Economic Impacts of Congestion in Oregon

SENATE INTERIM COMMITTEE ON BUSINESS AND TRANSPORTATION

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Prepared for:
Portland Business Alliance
Oregon Business Plan
Port of Portland
The Issues
Growing Population

Total state population is expected to increase by 0.7% annually from 2014-2040

- 0.8% in Portland Region
- 1.2% in Other Study Metros
- 0.2% in Rest of State

Source: Moody’s Analytics
Traffic is Expected to Increase Due To:

- Population Growth
- Expanding Buyer/Supplier Markets
- Globalization
- Overnight Deliveries
- Lack of Alternatives for Local Ground Transport

Source: Portland Metro
Even with existing & committed projects, system performance declines.

Source: Portland Metro; Oregon DOT
Worsening congestion and speeds by 2040 will cause the average household to experience:

- **69 hours** of congestion / year (Portland Region)
- **18 hours** of congestion / year (Other MPOs)

Compared to 50 hours of household delay / year in *Cost of Congestion to the Economy of the Portland Region (2005)*

Source: EDR Group
Questions Addressed in Current Study

- What are the impacts of highway congestion on the economic performance of Oregon and major metropolitan areas of the state?
- How has congestion affected business transportation decisions and operations in the state?
- How have the effects of congestion changed since the last PBA study in 2005?
- What are the effects of transportation investment on the state’s economy?
- What are the potential economic impacts of a seismic event affecting transportation infrastructure?
The Oregon Economy is Transportation Dependent
Traded Industries

- Provide products and services to markets beyond metro area.
- Source of money flowing into the metro area that support local-serving industries.
- Depend on transport connections.
- Can expand or relocate elsewhere if Portland location becomes less competitive.
- Includes international trade, as well as trade with other domestic regions/states.

Key Traded Sectors
- Steel products
- Agricultural products
- Computer / Electronics
- Sporting goods/apparel
- Transport equipment
- Machinery
- Wholesale / Distribution
Portland Region ranks 5th in international exports among Western State metropolitan areas.

<table>
<thead>
<tr>
<th>Region</th>
<th>2012 Exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Los Angeles MSA</td>
<td>$93.8 billion</td>
</tr>
<tr>
<td>2. Seattle MSA</td>
<td>$47.1 billion</td>
</tr>
<tr>
<td>3. San Francisco MSA</td>
<td>$38.0 billion</td>
</tr>
<tr>
<td>4. San Jose MSA</td>
<td>$34.6 billion</td>
</tr>
<tr>
<td><strong>5. Portland MSA</strong></td>
<td><strong>$33.9 billion</strong></td>
</tr>
<tr>
<td>6. San Diego MSA</td>
<td>$21.6 billion</td>
</tr>
</tbody>
</table>

Top Portland Region International Exports
- Computer / Electronics
- Machinery
- Transport equipment

*Top 3 are 89% of all exports by value*

Source: Brookings Institution, EDR Group vFreight
Dependency on Transportation Related Services

346,000 jobs
In transportation-related or transportation-dependent industries
Source: Moody’s Analytics, 2014

$300 billion of commodities
move annually into, out of, and through Oregon
Source: FAF3, 2012
Major International Trade Industries

Trucks carry 74% of all international trade goods (by value) into and out of Oregon. (Source FAF 3)

Trucks are used for part of air, sea and rail shipments.

Oregon Top 5 Industries*;
Share of International Trade

- Computer and Electronics Products: 36%
- Agricultural Exports: 13%
- Machinery, Except Electrical: 13%
- Chemicals: 9%
- Transportation Equipment: 20%
- Primary Metal Manufacturing: 6%

* Top 5 Exports & Top 5 Imports by Value
Creates 6 total categories.

Source: WISERTrade
Top International Gateways of Export for Oregon Goods

Portland
$4,884 M; 26%

Seattle/Tacoma
$3,005 M; 16%

Blaine, WA
$2,526 M; 14%

Eastport, ID
$478 M; 3%

S.F. Int. Airport
$1,455 M; 8%

L.A. Int. Airport
$1,283 M; 7%

New Orleans
$537 M; 3%

Top International Gateways and Border Crossings of Exports
(Source: WISER Trade, 2013)

Source: WISERTrade, 2014
Global Reach of Oregon Trade

Import and Export Trade in Billions of Dollars

Source: WISERTrade, 2014
Impacts of Congestion

- Increased Delay and Reduced Reliability
- Operations Overtime Cost
  - Additional drivers
  - Inventory costs
- Extended Operation Hours
  - Shifts and cut-off times
- Dispersion of Warehousing and Operation Locations
- Diversion of Shipments to Ports/Airports Outside Region
- Increased Outsourcing of Transportation Services
Market Access

- More than just travel time cost and impact.
- Congestion shrinks the size of labor markets and delivery markets that can be served.

Example of Difference in Market Access Between 40 and 60 Minutes Drive

Source: ESRI Business Analyst Online
Competitiveness

- Congestion reduces the advantages of a location

Factors in
- Business Retention
- Expansion
- Attraction

Freight Delivery Routes & Markets
Warehousing and Distribution Logistics
Labor Markets: Cost & Skill Availability
Land and Operations Costs
Quality of Life
Businesses Perspectives on Market Competitiveness
Industry Interviews

- **Agriculture/Resource-Based**
  - Anderson Hay
  - Pacific Seafood
  - Hampton Lumber
  - Roseburg Forest Products
  - Boise Cascade
  - Imperial Ranch

- **Advanced Manufacturing**
  - Intel
  - Genentech

- **Logistics Service Providers**
  - Expeditors
  - Central Oregon Trucking
  - Summit NW
  - Oregon Transfer

- **Manufacturing and Food Production**
  - Chris King
  - Craft Brew Alliance
  - Oregon Iron Works
  - Schnitzer Steel

- **Retail and Distribution**
  - Fred Meyer
  - Columbia Sportswear
Coping with Congestion – Businesses Interviewed
Coping with Congestion – Roadways Used
Coping with Congestion – Roadways Used
More freight-dependent businesses operating at night
  - Higher density of operations in “off-off-peak”
  - Issues of driver safety and regulatory limits on hours

Delivery acceptance hours limit distribution “off-off-peak” options

Businesses continue to lose “turns” for regional runs

Staggered shifts nearing implementation limits
  - Many start at 2AM
Coping with Congestion

**Emerging Issues**

- **Increasingly complex logistics practices**
  - Medium sized export-oriented businesses heavily reliant
  - Omni channel demands for distribution/delivery
  - Bifurcation of warehousing size and functions

- **Shift to 3rd party logistics and for-hire services**
  - Limited private operations to core services
  - Reduce operating risks of capital tie-up and labor costs
  - Smaller firms are greater users for both domestic and international trade

- **Focus on exports and out-of-state markets**
  - Increases role of Portland transportation freight infrastructure
  - Extensive use of PNW and California ports

- **Hours of service limits driver deployment**
Economic Impacts of Proposed Transportation Investments
Improved Future Reduces Congestion

Source: Portland Metro; Oregon DOT
Comparing the Alternatives

PORTLAND REGION

CONGESTED

69 Hours

Spent in congestion per household

IMPROVED

37 Hours

OTHER MPOS

CONGESTED

18 Hours

IMPROVED

6 Hours
## Benefits of Improved Future

### Annual Economic Benefits for Oregon by 2040

<table>
<thead>
<tr>
<th>Category</th>
<th>Total Benefit (All Regions - $ million)</th>
<th>Savings per Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income/GDP</td>
<td>$529.9</td>
<td>$394</td>
</tr>
<tr>
<td>Traveler Non-Monetary Benefit</td>
<td>$526.8</td>
<td>$392</td>
</tr>
<tr>
<td>Social &amp; Environmental</td>
<td>$1.6</td>
<td>$1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,058</strong></td>
<td><strong>$788</strong></td>
</tr>
</tbody>
</table>

RETURN ON INVESTMENT RATIO = 2.4

Source: EDR Group
### Economic Benefits for Oregon per Year by 2040 (in $ million)

<table>
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<tr>
<th></th>
<th>Portland Region</th>
<th>Other Study Regions</th>
<th>Total</th>
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<tr>
<td>Regional Benefits*</td>
<td>$822 ($908/household)</td>
<td>$327 ($744/household)</td>
<td>$1,058 ($788/household)</td>
</tr>
<tr>
<td>Jobs**</td>
<td>5,897</td>
<td>2,421</td>
<td>8,318</td>
</tr>
</tbody>
</table>

* Includes GDP, traveler non-monetary benefits, and societal benefits
** Change to average annual employment level

Source: EDR Group