Seattle Industrial Areas
Freight Access Project
Future Conditions – Part II

Image Credit: Port of Seattle

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Freight Advisory Board
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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

- Truck Tonnage >400 million
- Population: 5 million
- Jobs: 3.1 million

Forecast

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

Example of Daily Speed Changes

Legend for Congestion Maps

Percent of Speed Limit (AM)
- < 60% - Severely Congested Flow
- 60 - 70% - Congested Flow
- 70 - 85% - Delayed Flow
- > 85% - Uncongested Flow
Congestion levels – north

AM Peak
7:00 – 9:00 AM

Percent of Speed Limit (AM)
- < 60% - Severely Congested Flow
- 60 - 70% - Congested Flow
- 70 - 85% - Delayed Flow
- > 85% - Uncongested Flow
Congestion levels – north

PM Peak
3:00 – 5:00 PM
Congestion levels – central

AM Peak
7:00 – 9:00 AM
Congestion levels – central

PM Peak
3:00 – 5:00 PM
Congestion levels—south

AM Peak
7:00 – 9:00 AM
Congestion levels—south

PM Peak
3:00 – 5:00 PM
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
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

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

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
Ballard/Interbay Northend MIC

- Bridges are a mobility constraint
- Historical safety incidents with cyclists
- Geometric constraints on 15th Avenue

Focus areas - north
Central connections

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

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

• 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).

• **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

• 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.

SR 519 under construction. WSDOT.
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.

- **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.
Maintenance and Repair
Toolbox Treatment #7

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

• **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.

_Pavement cracking and spalling. Transpo Group._
## Next steps

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Questions?

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www.seattle.gov/transportation/freight_industrialareas.htm

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