

Economic Impacts of Congestion in Oregon

December 2014 Briefings

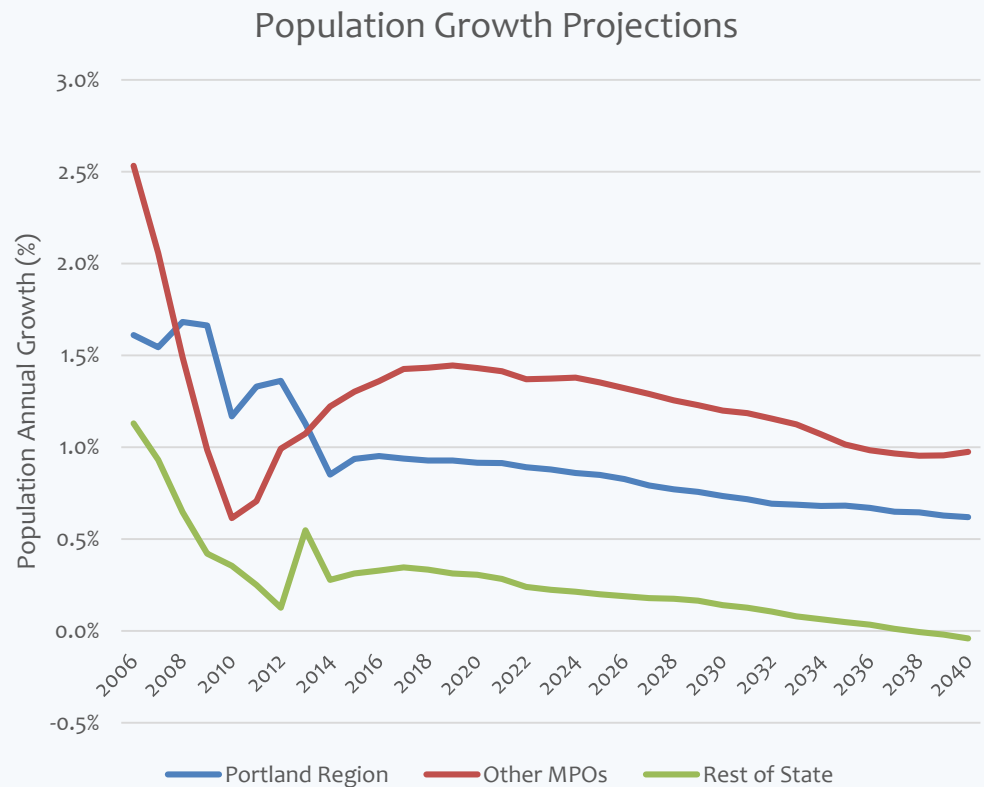
Prepared for:
Portland Business Alliance
Oregon Business Plan
Port of Portland

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

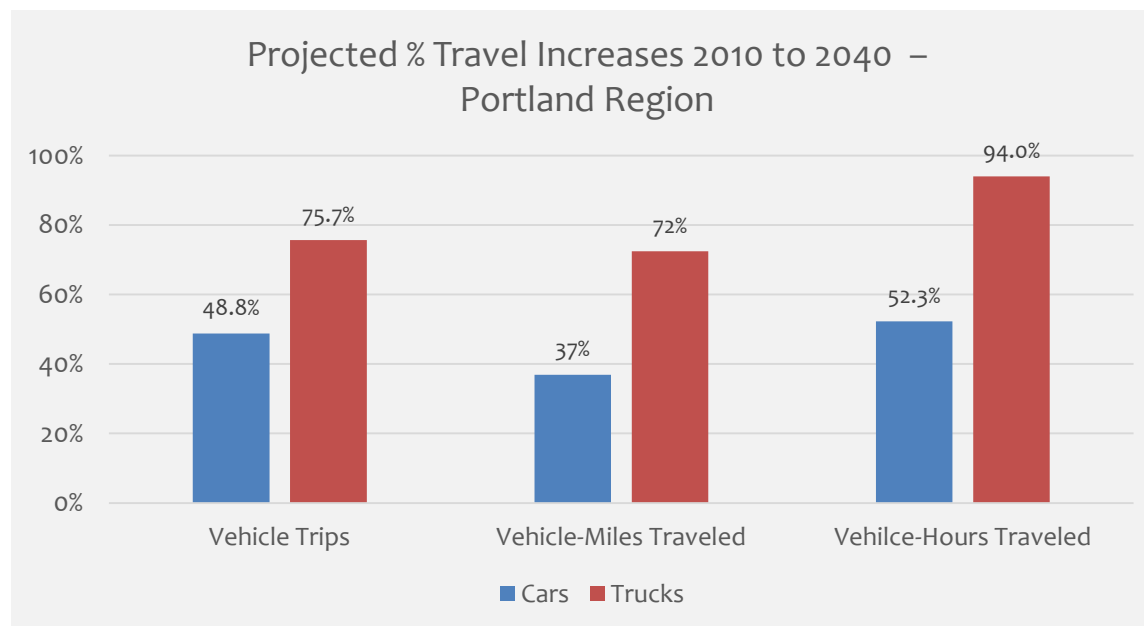


Source: Moody's Analytics

Rapid Travel Growth

Traffic is Expected to Increase Due To:

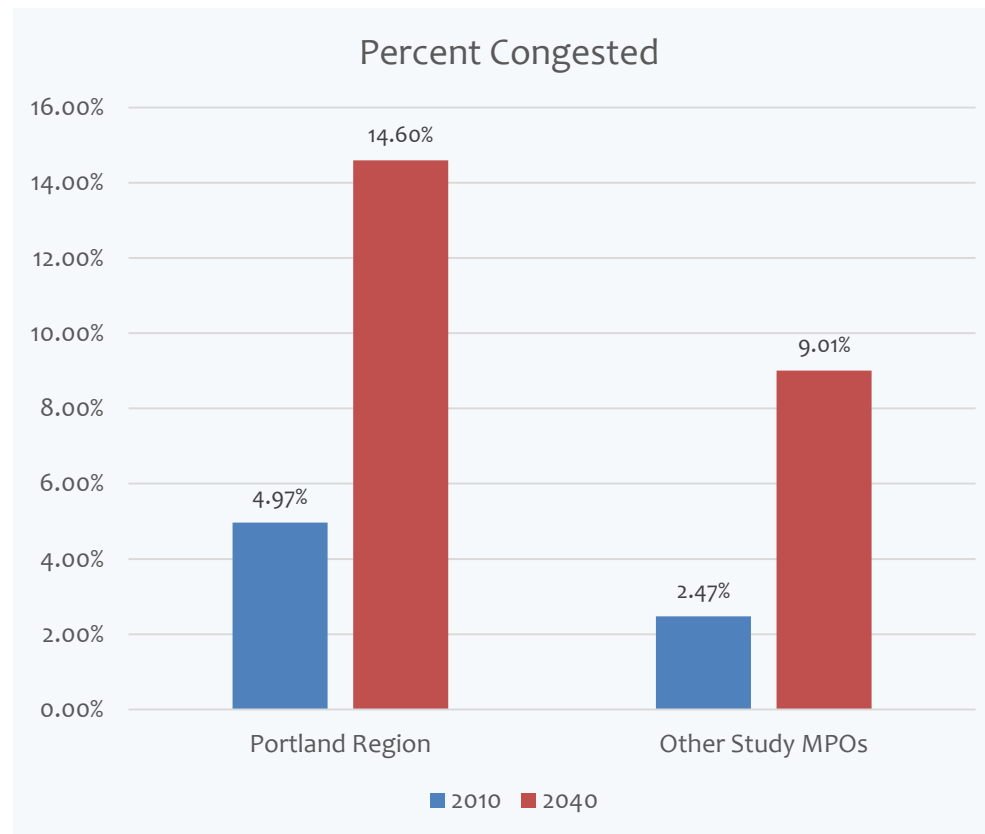
- Population Growth
- Expanding Buyer/Supplier Markets
- Globalization
- Overnight Deliveries
- Lack of Alternatives for Local Ground Transport



Source: Portland Metro

System Performance Degrades

Even with existing & committed projects, system performance declines.



Source: Portland Metro; Oregon DOT

System Performance Degrades

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?

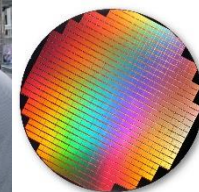
The Oregon Economy is Transportation Dependent

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



Traded Industries

- Portland Region ranks **5th in international exports** among Western State metropolitan areas

Region	2012 Exports
1. Los Angeles MSA	\$93.8 billion
2. Seattle MSA	\$47.1 billion
3. San Francisco MSA	\$38.0 billion
4. San Jose MSA	\$34.6 billion
5. Portland MSA	\$33.9 billion
6. San Diego MSA	\$21.6 billion

Top Portland Region International Exports

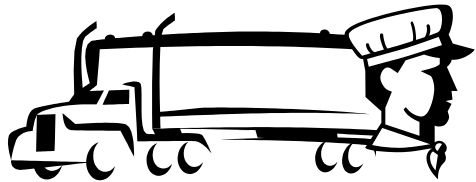
- ✓ Computer / Electronics
- ✓ Machinery
- ✓ Transport equipment

Top 3 are 89% of all exports by value



Source: Brookings Institution, EDR Group vFreight

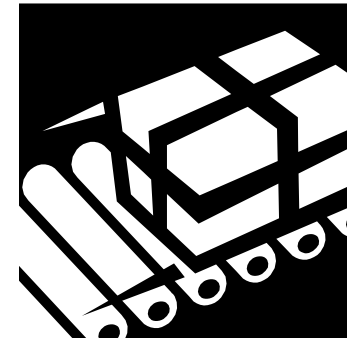
Dependency on Transportation Related Services



346,000 jobs

In transportation-related or
transportation-dependent industries

Source: Moody's Analytics, 2014



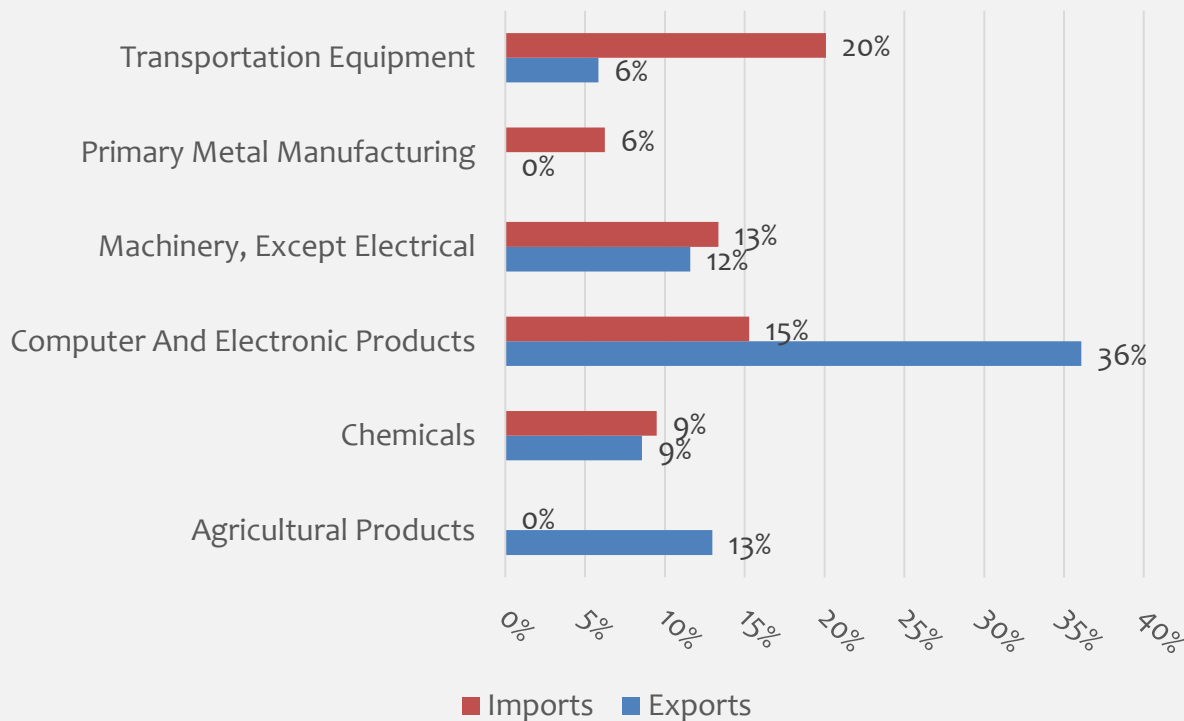
\$300 billion of commodities

move annually into, out of, and through
Oregon

Source: FAF3, 2012

Major International Trade Industries

Oregon Top 5 Industries*;
Share of International Trade



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.

Source: WISERTrade

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

Top 10 International Gateways of Export for Oregon Goods

International Gateway	Share of Oregon Exports
1. Portland, Oregon	19%
2. Blaine, Washington	14%
3. Seattle-Tacoma Int. Airport	8%
4. San Francisco Int. Airport, CA	8%
5. Portland Int. Airport, OR	8%
6. L.A. Int. Airport, CA	7%
7. Tacoma, Washington	5%
8. Seattle, Washington	3%
9. New Orleans, Louisiana	3%
10. Eastport, Idaho	3%
All Others	24%

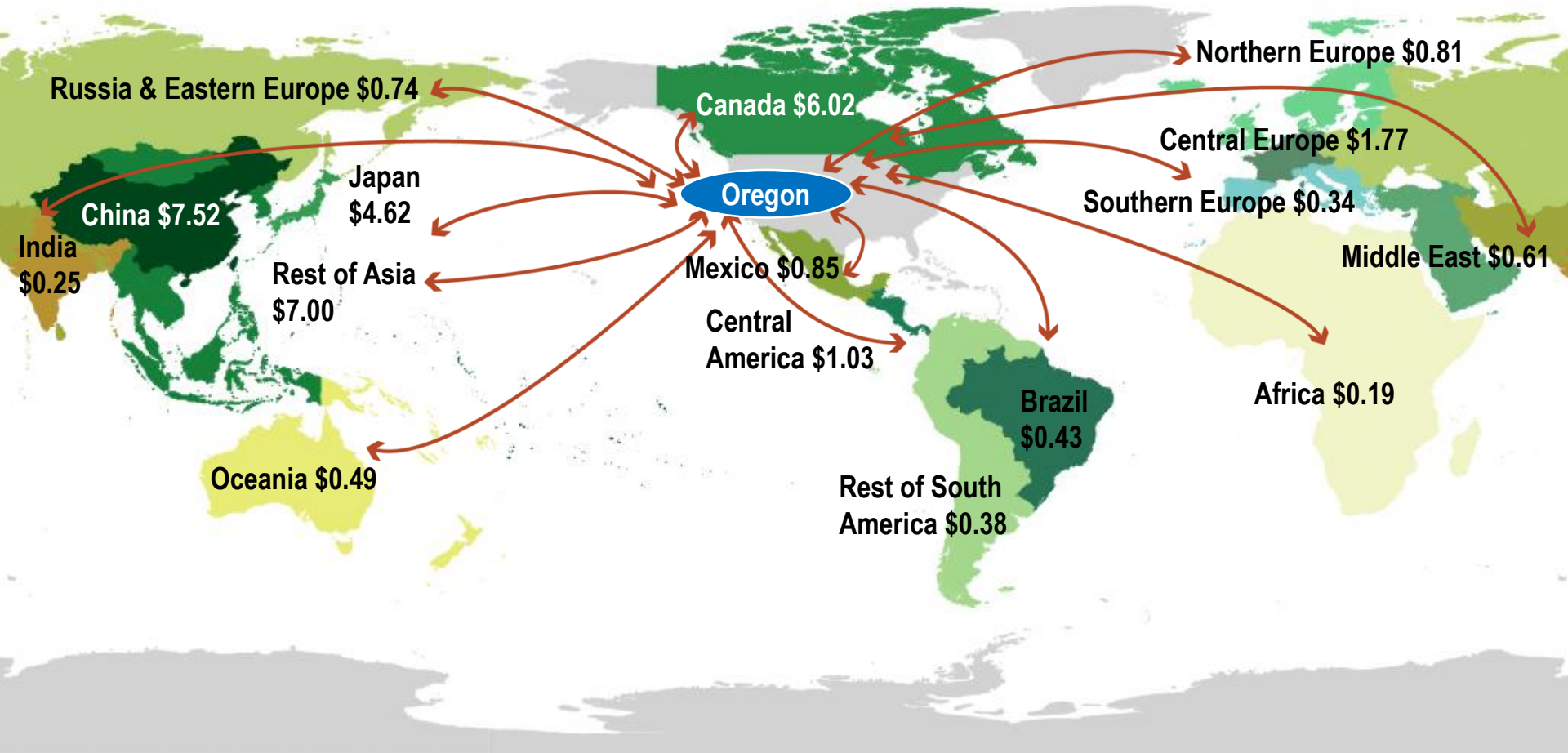
Source: WISERTrade

Top International Gateways of Export for Oregon Goods



Source: WISERTrade, 2014

Global Reach of Oregon Trade



Import and Export Trade in Billions of Dollars

Source: WISERTrade, 2014

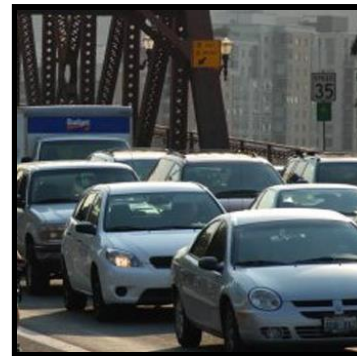
Impacts of Congestion

- 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

Trucks



Cars



Transit



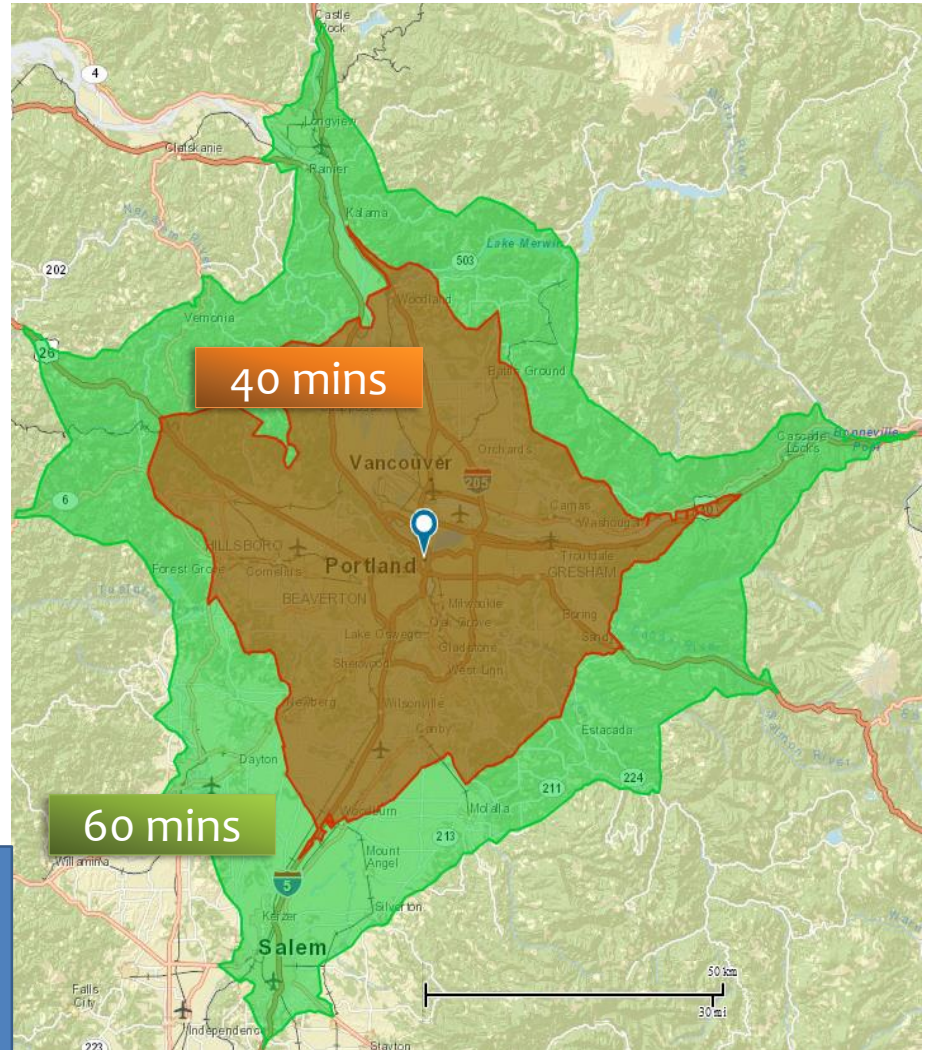
Port Access



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



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

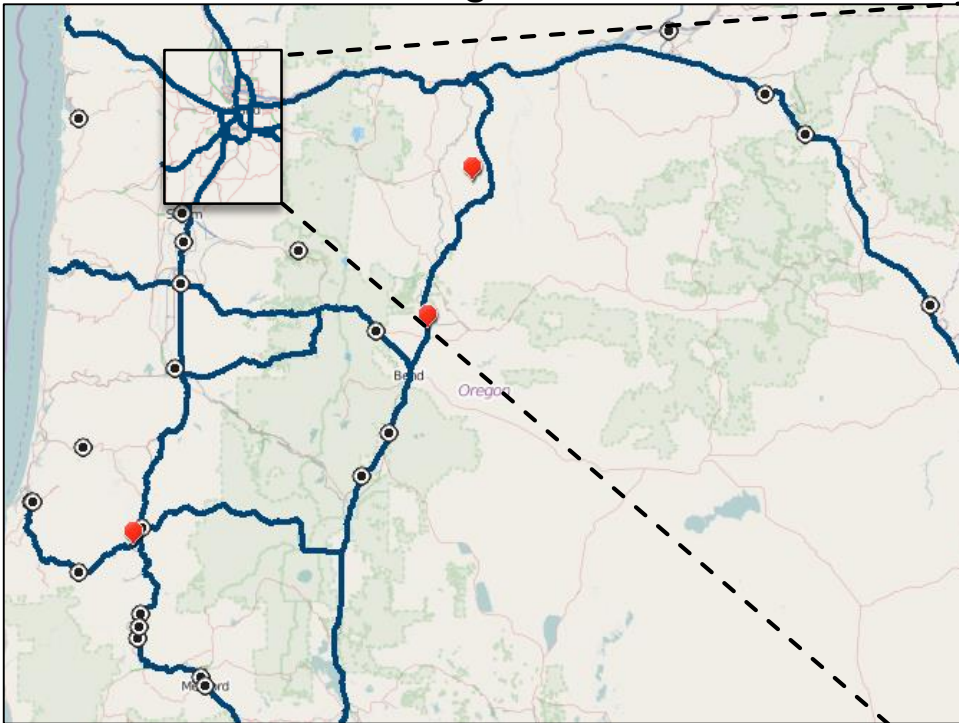
Businesses Perspectives on Market Competitiveness

Industry Interviews

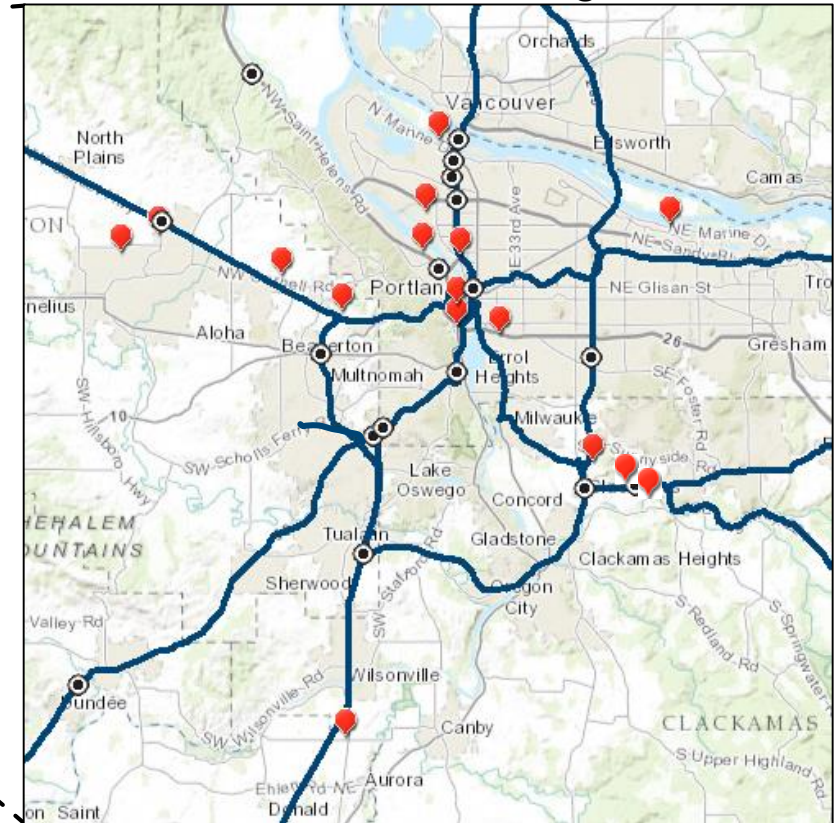
- **Agriculture/Resource-Based**
 - Anderson Hay
 - Pacific Seafood
 - Hampton Lumber
 - Roseburg Forest Products
 - Boise Cascade
 - Imperial Ranch
- **Advanced Manufacturing**
 - Intel
 - Genentech
- **Logistics Service Providers**
 - Expeditors
 - Central Oregon Trucking
 - Summit NW
 - Oregon Transfer
- **Manufacturing and Food Production**
 - Chris King
 - Craft Brew Alliance
 - Oregon Iron Works
 - Schnitzer Steel
- **Retail and Distribution**
 - Fred Meyer
 - Columbia Sportswear




Coping with Congestion

Oregon



Portland Metro Region



-  Businesses Interviewed
-  Bottlenecks
-  Key Routes

Coping with Congestion

Changes Since 2005

- 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

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Economic Impacts of Proposed Transportation Investments

Doing 'Nothing' Costs the Economy

Congested Future Scenario of existing and committed projects by 2040 will **cost** the **average household**:



- **211 hours** of additional travel time / year (Portland Region)
- **105 hours** of additional travel time / year (Other MPOs)

Improved Future Provides Benefits

Improved Future Scenario under the Full RTP Build will **save** the **average household**

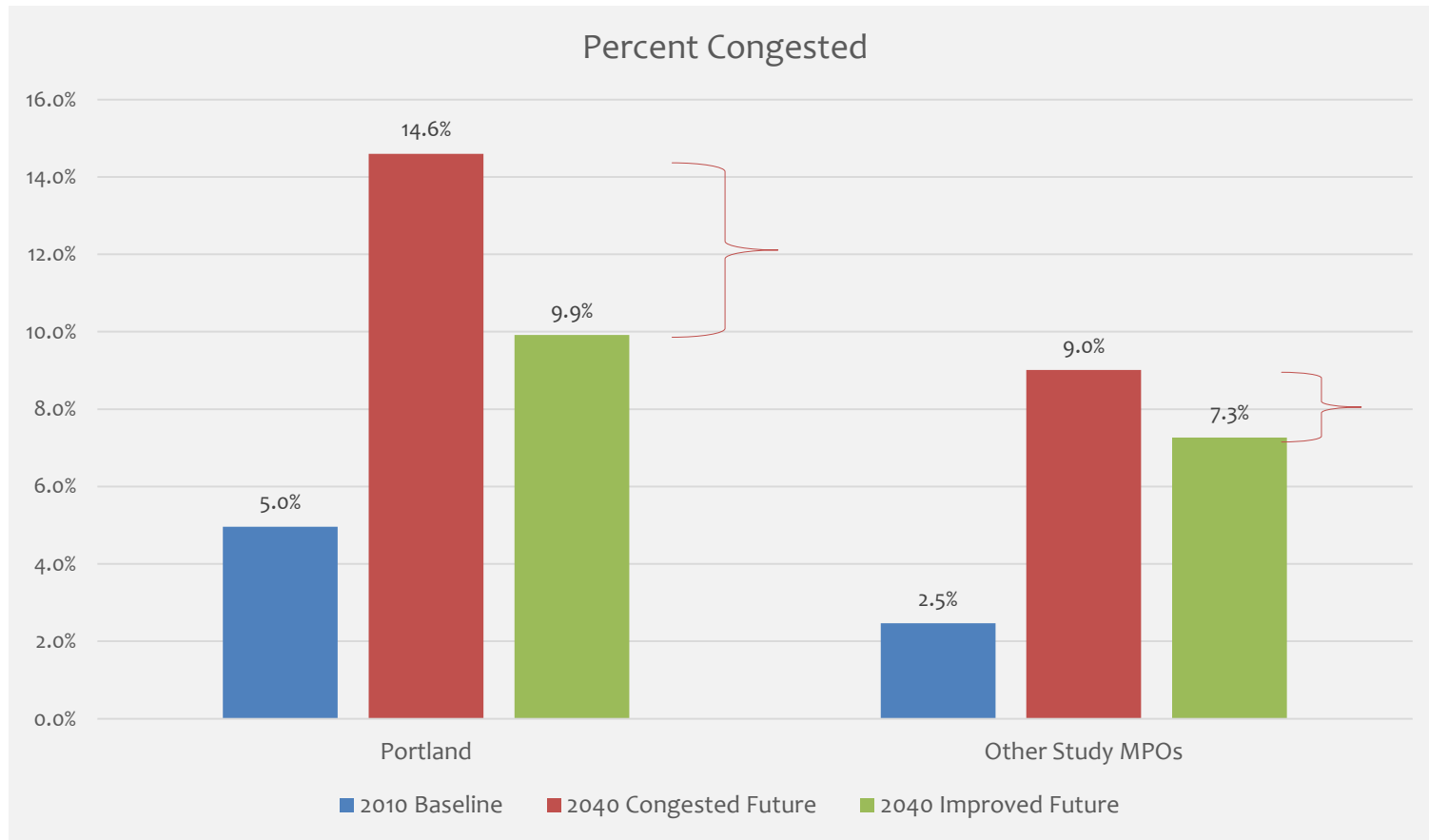


- **27 hours** of travel time savings / year (Portland Region)
- **28 hours** of travel time savings / year (Other MPOs)

Compared to 28 hours of household travel time savings per year in *Cost of Congestion to the Economy of the Portland Region (2005)*

Source: EDR Group

Improved Future Reduces Congestion

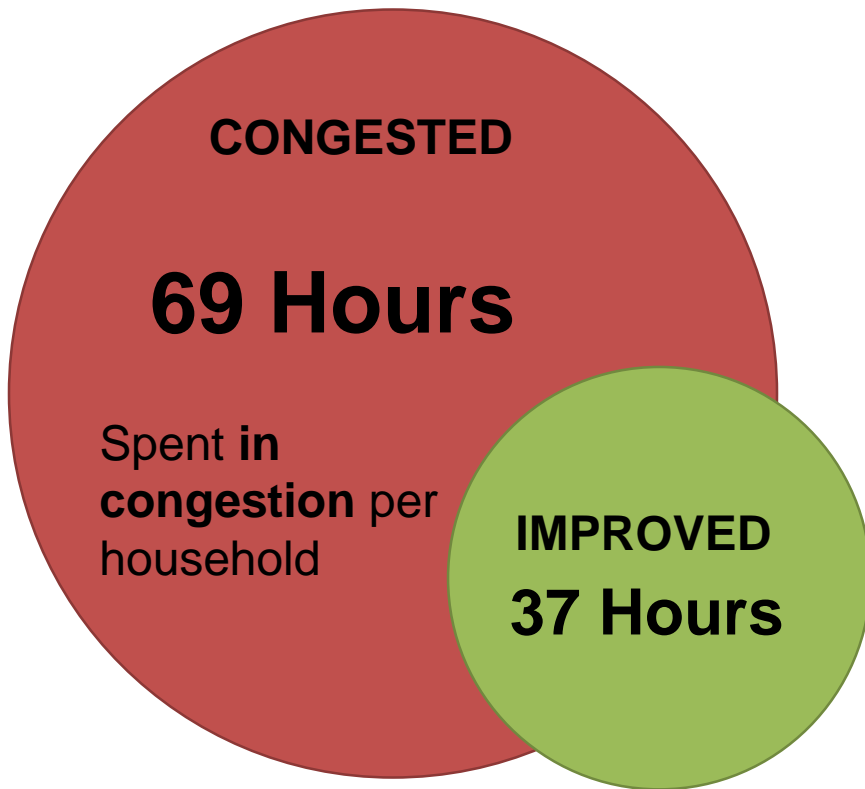


Source: Portland Metro; Oregon DOT

Indicates improvements from investment in Improved Future Scenario in 2040

Comparing the Alternatives

PORTLAND REGION



OTHER MPOS

CONGESTED



IMPROVED



Benefits of Improved Future

Annual Economic Benefits for Oregon by 2040

Category	Total Benefit (All Regions - \$ million)	Savings per Household
Income/GDP	\$529.9	\$394
Traveler Non-Monetary Benefit	\$526.8	\$392
Social & Environmental	\$1.6	\$1
Total	\$1,058	\$788

RETURN ON INVESTMENT RATIO = 2.4

Source: EDR Group

Benefits of Improved Future

Economic Benefits for Oregon per Year by 2040
(in \$ million)

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

* Includes GDP, traveler non-monetary benefits, and societal benefits

** Change to average annual employment level

Source: EDR Group

Effects of Seismic Events on Economy

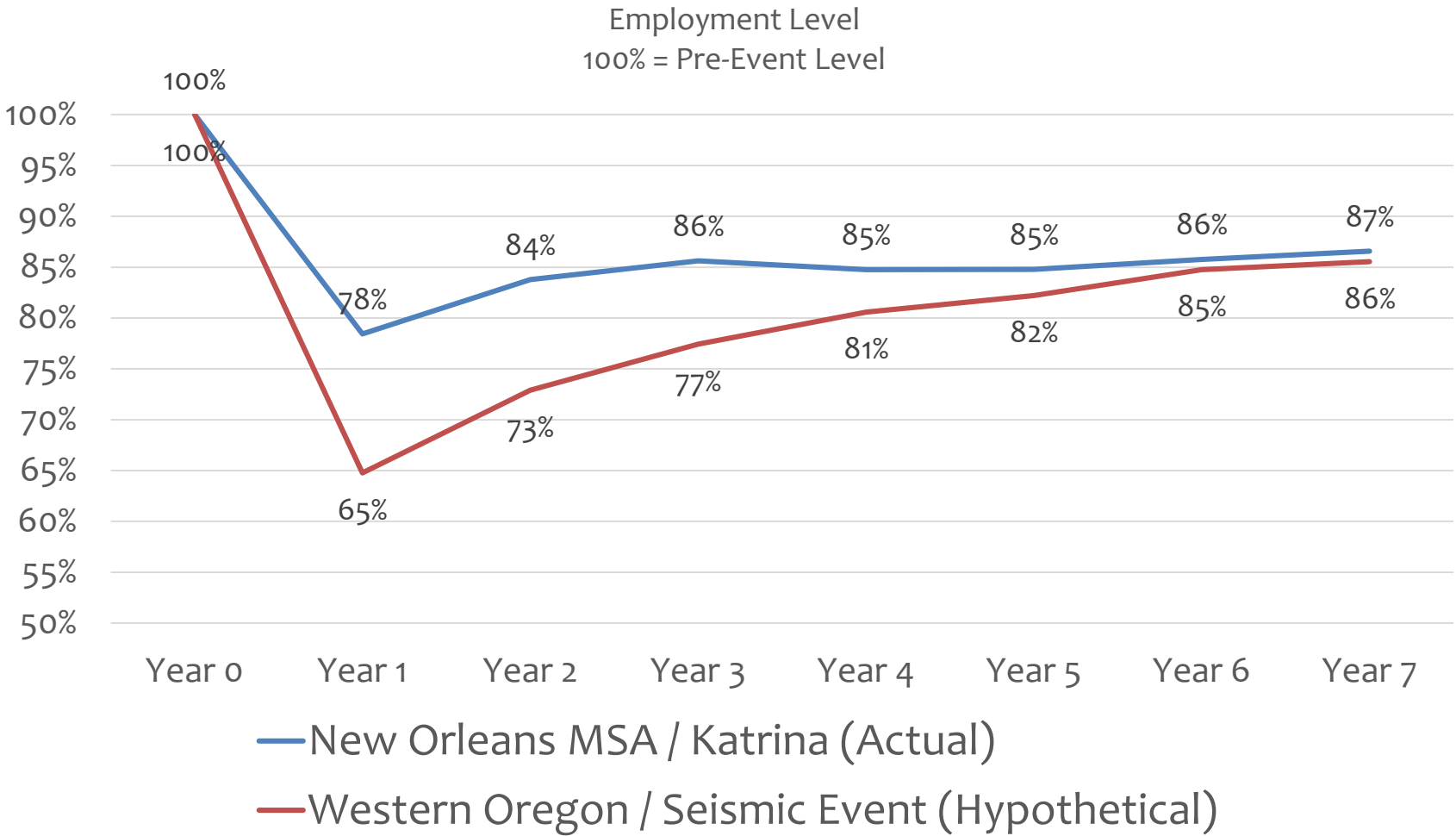
Seismic Study Methodology

- Builds off of figures in *Oregon Highways Seismic Options Report (ODOT, 2013)*.
- Assesses impact of major seismic event in Western Oregon for analysis timeframe 2014-2021.
- Uses calculations of % loss to state GDP from *Seismic Options Report*.
- Uses new, county-specific forecasts for GDP.
- Uses new, county-specific forecasts for employment.

Seismic Options Impacts

- Major seismic event would cost the state:
 - \$405 billion (27%) in statewide GDP over 7 years (equal to almost 2 years' worth of recent Oregon GDP)
 - 462,00 jobs lost in the initial 7 years.
- Full retrofit program can save:
 - \$92 billion (6%) in total GDP
 - 111,000 jobs annually by year 7

Comparison of Seismic Options Impacts



Business Preparedness and Response

- **Large companies have more flexibility**
 - Usually have multiple out-of-state production sites and distribution networks
 - Typically have contingency plans
 - May reduce, but not eliminate activities in Oregon based on assessment of post-event conditions
- **Medium and small companies are more vulnerable**
 - Limited production options and alternative suppliers
 - Typically count on adapting operations to post-event conditions
 - Highly vulnerable to prolonged loss of major transportation infrastructure (most cite 4 to 6 months)
 - Frequently cite risks of ending business operations in Oregon in event of prolonged recovery (over 6 months)