

CHARTING WASHINGTON STATE'S ECONOMY: *WHY FREIGHT MATTERS*



A Freight Primer by the
Washington Public Ports Association and the
Freight Mobility Strategic Investment Board

Dear Friends of a strong
and healthy state economy,

The state of Washington stands astride an international trade route that links our state to the world’s economy. Imports and exports through our ports sustain thousands of Washington businesses. Imports not only bring consumer goods and raw materials into our state, they also increase opportunities for Washington producers to export their products at lower costs by providing container capacity. Staying competitive in global markets supports jobs and helps families stretch paychecks further.

Much of the cargo received at Washington’s ports is discretionary and can move through alternative gateways. In order to preserve the shipping options available to local producers, we must compete aggressively to preserve and expand access to trade routes.

The Washington Public Ports Association (WPPA) has been forecasting waterborne cargo through the state’s port system since 1975. The 2017 Marine Cargo Forecast assesses and evaluates the distribution of cargo through the state’s transportation network, including waterways, rail lines, roads, and pipelines by commodity and cargo type from 2015 through 2035. The Freight Mobility Strategic Investment Board (FMSIB) is a co-sponsor of the project as we leverage agency partnerships to achieve the strongest economic future for our state’s citizens and businesses.

While the forecast provides insight about trade opportunities, it also reveals risks to our state if we do not remain competitive. The projected growth rates for containers are substantially lower than in past Marine Cargo Forecasts. Competing ports in British Columbia have gained market share at Washington’s expense. The main reason for these lower rates is the success that British Columbia ports have had in capturing United States bound intermodal traffic. Cargo moving through ports in British Columbia is not subject to the Harbor Maintenance Tax resulting in lower costs for shippers while cargo moving through United State’s ports is subject to the tax.

Barriers to efficiently moving cargo such as aging infrastructure, deficient landside intermodal access, rail capacity, road-rail at-grade crossings, and highway congestion all affect our competitive advantage. The key to maintaining and expanding Washington’s place in the global economy is to continue investing in our transportation infrastructure.

The recent \$183 million federal investment to deepen over 100 miles of the Lower Columbia River has already led to over \$1.08 billion in public and private investments at ports and terminals along the route.

This 2017 Marine Cargo Forecast charts a course for strengthening our state’s economy by providing data to drive investment in our port and transportation infrastructure that will yield measurable benefits in jobs, tax revenue, and access to markets for consumers and businesses. Meeting demand will require upgrades and investment, particularly in rail capacity. We must make wise choices now and invest in Washington’s freight network, the backbone of our economy.



Eric D. Johnson, Executive Director
Washington Public Ports Association



Dan Gatchet, Chair
Freight Mobility Strategic Investment Board

Why does trade matter to the
state of Washington, its
citizens, and businesses?

The state of Washington exported **\$79.6 billion** in goods in 2016. Goods exports accounted for 19.2% of Washington’s state Gross Domestic Product (GDP) in 2014, according to the United States Department of Commerce, International Trade Administration. **With more than 95% of the world’s population and 80% of the world’s purchasing power outside of the United States, future American economic growth and job creation depends on open markets abroad.**

What is traded?

Customers in 214 countries and territories buy Washington-made goods and services, including billions of dollars in annual exports to top markets like China, Canada, and Japan. **Washington is America’s ninth largest exporter of agricultural products.** It is the largest exporter of apples and the second largest exporter of other non-citrus fruits, potatoes, and grapes. Wheat, corn, barley, soybeans, grain sorghum, and some animal feeds dominate Washington exports. Washington State serves as a funnel for the export of Washington and Midwest grain. Eighty-five to 90% of Washington wheat is sold for export, making export sales critical to Pacific Northwest farmers. **The Port of Kalama ranks #2 on the West Coast for grain exports**, according to the United States Department of Agriculture.

Breakbulk exports from Washington ports consist primarily of forest products, including lumber, pulp, and paper.

Between 2000 and 2015, auto exports moving via Pacific Northwest ports increased at an annual rate of 23%, due mainly to shipments from Grays Harbor, and Portland, Oregon to China. The Lower Columbia River (on both sides of the river) and Central Puget Sound have extensive industry clusters of construction and manufacturing firms that use imported steel.

WASHINGTONPORTS.ORG/MCF

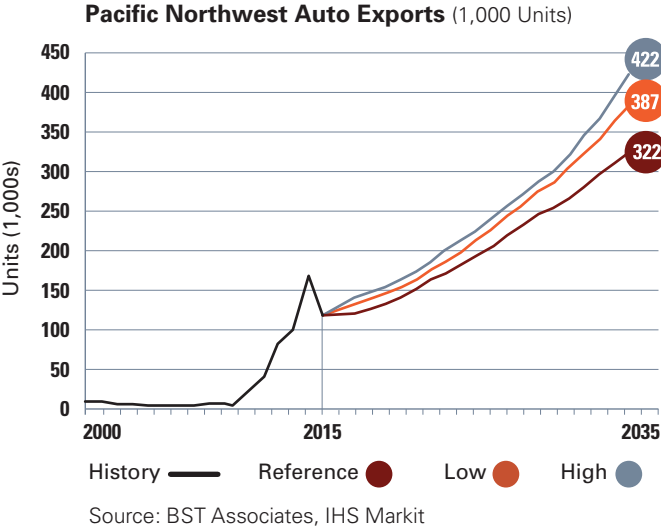
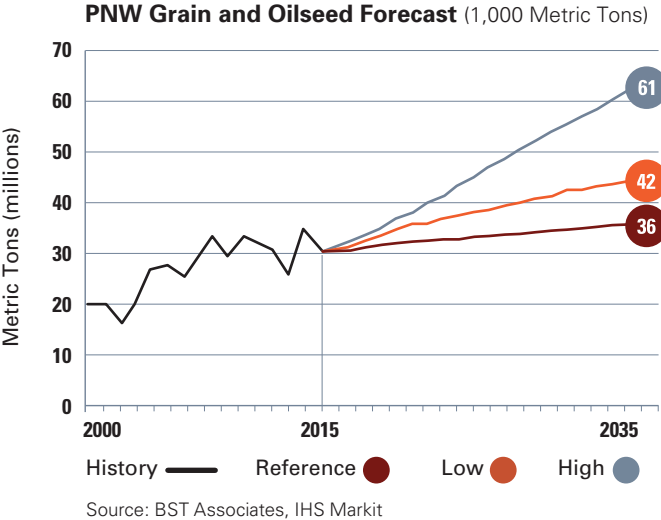
PORTS CREATE JOBS

75 PORT DISTRICTS
IN WASHINGTON STATE

71,300 DIRECT
JOBS

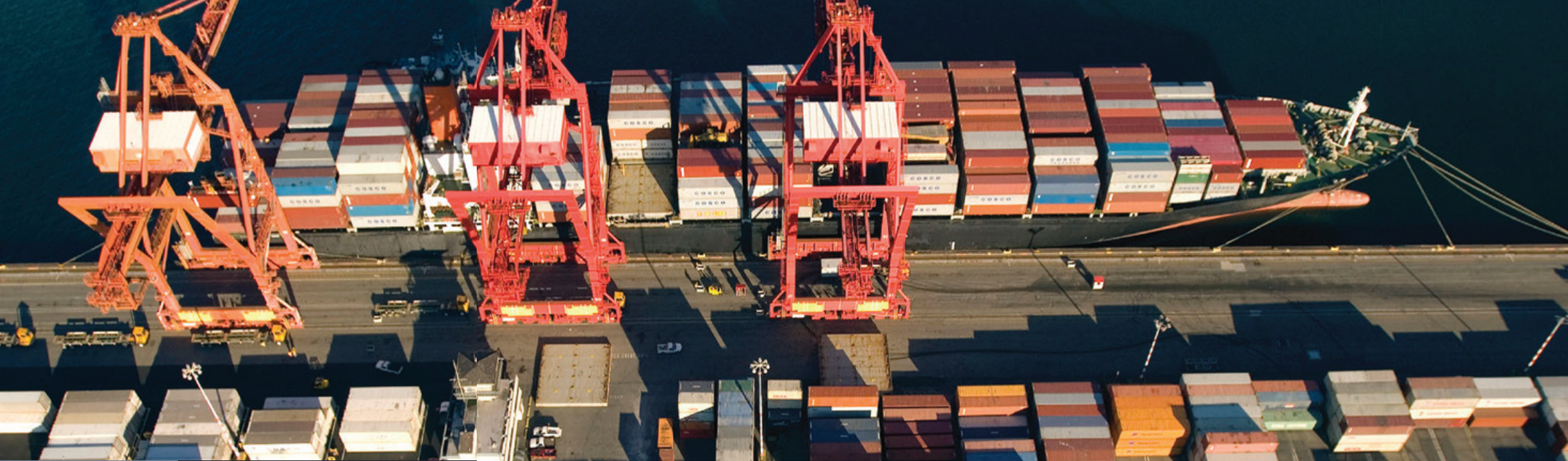
25,300 MARITIME
ACTIVITIES JOBS

\$4.6 BILLION IN
ECONOMIC IMPACT



Our international trade partners.

The share of trade moving between the Pacific Northwest and China grew from less than 10% in 2000 to more than 29% in 2015. Ninety-seven percent (97%) of containers imported and 90% of containers exported through Washington ports either come from or go to Asia. Total Gross Domestic Product (GDP) for China doubled approximately every five years, between 1980 and 2010. Between 2010 and 2015, per capita GDP in China grew from \$4,684 to \$6,603; it is projected to reach \$8,478 by 2020, \$10,733 by 2025, and \$13,696 by 2030 (as measured in 2010 dollars). **China's increased buying power is a trade growth opportunity for the Pacific Northwest.**



Summary of Pacific Northwest Trade Share by World Region

REGION	Containerized (% of TEU)		Non-Containerized (% of Metric Tons)		Total (% of Metric Tons)	
	2000	2015	2000	2015	2000	2015
China	34.5%	51.6%	2.9%	30.2%	9.4%	29.4%
Other Northeast Asia	45.5%	27.9%	69.8%	36.1%	48.2%	31.2%
Southeast Asia	13.3%	9.2%	10.5%	14.0%	10.8%	11.7%
Indian Subcontinent	1.8%	2.5%	0.9%	1.4%	1.2%	1.9%
Oceania	1.4%	1.3%	2.4%	2.1%	6.6%	2.8%
Canada	0.0%	0.1%	3.2%	5.4%	10.3%	9.2%
Latin America	1.2%	2.4%	1.7%	6.6%	6.9%	8.2%
Middle East	0.6%	1.7%	2.9%	2.2%	2.4%	3.0%
Europe	1.5%	3.0%	2.5%	1.7%	2.0%	2.5%
Africa	0.2%	0.3%	3.2%	0.2%	2.2%	0.2%

Source: BST Associates using WISERTrade data

What is a TEU?

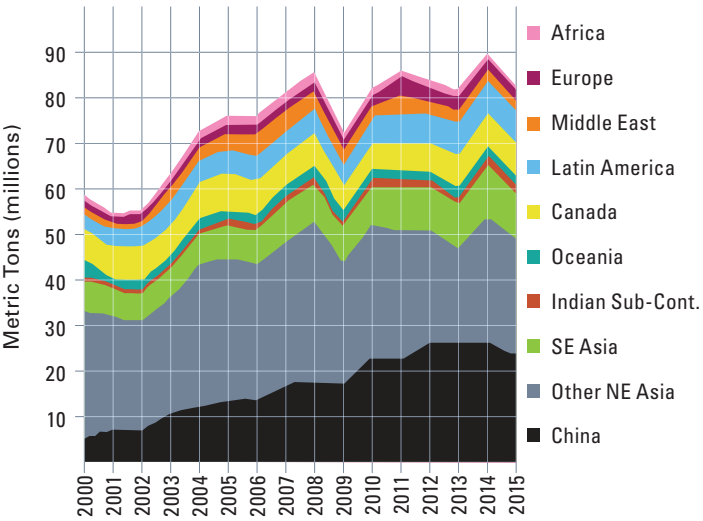
A twenty-foot equivalent (TEU) is a standard unit for describing a ship's cargo carrying capacity, or a shipping terminal's cargo handling capacity. A standard forty-foot (40x8x8 feet) container equals two TEUs (each 20x8x8 feet).

Our domestic trade partners.

A substantial portion of Pacific Northwest waterborne cargo moves to and from domestic locations, primarily Alaska and Hawaii. As measured in tonnage, Alaska accounted for most of the domestic trade. Crude oil accounted for most of this tonnage, and as crude oil production has dropped in Alaska, so has Alaska's share of Pacific Northwest waterborne trade. Fish is the other key product type shipped from Alaska to domestic destinations, and most of this fish is processed in Washington and moves through ports on Puget Sound.

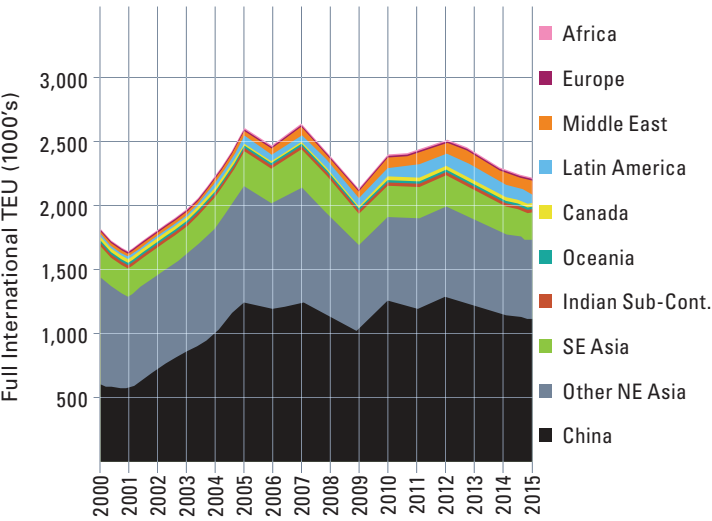
The Midwest has become increasingly competitive with the Pacific Northwest for container imports because importers have increasingly chosen to use East Coast ports via the Panama or Suez Canal, rather than shipping through West Coast ports. In addition, cargo is also reaching the Midwest via Canadian ports and rail putting Pacific Northwest ports at further disadvantage because cargo through Canada is not subject to the United State's Harbor Maintenance Tax.

Pacific Northwest Waterborne Trading Partners – Total Trade



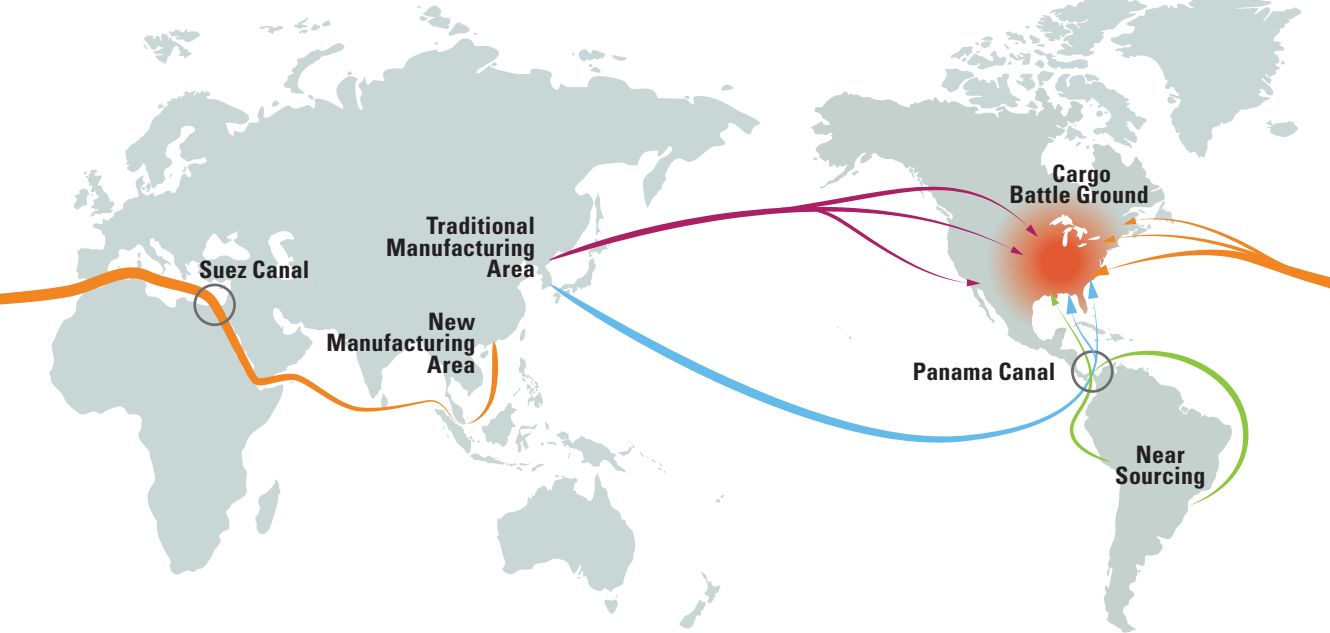
Source: BST Associates using WISERTrade data

Pacific Northwest International – Containerized Trade



Source: BST Associates using PIERS data

Potential Impact from Shifting Trade Patterns



What transportation modes move cargo?

Marine cargo is interdependent on rail, trucks, barges, and ships for efficient and cost effective movement of goods.



Rail transport is the preferred mode for large volumes of cargo moving at least 500 miles, such as containers imported from China and destined for Chicago. Rail is also efficient for moving large volumes of heavier cargo on shorter routes, such as petroleum coke movements from Ferndale to Longview. Nearly all of the grain currently and forecasted to be exported through the Puget Sound/ Lower Columbia River region is moved by rail. Rail moves 100% of export automobiles and approximately 80% of auto imports. The other 20% of the auto imports remain in the region and are distributed by truck.

Trucks, heavy, mid, and light play important roles in cargo movement and goods distribution. Truck transport is more likely for cargoes moving within the state or region. Trucks are used to haul (dray) the containers from port terminals to railroad intermodal yards or transload facilities. In Seattle, this means that port container traffic must use city streets to reach container yards. While truck traffic is expected to grow between now and 2035, auto traffic will increase even faster. The challenge will be to protect the functionality and reliability of the system for truck transport. Road capacity development will be critical for continued economic growth. Trucks account for moving an estimated 70% of breakbulk cargo and they move an estimated 95% of all logs transported.

Barges connect the Upper Columbia and Snake Rivers with the Lower Columbia River, a critical connection for wheat farmers. Essentially all wheat exports from the state’s farmers move through terminals on the Lower Columbia River. The Columbia-Snake River navigation system allows Washington-grown agricultural products to move from farm to market, and creates price competition between modes of transportation. The Columbia River deepening project has greatly benefitted shippers who use Washington and Oregon ports along the Lower Columbia by creating transportation cost savings.

Vessels that handle imports and export at our ports are getting bigger and shipping companies are consolidating through mergers, acquisitions, and vessel-sharing agreements. These changes mean that carriers have more leverage in choosing which ports they will use. Bigger ships require a different type of infrastructure such as longer berths, bigger cranes with a broader reach, more terminal area and backlands to support, along with yard handling equipment and technology that allows for efficient handling of more containers in a shorter period of time. Ports need to modernize and upgrade facilities to compete for this business.

Port Infrastructure and Access Needs

Washington’s ports have developed unique facilities to meet global market demand. They also have diverse infrastructure needs such as investments to accommodate big ships, to minimize rail and road conflicts, to handle larger and heavier freight volumes, to reduce congestion with general traffic at landside access points, and to leverage economic value of real estate assets. The chart below summarizes the types of investments needed.



Summary of Port Project Needs

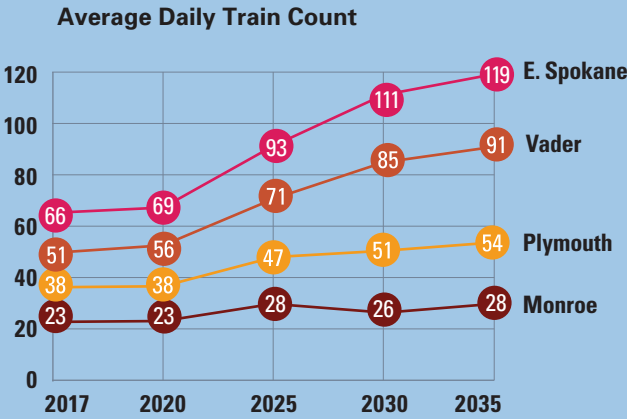
PORT	Road	Rail	Terminals	Dock	Dredging	Business Park Infrastructure	Buildings	Property Purchases	Intelligent Transportation Systems (ITS)	Grade Separations	Studies	Summary
Anacortes					1							1
Bellingham					1							1
Benton		1										1
Clarkston	2											2
Everett	1		3									4
Grays Harbor			2							1		3
Kalama	4		1	1	2	2	1	1				12
Longview	3	2	4									9
Multi-Columbia River Ports					1							1
Northwest Seaport Alliance	3	5	1		2				1			12
Olympia		1			1						1	3
Pasco		1					1			1		3
Port Angeles	1		2				1				3	7
Seattle	16	1							2	2		21
Tacoma	7	1							1	1	1	11
Vancouver	3	1	1							1		6
Walla Walla	1											1
WPPA - Statewide											1	1
Total Ports	41	13	14	1	8	2	3	1	4	6	6	99

Source: 2017 Marine Cargo Forecast Chapter 6

Rail Volumes and Future Growth

BNSF and UP operate on track built and maintained without taxpayer funds. Their investments are a key partnership with our ports and are integral to the freight network. In 2016, BNSF and UP invested over \$234 million in rail improvements in Washington.

The mainline rail system in the Pacific Northwest does not currently experience delays due in part to significant investments that have been made in the I-5 rail corridor; however, as projected rail traffic grows, capacity on the region’s rail system will likely require infrastructure improvements. For example, the height of Stampede Pass Tunnel may need to be increased to allow for double-stack traffic and auto carriers. Intermediate rail yards are also likely to experience delays with growth.



Port Infrastructure Investment Successes and Needs

The 2017 Marine Cargo Forecast identifies key locations where investments may be needed. This map illustrates those needs as well as a number of projects identified in previous Marine Cargo Forecasts that were either constructed or are under construction. These investments have helped to reduce key capacity constraints.

A complete list of port access and infrastructure needs (indicated by dots in black, both lettered and blank) is displayed in the table on page 6.



- A PORT OF GRAYS HARBOR TERMINAL 2**
Success: The Port worked with Ag Processing Inc. (AGP) to expand the capacity of the export terminal.
Need: A grade separation in East Aberdeen to reduce rail and road congestion delays.
- B WEST VANCOUVER FREIGHT ACCESS (WVFA)**
Success: The Port is nearing completion of the \$275 million WVFA project consisting of 21 separate project elements aimed at reducing delays on the adjacent mainlines by as much as 40%.
- C PORT OF EVERETT SOUTH TERMINAL**
Success: The Port of Everett completed a series of projects to construct a new cargo berth and strengthen the dock for heavy cargo operations.
Need: Rail infrastructure is needed to allow efficient unit-train operations into and out of the port terminal.
- D COLUMBIA RIVER DREDGING**
Success: The public sector invested \$183 million to deepen 110 miles of the Lower Columbia River navigation. This investment led to over \$1.08 billion in public and private investments at ports and terminals along the route.
Need: The United States Army Corps of Engineers is developing a plan to ensure the navigation channel is maintained and stays operational for another 20 years.
- E TACOMA HARBOR PIER 4**
Success: Modernization and upgrades are needed to increase efficiency and get ready for big ships. Pier 4 will be completed in 2018.
- F SEATTLE HARBOR TERMINAL 5**
Need: Modernization is being planned to make the 172-acre Terminal 5 ready for big ships.
- G PORT OF LONGVIEW**
Need: Accommodate growth by adding sufficient rail capacity for the efficient handling of five unit trains at the port simultaneously.
- H THE PORT OF KALAMA**
Need: Road improvement access and other terminal enhancements to their planned facilities.
- I RICHLAND INLAND PORT**
Need: The City of Richland and the Port of Benton have commissioned a joint Rail Master Plan to assess the feasibility of an inland container port. The Richland Inland Port will provide a transportation option to Eastern Washington agricultural exporters that face long dray operations to reach Seattle and Tacoma.
- J SR 14 BINGEN OVERPASS**
Success: Funding partnership to construct a grade separation to access the Port of Klickitat and Bingen Point from SR 14 improving safety, access, and reliability.

Challenges

Competing ports in British Columbia and Los Angeles have gained market share at our expense. Shippers save money when they move cargo through British Columbia because they are not subject to the Harbor Maintenance Tax (HMT) while cargo moving through United States’ ports is taxed. The HMT creates an unintended incentive for international importers to divert cargo through non-United States’ ports.

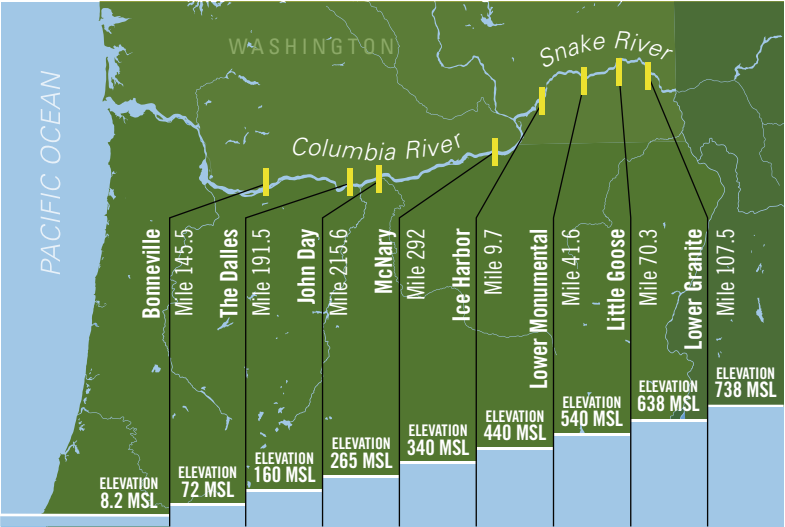
The HMT is a fee collected from users of the maritime transportation system in order to fund the Army Corps of Engineers’ operation and maintenance activities. Despite the fact that adequate revenue is being collected (approximately \$1.7 billion annually), Congress has restricted spending on harbor maintenance due to budgetary constraints. In 2014, Congress took the first step to address HMT expenditure targets in the Water Resources Reform and Development Act (WRRDA), calling for full use of HMT revenue and setting forth spending targets between FY2015-25. This work needs to continue.

Another challenge is that ships are getting bigger and are handling greater volumes. This trend is happening at the same time as the consolidation of shipping lines into fewer and larger alliances. The result is that carriers have significant leverage negotiating with ports due to the amount of cargo the carriers control.

Regions that can accommodate larger ships have an advantage attracting these carriers over regions that cannot accommodate the big ships. Big ships require deeper berths as well as more landside capacity to handle peak volumes. Accommodating the big ships will require capital investment.

Inland navigation would be negatively affected if policy makers decide to breach dams on the Snake River. Barges would no longer be viable throughout the system resulting in higher transportation costs and lower levels of service. Since Washington farmers sell to world markets, they have little ability to raise their selling price to recover additional transportation costs.

Columbia And Snake River Waterways



Source: Pacific Northwest Waterways Association

Opportunities

If we can better leverage the trade and cargo movement strengths identified in the Marine Cargo Forecast, more opportunities will be available to the citizens and businesses in our state.

China’s economic expansion and per capita GDP growth create market opportunities. We should pursue exports to this market.

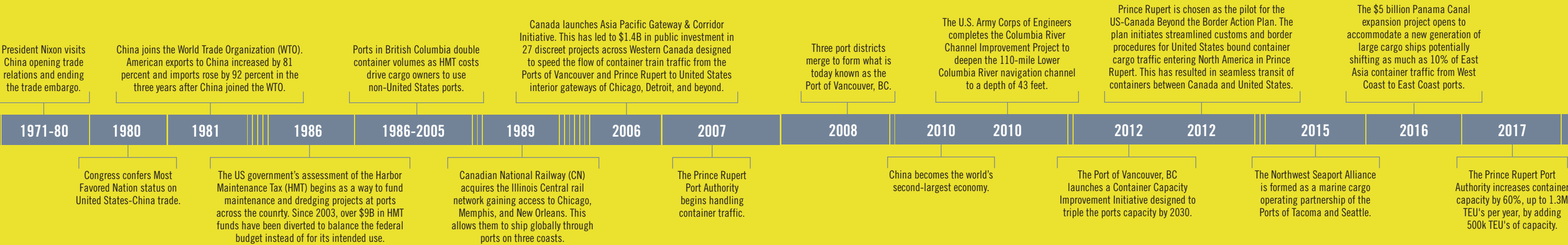
Significant capacity has been added on the Columbia River through federal funding, and the deepening has attracted public and private investment and added freight volume. This is an opportunity to move more of our state’s agricultural products cost effectively. And we must also ensure the deepened navigation channel is maintained.

Significant rail capacity has been added to the system through private investment by BNSF and UP, and partnership funds have removed some road-rail conflicts. This capacity should be preserved by continuing to make strategic investments in rail corridors.

The creation of the Northwest Seaport Alliance is a competitive advantage for the state by having the Ports of Seattle and Tacoma working together to attract business. This Alliance is the first of its kind in North America and is now the fourth-largest container gateway in the United States. The Northwest Seaport Alliance’s Strategic Plan identified the need to respond to challenges such as the consolidation of shipping lines, the ability to handle big ships, and the need to improve terminal utilization.



International Trade and the State of Washington—A Timeline of Global Milestones





A CALL TO ACTION:

Invest in Washington's Freight Network the Backbone of our Economy

International container volumes are projected to grow and that growth is an economic opportunity for citizens, businesses, ports, and communities in our state. Our ability to capture that growth will depend on the ability of local ports to compete globally. We need broader understanding about the importance of freight and the interdependent network that moves goods including ports, rail, trucks, barges, and ships. That understanding will help to inform policy and investment decisions needed to be competitive in a global economy.

Spread the word: Freight Matters

Reform Harbor Maintenance Tax to ensure equity

Support modernization of port facilities

Support landside investment at ports with funding, land use decisions, regulatory permits

Create funding opportunities:

- Significant investments will be required in port infrastructure, including longer berths, larger container cranes, increased water depth in channels and alongside berths, and additional on-dock rail to quickly move cargo off dock.
- Invest in eliminating chokepoints with public/private and inter-jurisdictional partnerships.
- Continue to fund investments in grade separations.

The Washington Public Ports Association (WPPA) was formed by the Legislature in 1961. WPPA promotes the interests of the port community through effective government relations, ongoing education, and strong advocacy programs.
www.washingtonports.org

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The Freight Mobility Strategic Investment Board (FMSIB) proposes policies, projects, corridors, and funding to the State of Washington Legislature to promote strategic investments in a statewide freight mobility transportation system. www.fmsib.wa.gov

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