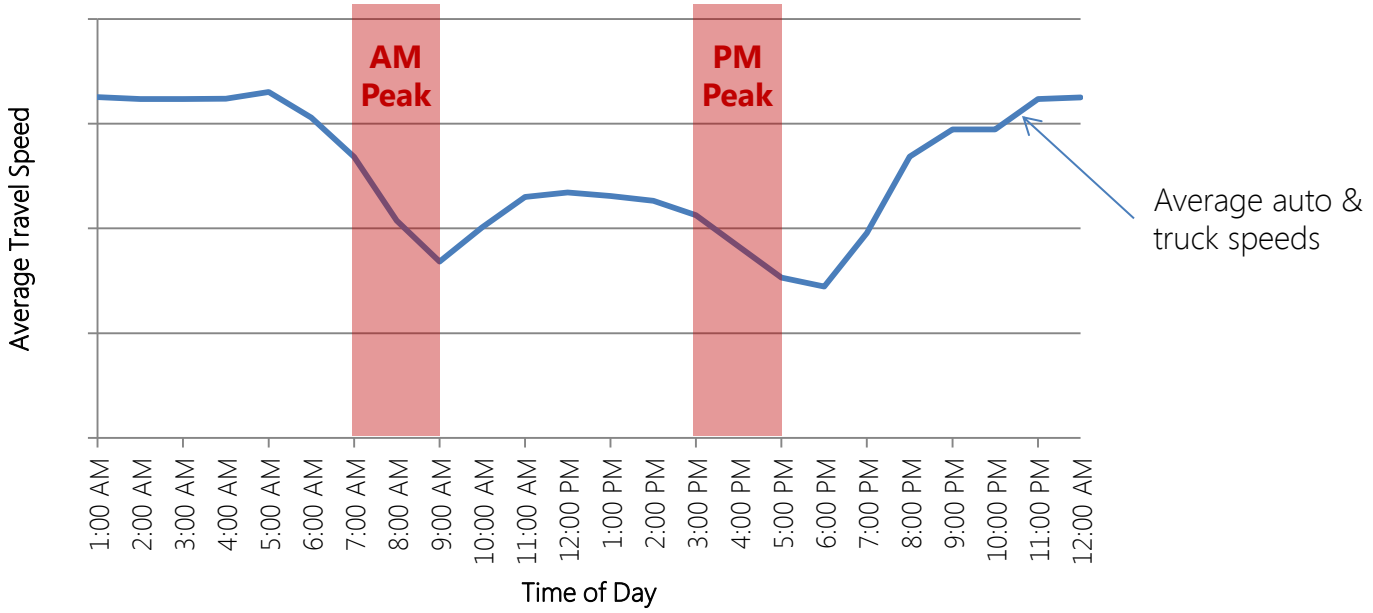
- Trucks account for more than 10 percent of traffic on most roadways
- Port activity contributes to the large number of Duwamish truck movements



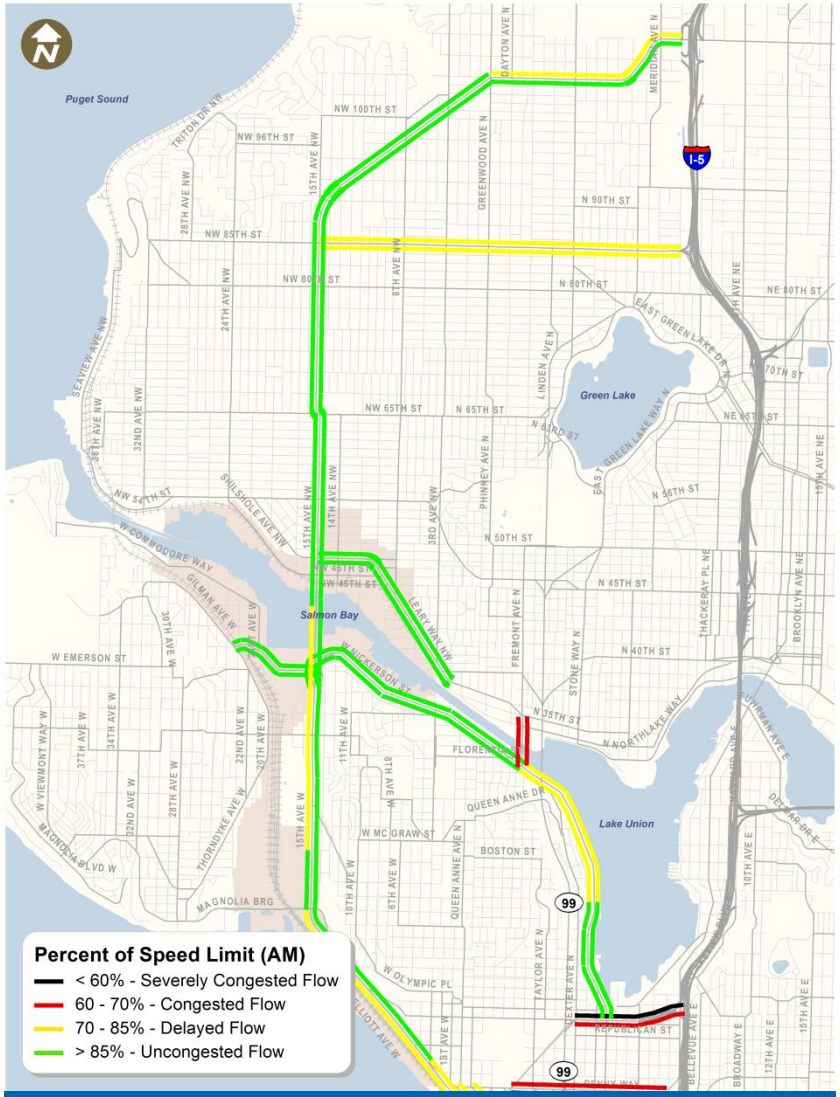
New travel speed methodology

- Congestion measured as percent of posted speed limit
  - i.e. < 60% of speed limit is severely congested flow
- Focus on peak periods
  - 7:00 to 9:00 AM
  - 3:00 to 5:00 PM

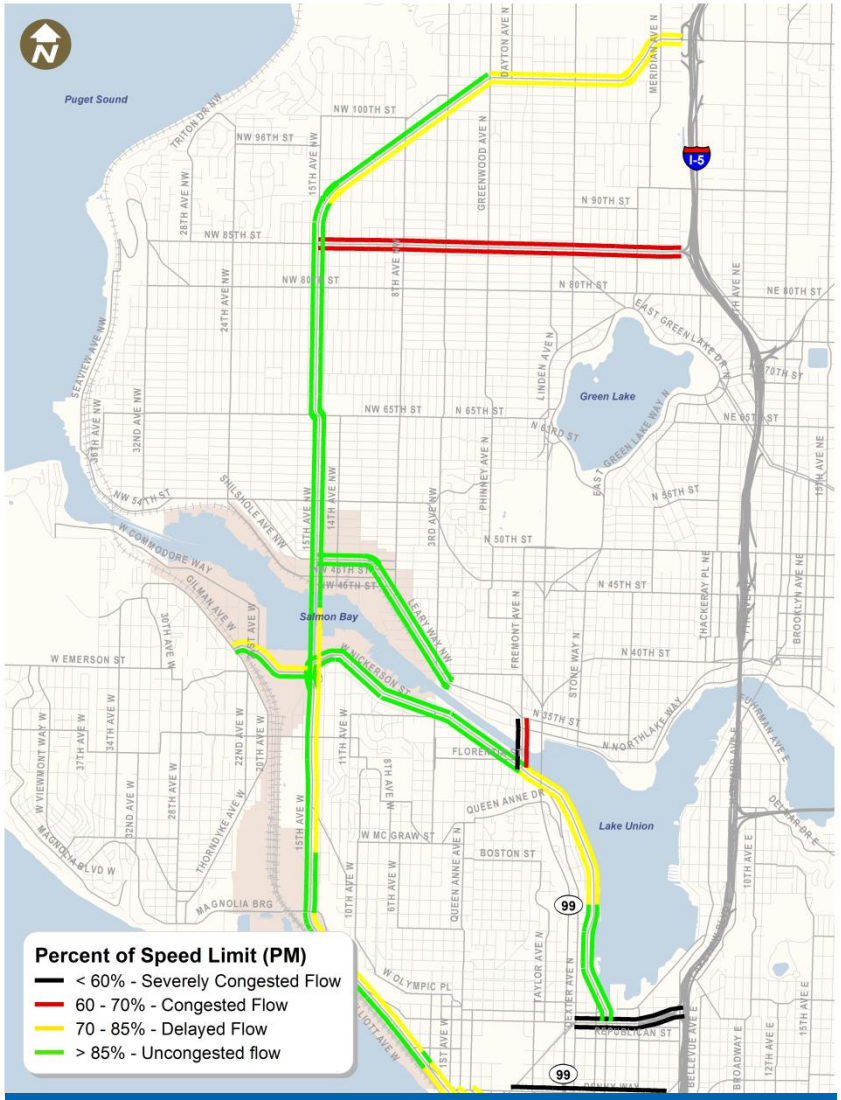
Example



Congestion levels – north

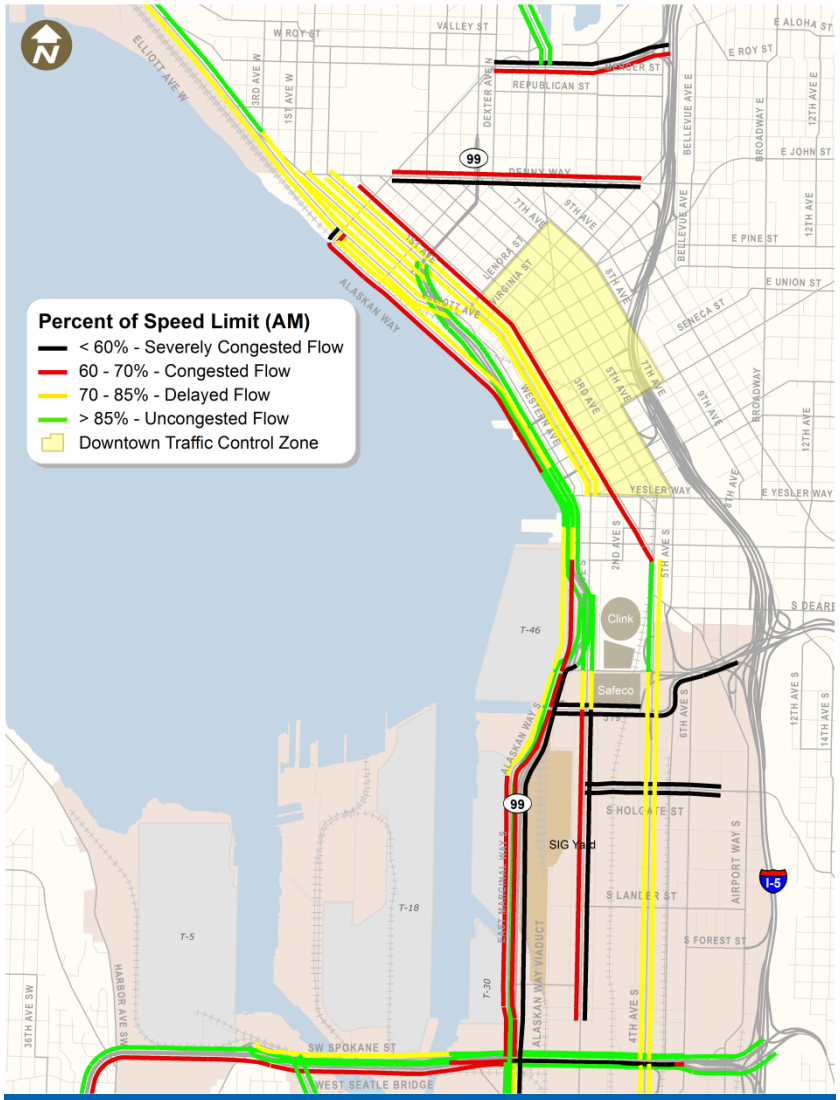


AM Peak: 7:00 – 9:00 AM

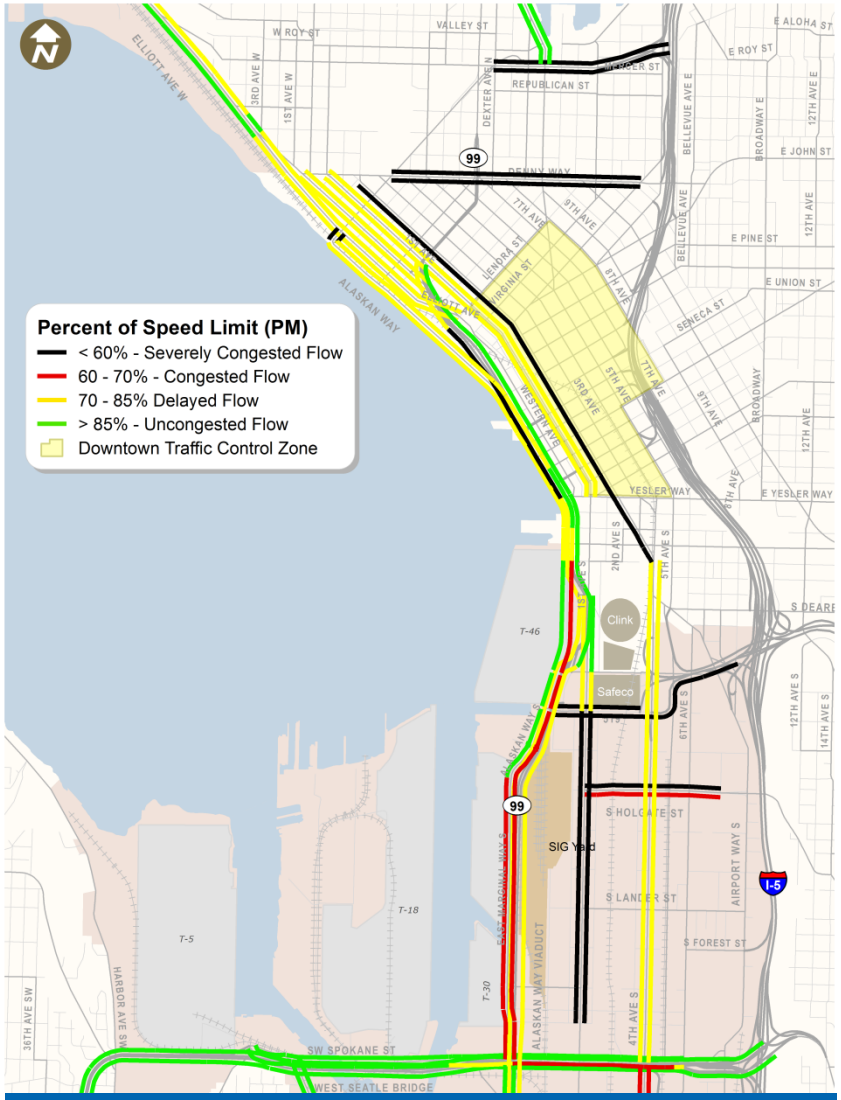


PM Peak: 3:00 – 5:00 PM

Congestion levels – central

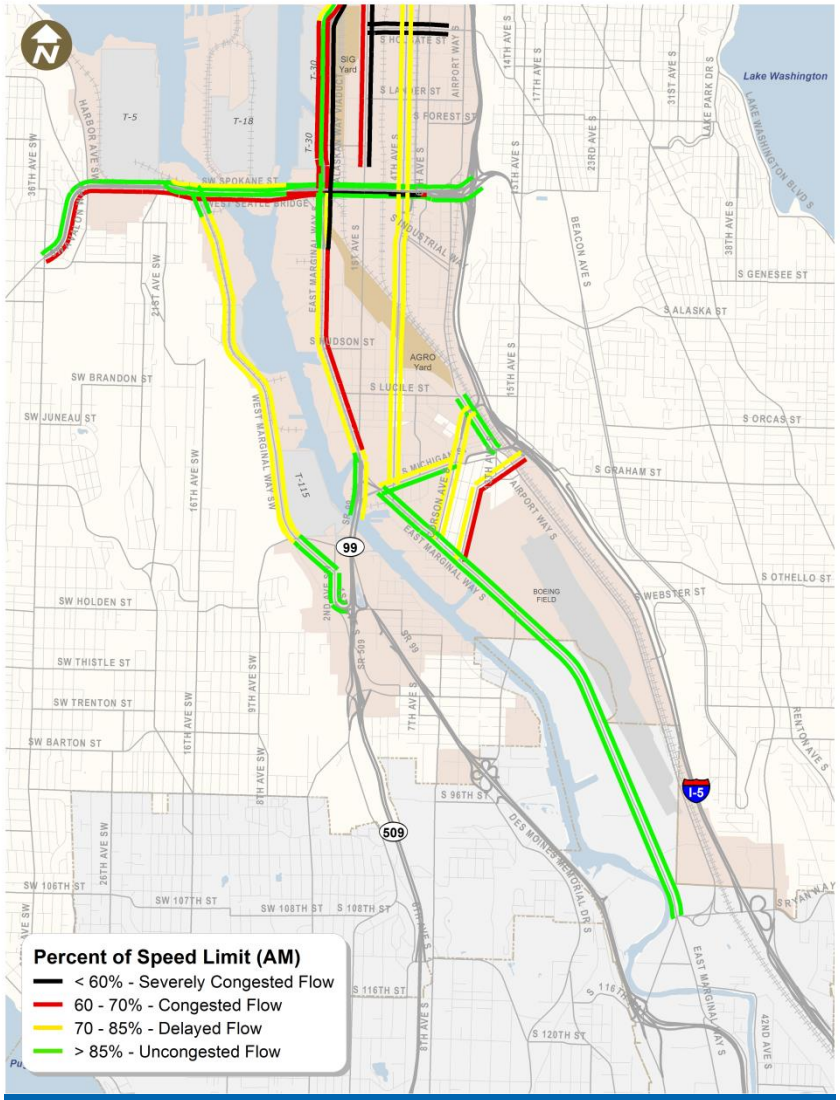


AM Peak: 7:00 – 9:00 AM

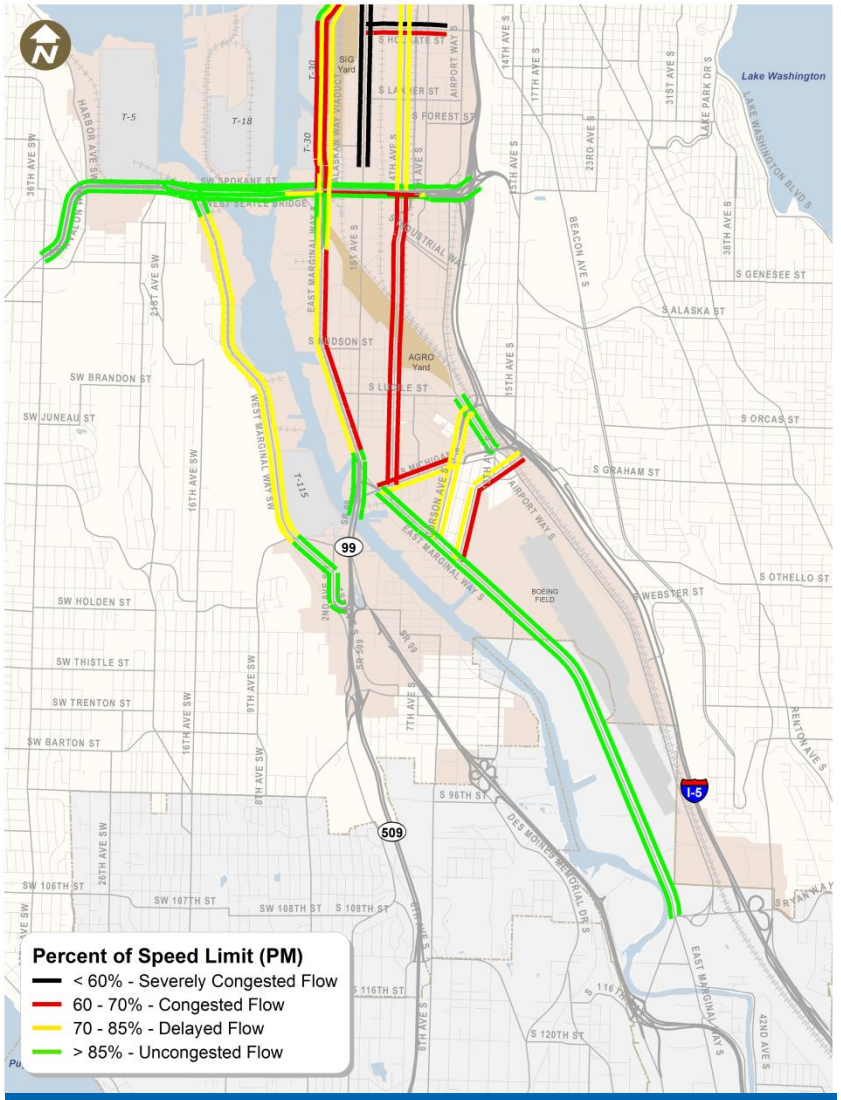


PM Peak: 3:00 – 5:00 PM

Congestion levels– south



AM Peak: 7:00 – 9:00 AM

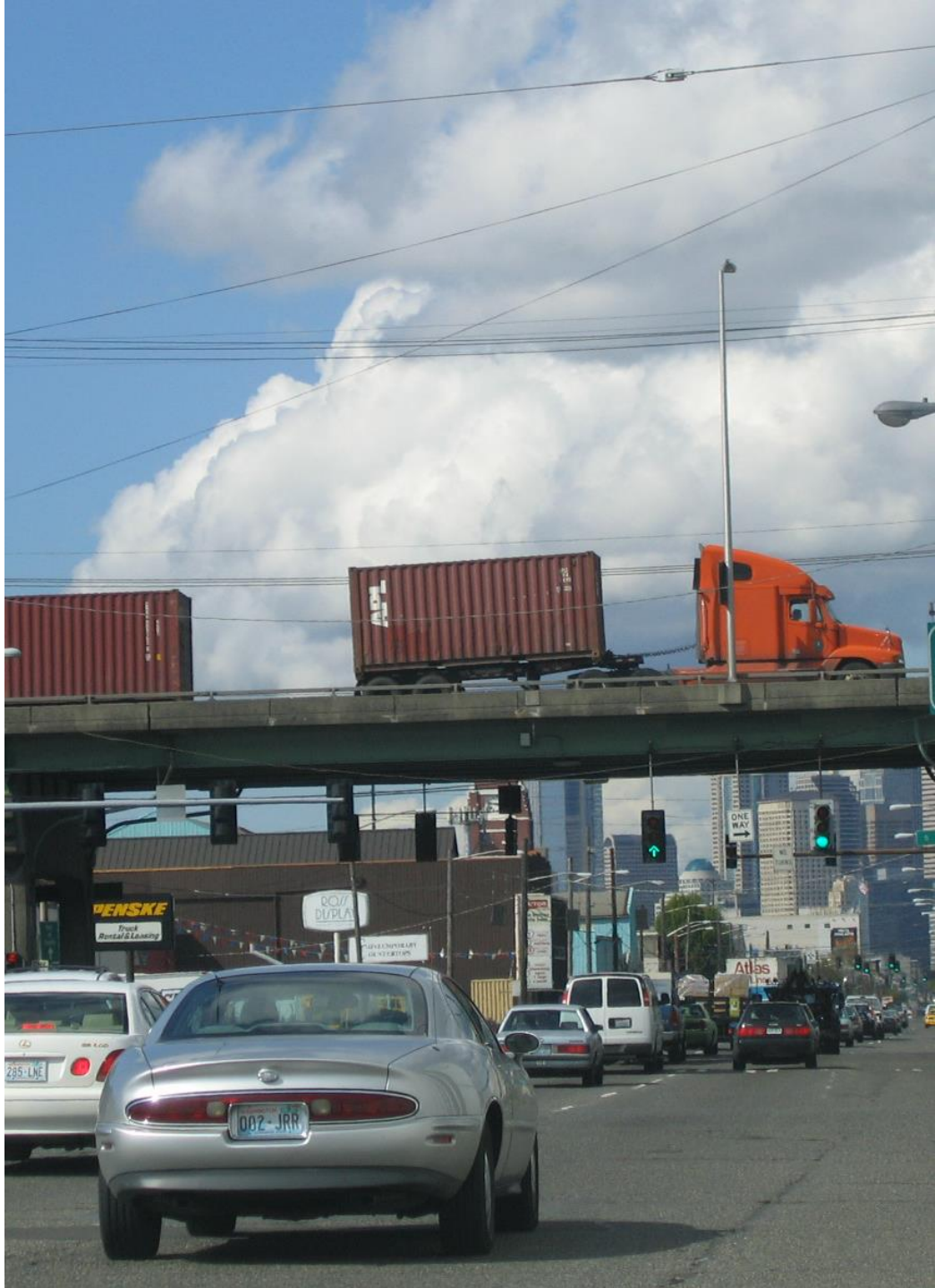


PM Peak: 3:00 – 5:00 PM

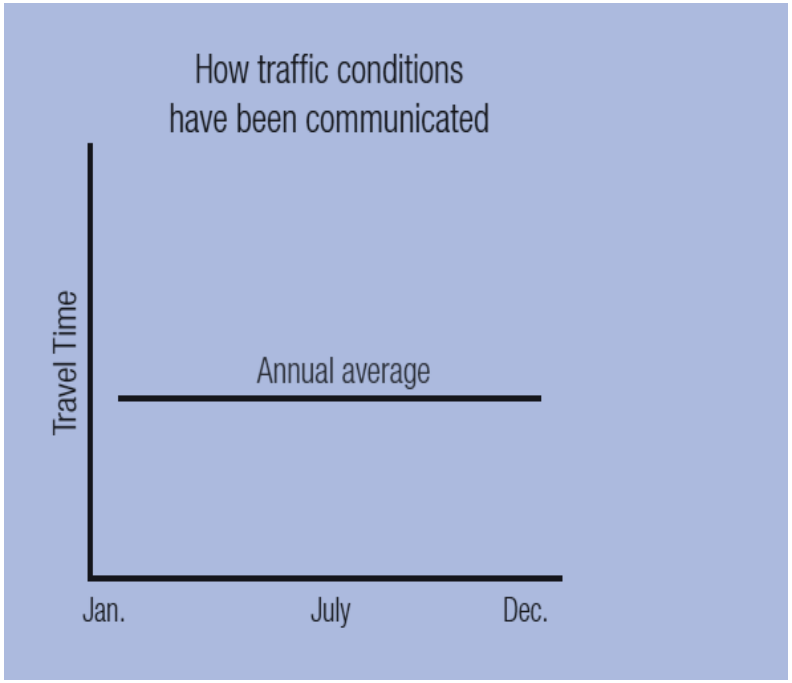
System reliability

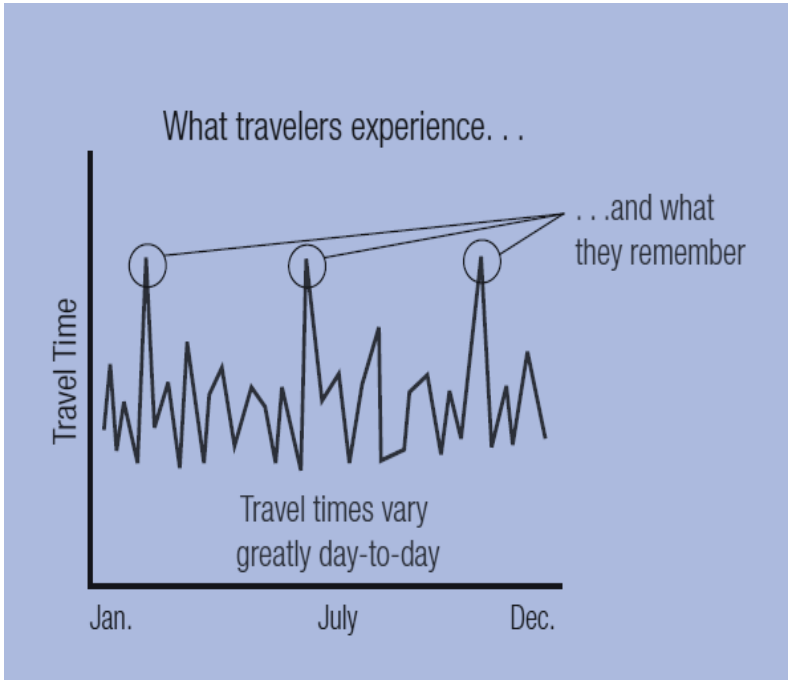
What it Measures

- Variability of travel time or delay
- Concept of buffer index



Buffer index





Example

Plan for 40% more travel time ~ or six additional minutes to arrive on-time

$$\text{Buffer Index (40\%)} = \frac{(\text{95th-Percentile (21 min)} - \text{Average (15 min)})}{\text{Average (15 min)}}$$

Rail operations

- At-grade rail crossings on mainline in MICs

Average Daily Totals (2012 weekday)	Duwamish MIC		MIC connection
	Holgate Street	Lander Street	Broad Street
Train Crossings	107	87	52
Total Gate Down Time (hours)	3.6	3.7	2.8
Average Gate Down Time (min.)	2.0	2.5	3.3
Minimum/ Maximum Gate Down Time (min.)	0.3 – 8.2	0.5 – 8.1	1.1 – 11.6
Average Train Speed (mph)	7.4	8.1	6.7
Minimum/Maximum Train Speed (mph)	0.4 – 24.6	0.5 – 22.9	0.3 – 22.7

Source: SDOT Coal Train Traffic Impact Study (2012)

Next steps

July	Future Conditions and Needs Identification
September	Improvement Project Identification and Prioritization
October/ November	Preparation of Draft Plan

Questions?

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www.seattle.gov/transportation/freight_industrialareas.htm

http://www.seattle.gov/transportation




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