Seattle Industrial Areas Freight Access Project

Image Credit: Port of Seattle

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Presentation overview

• Project area
• Project partnership
• Goals & objectives
• Methodology
• Performance measures
• Existing & future conditions
• Project development & prioritization
Project area

- Manufacturing and Industrial Centers (MICs)
  - Ballard/Interbay
  - Duwamish

- Connecting corridors between MICs

- Corridors from the MICs to the regional highway system
Project partnership

- Port and City jointly received a $250,000 federal grant
- City local match, $37,000
- Joint agency team managing project
Project goals

- Identify a set of cost-effective operational and capital improvements to maintain and improve freight mobility

- Serve as a building block for Seattle’s Freight Master Plan and Port’s Container Terminal Access Study
Project objectives

- Increase safety for all travel modes
- Maintain and improve truck mobility and access to accommodate expected general traffic, freight, and cargo growth
- Ensure connectivity for major freight intermodal facilities
- Reduce environmental impacts, including greenhouse gas emissions
**Stakeholder engagement**

- Freight Advisory Board workshops
- Targeted stakeholder interviews
- Stakeholder briefings

The **Freight Advisory Board** was established in September 2010. It advises the Mayor, City Council, and all departments and offices of the city in the development of a functional and efficient freight system.
Methodology

- Process to evaluate freight needs and develop project list

1. Evaluate freight needs
   - Performance measures

2. Review assumed projects
   - Projects identified through other planning efforts

3. Apply toolbox treatments
   - Identify gaps
   - Consider possible solutions

4. Develop project list
   - Cost, schedule, location, etc.

- e.g. ITS applications
# Performance measures

<table>
<thead>
<tr>
<th>Goal</th>
<th>FAP Objective</th>
<th>Performance Measure</th>
<th>Metric or Indicator</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Safety</strong></td>
<td>Increase safety for all modes</td>
<td>• Truck safety</td>
<td>1. Truck collision rates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Safety for other modes</td>
<td>2. Collision history</td>
</tr>
<tr>
<td><strong>Truck Mobility, Reliability, &amp; Throughput</strong></td>
<td>Maintain and improve freight-truck mobility and access</td>
<td>• Volumes &amp; vehicle classifications</td>
<td>1. Daily total, truck volumes and truck percent</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Speed</td>
<td>2. Average speed as percent of the posted speed limit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Travel time</td>
<td>3. Point-to-point travel time (selected corridors)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Buffer index</td>
<td>4. Percent travel time to arrive on time w/ 95% certainty</td>
</tr>
<tr>
<td><strong>Connectivity</strong></td>
<td>Ensure network connectivity, especially for major freight inter-modal facilities</td>
<td>• Mobility constraints</td>
<td>1. Operational &amp; geometric constraints</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2. Weight and height restrictions</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3. Delay from RR and bridge closure (hours per day)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4. Improved lane-miles of Last Mile connections</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td>Reduce environmental impacts</td>
<td>• Congestion/delay- from speed &amp; travel time</td>
<td>1. Qualitative assessment of environmental benefits of congestion relief and drainage improvements</td>
</tr>
</tbody>
</table>
Existing & future conditions

- Street network, incl. Major Truck Streets
- Corridor volumes
- Corridor travel speeds
- Collision history
- Mobility constraints
- Pavement and bridge conditions
- Multi-modal demands
Composite score

- Sum of the safety, mobility, and connectivity scores

<table>
<thead>
<tr>
<th>Components</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Score</td>
<td>0 to 40</td>
</tr>
<tr>
<td>Mobility Score</td>
<td>0 to 35</td>
</tr>
<tr>
<td>Connectivity Score</td>
<td>0 to 25</td>
</tr>
<tr>
<td>Total Possible Points</td>
<td>100</td>
</tr>
</tbody>
</table>

Future conditions
Assumed improvements
Identify needs

- Identify gaps not covered by existing project definitions

Options to address gaps

1. Refine/expand previously identified project
2. Identify new projects and programs
Freight toolbox elements

ITS applications
Intersection operational changes
Wayfinding for trucks
Geometric improvements
Freight management
### Prioritize projects

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% Freight composite score</td>
<td>• Existing and future freight composite of safety, mobility, and connectivity performance measure scores</td>
</tr>
<tr>
<td>15% Roadway designation</td>
<td>• Location on Major Truck Street, Heavy Haul Route, or First/Last Mile Connection</td>
</tr>
<tr>
<td>15% Pavement conditions</td>
<td>• Pavement condition index</td>
</tr>
<tr>
<td>10% Environmental</td>
<td>• Qualitative assessment of congestion relief and drainage improvements</td>
</tr>
<tr>
<td>10% Reliability</td>
<td>• Existing conditions buffer index based on travel times</td>
</tr>
</tbody>
</table>
### Project #34

**Advanced Traveler Information and Warning Systems at Railroad Crossings**

<table>
<thead>
<tr>
<th>Freight Need</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>There are five (5) mainline railroad crossings at Broad Street, Lander Street, Spokane Street, Holgate Street, and that block roadways for extended periods of time. Providing advanced warning and warning through early train detection will result in less delay at the crossing. As part of the project, verifying warning signage will also improve safety at these locations.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toolbox Treatment</th>
<th>Project Benefits</th>
<th>Cost Estimate</th>
</tr>
</thead>
</table>
| ✓ ITS improvements | ✓ Reduced traveler delay  
✓ Improved safety  
✓ Fewer idling vehicles | $XXX,000 |

**Location**

- Add variable message sign displaying information for when train will arrive and how long
- Add signage detailing alternate routes for pedestrians

### Project #35

**1st Avenue S Signal Timing and ITS Updates**

<table>
<thead>
<tr>
<th>Freight Need</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Data collected in 2013 shows that multiple intersections along 1st Avenue South are forecasted to operate at an LOS E or F by 2023. By installing ITS equipment that will enable &quot;freight priority&quot; as well as signal retiming, freight vehicles will have to stop less often providing them with faster travel between local destinations and heavy haul routes on the freight network.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Toolbox Treatments</th>
<th>Cost Estimate</th>
</tr>
</thead>
</table>
| ✓ Intersection operations  
✓ ITS Improvements | $XXX,000 |

**Project Benefits**

- Improved Freight Mobility
- Reduced Greenhouse Gases
- Low Cost Improvement

**Key Components**

- Signal retimings at 1st Ave S / S Holgate Street, 1st Ave S / S Lander Street, and 1st Ave S / S Atlantic Street to add heavy vehicle priority for northbound and southbound movements on 1st Avenue S.
Questions?

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www.seattle.gov/transportation/freight_industrialareas.htm

www.seattle.gov/transportation