

# Seattle Industrial Areas Freight Access Project

## Summary of Existing Conditions



*Image Credit: Port of Seattle*

Seattle Freight Advisory Board  
Tony Mazzella, Jon Pascal (Transpo Group)  
May 20, 2014



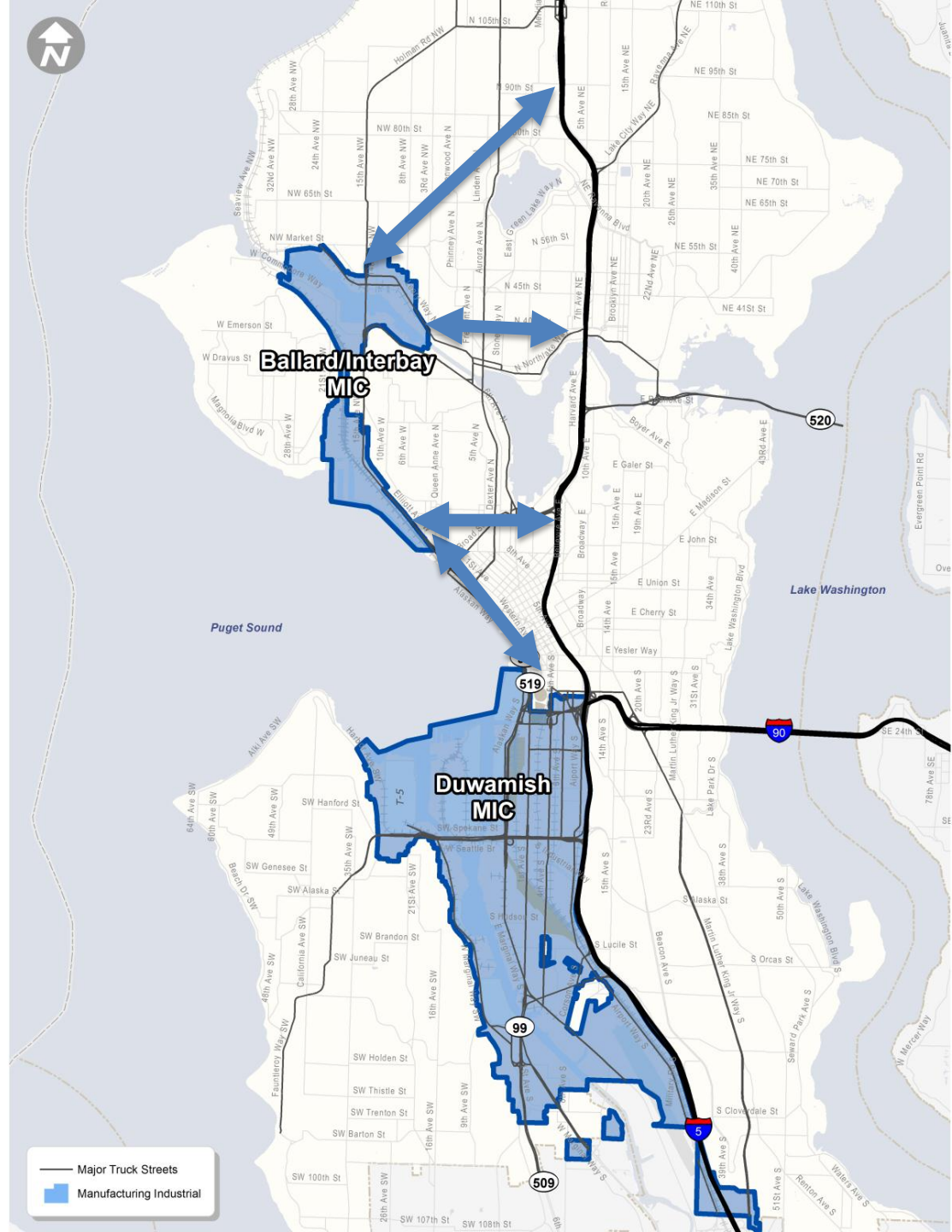
# Presentation overview

- 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



Image Credit: WSDOT

# FAB workshops

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

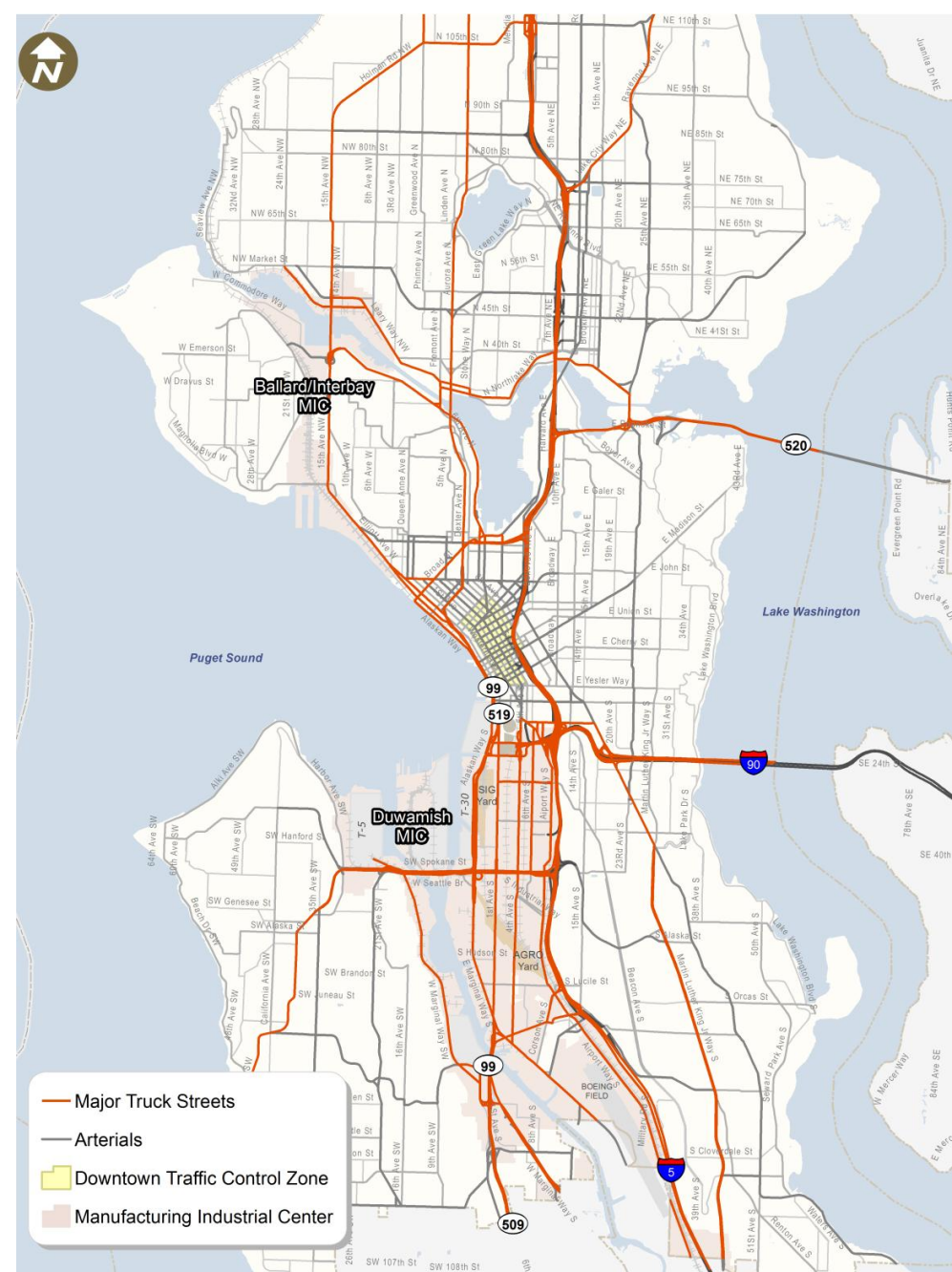
# Existing conditions for trucks

- 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



# Mobility constraints



Intersection Operations



Geometric Constraints



Height Restrictions



At-grade RR Crossings



# Mobility constraints



Weight & Width Restrictions












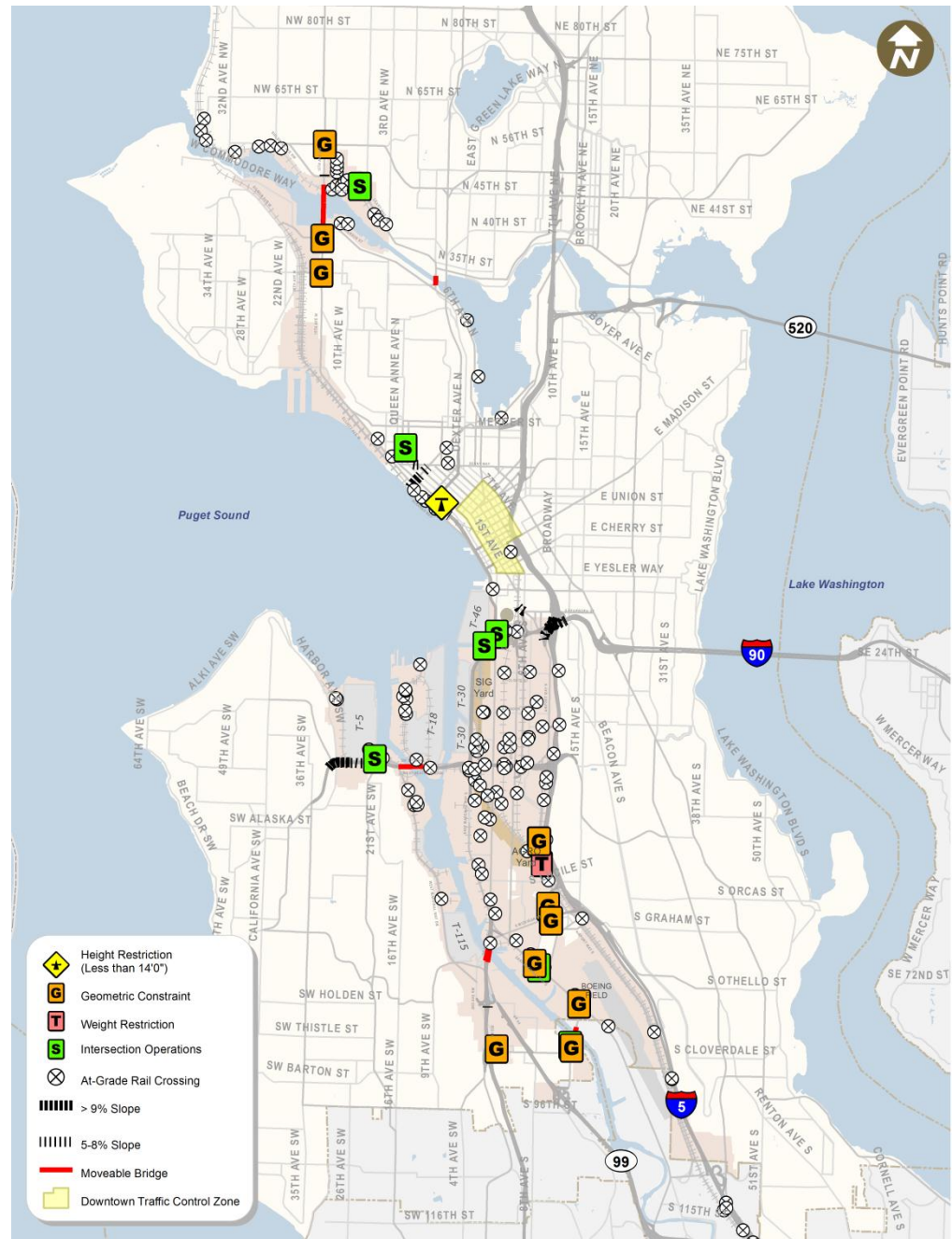
Port/Rail Yard Operations



Moveable Bridges

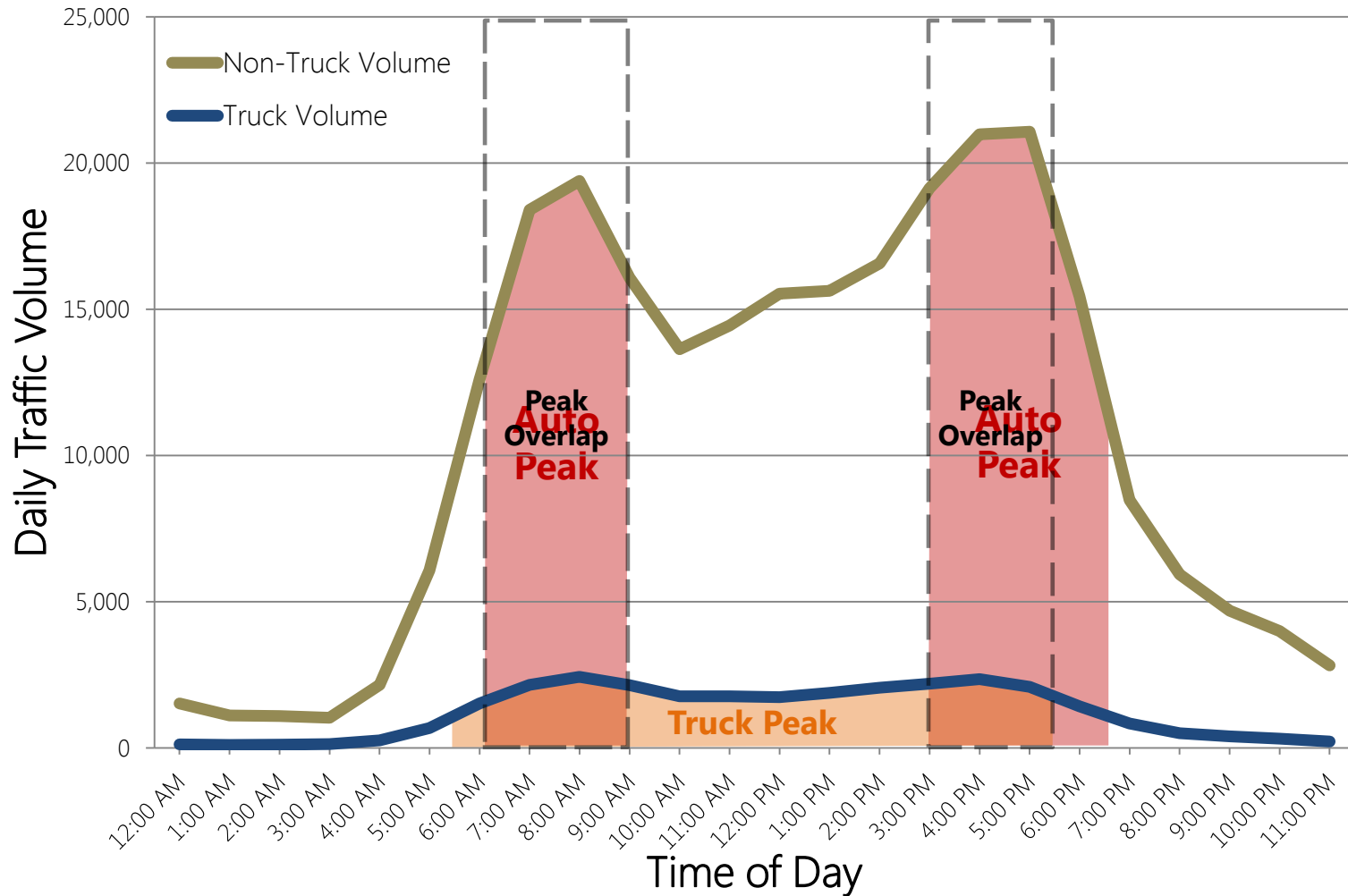
# Mobility constraints

-  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



# Draft truck volumes

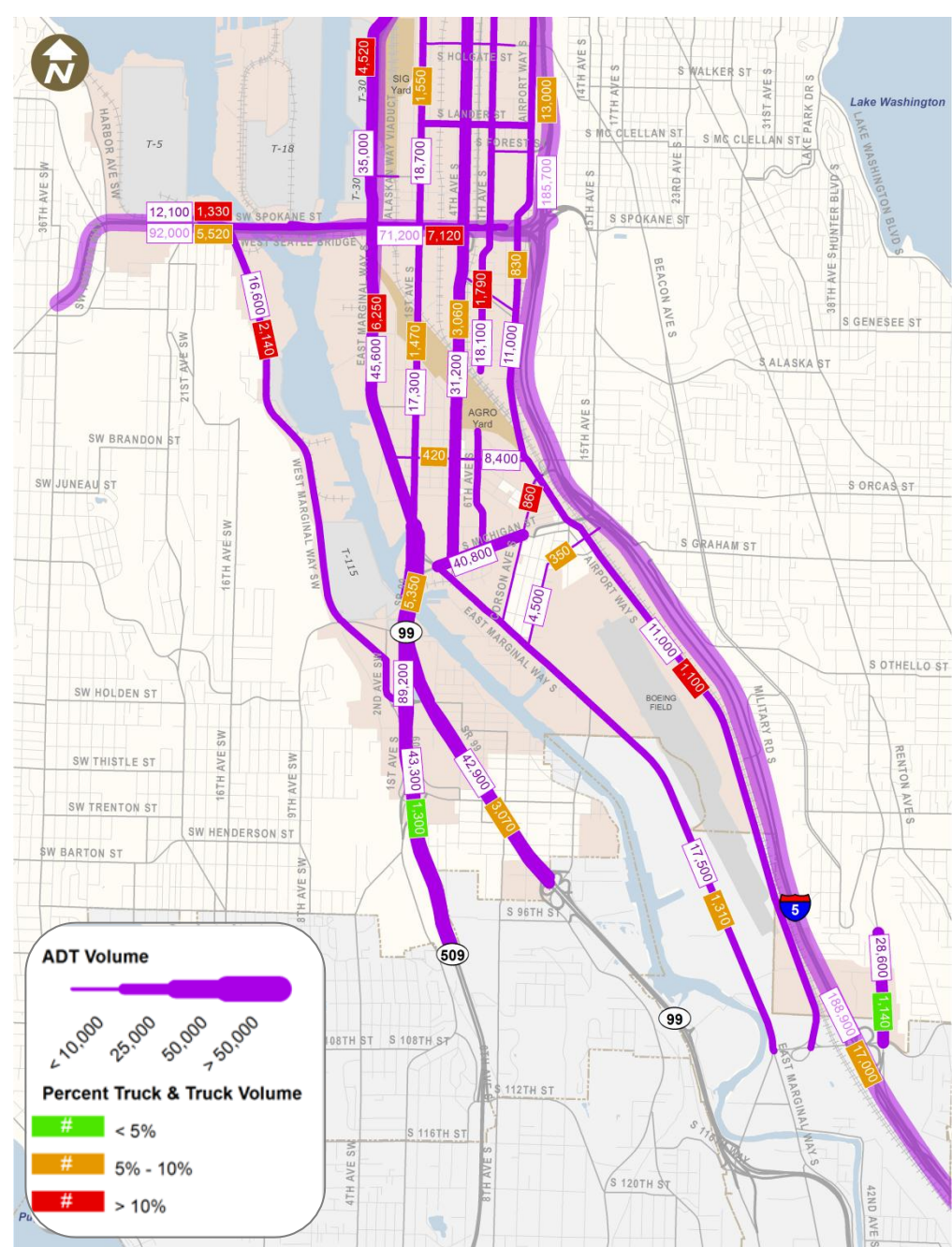
- 15<sup>th</sup> Avenue NW and Elliott Ave W have the highest daily percentage of trucks
- Limited east-west truck routes
- Data gaps still exist





# Draft truck volumes

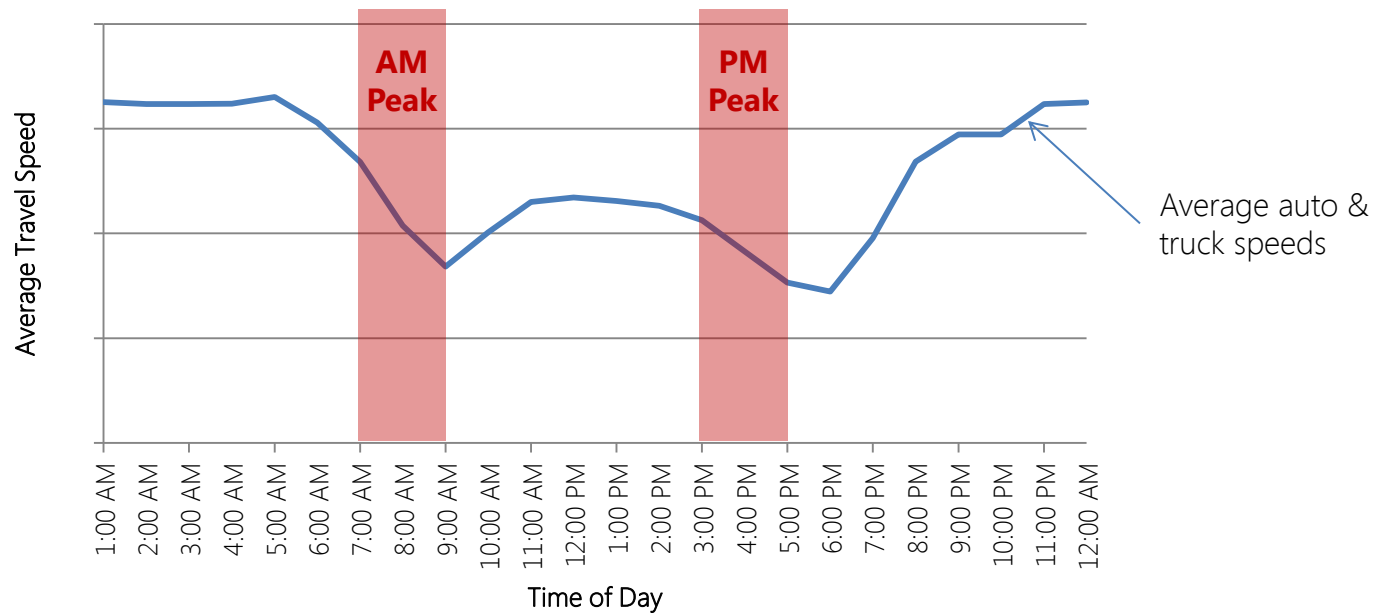
- Trucks account for more than 10 percent of traffic on most roadways
- Port activity contributes to the large number of Duwamish truck movements



# 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

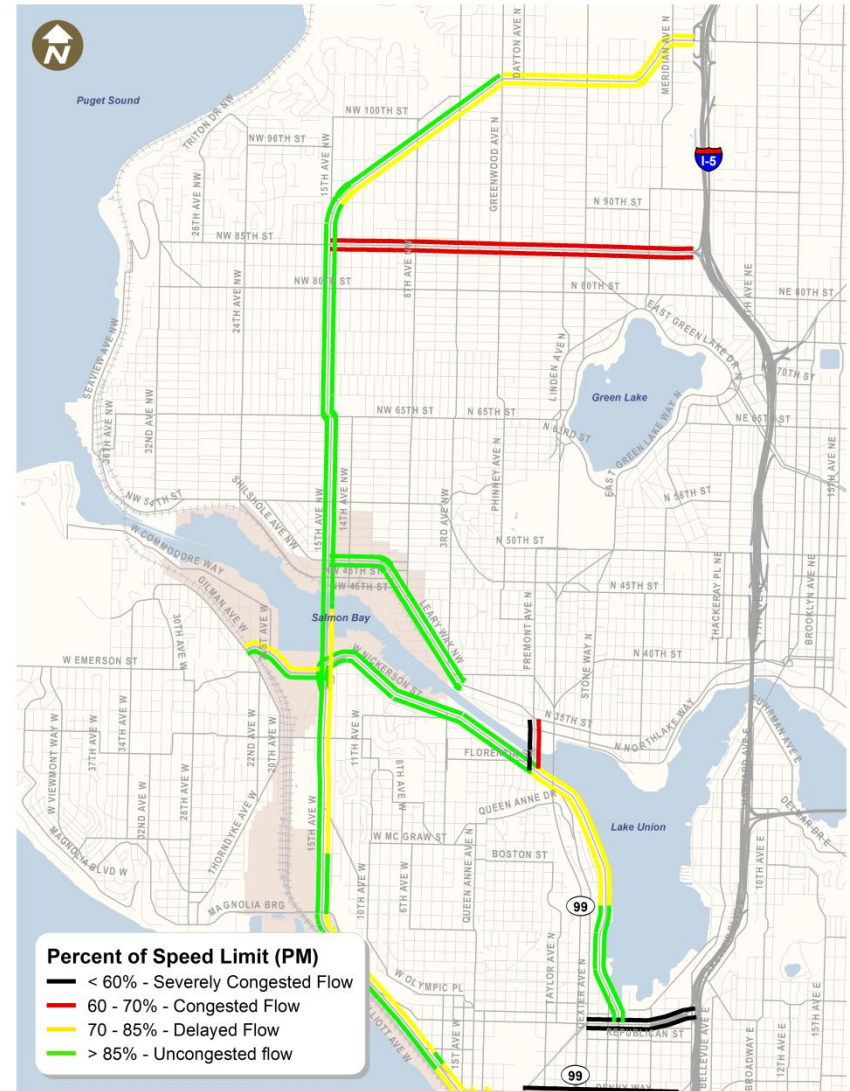
Example



# Draft congestion levels – north



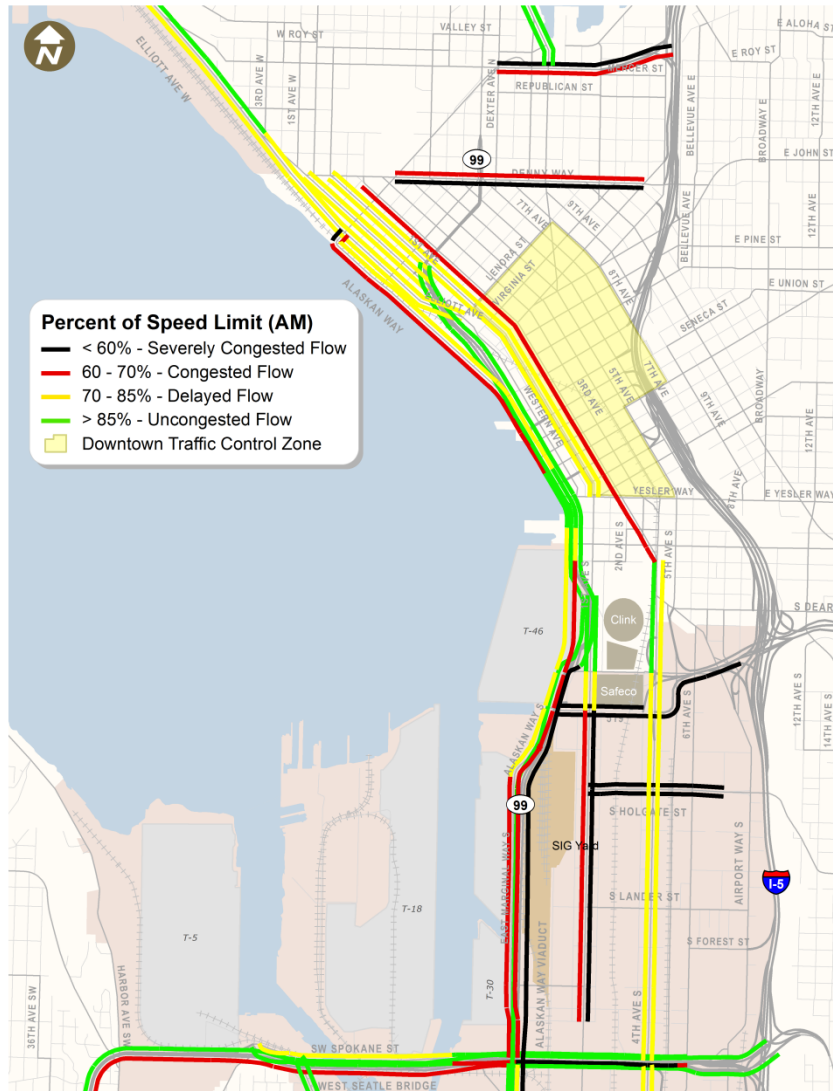
AM Peak: 7:00 – 9:00 AM



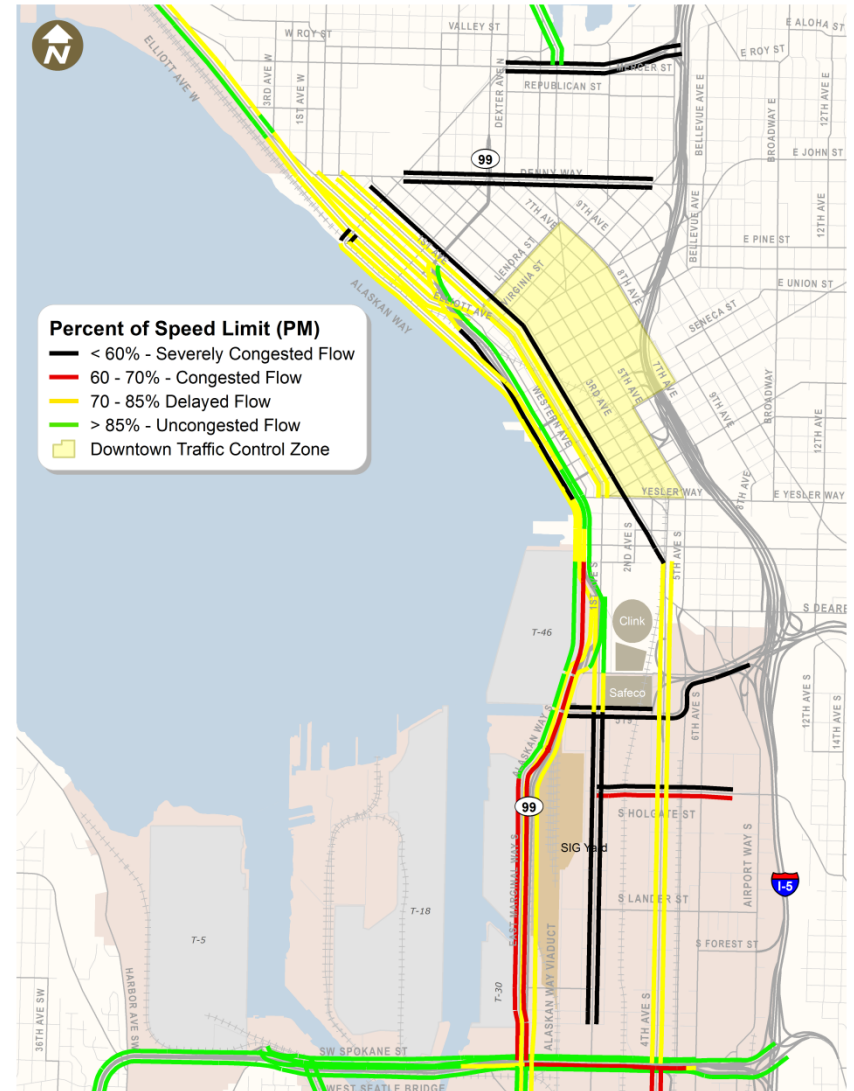
PM Peak: 3:00 – 5:00 PM



# Draft congestion levels – central

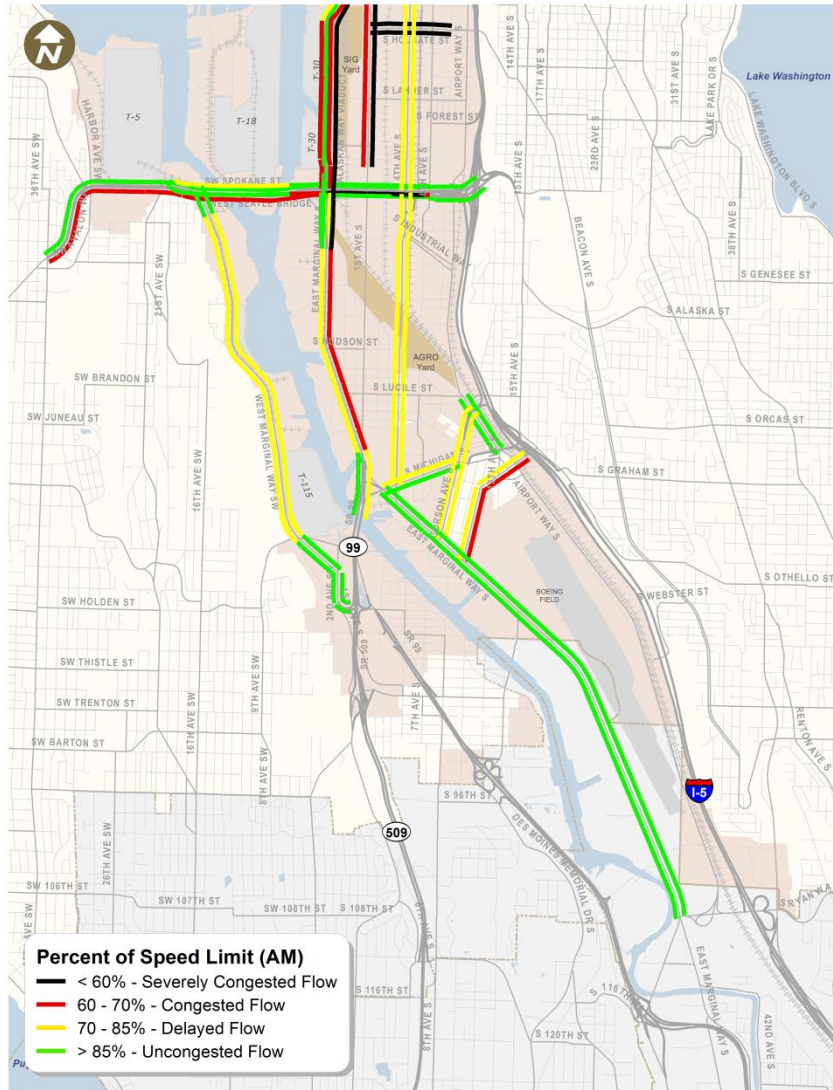


AM Peak: 7:00 – 9:00 AM

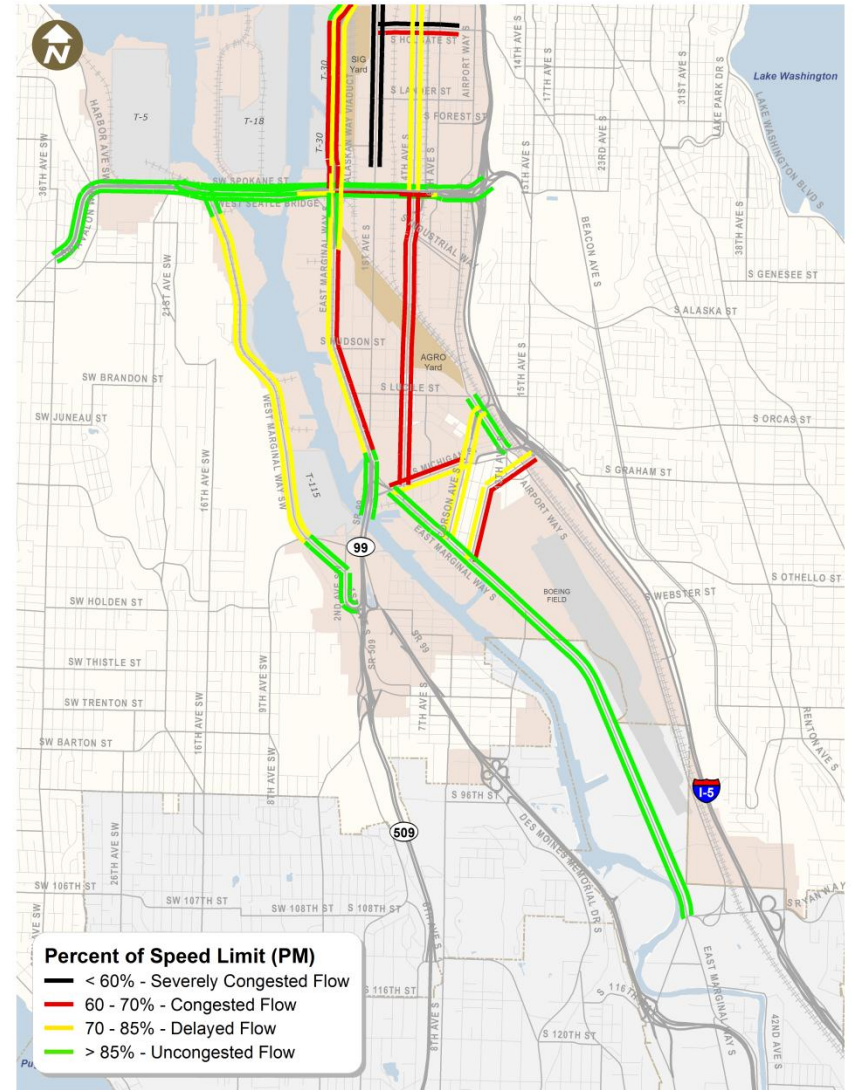


PM Peak: 3:00 – 5:00 PM

# Draft congestion levels– south



AM Peak: 7:00 – 9:00 AM

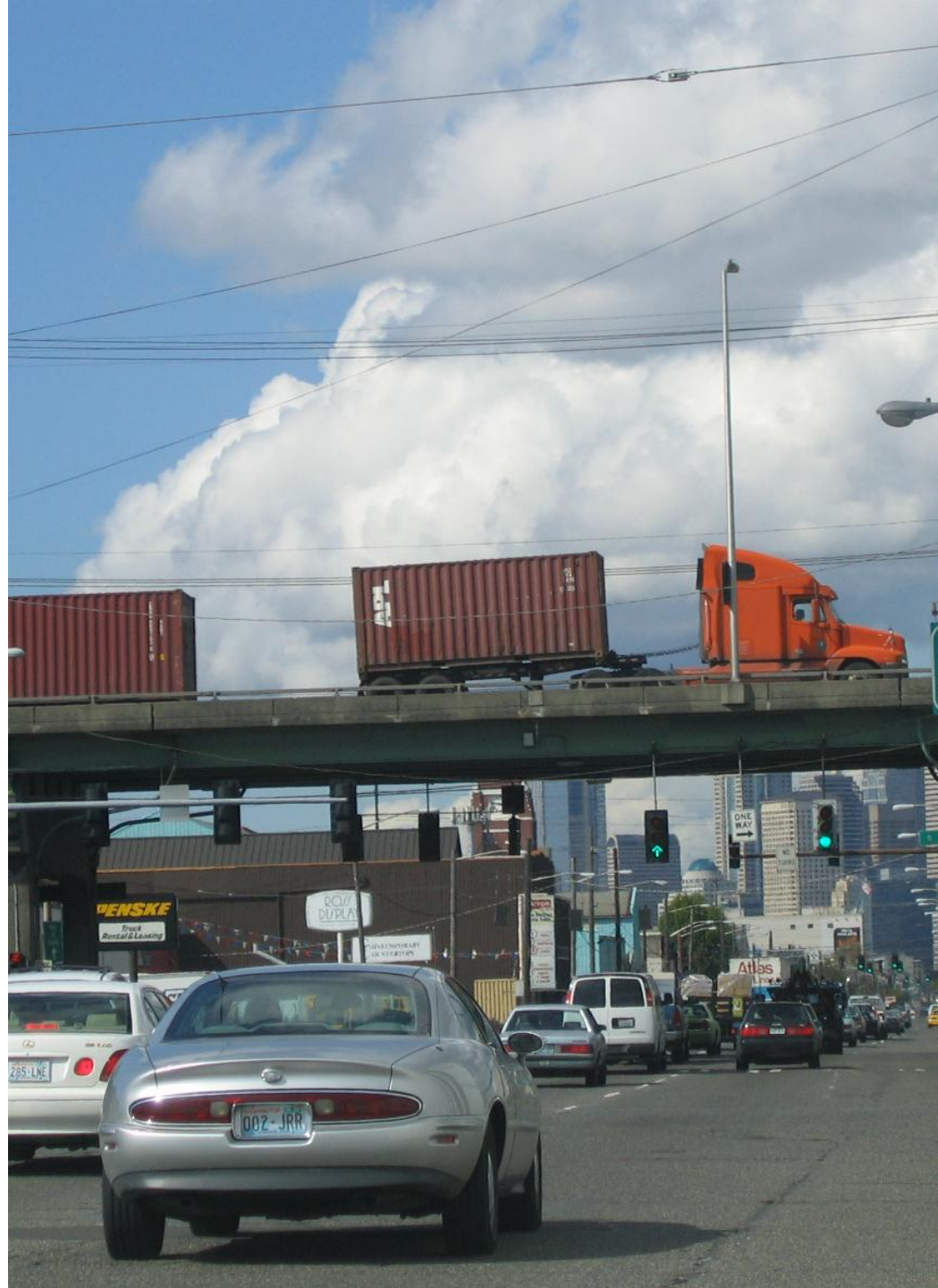


PM Peak: 3:00 – 5:00 PM

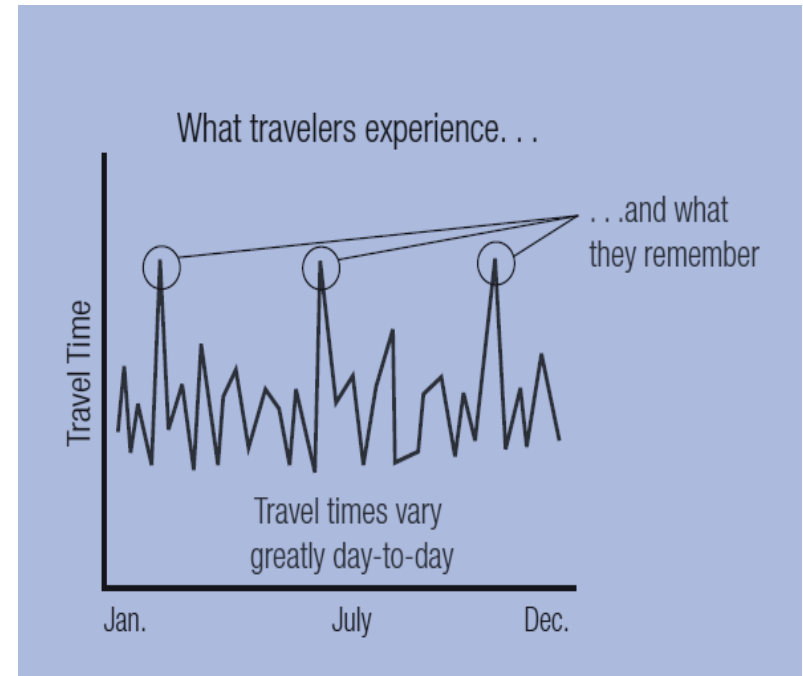
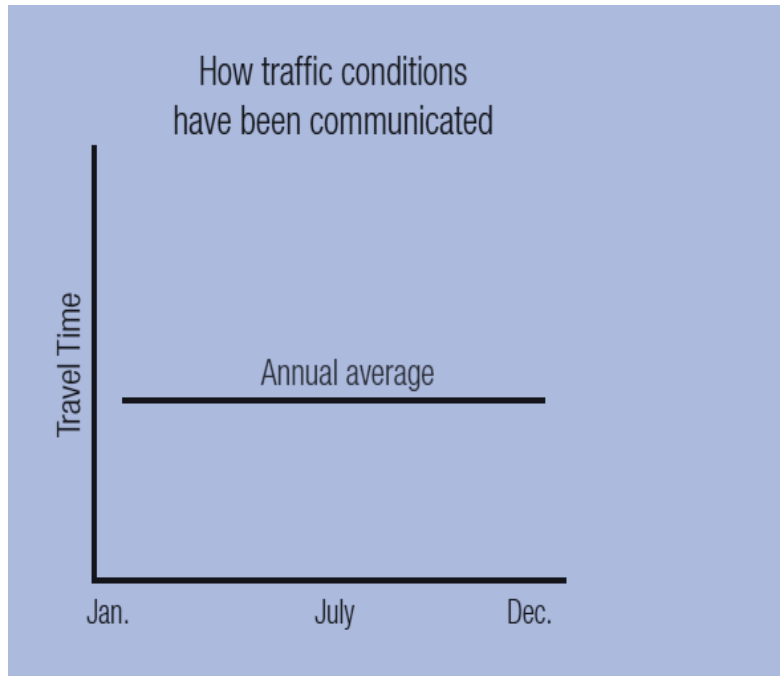
# System reliability

## What it Measures

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



# Buffer index



## Example

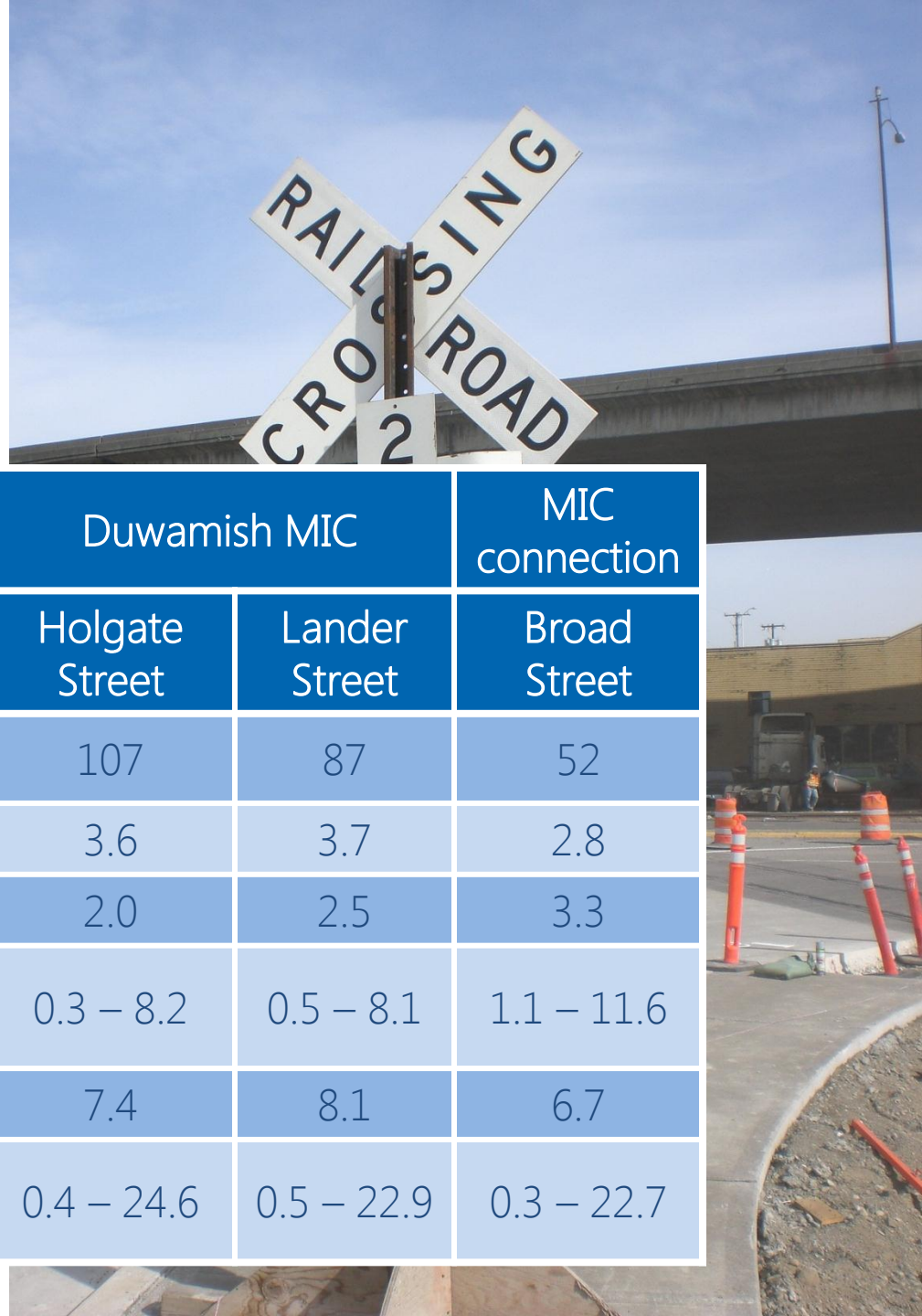
Plan for 40% more travel time ~  
or six additional minutes to  
arrive on-time

Buffer Index  
(40%)

$$\frac{\left( \begin{array}{l} \text{95}^{\text{th}}\text{-Percentile} \\ \text{(21 min)} \end{array} \right) \text{ minus } \left( \begin{array}{l} \text{Average} \\ \text{(15 min)} \end{array} \right)}{\begin{array}{l} \text{Average} \\ \text{(15 min)} \end{array}}$$

# 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

|           |   |
|-----------|---|
| May       | 2035 Conditions and Needs Identification              |
| June      | Improvement Project Identification and Prioritization |
| July      | Preparation of Draft Plan                             |
| September | Release of Draft Plan                                 |

# Questions?

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[www.seattle.gov/transportation/freight\\_industrialareas.htm](http://www.seattle.gov/transportation/freight_industrialareas.htm)

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