Bridge Overview, Load Ratings, & Specialized Haul Vehicles

Seattle Freight Advisory Board
Art Brochet & Jamie O’Day
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Seattle Department of Transportation
SDOT’s mission & vision

Mission: delivering a first-rate transportation system for Seattle.

Vision: a vibrant Seattle with connected people, places, and products.
SDOT’s core principles

- Keep it safe
- Focus on the basics
- Provide great service
- Build healthy communities
- Support a thriving economy
Presentation overview

- Overview of Seattle’s Bridges
- Current Bridge Load Limits & Vehicle Types
- Specialized Hauling Vehicles (SHVs)
- Bridge Evaluations Required
- SDOT’s SHV Load Evaluation Program
- Cowen Park Bridge Restrictions
- 3 Other Bridge Evaluations in 2015
- Bridge Restriction Signage
- Next Steps
- Outreach Plans
Overview of Seattle’s Bridges

• 83 Bridges
• 4 Operable
  Ballard Bridge
  Fremont Bridge
  University Bridge
  Spokane Street Swing Bridge
• 1990’s Load Rating Program – all bridges
• Ongoing Inspection Program
## Current Bridge Load Limits
(based on 3 AASHTO Truck Types)

<table>
<thead>
<tr>
<th>Structure</th>
<th>Restriction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airport Way over ARGO</td>
<td>Legal Loads Only, No Overloads</td>
</tr>
<tr>
<td>Magnolia Bridge, Pier 91 Ramps</td>
<td>No Trucks Allowed</td>
</tr>
<tr>
<td>McGraw Street Bridge</td>
<td>2 Axle – 14T&lt;br&gt;3 Axle – 18T&lt;br&gt;Truck &amp; Semi Trailer – 28T&lt;br&gt;Truck &amp; Trailer – 35T</td>
</tr>
<tr>
<td>East Interlaken Blvd.</td>
<td>5 Tons</td>
</tr>
<tr>
<td>Fairview Ave N. (southbound)</td>
<td>40 Tons</td>
</tr>
<tr>
<td>Post Alley – Marion to Columbia</td>
<td>Single Axle – 19 Tons</td>
</tr>
</tbody>
</table>
3 AASHTO Truck Types

Type 3 W=50 kips

Type 3S2 W=72 kips

Type 3-3 W=80 kips
Specialized Hauling Vehicles

- Single Vehicles with 4-7 closely spaced axles – weighing up to 40T (loaded)
- Relatively recent introduction
- Four types – for 4, 5, 6 & 7 axles
SU4 Truck GVW = 54 kips
SU5 Truck GVW = 62 kips
SU6 Truck GVW = 69.5 kips
SU7 Truck GVW = 77.5 kips
Bridge Evaluations Required

All bridges with clear spans > 20’ must be evaluated for SHV loads.

Bridges which have shorter spans or lower spare capacity for loads must be evaluated before 2018: otherwise before 2023.
SDOT’s SHV Load Evaluation Program

83 bridges with spans > 20’

• 10 already evaluated
  – 9 now proven OK
  – Cowen Park Bridge needs to be limited

• 3 additional structures will be evaluated this year

• 21 more (minimum) will need evaluation in 2016 - 2017

• 49 more will need evaluation before end of 2022
Cowen Park Bridge

Restrictions for SU-7 will be needed, possible others – final load ratings TBD

Minor arterial - 41 feet wide - 1 travel lane in each direction, now with bicycle lanes on each side.
Other Bridge Evaluations in 2015

• NW 57th Street crossing of RR
  – Non-arterial street
  – In non-commercial zone

• 15th Ave NW over NW Leary Way
  – Major Truck Route and Transit Way
  – Over Principal Arterial
  – In industrial/commercial zone

• W. Dravus St. over 15th Ave W.
  – Principal Arterial and Minor Transit Street
  – Over Major Truck Street
  – In industrial buffer zone
NW 57th St over RR (near 36th Ave NW)
NW 15th Ave over NW Leary Way
West Dravus St over 15th Ave W
Bridge Restriction Signage

Sample of Signage for Specialized Hauling Vehicles

<table>
<thead>
<tr>
<th>WEIGHT LIMIT</th>
<th>SINGLE UNIT VEHICLES</th>
</tr>
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<tbody>
<tr>
<td>4 AXLES</td>
<td>18 T</td>
</tr>
<tr>
<td>5 AXLES</td>
<td>24 T</td>
</tr>
<tr>
<td>6 AXLES</td>
<td>30 T</td>
</tr>
<tr>
<td>7 AXLES</td>
<td>37 T</td>
</tr>
</tbody>
</table>

Signage for 3 AASHTO Trucks (now in use)
## Next steps

<table>
<thead>
<tr>
<th>Date</th>
<th>Action Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2015</td>
<td>- Determine load restriction needed for SHVs on Cowen Park Bridge</td>
</tr>
<tr>
<td>May 2015</td>
<td>- Design, place Cowen signage</td>
</tr>
<tr>
<td>May 2015</td>
<td>- Begin outreach to SHV owners and operators re: restrictions &amp; program</td>
</tr>
<tr>
<td>In 2015</td>
<td>- Rate 15th &amp; Leary, NW 57th &amp; 36th Ave NW, and Dravus over 15th</td>
</tr>
<tr>
<td>2016 - 2017</td>
<td>- Rate 21 more bridges (minimum)</td>
</tr>
<tr>
<td>Before 2023</td>
<td>- Rate remaining 49 bridges</td>
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Outreach Plans

• SHV owners/operators
  – Washington Trucking Association (WTA)
  – Manufacturing Industrial Council (MIC)
  – Duwamish Transportation Management Association (DTMA)

• Other outreach ideas?
Questions?

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http://www.seattle.gov/transportation