Transportation Equipment and Steel Industry

Standard Industry Classification Codes:	33, 37
Oregon and Washington Employment (2000):	144,846
Oregon and Washington Value of Production (2000):	$9.8 billion

Industry Trends

The Pacific Northwest is home to one of the greatest concentrations of transportation equipment manufacturers in the United States, including Boeing and Paccar in Seattle, and Freightliner and Gunderson in Portland. Suppliers that support the aerospace, truck, and railcar manufacturing industries, including aluminum and steel producers, are located throughout the region.

The transportation equipment industry tends to be very cyclical, rising with economic upturns and falling during recessions. After a decade of robust growth, Boeing, the region's largest employer in the transportation equipment industry, is confronting a sharp decline in jet aircraft orders. In contrast, a major railcar manufacturer, Gunderson, has recently noticed an increase in railcar orders despite the economic slowdown. Overall, production levels for transportation equipment in the Pacific Northwest are declining modestly while employment in the industry is falling more rapidly. As the United States economy recovers, orders for trucks and railcars produced in the region are expected to increase.[20] However, the timing of an improvement in Boeing's passenger aircraft sales is less certain because of strong competition and the current glut in the market created by record orders for new planes in the 1990s.

Importance of Portland-Vancouver Crossings to Industry

The transportation equipment sector requires reliable, low-cost access to suppliers and markets located throughout the Pacific Northwest to remain cost-competitive and viable. Parts and supplies are either destined for the Portland-Vancouver area or must transit the area to reach manufacturers in the Puget Sound region. For example, shipments carried by truck from the east or from ports in Washington use I-5 to access the railcar and truck plants in the North Portland industrial complex. The Boeing parts facility in Gresham, Oregon relies on the I-205 bridge to transport supplies to production facilities in the Seattle area, but congestion on that bridge is worsening as growth in the corridor adds new trips and the I-205 bridge draws overflow from I-5.

[20] For example, Freightliner recently consolidated a Canadian production line into its Portland plant. This is a positive indicator for the future of the Portland plant.

Figure 28 shows the approximate distribution of transportation equipment shippers and receivers and the associated truck moves by value within Oregon and Washington. The figure also shows truck shipments of transportation equipment that cross the I-5/ Columbia River bridge. The broad bandwidth of I-5 underscores the importance of the region's ports for import and export of transportation equipment products. The Port of Tacoma is the most important origin and destination for transportation equipment and metal products moved over the I-5/Columbia River bridge by truck. Commodities, including rolled steel, are imported through Tacoma for use by Portland area manufacturers.

Figure 29 shows the corresponding distribution of transportation equipment shippers and truck moves by tonnage (not value as in the prior figure) across the West Coast. Again, the figure shows just those truck shipments of transportation equipment that move across the I-5/Columbia River bridge. The figure reveals the strong interdependence of businesses along the I-5 corridor in Washington and Oregon as well as the strong links between the Oregon-Washington transportation equipment industry and the Southern California aerospace and transportation equipment industries.

The final figure in the series, Figure 30 shows the movement of transportation equipment between Oregon-Washington counties and the western United States. The figure shows counties of origin and destination for products moving through the Portland-Vancouver rail triangle, and the routes used by these products to access the triangle. Many of the transportation equipment industry's finished products are distributed by rail (or air, not captured in these diagrams), rather than by truck. Southern California, the Midwest, and the Port of Houston are primary destinations for transportation equipment passing through the Portland-Vancouver rail network; parts and supplies come from Chicago and east.

Effects of Portland-Vancouver Choke Points on Industry

The manufacturers of transportation equipment require a reliable stream of components and parts to produce aircraft, trucks, ships, and railcars in a timely and cost-effective manner. Congested rail and highway bottlenecks are making the region's transportation system less dependable and are triggering delays that affect the underlying competitiveness of Oregon's and Washington's substantial transportation equipment industry. With strong domestic and foreign competition, the region's transportation equipment industry must remain technically innovative and keep costs low to stay competitive. Growing congestion undermines these efforts.

Parts used in the manufacture of transportation equipment are delayed by congestion at the Portland rail yards. In addition, trucks have difficulty during the peak-travel periods accessing intermodal transfer facilities due to roadway congestion. Congestion in Portland-Vancouver reduces the dependability of deliveries and shipments, adding to business costs in the region.

The case study of Gunderson, below, demonstrates the importance of rail and trucking to maintain the supply streams that keep the company's North Portland production facility running. With its North Portland location, Gunderson is affected first-hand by rail capacity restrictions and congestion on the Columbia River bridges and I-5.

Figure 28. Oregon-Washington Origins and Destinations for Transportation Equipment and Steel Products Crossing the I-5 and I-205 Bridges at Portland-Vancouver
With Value of Freight on Truck Routes Used to Access Bridge

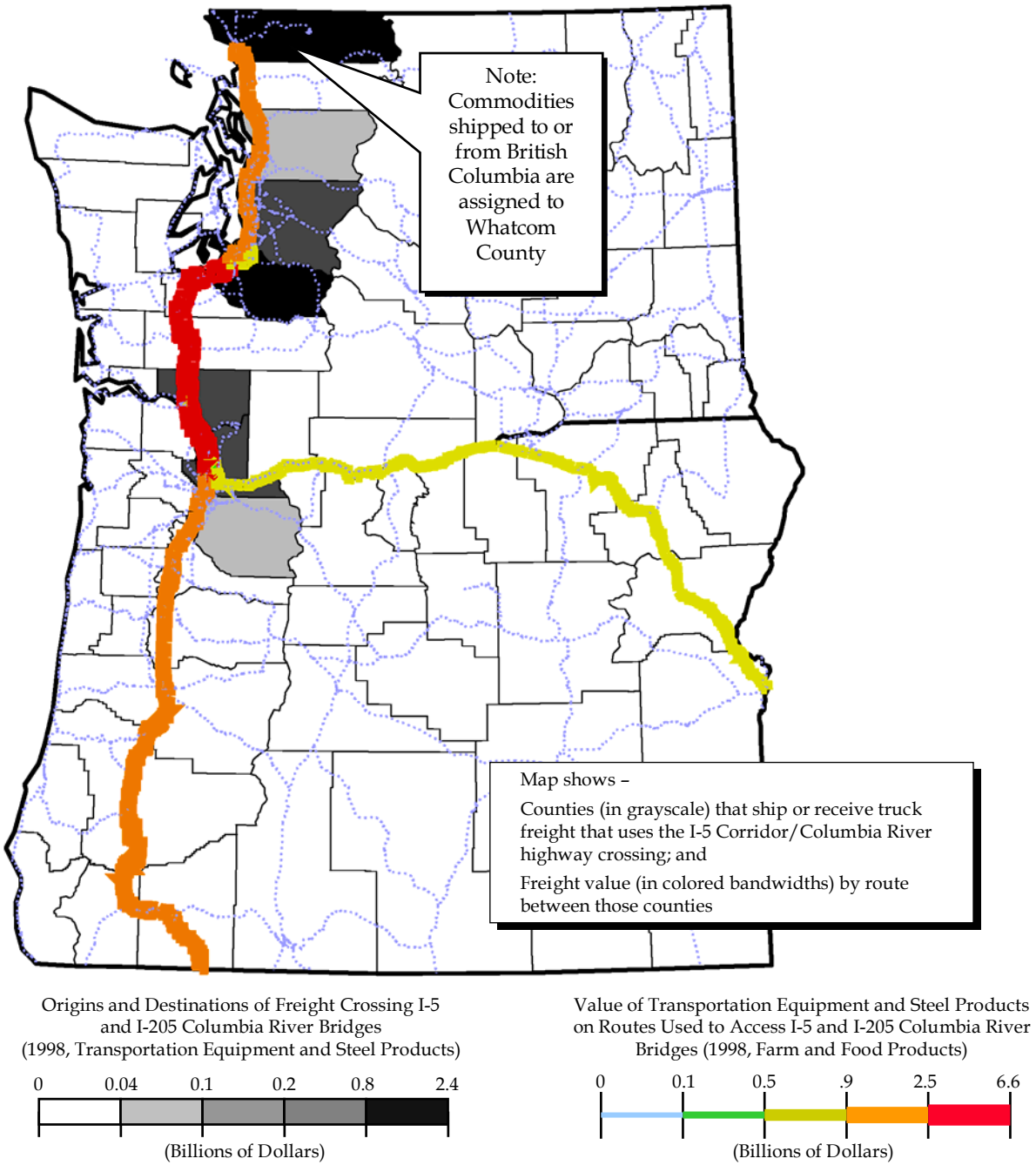


Figure 29. West Coast Origins and Destinations for Transportation Equipment and Steel Products Crossing the I-5 and I-205 Bridges at Portland-Vancouver
With Tonnage of Freight on Truck Routes Used to Access Bridge

Map shows –

Counties (in grayscale) that ship or receive truck freight that uses the I-5 Corridor/Columbia River highway crossing; and

Truck tons (in colored bandwidths) by route between those counties

Origins and Destinations of Freight Crossing I-5 and I-205 Columbia River Bridges
(1998, Primary Metal and Transportation Equipment)

0 0.05 0.25 1.0 2.5 10

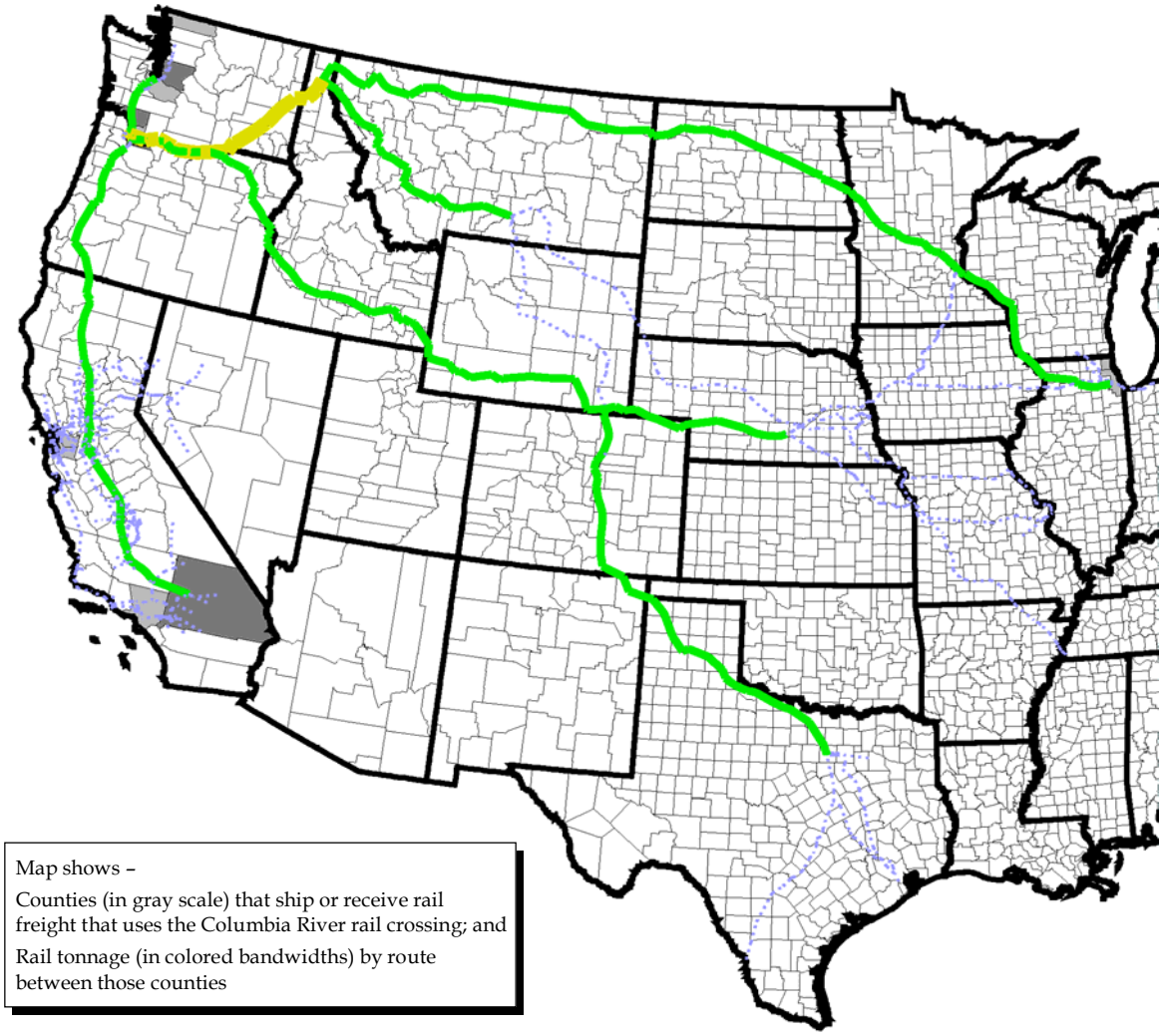
(million tons)

Volume of Transportation Equipment and Steel Products on Routes Used to Access I-5 and I-205 Columbia River Bridges
(1998, Farm and Food Products)

0 0.25 0.75 2.5 5.0 33.0

(million tons)

Figure 30. Western United States Origins and Destinations for Transportation Equipment and Steel Products Using the Portland-Vancouver Rail Triangle
With Tonnage of Freight on Rail Lines Used to Access Triangle



Transportation Equipment Case Study:
Gunderson, Inc.

Locations: Portland, Springfield, and Tri-Cities (Washington).

Products: Rail car manufacturing.

Background: Gunderson is a builder and refurbisher of freight cars and marine barges, employing about 1,300 people at its Portland, Springfield, and Tri-Cities locations. Innovations in its railcar designs have resulted in robust sales over the past several years. The company has produced more than 100,000 railcars since 1960.

Product Shipping Processes: Heavy castings and other material inputs for Gunderson's Portland manufacturing plant are imported by rail from Chicago and the East via the BNSF line on the north side of the Columbia River. Twenty containers per month arrive at the Port of Tacoma and are transported to Gunderson by rail or by truck. A local Oregon Steel plant supplies Gunderson by rail. Finished rail car products are shipped to customers from Gunderson's Portland facility.

Effects of I-5/Columbia River Crossing Congestion on Company: Inbound rail shipments (e.g., those from the East and the Port of Tacoma) must contend with rail congestion spilling out of the Portland-Vancouver rail triangle to reach the Gunderson facility. Most truck deliveries arrive from the east via I-84, but still are affected by I-5/Columbia River-related congestion at the Columbia Boulevard and North Portland interchanges and at the I-5 and I-84 interchange.

Impacts on Competitiveness: Rail and roadway congestion reduces the reliability and predictability of deliveries and shipments, raising business costs.

High-Technology Industry[21]

Standard Industry Classification Codes:	36, 38
Oregon and Washington Employment (2000):	85,333
Oregon and Washington Value of Production (2000):	$34.3 billion

Industry Trends

A strength of the Pacific Northwest is that it is a "creative economy"—a region that cultivates innovation and successfully attracts well-educated people. These attributes helped guide a spectacular high-technology boom in the region during the 1990s. The growth was led by semiconductors and semiconductor research in the Portland-Vancouver area and software development in the Puget Sound region. By 2000, two high-technology-related industries—electronics and scientific instruments—accounted for over 11 percent of the entire Pacific Northwest's economy, up from just over one percent in 1990.

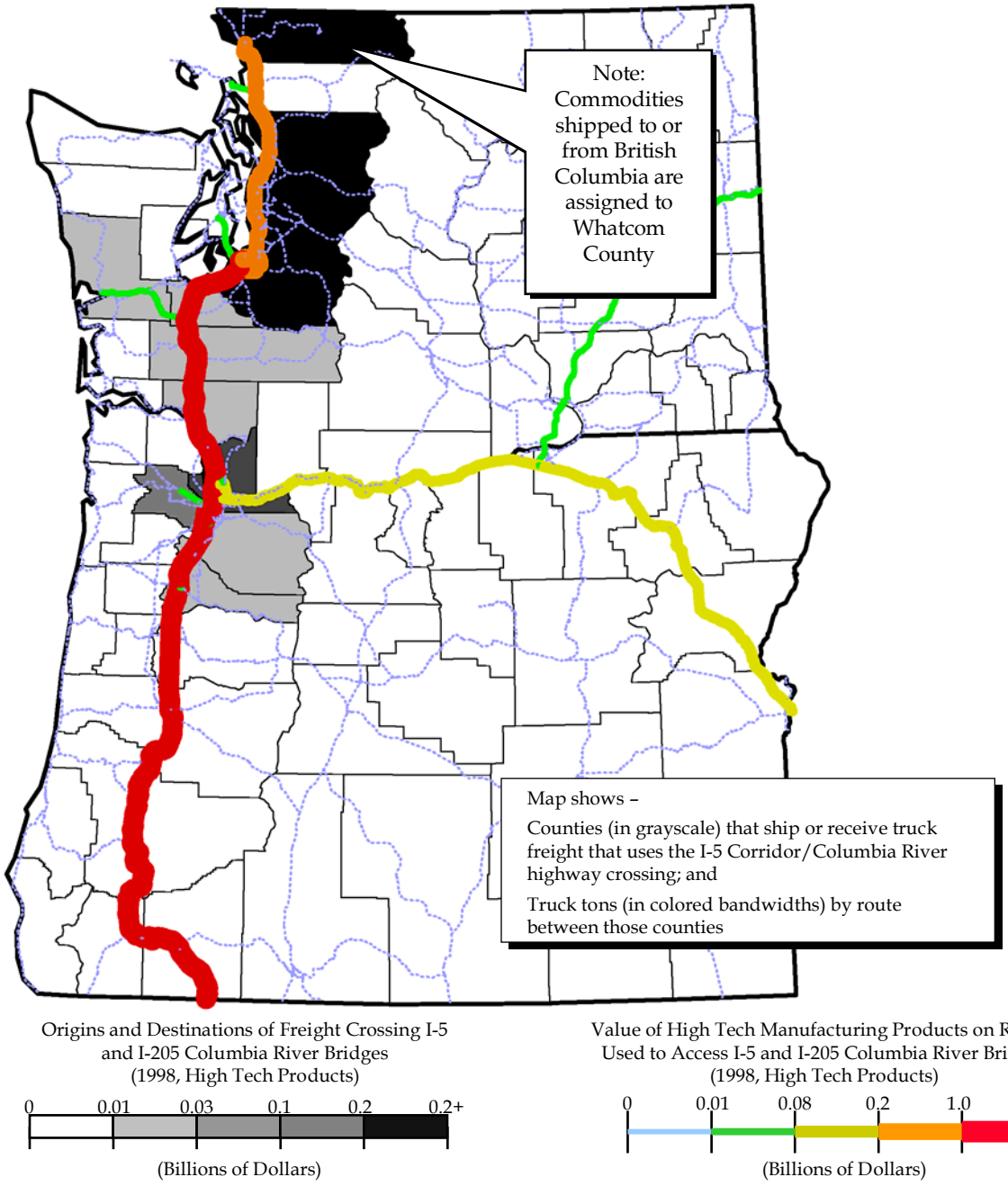
While growth in the high-technology sector in the Pacific Northwest has slowed due to a decline in worldwide demand and a shift in commodity production to overseas markets, the high-tech industry is expected to be a long-term growth engine for the region. The resumption in growth is expected to be led by a new generation of semiconductors, environmental technologies, software, flat panel and infrared displays, and biotechnology.

Importance of Portland-Vancouver Crossings to Industry

Due to their relatively high values and low weights, high-tech goods are generally shipped by truck or air. The value of high-tech goods that cross the I-5/Columbia River bridge exceeds $1.5 billion per year. Figure 31 maps the distribution of high-tech manufacturing shippers and receivers and the associated truck moves by value within Oregon and Washington. Many of the counties that most intensively ship high-tech goods over the I-5/Columbia River bridge are in the Puget Sound area. The figure shows just those truck shipments of high-tech goods that move across the I-5/Columbia River bridge. The gray scale indicates the total commodity value shipped and received by each county, and the bandwidth and color of the lines indicate the value of commodities moving by truck along the major highways.

[21] The high-technology industry analyzed in this section covers the electronics industry and the scientific instruments industry, selected because these sectors correspond to the Standard Transportation Commodity Code industry classifications used for analyzing the movement of goods. The American Electronics Association uses a broader definition of high-technology that includes high-tech services such as software. The AEA's classification shows 225,200 high-tech employees in Oregon and Washington in 2001.

Figure 31. Oregon-Washington Origins and Destinations for High-Tech Manufacturing Products Crossing the I-5 and I-205 Bridges at Portland-Vancouver *(With Value of Freight on Truck Routes Used to Access Bridge)*



The I-5 corridor connects suppliers and manufacturers, but also provides critical access to the region's international airports. In 2001, over $850 million in Oregon exports, much of which was generated by the high-tech industry, was shipped overseas from the Seattle-Tacoma (Sea-Tac) International Airport gateway. Even more of Oregon's high-tech exports traveled via domestic flights from Portland International Airport to other major international air-cargo gateways. Due to the frequency of international flights and availability of cargo carriers at larger out-of-state airports, the value of Oregon exports departing from Sea-Tac, Los Angeles International Airport, and San Francisco International Airport exceeded those leaving from Portland International Airport. In 2001, the value of Oregon exports leaving the country through the Los Angeles International Airport gateway was $1.2 billion, almost two times greater than the $616 million of Oregon goods exported through the Portland International Airport. The reliable movement of high-tech goods by truck from Oregon manufacturers to Portland International Airport, Sea-Tac, and even the more distant gateway airports on I-5 is critical to the future success of the industry in the region.

Figure 32 shows the linkages between the Oregon-Washington high-tech industry and suppliers and markets in San Francisco and Los Angeles. As before, the figure shows just those truck shipments of high-tech goods that move across the I-5/Columbia River bridge. The gray scale indicates the total commodity value shipped and received by county, and the bandwidth and color of the lines indicate the value of commodities moving by truck along the major highways.

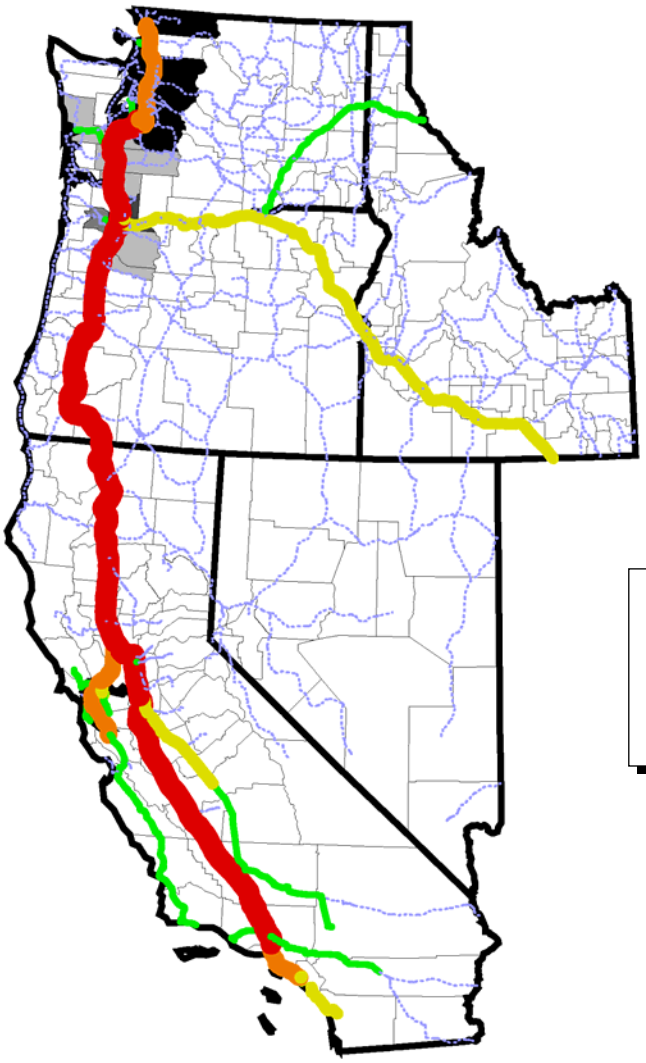
Effects of Portland-Vancouver Choke Points on Industry

High-tech companies are very dependent on air cargo. However, congestion makes it difficult to reliably reach the Portland International Airport from Washington County employment centers such as the Westside technology area. To ensure on-time deliveries, companies have resorted routinely to shipping finished products to the airport during off-peak, midday hours.

In an industry that pioneered low-inventory, just-in-time manufacturing, congestion is making logistics coordination between labor and parts more difficult. Companies are increasing night deliveries to avoid congestion. While this improves the reliability of deliveries, labor costs increase as staffing levels must be maintained during off hours.

Congestion on the I-5/Columbia River bridge adds to business costs in the region by reducing the size and quality of the labor pool that can cost-effectively access places of employment. For example, commuters from relatively affordable residential areas in fast-growing Clark County, Washington face a long, costly, and unpredictable commute to jobs at Westside technology companies. I-5 congestion bifurcates the labor market into smaller subregional markets within the Portland-Vancouver area as workers seek jobs closer to their homes. To continue drawing from a large labor pool, employers must increase wages to maintain their attractiveness in the face of the longer commutes.

Figure 32. West Coast Origins and Destinations for High-Tech Manufacturing Products Crossing the I-5 and I-205 Bridges at Portland-Vancouver
With Value of Freight on Truck Routes Used to Access Bridge

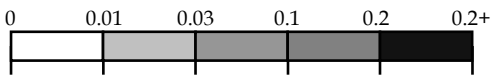


Map shows –

Counties (in grayscale) that ship or receive truck freight that uses the I-5 Corridor/Columbia River highway crossing; and

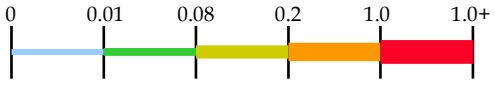
Truck tons (in colored bandwidths) by route between those counties

Origins and Destinations of Freight Crossing I-5 and I-205 Columbia River Bridges
(1998, High Tech Products)



(Billions of Dollars)

Value of High Tech Manufacturing Products on Routes Used to Access I-5 and I-205 Columbia River Bridges
(1998, High Tech Products)



(Billions of Dollars)

High-Technology Case Study
Intel

Location: Hillsboro, Oregon (and other locations in Oregon and Washington).

Products: Semiconductor research and semiconductor production.

Background: Intel is Oregon's largest private employer. In 2001, the company accounted for three percent of employment, 4.4 percent of payrolls (non-farm wages and salary), and six percent of total state output. At its Hillsboro facility, Intel produces extremely high-value semiconductors, the "brains" that enable computers to process information and accept commands. While lower-end "commodity" semiconductors are increasingly being produced overseas in Southeast Asia and Latin America, Intel researches and produces its most advanced products in the Portland area. These include a 300 millimeter chip, currently under development, that will allow computers in the future to operate at much higher speeds. Growth at Intel was a major contributor to the overall expansion of the Oregon economy during the 1990s.

Product Shipping Processes: Intel, with its high-value, low-weight production of semiconductors, is dependent on air cargo. Finished products are shipped by truck from Hillsboro to Portland International Airport (PDX). From PDX, air-freight carriers transport semiconductors to locations throughout the United States. Due to limited international service from Portland, semiconductors destined for overseas markets often transit through Los Angeles International, San Francisco International, or Seattle-Tacoma International Airport.

Effects of I-5/Columbia River Crossing Congestion on Company: Intel ships finished products to PDX early in the afternoon to ensure they arrive before the 5:30 p.m. scheduled departures of over-night express carriers. The early shipments are required because the travel times of trips in the North Portland area are unpredictable, due largely to I-5/Columbia River congestion. Incidents on I-5/Columbia River such as breakdowns, accidents, and the raising of the Columbia River Bridge cause motorists and trucks to use surrounding arterials to reach I-205 in order to avoid prolonged delays and resume their trips. These arterials—the same arterials used by Intel to reach the airport—become clogged with traffic. Intel ships early to avoid this congestion, which is worse during peak late afternoon periods, and to allow sufficient time should heavy congestion be encountered. Congestion also is pushing delivery trucks onto back roads to reach Intel and other technology companies, creating safety concerns, and has made just-in-time coordination between labor and parts deliveries more difficult. To increase reliability, companies increasingly use night deliveries.

Impacts on Competitiveness: While high-tech companies can ship goods to the airport reliably during early afternoon, off-peak-travel periods today, higher traffic volumes in the future will force "peak spreading," making early afternoon travel more congested. The growing congestion and accompanying increase in accidents and auto breakdowns will make shipping during the early afternoon less reliable and predictable. As reliability and predictability deteriorate, businesses must compensate by allowing more driver time for shipping or paying higher labor costs for night shipping and receiving. Both strategies add to business costs.

High-Technology Case Study:
Hewlett Packard

Location: Corvallis, Oregon (and other location in Washington State, Idaho, and British Columbia).

Products: Inkjet printers.

Background: Corvallis, located between Salem and Eugene, is home to a Hewlett Packard design and fabrication facility that employs about 4,000 people. This facility produces advanced inkjet printers and is the second-largest employer in the community after Oregon State University.

Product Shipping Processes: Finished inkjet printers and cartridges are shipped by truck to airports in Portland, Seattle, and Vancouver (British Columbia). I-5/Columbia River and I-205 are the primary highways used to reach these airports.

Effects of I-5/Columbia River Crossing Congestion on Company: Congestion and delays at the I-5/Columbia River crossing increase the travel time between Corvallis and the airports and make it more difficult to predict travel time reliably. This increases the risk that trucks will miss delivery deadlines for domestic and international air cargo flights.

Impacts on Competitiveness: Congestion on I-5 disrupts the delivery of parts and finished goods, adding to business costs. As travel times between Corvallis and key regional airports becomes less predictable, Hewlett Packard must pay truck drivers for additional "buffer" travel time to ensure that they hit delivery window times consistently.

Distribution and Warehousing Industry

Standard Industry Classification Codes:	42, 50
Oregon and Washington Employment (2000):	350,875
Oregon and Washington Value of Production (2000):	$28.6 billion

Industry Trends

Distribution is part of Portland-Vancouver's economic legacy. The area developed as the distribution center for the Pacific Northwest because of its unique geographic advantages. Portland-Vancouver, as well as nearby Longview and Kalama, Washington, have access to interior states via a navigable waterway and sea-level rail and highway routes, giving these ports an advantage over other West Coast ports. Water access, combined with its location in the major valley of a mountainous region and proximity to the Pacific Ocean, make the Portland-Vancouver area an ideal distribution hub. As the rail, water, and roadway network have developed around Portland-Vancouver, the distribution industry in the metropolitan area has grown, attracting distributors that today serve Oregon, Washington, Idaho, the western portions of Montana, and the northern parts of California.[22] In recent decades the distribution and warehousing industry has expanded to accommodate a large influx of new residents into the region. As the Pacific Northwest continues to grow in population, the distribution industry is expected to expand commensurately.

The industry also has been greatly reshaped by the introduction of just-in-time manufacturing and retailing. Just-in-time (JIT) is a "pull" production system that involves scheduling inputs to minimize inventory. Within a pull system, production starts when a buyer has requested a product. Parts and components to build the product arrive at the assembly line only as they are needed. JIT has been adopted by companies worldwide as a way to minimize inventory costs, resulting in lower business expenses and higher profits. Retailers such as Wal-Mart use JIT to minimize merchandise inventories by monitoring sales and replenishing shelves as products are sold. Through JIT, companies lower the financial costs associated with carrying larger inventories and can use their real estate assets more intensively for productive purposes such as manufacturing or sales, rather than having to set aside large amounts of floor space for inventory. However, JIT depends critically on efficient transportation systems to ensure the frequent and reliable delivery of goods.

[22] One measure of Portland-Vancouver's role as a distribution and transshipment center is the ratio of wholesale to retail sales. The City of Portland, in its Economic Development Strategy (Summer 2002) reported that in 1992 the Portland-Vancouver ports generated $4.36 in wholesale trade for each $1 in retail trade. The ratio was somewhat higher than Seattle-Tacoma's ratio of $3.33, but both areas were significantly higher than the national average at $1.71. The ratios will have changed in recent years, but the numbers indicate the importance of distribution to the regional economy.

Importance of Portland-Vancouver Crossings to Industry

On an annual basis, over 5 million tons of goods tied to the distribution and warehousing industry cross the I-5/Columbia River bridge by truck between Portland and Vancouver. These flows represent a wide range of shipments, including goods bound for retailers and manufacturers, containerized intermodal merchandise (most of which is classified into a "miscellaneous shipments category" that is included here as part of the "distribution" sector), and business supplies.[23]

Figure 33 shows the origins, destinations, and flow patterns of distribution and warehouse goods moving across Oregon and Washington. The figure shows just those truck shipments of distribution and warehousing goods that cross the I-5/Columbia River bridge. The gray scale indicates the total commodity value shipped and received by county, and the bandwidth and color of the lines indicate the value of commodities moving by truck along the major highways. Within the Pacific Northwest, distributors in the most populous counties, including King County, Washington and Multnomah County, Oregon, are the most intensive users of the I-5/Columbia River crossing.

Figure 34 provides comparable information for the West Coast. Trucks crossing the I-5/Columbia River bridge are critical to maintaining the intraregional flow of goods between Oregon and Washington as well the movement of goods up and down the West Coast. Reflecting the importance of I-5 to distributors serving the entire West Coast, over 2 million tons of goods using the I-5/Columbia River bridge either originate in or are destined for California.

The Portland-Vancouver area also is the hub of intermodal rail moves that connect distributors and warehouse operators in the Pacific Northwest with the rest of the country. Figure 35 shows the span of distribution and warehousing freight moving through the Portland-Vancouver rail triangle. This freight activity centers on Seattle-Tacoma and Portland-Vancouver. The Puget Sound ports of Seattle and Tacoma, if combined, would rank as the third-busiest container port in the United States, behind Los Angeles-Long Beach and New York-Northern New Jersey.

[23] Containers are included in this discussion because they typically carry merchandise (e.g., footwear, toys, apparel, household goods, etc.) that are bound for retailers, generally by way of warehouses and distribution centers. Containers constitute a large part of the overall volume of freight movements associated with the distribution and warehousing industry.

Figure 33. Oregon-Washington Origins and Destinations for Distribution and Warehouse Goods Crossing the I-5 and I-205 Bridges at Portland-Vancouver *(With Tonnage of Freight on Truck Routes Used to Access Bridge)*

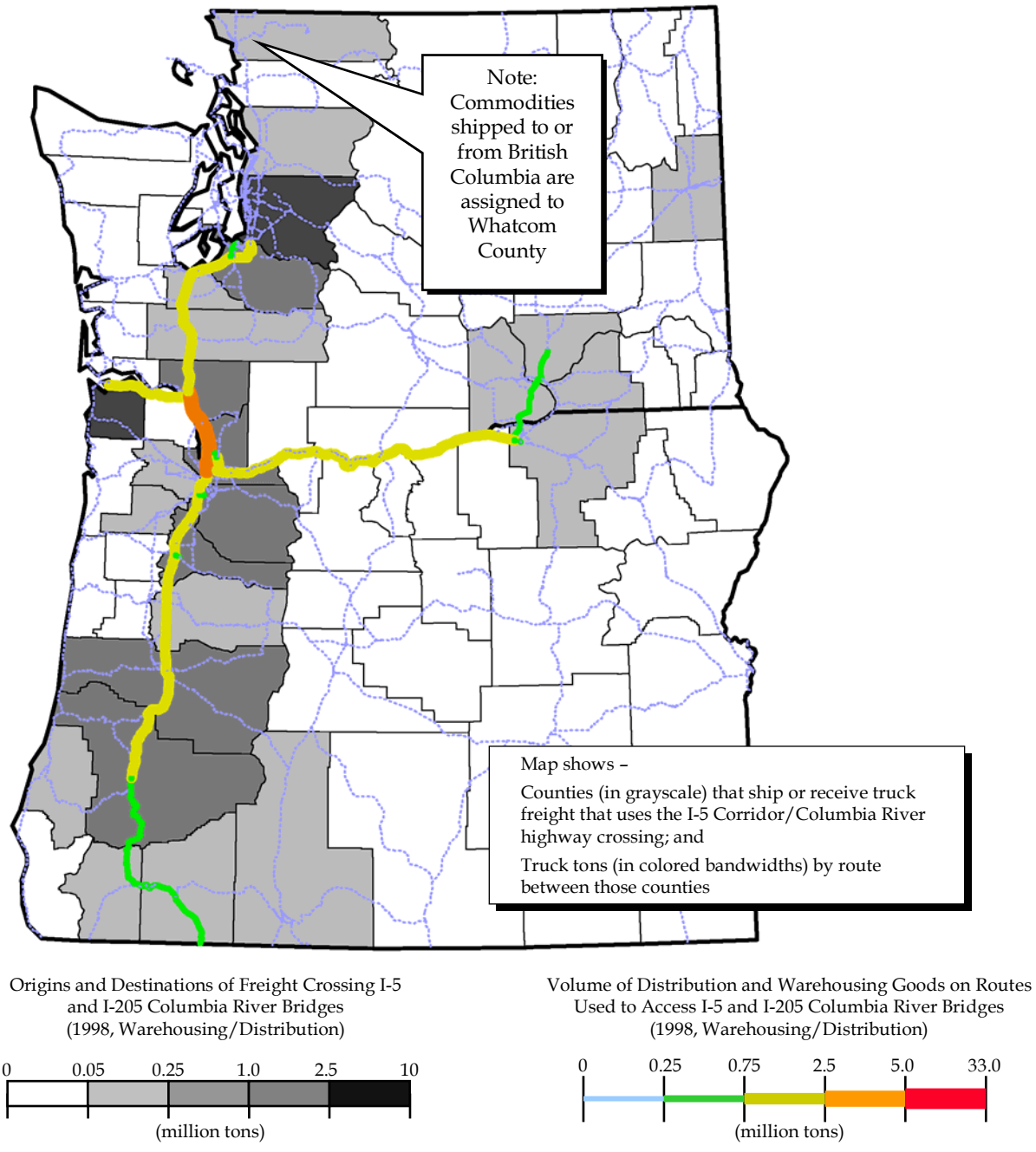
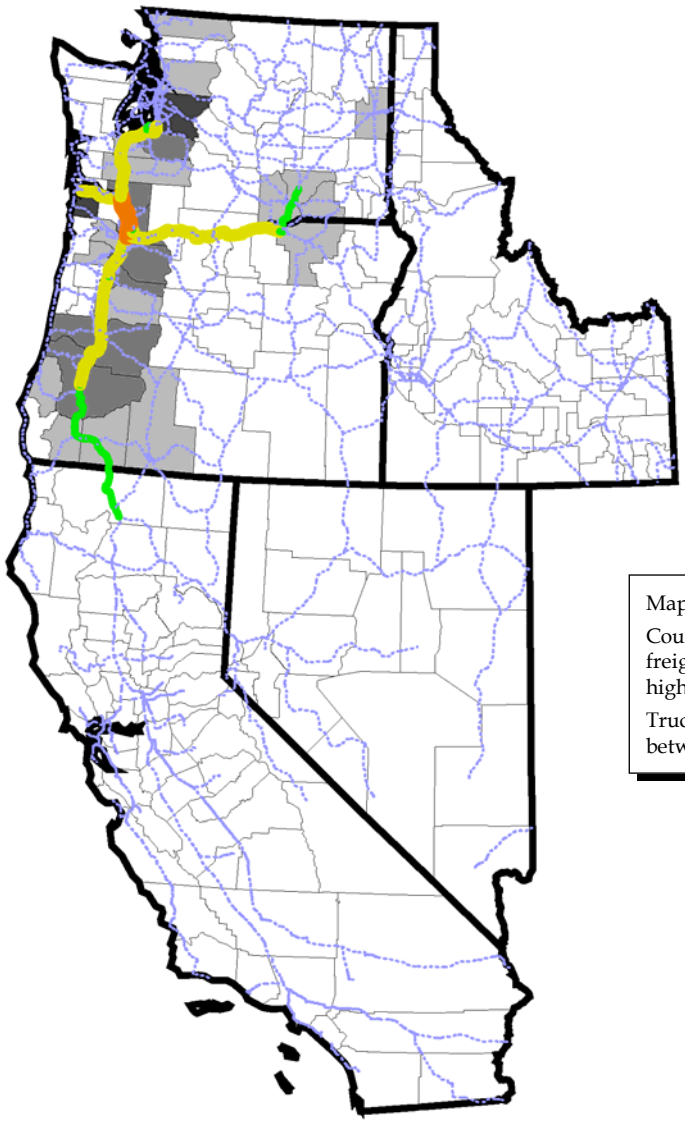


Figure 34. West Coast Origins and Destinations for Distribution and Warehouse Goods Crossing the I-5 and I-205 Bridges at Portland-Vancouver
With Tonnage of Freight on Truck Routes Used to Access Bridge



Map shows –

Counties (in grayscale) that ship or receive truck freight that uses the I-5 Corridor/Columbia River highway crossing; and

Truck tons (in colored bandwidths) by route between those counties

Origins and Destinations of Freight Crossing I-5 and I-205 Columbia River Bridges (1998, Warehousing/Distribution)

0 0.05 0.25 1.0 2.5 10

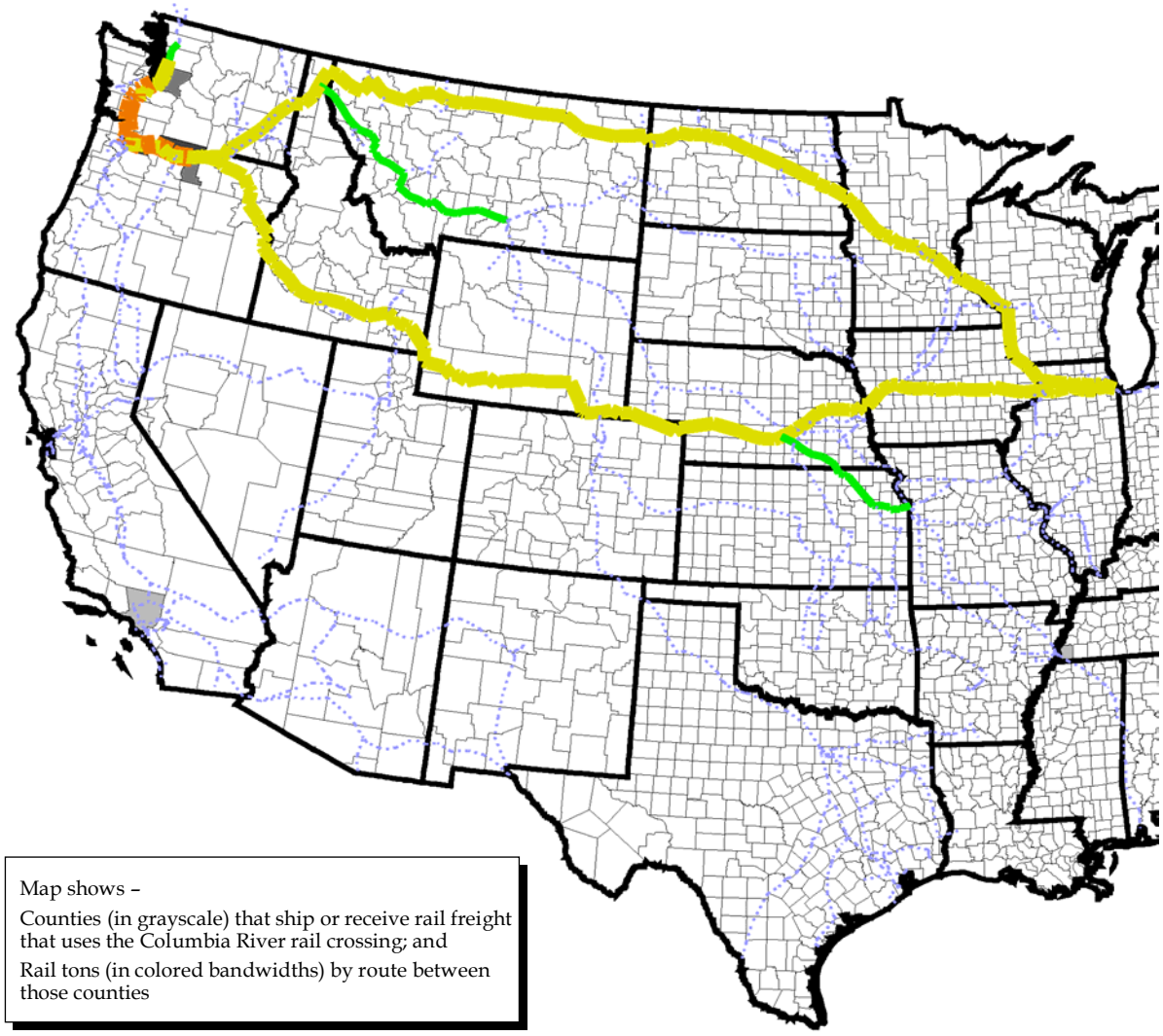
(million tons)

Volume of Distribution and Warehousing Goods on Routes Used to Access I-5 and I-205 Columbia River Bridges (1998, Warehousing/Distribution)

0 0.25 0.75 2.5 5.0 33.0

(million tons)

Figure 35. Western United States Origins and Destinations for Distribution and Warehouse Goods Using the Portland-Vancouver Rail Triangle
With Tonnage of Freight on Rail Lines Used to Access Triangle



About half of the containers processed for import and export by ports in Seattle and Tacoma, as well as by the Port of Portland, transit the Portland-Vancouver rail triangle on their journeys to and from the Midwest and East Coast. This traffic is routed through Portland-Vancouver because the BNSF line on the north side of the Columbia River Gorge and the Union Pacific (UP) line on the south side have relatively flatter grades and are easier to navigate in bad weather than the more northerly routes out of Seattle, one of which goes through the high, single-track Stevens Pass tunnel, and the other through the winding Stampede Pass route. For that reason, the competitiveness of Puget Sound ports in attracting and retaining container traffic is affected directly by their ability to move goods reliably through Portland-Vancouver.

Effects of Portland-Vancouver Choke Points on Industry

The I-5 Corridor/Columbia River highway and rail choke points reduce the geographical reach of distributors by raising the costs of getting to markets. Although the distribution and warehousing industry has traditionally been Portland-centered, increasing congestion at the I-5 Corridor/Columbia River highway and rail crossings and spreading peak hours are leading to changes in the region's distribution system.

Congestion, combined with high prices for available industrial land in Portland-Vancouver, is pushing distributors to the periphery of the Portland-Vancouver area and to other parts of the Pacific Northwest. Distributors that serve markets outside Portland-Vancouver are finding it difficult to remain in the area as travel times within the region shrink the size of their service areas. In response, major distribution centers have been moving to the Pasco-Hermiston area to the east and companies that used to serve both the Puget Sound and Portland areas from a single location in Portland-Vancouver are opening additional facilities in Washington (e.g., Centralia) and elsewhere along the I-5 corridor.

While distribution and warehousing remain important in Portland, the lack of available land in Portland is directing new growth to Vancouver and surrounding Clark County, Washington. As the distribution and warehousing industry in Clark County expands, higher volumes of truck traffic will cross the I-5 and I-205/Columbia River bridges to supply the Portland market, contributing further to traffic delays and the cost of distribution and warehousing. These higher transportation expenses ultimately may be passed on to consumers and manufacturers in the form of higher prices or the reduced availability of goods.

Distribution Case Study

Les Schwab Tire Distribution Centers

Locations: Prineville, Portland, Boardman, and Ontario, Oregon; Redding, California.

Products: Tire sales and services.

Background: Les Schwab is one of the largest independent tire companies in the United States. The company has a retail sales network of 344 stores, including both company-owned and member dealer locations, located in Oregon, Washington, Idaho, Montana, northern California, Nevada, and Alaska. Annual sales are approximately $1 billion.

Product Shipping Processes: The hub of Les Schwab operations is a 2 million-square-foot distribution center in Prineville, Oregon which handles over 4,600 containers annually. Tires are imported through the Ports of Seattle, Tacoma, and Portland and are shipped to the Prineville facility and other transfer facilities by truck and some by rail. The company serves regional markets through a network of transfer centers located in Portland, Boardman, Ontario (Oregon), and Redding. At any given time, Les Schwab stocks about one million tires in its stores and warehouses.

Effects of I-5/Columbia River Crossing Congestion on Company: Les Schwab serves both the Portland and Seattle markets from its Portland transfer center. Due to congestion in the I-5/Columbia River corridor, truck operations are scheduled during off-peak, midday, and evening time periods to avoid possible delays. Peak spreading in the I-5 corridor narrows the regions that each facility can serve in a timely manner by truck, reducing economies of scale and increasing delivery costs.

Impacts on Competitiveness: Increased business costs, especially if peak times spread and further limit the periods when trucks can cross the Columbia River without encountering delays.

Choices for the Future

Over the last half-century, the Pacific Northwest has made major investments in its highways, ports, and rail systems. However, the region is seeing diminishing returns from the transportation initiatives of earlier decades. Capacity and congestion problems today are eroding the productivity of the transportation system. Travel time and cost are increasing, service reliability is decreasing, and the ability of the system to recover from emergencies and disruption of service in severely taxed. The capacity and congestion problems are most apparent at the I-5 Corridor/Columbia River highway and rail crossings in the Portland-Vancouver area. The congestion at the crossings has a real and immediate cost to Portland and Vancouver residents and businesses. It has a less visible, but equally real, cost to the Oregon and Washington residents and businesses beyond the metropolitan area who depend on safe, reliable, and cost-effective access into and through the Portland-Vancouver area.

Oregon and Washington residents and businesses as well as Portland and Vancouver residents and businesses have a choice of two futures: a positive one in which the I-5 Corridor/Columbia River highway and rail crossings are improved and make a greater contribution to the economic well being of the entire Pacific Northwest; or a negative one in which the I-5 crossings are not improved, and the burden of congestion becomes more severe.

The region is weathering an economic recession, making it difficult to envision major new transportation investments. However, the region cannot afford to postpone action. Environmental studies, negotiation of funding agreements, stakeholder involvement activities, right-of-way acquisition, design, and construction of major transportation improvements can take five to 15 years to complete. Oregon and Washington must make a coordinated effort to act promptly to decide on a course of action and identify sources of funding for the recommended transportation improvements in the I-5 corridor.

Solving the problems of the I-5 Corridor/Columbia River crossings will require a willingness to plan and fund transportation improvements across boundaries—across the jurisdictional boundaries between states, across the interest boundaries of the public and private sectors, and across the financial boundaries among highway, rail, and port systems. These boundaries are surmountable because all parties to the I-5 Partnership must share the problem, the risks, and the benefits if they are to ensure the economic well being of the region.