

## ■ Regional Economic Effects

### The Crossings Are Transportation Choke Points for the Pacific Northwest

Congestion delays in the Portland-Vancouver area are not just a local problem. The economy of the Pacific Northwest is very dependent on trade, and much of the freight traffic upon which the regional economy depends funnels through the Portland-Vancouver crossings. Congestion at the Columbia River highway and rail crossings affects the entire Pacific Northwest.

The physical geography of the Pacific Northwest defines the regional transportation system and makes the crossings at Portland-Vancouver strategic regional choke points. Figure 6 shows the major landforms of Oregon and Washington and the major highways. Mountain ranges across the region have constrained development of most of the region's highways, rail lines, and large population centers to a narrow corridor running from Vancouver, British Columbia through the Portland-Vancouver area to Eugene, Oregon. Highway and rail routes connecting the region to the other major North American trade blocs to the east and south run through difficult mountain passes and the Columbia River Gorge.

The region has excellent deepwater ports with access to the West Coast and Pacific Rim, and the Columbia/Snake River system provides barge access to the agricultural areas in the eastern half of the region. The Columbia River is a major regional transportation artery, but the river also is major regional barrier. There are just nine highway bridges and two rail crossings between Umatilla, Oregon, where the river curves northward into Washington State, and the Pacific Ocean, a distance of 292 miles or a little less than the distance between Portland-Vancouver and Vancouver, British Columbia.

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*"Time is [of the] essence in a truck driving company. The slower we go, the less money we make."*

Truck driver, Survey of Freight Industry  
Opinions of I-5, Oregon DOT

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### Congestion at the I-5/Columbia River Highway Crossing Delays Truck Shipments Across Oregon and Washington

The I-5/Columbia River bridge at Portland-Vancouver is a critical link in the Pacific Northwest's regional highway network. Congestion at the I-5/Columbia River highway crossing and the parallel I-205 crossing affects truck traffic throughout Oregon and Washington, but especially within the I-5 corridor.

**Figure 6.** Landforms of the Pacific Northwest  
With Interstate and Major Highways

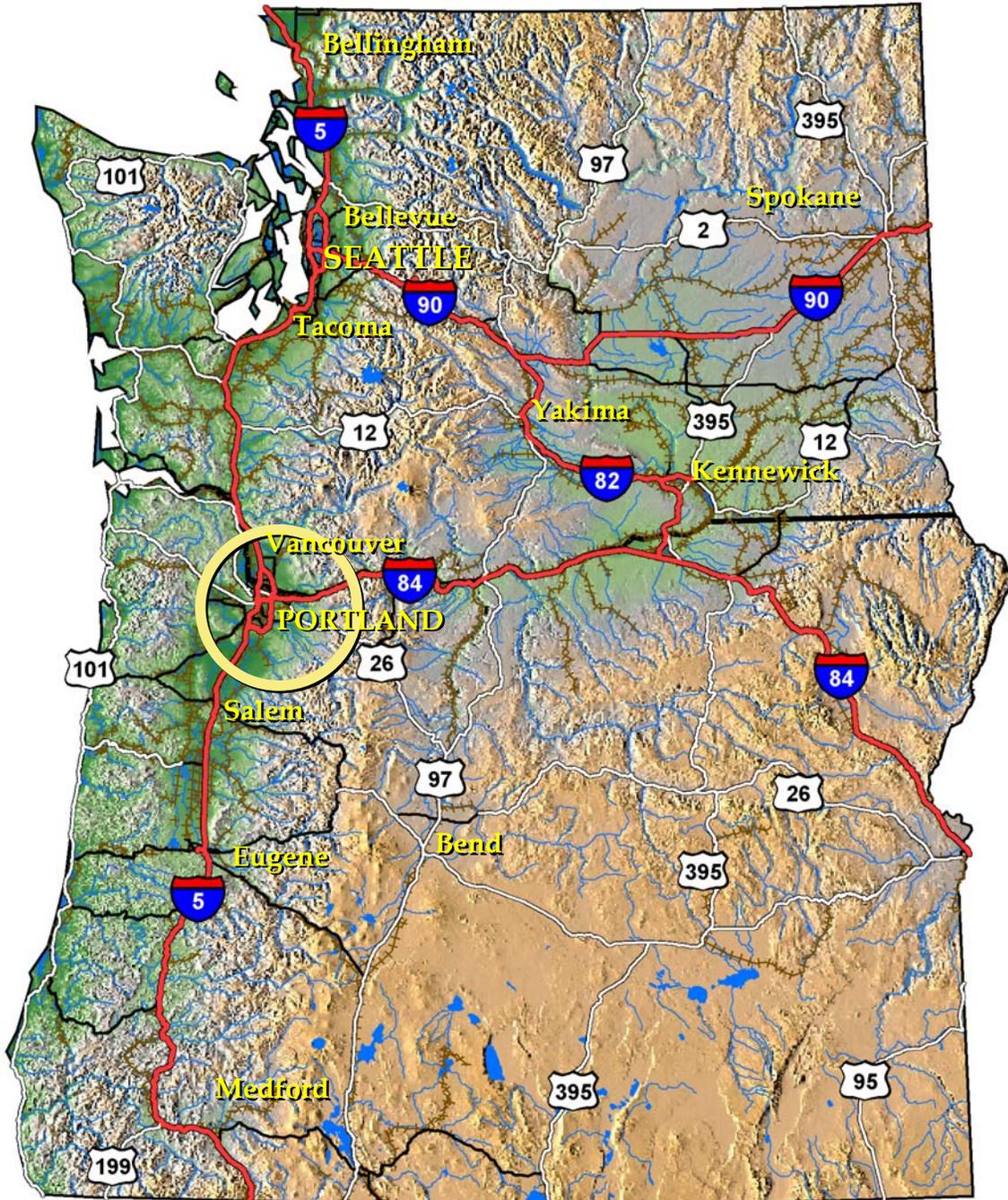


Figure 7 shows Oregon and Washington counties and highways affected by congestion at the I-5 and I-205/Columbia River highway crossings.<sup>8</sup> The figure shows the counties (in gray scale) that ship or receive truck freight using the crossings; the darker gray the county, the more tonnage is shipped or received from that county. (Commodities shipped to and from British Columbia are assigned to Whatcom County.) The figure also shows the highways (in color) that trucks use to move to and from these counties; the wider and redder the bandwidth of the highway line, the greater the truck tonnage carried on the highway.

## Congestion at the Rail Crossing Has a Major Impact on Rail Shippers

The rail junction at Portland-Vancouver is a critical link in the Pacific Northwest rail system. Congestion at the rail crossing also has a major impact on Oregon and Washington State rail shippers.

Figure 8 shows freight-rail tonnage on the major rail lines serving Oregon and Washington, including those passing through the Portland-Vancouver rail triangle.<sup>9</sup> The wider and redder the bandwidth of the rail line, the greater the commodity tonnage carried on the rail line. (The figure shows commodity or net tonnage, not gross tonnage, which would include the weight of the locomotive and railcars.)

Figure 9 highlights Oregon and Washington counties and highways affected directly by rail congestion in the Portland-Vancouver triangle. The figure shows the counties (in gray scale) that ship or receive rail freight that moves into, out of, or through the congested Portland-Vancouver rail triangle; the darker gray the county, the more tonnage is shipped or received from that county. (Commodities shipped by rail to and from British Columbia are assigned to Whatcom County.)

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*"The rail system is our life blood. We have to be able to move our grain."*

Grain shipper, commenting at an I-5  
Partnership public meeting

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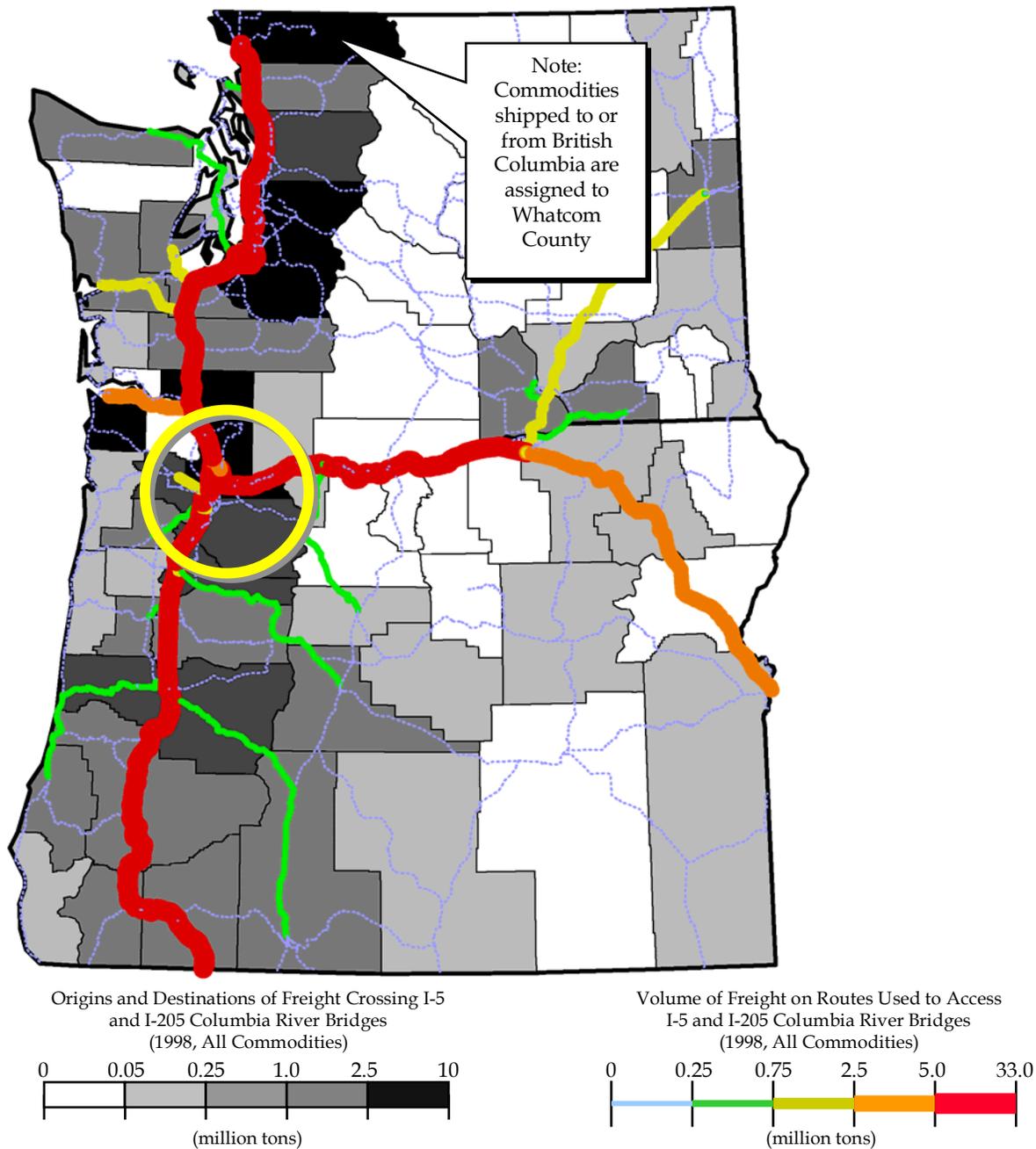
Rail congestion at Portland-Vancouver has a major impact on Puget Sound shippers, Washington State's Columbia River ports, and the Portland-Vancouver area. The congestion affects shipments of grain, lumber, and minerals moving west by rail from Montana, Idaho, eastern Washington, and central and eastern Oregon for export through the ports. It also affects intermodal container shipments of merchandise moving east by rail from Seattle-Tacoma, wood products from western Washington moving south and east, and automobiles being carried inland from Portland.

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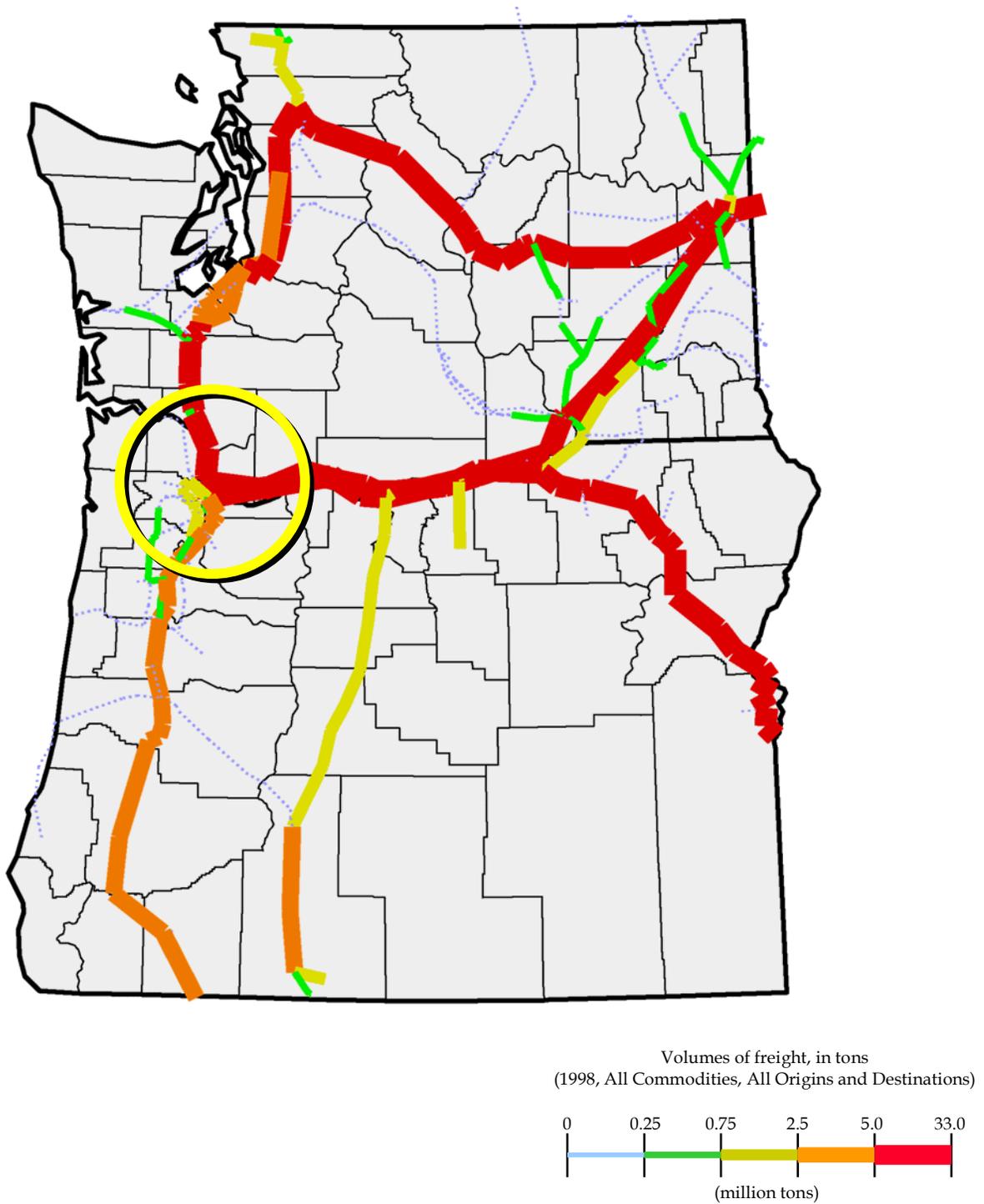
<sup>8</sup> Source: Cambridge Systematics, Inc., based on commodity flow and truck-routing data provided by Reebie Associates from their 1998 TRANSEARCH database.

<sup>9</sup> Source: Cambridge Systematics, Inc., based on commodity flow and rail-routing data provided by Reebie Associates from their 1998 TRANSEARCH database.

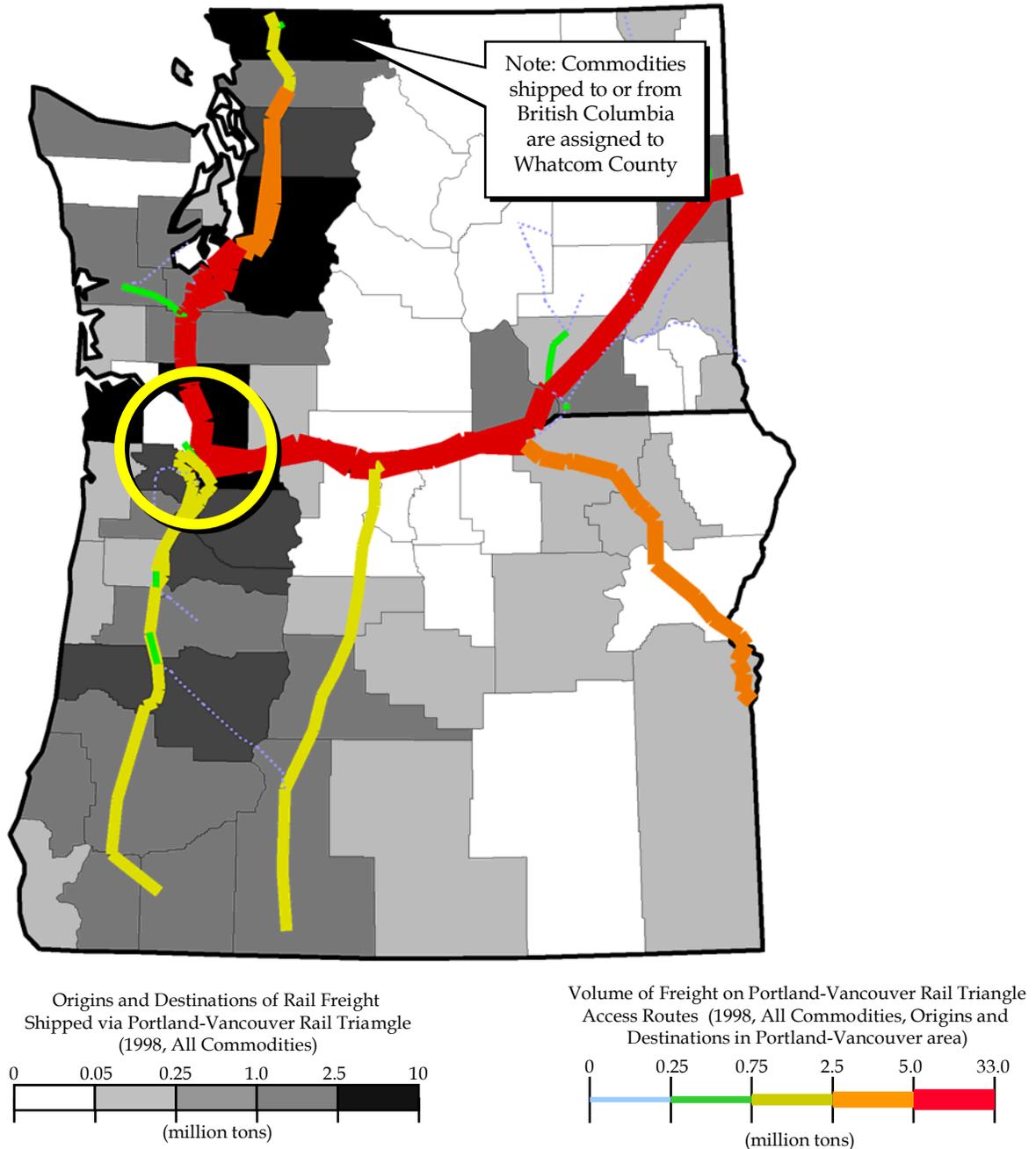
**Figure 7. Oregon-Washington Origins and Destinations for Truck Freight Crossing the I-5 and I-205 Bridges at Portland-Vancouver**  
*With Tonnage of Freight on Truck Routes Used to Access Bridge*



**Figure 8. Volume of Freight on Pacific Northwest Rail Network**



**Figure 9. Oregon-Washington Origins and Destinations for Rail Freight  
Using the Portland-Vancouver Rail Triangle**  
*With Tonnage of Freight on Rail Lines Used to Access Triangle*



## **Congestion at the Crossings Impedes Oregon and Washington Trade with National Markets**

The population and economy of Oregon and Washington are small compared to the other economic regions of the United States. Transportation is critical for Pacific Northwest businesses moving and selling products to the larger California and Eastern markets. Figure 10 shows the relative sizes of the national trade regions. The shaded circles show the relative population size of the major metropolitan areas, the ovals indicate the geographic scope of the multi-state trade regions, and the columns show the relative size of the regional economies measured as a share of national gross domestic product (GDP). (Florida, shown in the dotted-line oval, is usually counted as part of the Atlanta-Southeast trade region, but is emerging as a major, new, trade and distribution center for the Caribbean and Latin America.)

Figure 11 shows the flows of truck freight between the Oregon-Washington region and the rest of the United States; the wider the bandwidth of the highway line, the higher the tonnage of truck freight moving over that highway. The ovals delineate the multi-state trade regions. The small circle shows the location of the I-5 and I-205/Columbia River highway crossings. The density of truck freight on I-5 and I-84 shows the importance of these trade routes to Oregon and Washington businesses and the influence of congestion at the I-5/Columbia River highway crossings.

## **Congestion at the Crossings Weakens the Region's Competitiveness in Global Markets**

The Pacific Northwest is very reliant on international trade. With exports worth \$45 billion per year, Oregon and Washington are more dependent on international trade than the United States as a whole. Figure 12 tracks the value of exports from Oregon and Washington as a percentage of gross regional product compared to the value of exports from the United States as a percentage of gross domestic product.

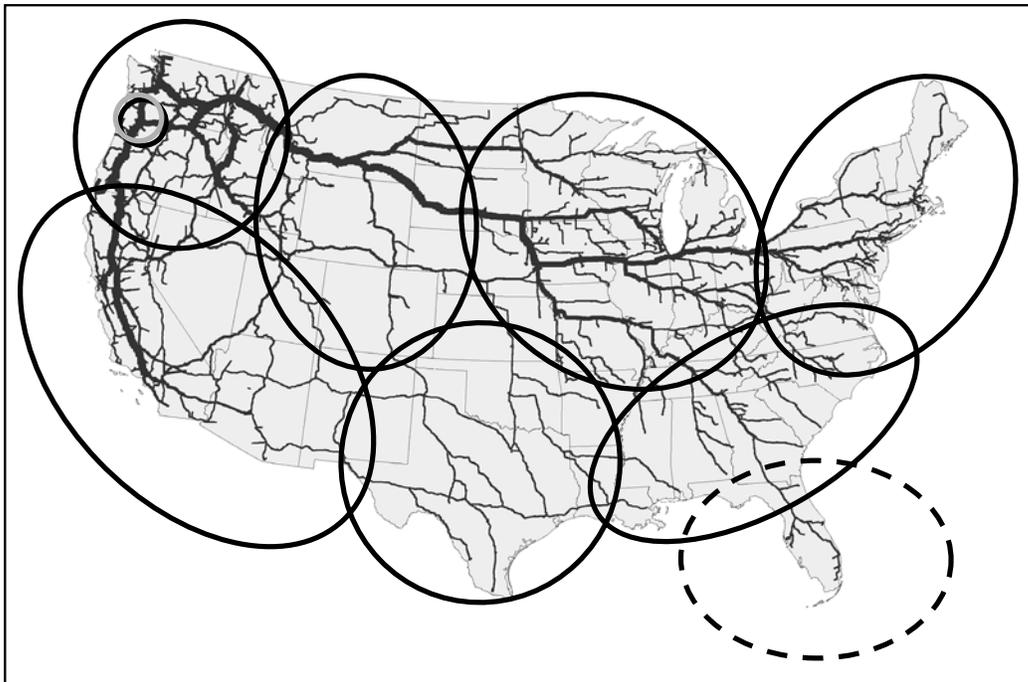
Good access to Pacific Northwest ports and airports—measured in travel time, cost, and reliability—gives the region's businesses a competitive edge in reaching global markets. However, the Portland-Vancouver area's preeminent position as an export region is being undermined by global competition and rising transportation costs.

Over half of the Pacific Northwest's export trade today is with Pacific Rim countries; much of it is trade in grain that moves through Portland-Vancouver and other Columbia River ports. Grain export sales are particularly sensitive to cost. Differences of a few cents a ton affect buyers' choices among global suppliers. Highway and rail congestion at the Portland-Vancouver crossings increases the cost and decreases the reliability of export shipments, weakening the competitive position of businesses selling to overseas markets.

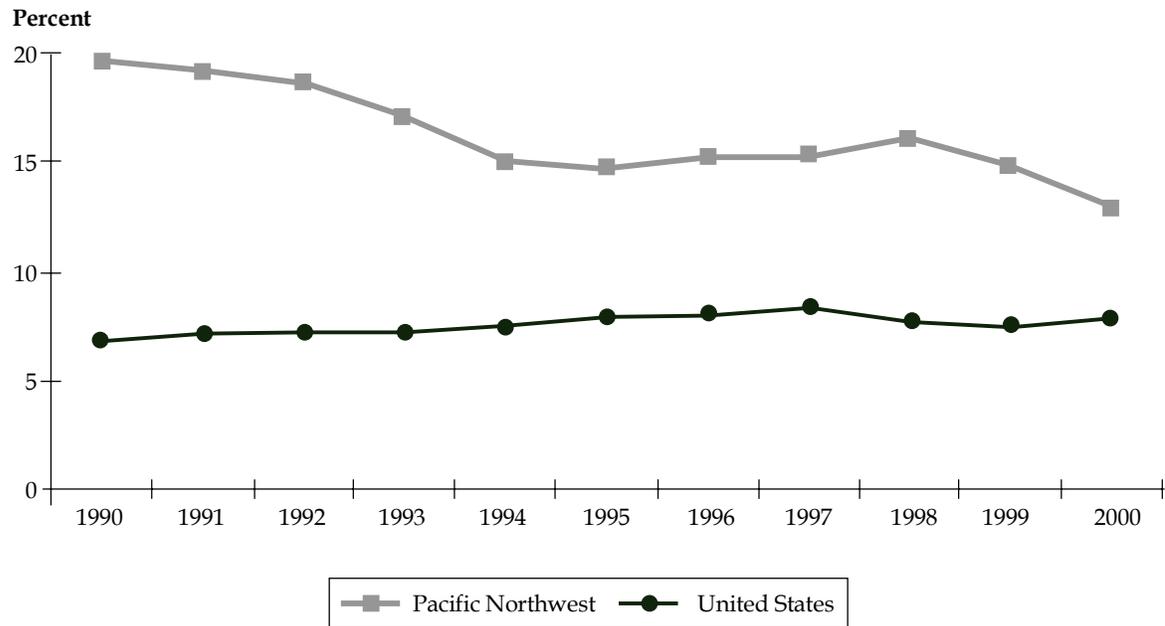
**Figure 10. Gross Regional Products of Eight U.S. Trade Blocs  
With Major Population Centers**



**Figure 11. National Freight Flows for Goods with Origins or Destinations  
in Oregon or Washington**



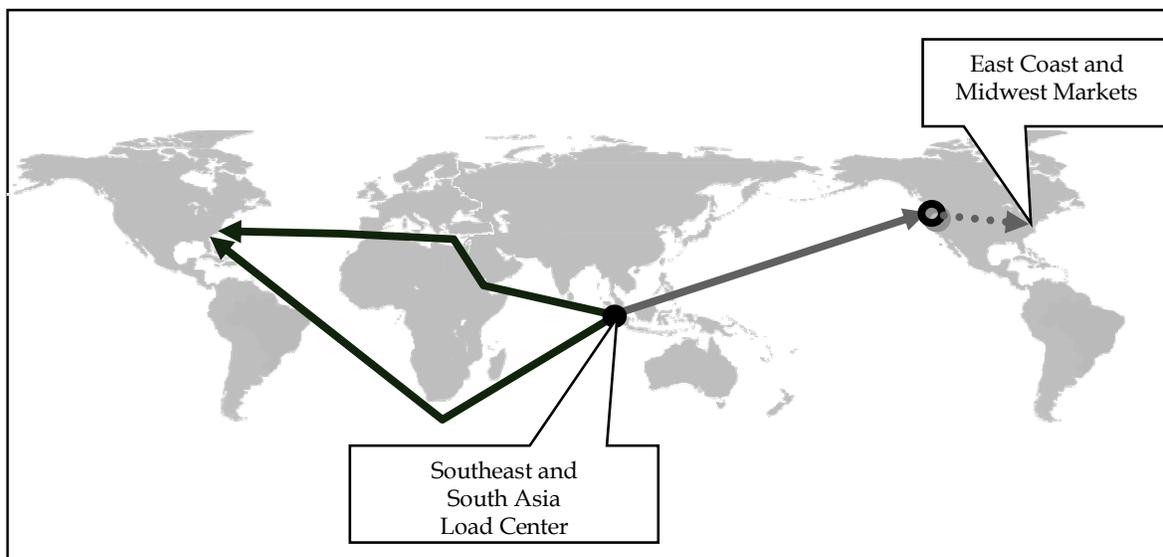
**Figure 12. Oregon-Washington Exports as a Percentage of Oregon-Washington Gross Regional Product and U.S. Exports as a Percentage of U.S. Gross Domestic Product**



The ports of Seattle and Tacoma have been major transshipment centers for imported merchandise moving from the Pacific Rim to Midwest and East Coast markets. About half of rail shipments originating from Seattle-Tacoma travel south through Portland-Vancouver, then eastward along one of the Columbia River Gorge rail lines.

The Pacific Northwest remains a major trading partner for Korea, Japan, China, and Taiwan. But the Pacific Northwest is no longer on the shortest, most cost-effective route from the growing, global load centers of South and Southeast Asia to the major United States Midwest and East Coast markets. As illustrated in the schematic diagram in Figure 13, when the cost of transporting goods by land across the United States is considered, shipping routes via the Cape of Good Hope or the Suez Canal and the Atlantic Ocean are now competitive with Pacific routes. The Pacific Northwest ports will be competing more and more with the ports in New York, New Jersey, and the Southeast United States as well as the ports of Los Angeles-Long Beach. For Oregon and Washington ports to maintain or increase their share of the global merchandise trade, access to and from its ports must be as reliable and cost-effective as possible.

**Figure 13. Shipping Routes from Southeast and South Asia Load Centers to East Coast and Midwest Markets in U.S.**



### **Regional Growth and Increasing Demand for Freight Transportation Will Magnify the Economic Impacts of the Crossing Choke Points**

The region has significant potential for economic expansion. Regional economic growth has averaged 3.4 percent per year over the last 20 years, outpacing the United States average in the last decade. Figure 14 compares the growth of the Oregon-Washington economy to the United States average. Regional employment also has grown faster than the national average.

Despite a recent slowdown in the economy, the economy of the Pacific Northwest is forecast to match or exceed the national average over the next 20 years. With this growth will come increased demand for reliable and cost-effective freight transportation. At a moderate, national economic growth rate of 3.1 percent per year, import-export freight tonnage could double by 2020 and domestic freight tonnage could increase by about 70 percent.<sup>10</sup>

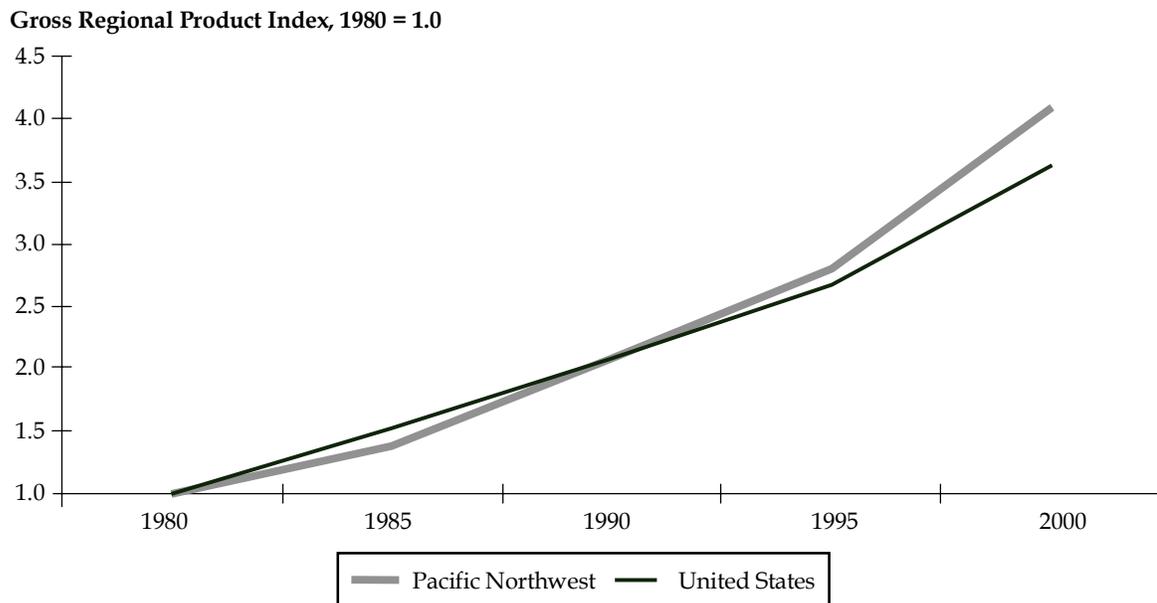
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*"Traffic on I-5 makes it difficult for us to do business in Washington. It takes too long to get there and back."*  
Portland freight shipper

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<sup>10</sup>Federal Highway Administration, Freight Analysis Framework Project estimates, December 2002.

**Figure 14. Growth in Oregon-Washington Gross Regional Product (GRP) and U.S. Gross Domestic Product (GDP)**



This growth will strain the national freight transportation system. Over the last two decades, passenger and freight movements on the nation's transportation system have increased dramatically. Vehicle-miles-of-travel (VMT) by passenger cars and trucks grew by 72 percent while construction of new road-lane-miles grew by only one percent.<sup>11</sup> Over the same period, ton-miles-of-freight moving over the nation's railroads increased by 55 percent while rail system mileage actually declined because unused track was removed.<sup>12</sup>

The Portland-Vancouver area and the Pacific Northwest can expect growth in freight volumes to occur at rates faster than the national average, with import-export freight tonnage growing 123 percent between 1998 and 2020 and domestic freight tonnage increasing by 76 percent.<sup>13</sup> If the forecast growth in freight is not accompanied by increases in capacity, worsening congestion will make supply chains less reliable, drive up the cost of labor and materials, and undermine the competitive position of Pacific Northwest businesses.

<sup>11</sup>Federal Highway Administration, *Highway Statistics*.

<sup>12</sup>Eno Foundation.

<sup>13</sup>Federal Highway Administration, Freight Analysis Framework Project estimates, December 2002. For additional detail and comparative information for other regions see <http://www.ops.fhwa.dot.gov/freight/adfrmwrk/index.htm>.