



Freight Mobility Strategic Investment Board Workshop

*September 14, 2017
9:00 a.m. to 2:30 p.m.*

*Tri-Cities Airport
3601 N 20th Avenue
Pasco, WA 99301*

Agenda

| | | |
|-------|---|----------------|
| 9:00 | Welcome and Introductions | Dan Gatchet |
| 9:15 | History of Freight in Washington Presentation & Discussion | Brian Ziegler |
| 10:15 | WAFAC/FMSIB | Brian Ziegler |
| 10:30 | Break | |
| 10:45 | FMSIB Annual Report | Kjris Lund |
| 11:00 | Marine Cargo Forecast Report | Chris Herman |
| 12:00 | Board Meeting Plus/Delta <ul style="list-style-type: none">- Agendas- Venues- Tours- Packets- FMSIB Staff | Brian Ziegler |
| | Working Lunch | |
| 1:00 | 2018 Call for Projects | Brian Ziegler |
| 1:30 | Washington D.C. Trip | Brian Ziegler |
| 1:45 | Subcommittee Appointments | Brian Ziegler |
| 2:00 | 2018 Meeting Schedule | Brian Ziegler |
| 2:30 | Supply Chain Logistics Tour | Port of Benton |

Freight History in Washington State

Board Retreat

Sept. 14, 2017



Purpose

- Provide historical perspective of freight mobility partners and modes to FMSIB Board Members
- Facilitate discussion and understanding of current issues affecting freight mobility
- Prepare Board for discussions about future role of FMSIB in statewide freight issues

1700's

- Horses arrived in the Northwest
- East-west trade amongst many tribes mingled at the Dalles along the Columbia River Gorge
- European sailing ships arrived in the PNW
- 1791-95: British explorer George Vancouver charts coast and Puget Sound
- 1792: Spain abandons Northwest land claims

1800's

- 1836: Steamships began operating on Puget Sound (Hudson's Bay Company *Beaver*)
- 1845: First counties established in Washington (Eight under Oregon Territorial laws, 26 under Washington Territorial laws, five after statehood)
- 1845: First wagon road built from Cowlitz Landing to Budd Inlet
- 1853: Washington Territory incorporated
- 1853: First military road surveyed from Walla Walla to Steilacoom
- 1854: First city incorporated in Washington

1800's (con't.)

- 1859: First military road built from Fort Walla Walla to Fort Benton, Montana
- 1860: Daily mail and stagecoach service begins between Portland and Olympia
- 1864: First telegraph line reaches Seattle
- 1866: Sternwheeler Okanogan first to navigate Celilo Rapids on the Columbia
- *1864-66 Fredrick Ziegler served in CO. E of 15 N.Y. Engineers (Lincoln's Army). Homesteaded in Washington*
- 1867: First wagon road built over Snoqualmie Pass

1800's (con't.)

- 1873: Northern Pacific Railroad names Tacoma as its western terminus
- 1884: First Northern Pacific train reaches Seattle
- 1889: Washington becomes 42nd state.
- 1889: First Legislature authorized counties to bond road construction and implemented first highway safety act (steam vs. team)
- 1893: Final spike driven for Great Northern Railway at Scenic, WA
- 1893: First state road established by legislature: Cascade Wagon Road along the Nooksack River
- 1899: WA Good Roads Assn. established

1900's

- 1900: King Co. operates ferry service on Lake Washington
- 1902: Electric interurban trains begin operating between Seattle and Tacoma
- 1904: Automobile Club of Seattle (predecessor to AAA of Wash.) formed
- 1905: State legislature designates 12 state roads and provides \$110,000 for improvements
- 1905: Legislature creates Highway Board (Forerunner of WSTC) and position of Highway Commissioner (forerunner of WSDOT Secretary)

1900's (con't.)

- 1905: First vehicle crosses Snoqualmie Pass
- 1907: Nation's first gas station opens – in Seattle
- 1908: First highway bridge across the Columbia River
- 1909: Nation's first transcontinental auto race, ends at Seattle's Alaska-Yukon-Pacific Exposition

1910's

- 1911: First port district formed in Washington
- 1912: State engineers first experimented with concrete paving
- 1913: First weight limits enacted for trucks in Washington State
- 1913: Port of Seattle launches first ferry designed for motor vehicles

1910's (con't.)

- 1915: The Dalles-Celilo Canal on the Columbia River opens
- 1917: Clark and Multnomah counties open “interstate” Columbia River Crossing
- 1917: U.S. Army Corps of Engineers opens Government Locks on Lake Washington Ship Canal
- 1917: U.S. enters World War I

194. "PACIFIC HIGHWAY INTERSTATE BRIDGE," SPANNING COLUMBIA RIVER, PORTLAND, ORE, TO VANCOUVER, WASH.

1920's

- 1921: One penny gas tax authorized
- 1922-23: First snow removal operations undertaken on Cascade mountain passes
- 1923: Gas tax raised to two cents
- 1923: Final stretch of Highway 1 (Vancouver, WA to Blaine) is paved

at Summit Inn Snoqualmie Pass Highway

Julian 7/66

1920's (con't.)

- 1927: Legislature orders all roads to be toll-free. State purchases private toll-bridges and removes tolls
- 1927: Four cross-sound ferries are built and served into the 2000's
- 1928: King County dedicates Boeing Field
- 1928: Seattle-Tacoma Interurban ends operations
- 1929: Gas tax raised to three cents, the extra penny dedicated to counties to plan for and improve a system of "Lateral Highways" to improve a system of Farm to Market Roads that connected to state highways

1930's

- 1930: Mosquito fleet service between Seattle and Tacoma ends
- 1933-35: Twenty-six stationary truck platform scales installed at points along the state highway system
- 1933: Six “traffic officers” (part of the Highway Department) were outfitted with portable scales (“Drive-on loadmeters”)
- State issues first debt (\$10 million) for highway improvements, backed by the gas tax
- 1933: American Trucking Association formed

1930's (con't.)

- 1933: Testing for driver's licenses becomes mandatory
- 1937: Legislature raises speed limit to 50 mph
- 1938: First "hours of service" regulations enacted
- 1938: First state vehicle inspections instituted (65% failed in the first year)
- 1939: Seattle-Everett Interurban ceases operations

1940's

- 1940: Tacoma Narrows Bridge opens (and closes)
- 1940: Lacey V. Murrow Floating Bridge opens
- 1943: Responsibility for truck weight enforcement was transferred from the Department of Highways to the State Patrol
- 1943: Secret nuclear processing operations begin at Hanford

1940's (con't.)

- 1944: Voters approve the 18th Amendment to the state constitution
- 1946: First stores open in Bellevue Square
- 1947: Legislature authorizes limited access highways
- 1949: Legislature raises gas tax to 6.5 cents
- 1949: First terminal dedicated at SeaTac International

1950's

- 1950: Northgate shopping center opens
- *1950: Charles R. Ziegler begins his Highway Dept. career*
- 1950: Second Tacoma Narrows Bridge opens
- 1951: State Toll Bridge Authority takes over the Black Ball Ferry for \$6.8 million (forerunner of the WA State Ferries)

1950's (con't.)

- 1953: First portion of Alaskan Way Viaduct opens
- 1954: Puget Sound Regional planning Council meets (forerunner of PSRC)
- 1956: Federal Aid Highway Act creates the Interstate Highway and Defense System of highways
- 1960: Second I-5 Columbia River Crossing opens as a tolled facility

1960's

- 1961: WPPA formed by the state legislature
- 1961: Hood Canal Floating Bridge opens
- 1962: Federal Aid Highway act creates requirement for MPO's in urbanized areas greater than 50,000 population
- 1962: I-5 Lake Washington Ship Canal bridge opens

1960's (con't.)

- 1963: Evergreen Point Floating Bridge opens
- 1965: CRAB Board created
- *1966: Roy D. Ziegler retires from Highway Dept. with 39 years service*
- 1967: US Dept. of Transportation formed
- 1967: Urban Arterial Board created (forerunner of TIB)

1960's (con't.)

- 1967: Final segment of I-5 between Tacoma and Everett opens
- 1968-70: King Co. voters twice reject “Forward Thrust”
- 1969: Boeing 747 maiden flight from Paine Field
- 1969: Last stop light removed on I-5
- 1969: MVET of 1% levied for transit services

EMPIRE EXPRESSWAY ~ ARBORETUM INTERCHANGE ~

1970's

- 1970: Highway Dept. moves into current HQ building (shaped like an “H”)
- 1970: EIS Lawsuit halts I-90 Seattle construction
- 1972: Seattle voters scrap proposal for Bay Freeway and R. H. Thompson Expressway
- 1973: State introduces first HOV lanes (SR-520)

1970's (con't.)

- 1975: Legislature grants authority to local governments to form PTBA's for transit service
- 1977: The State Highway Commission is directed to develop a functional classification system for state highways. Nine criteria are enumerated, no mention of freight. (RCW 47.05.021)
- 1977: *Brian J. Ziegler begins his WSDOT career*

1970's (con't.)

- 1978: North Bend celebrates removal of last stop light on I-90
- 1979: First publicly funded railroad rehabilitation project in the West begins
- 1979: The Highway Commission is replaced by the Transportation Commission
- 1979: Federal courts lift injunctions halting I-90 construction in Seattle

1980's

- 1980: First non-engineer selected to head WSDOT (Duane Berentson)
- 1981: First FLOW meters installed on I-5
- 1982: I-205 bridge opens between Vancouver and Portland
- 1985: First cooperative Marine Cargo Forecast (WSDOT and WPPA)
- 1988: Legislature forms first “high speed rail” Commission
- 1989: First guidelines for treatment of highway stormwater runoff are proposed



1990's

- 1990: Growth Management Act (GMA) and High Capacity Transit Act (HCTA) enacted
- 1991: Federal ISTEA passed
- 1993: Statewide planning statutes adopted by the Legislature. Created State Multimodal Plan, State-owned and State interest components, and state support for high-capacity transit planning and regional planning. (RCW 47.06)
- 1993: WSDOT purchases 20-mile Toppenish-White Swan Rail line

1990's (con't.)

- 1993: Legislature directs Transportation Commission to develop a freight and goods transportation system (FGTS). In collaboration with counties and cities, the Commission is to review and make recommendations regarding weight restrictions and road closures which affect freight transportation. (RCW 47.05.021)
- 1994: Washington's first state-funded Amtrak train begins service
- 1994: WSDOT purchases six rail cars and begins Grain Train program operating out of the Port of Walla Walla

1995

State ports continue raising concerns about Washington state's trade dependency and competition

- Southern California Ports/Alameda Corridor
- British Columbia: DeltaPort

Alameda Corridor

- A 20-mile-long rail cargo expressway linking the ports of Long Beach and Los Angeles to the transcontinental rail network near downtown Los Angeles.
- A series of bridges, underpasses, overpasses and street improvements that separate freight trains from street traffic and passenger trains, facilitating a more efficient transportation network.
- The centerpiece is the Mid-Corridor Trench, which carries freight trains in an open trench that is 10 miles long, 33 feet deep and 50 feet wide between State Route 91 in Carson and 25th Street in Los Angeles.
- Construction began in April 1997. Operations began in April 2002.
- Predicted 50% of waterborne containers would be handled by rail. (32.9% as of 2003)

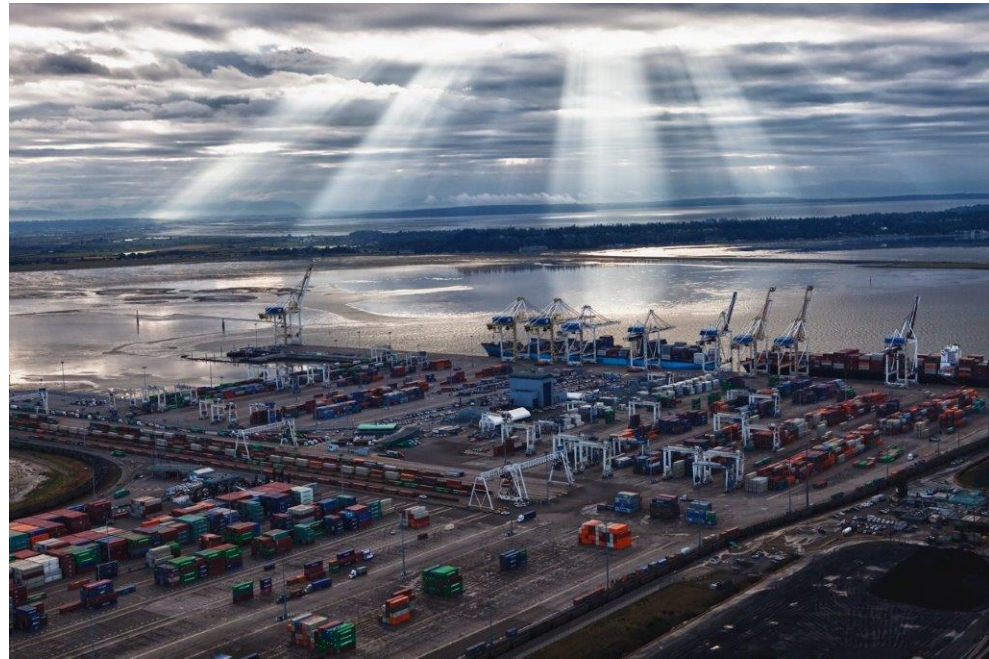


Alameda Corridor





DeltaPort



2016 Description:

- Global Container Terminals (GCT) Deltaport is Canada's flagship container terminal. and is located at Roberts Bank (Metro Vancouver).
- Located at Roberts Bank, just south of Vancouver, it is an 85 ha (210 acre) 3 berth container terminal that offers 10 high-speed Super Post-Panamax dock gantries, a modern fleet of container handling equipment and an 8-track on-dock intermodal rail yard totaling 28,000'.
- 1,100 meter (3,609-foot) continuous birth
- Unions:
 - ILWU Local 502-Longshoreman
 - ILWU Local 514-Foreman

1996

WHEREAS, recent interagency efforts have identified the elements of a strategic freight corridor through the Green River Valley and connecting the Ports of Seattle and Tacoma, known as ***the Freight Action Strategy for the Seattle-to-Tacoma (FAST) Corridor***, and

WHEREAS, the FAST Corridor work has involved the Ports of Seattle, Tacoma, and Everett; the cities of Seattle, Tacoma, Everett, Auburn, Kent, Tukwila, Puyallup, Sumner, Renton, Pacific, and Algonia; the Burlington Northern & Santa Fe and Union Pacific Railways; the Puget Sound Regional Council; the WSDOT Office of Urban Mobility; and the counties of Pierce, Snohomish, and King, which are the parties to the memorandum, and ...

1996 (con't.)

- Legislative Transportation Committee:
 - Convened private sector freight representatives: Freight Mobility Advisory Committee (FMAC)
 - Hired a consultant to analyze freight needs, make recommendations
 - Recommendations were the formula for creation of FMSIB

1997

- FMAC recommendations:
 - Adopt a state freight mobility policy
 - Establish a process for determining strategic freight investments (including eligibility and selection criteria)
 - Establish a dedicated funding source to support:
 - 1) A new freight mobility program; and
 - 2) Strategic freight mobility investments
 - Fund special studies to ensure freight mobility needs are well-defined
 - Address non-physical barriers (i.e. regulations, permits, technology, safety, speed)

1997

- FMAC project criteria recommendations:
 - Make the program modally and jurisdictionally neutral
 - Focus on freight transportation
 - Take a long term perspective: current project needs should not “unduly influence” long term objectives of program

Other:

“No common measure or set of measures has emerged for comparing freight mobility improvements across different modes at the state level or across regions.”



1998

- FMSIB created
 - 12 member board
 - Independent board was *critical* part of authorization- would not have passed if part of another agency or jurisdiction
 - Initial staffing by WSDOT, assistance by Transportation Improvement Board and County Road Administration Board.
 - **\$100M/biennium budget.** Proposed funding source: Referendum 49 (passed in November, 1998)
 - 33 projects of \$341.91M selected as part of first 6-year plan (based on FMAC recommendation)
 - Included “FAST” Corridor projects



1998-99

- 1998: Referendum 49 was on the ballot, and passed by citizens
- It lowered vehicle excise taxes and provided \$1.9b in bonds for highway projects
- 1999: Initiative 695 on the ballot, also passed by the citizens
- It lowered vehicle license fees to \$30, eliminating source of funds for FMSIB projects
- Initiative declared unconstitutional, but



ESHB 1858

07May04D_4570



2000

- Supplemental budget salvaged 12 FMSIB projects
- Puget Sound Regional Council funded 2 more
- FMSIB does first call for projects
 - 18 selected
 - Added to first 33 active projects
- Dan O'Neal appointed as first FMSIB Chair

2002



- Referendum 51: Nine-cent gas tax on ballot
- Included funding for FMSIB projects
- Voters reject referendum
- FMSIB conducts call for projects



2003

- Legislature enacts Nickel package
- 15% surcharge on truck weight fees
- WTA agreed to support if funds were dedicated to freight
- Nearly total amount was dedicated to WSDOT projects
- Two FMSIB projects included

2004



- Legislature included 10 more FMSIB projects in supplemental budget
- A call for projects was issued to keep an active list of projects advancing



2005

- Legislature passed 9.5 cent gas tax (phased)
- For first time, FMSIB received \$12M/biennium of dedicated funding:
 - \$6M is 18th Amendment restricted (roads only)
 - \$6M is multimodal (roads or non-roads)
 - FMSIB revenue tied to weight fee increase on trucking industry



2006 and 2007

- Board required increased project reporting
- Project advancement, reviews, and project eliminations were added to Board duties.
- Board continued to advocate for federal participation on FMSIB projects (trips to Washington, DC)
- Call for projects continued to maintain active 6 year list.
- 2007: Puget Sound RTID defeated at the polls

2008



- FMSIB, City of Everett, City of Marysville, and Port of Everett collaborated on identification of future freight routes.
- Extensive interaction with Congress - Sen. Patty Murray, Congressman Adam Smith.



2009

- Call for projects: 6 submitted/4 approved
- Tacoma Area Tideflats Study (TATS)
 - SSA Marine
 - Marine View Ventures
 - Port of Tacoma
 - Fife
 - Tacoma
 - Pierce County
- Argo Truck Access Project begins

2010



- Call for projects: 10 submitted/6 approved
- **Executive Branch** proposal to consolidate FMSIB, County Road Administration Board (CRAB), Transportation Improvement Board (TIB), and WSDOT Highways and Local Programs (WSDOT-HLP)
- Joint Transportation Committee: **Local Agency Efficiencies Study** - CRAB, TIB, FMSIB and WSDOT Highways and Local Programs
 - Evaluate funding and services offered by four state agencies providing local transportation services.
 - Objective: identify opportunities to streamline governance and organization, and to identify whether there are more efficient ways to distribute transportation funds and provide services to local governments.
 - Goal: Increase efficiencies while effectively meeting local governments' needs.
- Policy workgroup comprised of legislators and Governor's staff oversaw the study. A technical staff workgroup provided support.



2010/11 (Continued)

Local Agency Efficiencies Study – December findings:

- ... Each of the four agencies was created to address a particular need. Our assessment is that agencies have continued to execute programs and deliver services in alignment with their founding statutes and program direction.
- The four agencies' programs and outcomes are in line with the six State Transportation Policy Goals.
- ... customers interviewed for this study are generally very satisfied with the four agencies and did not highlight a need for significant structural changes.
- Based on this assessment, we do not see a need for or benefit from restructuring the current system.



2010/11 (Continued)

Local Agency Efficiencies Study – findings and recommendations:

- *Changes at the state and/or federal level might necessitate another look at the structure and intent of the agencies.*
- Continuation of the competitive grant model, with its focus on criteria-based selection and accountability, are recommended in the event of performance-based funding.

Project Selection

- Project selection varies both by agency and by program. For programs that require legislative approval, a full construction cycle may pass between the time project awards are determined by the agency and recipient jurisdictions actually begin construction.

Reporting Requirements

- State reporting requirements for projects were identified by cities and county engineers as a potential challenge, particularly for smaller jurisdictions. All agreed that agencies should continue to streamline reporting requirements to the greatest possible degree for recipient jurisdictions.



2010/11 (Continued)

Local Agency Efficiencies Study – findings and recommendations:

Strengthening Programs and Technical Assistance

- FMSIB should be given the authority to finalize their list without legislative approval. This would release the funds earlier than currently occurs, speeding project implementation by as much as one construction season and in down cycles could produce lower construction costs.

Communicating more efficiently

- CRAB, FMSIB, and WSDOT-HLP should develop a dashboard –lite.

Developing Agency and Leadership succession plans

- CRAB, FMSIB, and TIB should develop formal plans for leadership development and succession



2011

- Call for projects. 4 submitted/3 approved
- “Stick to the mission” was the FMSIB theme - Focus on investing in freight and infrastructure for economic recovery
- TATS completed
- FMSIB Board approved two of the JTC study recommendations:
 - Pursuing a legislative appropriation for a third FTE
 - State law change to eliminate line item approval of FMSIB projects.



2012

- Call for projects. (One awarded)
- Deputy Director position funded in supplemental budget
- Deputy Director hired in November 2012
- MAP-21 authorized
 - First federal transportation authorization to recognize freight
 - “Borrows” from FMSIB to create Freight Advisory Committees (Optional, Advisory to the “State”)

2013



- Senate Bill 5239/House Bill 1256 introduced and enacted:
 - Eliminated legislative, line-item approval of FMSIB projects.
 - FMSIB receives own capital budget (no longer part of WSDOT-HLP appropriation)
- MAP-21:
 - Washington State Advisory Committee created via WSDOT/FMSIB letter of agreement, staffed by FMSIB
 - Karen Schmidt appointed to the National Freight Advisory Committee as only Washington State representative

2014

- Call for projects. (Three awarded in July)
- Legislative:
 - Agency request to permanently fund deputy director position denied.
 - House/Senate *reduced* operating budget \$25,000-Governor vetoed
- Washington State Freight Advisory Committee (WAFAC) completes recommendations to state freight plan, state legislature, and congress (Incarnation 1)
- Board travels to Washington DC with WAFAC recommendations
- Karen Schmidt, Executive Director, retires.
- Ashley Probart is hired as new Executive Director.



2015



- 2015 Connecting Washington Transportation Package increases FMSIB budget from \$12M a biennium to \$27M a biennium (full implementation in 2017-19 biennium)
 - \$13.5M is 18th Amendment restricted (roads only)
 - \$13.5M is multimodal (roads or non-roads)
 - Funds are part of an expenditure plan; they are not codified
- FMSIB budget increase is widely recognized as tied to weight fee increase on trucking
- Agency request to permanently fund deputy director position denied.
- FMISB and Washington Public Ports Association are to conduct Marine Cargo Forecast (\$250,000 state, @\$140,000 ports)



2015 – FAST Act

- Provides freight funding and policy direction
- New FASTLANE grant program - eligible projects include highway freight projects on National Highway Freight Network (NHFN); The current grant cycle is \$800M and the total program is \$4.5B over five years.
- Requires designating an urban and rural freight corridor network as an extension of the National Highway Freight Network (approximately 240 miles)
- Federal freight formula funding program: States receive a direct funding distribution to improve the movement of freight on their share of the NHFN. Washington State share is \$107.8M over five year Act.



2016

- FMSIB approves six new projects
- Local Agency Efficiencies Study Recommendation met: Dashboard – Lite implemented. FMSIB now has web based reporting capability.
- Legislative:
 - HB 2599 Authorizes FMSIB to remove deferred projects
 - Supplemental Transportation Budget Proviso requires an update of the State Freight Plan to comply with new FAST Act
 - Includes requirement to identify projects on freight network, submit to Office of Financial Management, Legislature by November 1, 2016
 - FMSIB reactivates Washington State Freight Advisory Committee (Incarnation 2)
- Governor's Office is conducting meetings on allocation of all federal formula funding in June/July 2016 (FMSIB is identified as part of FAST ACT Work Group)

FMSIB Added Responsibilities



- Washington State Freight Advisory Committee (WAFAC) – Joint with WSDOT
- Marine Cargo Forecast – Joint with WPPA
- Road-Rail Conflict Study – Joint with Advisory Panel
- Observations of these:
 - Freight related
 - Collaborative
 - Not requested by FMSIB

Discussion Issues

- Role of the Legislature, Transportation Commission, WSDOT and FMSIB in setting state freight **policy**
- Current statutory responsibilities for **planning** for freight
- Selecting freight **projects** for funding, is there more than one way?

Comparison of FMSIB and WSDOT Freight Project Scoring

- Criteria
- Weighting
- Selection Process

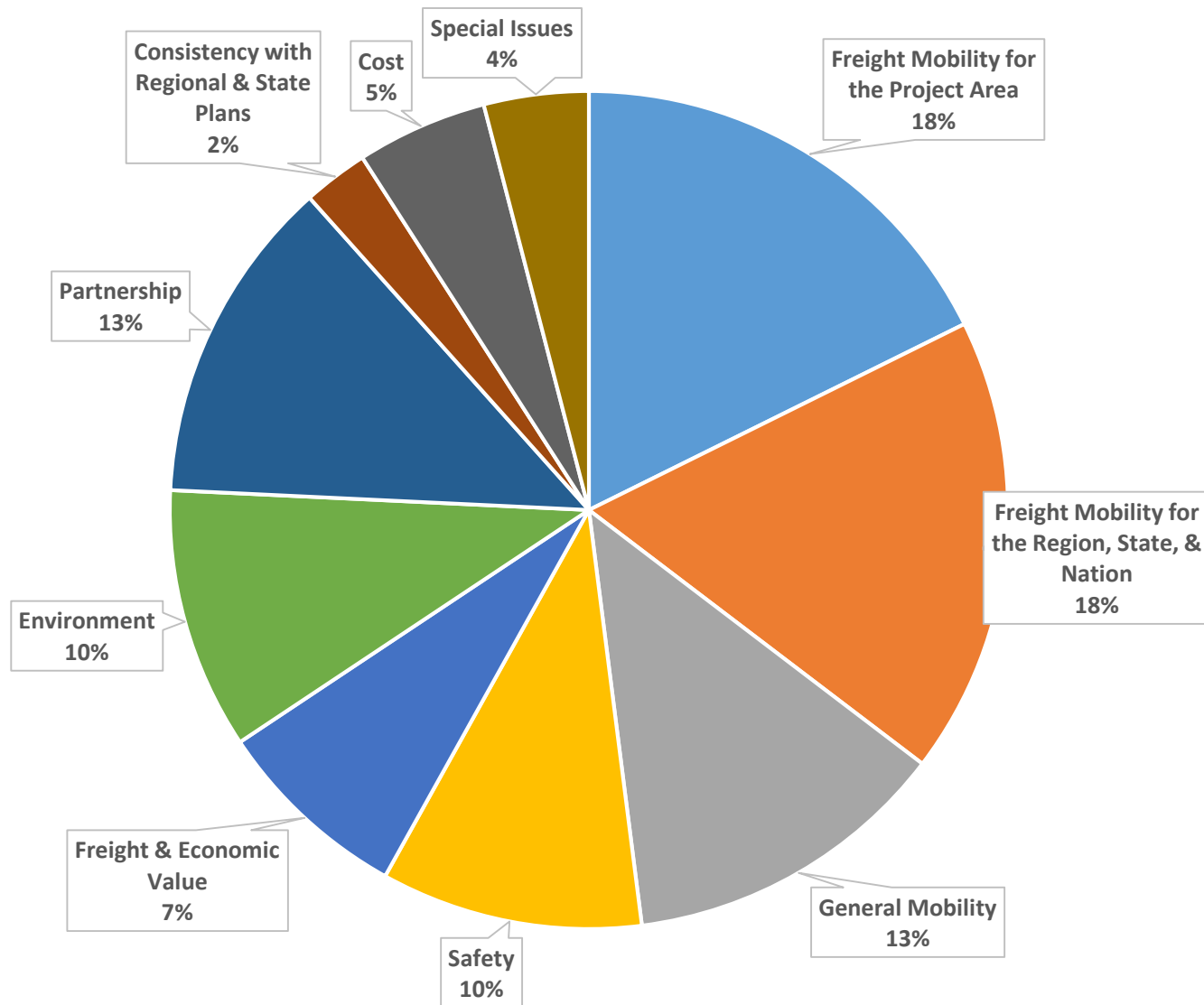
FMSIB Criteria

| FMSIB Criteria | | |
|--|--|-----|
| Freight Mobility for the Project Area | | 35 |
| Freight Mobility for the Region, State, & Nation | | 35 |
| General Mobility | | 25 |
| Safety | | 20 |
| Freight & Economic Value | | 15 |
| Environment | | 20 |
| Partnership | | 25 |
| Consistency with Regional & State Plans | | 5 |
| Cost | | 10 |
| Special Issues | | 8 |
| TOTAL POINTS | | 198 |

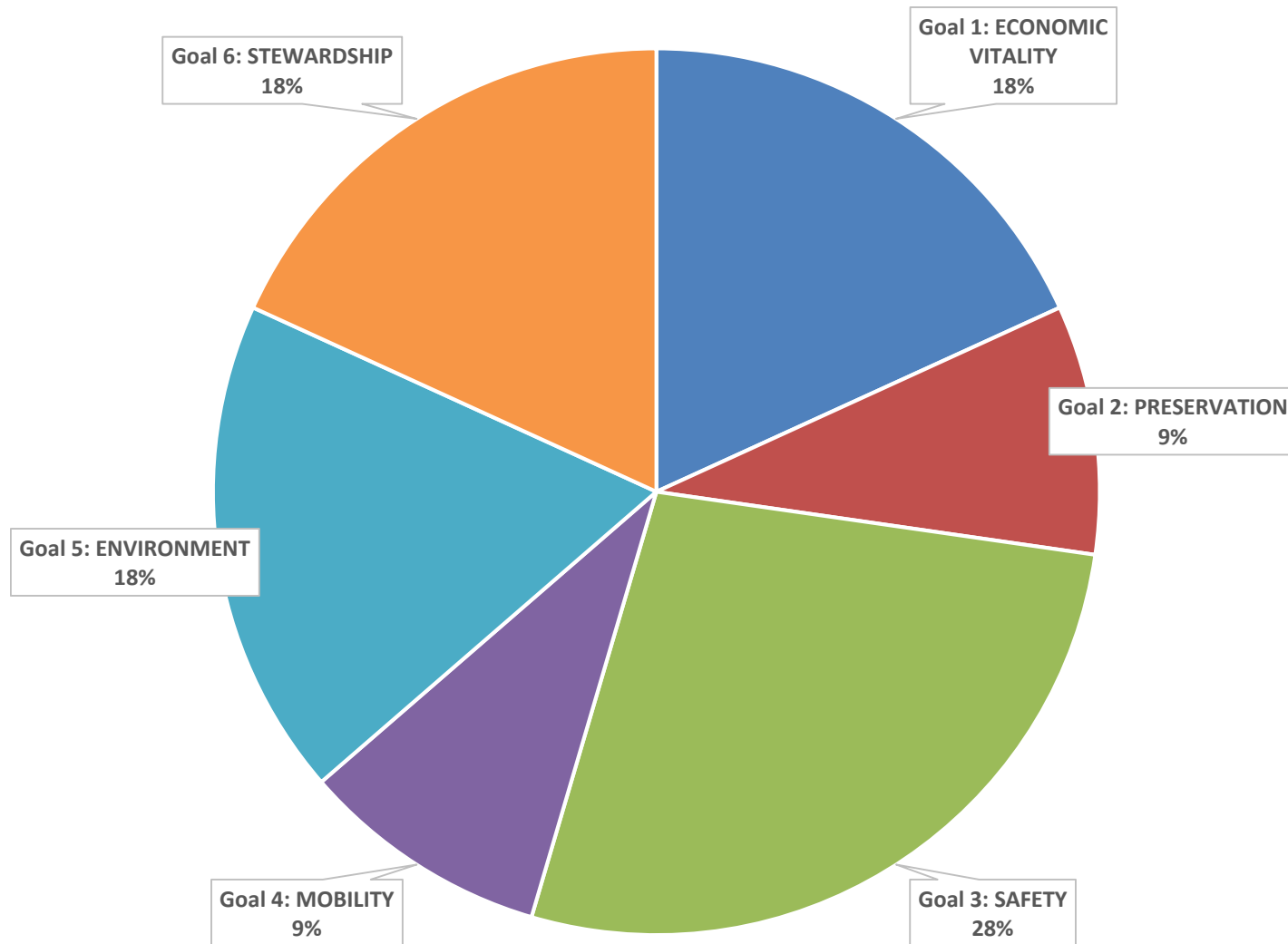
WSDOT Criteria

| | | | |
|---------------------------|--------------|--|----|
| WSDOT NHFP Criteria | | | |
| Goal 1: ECONOMIC VITALITY | | | 10 |
| Goal 2: PRESERVATION | | | 5 |
| Goal 3: SAFETY | | | 15 |
| Goal 4: MOBILITY | | | 5 |
| Goal 5: ENVIRONMENT | | | 10 |
| Goal 6: STEWARDSHIP | | | 10 |
| | TOTAL POINTS | | 55 |

FMSIB Weighting



WSDOT Weighting



FMSIB Process

- Call for Projects
- Technical Committee Scoring (Cities, Counties, Ports, Trucking)
- Board Committee Scoring
- First Cut and Interview Questions
- Interviews w/Sponsors
- Committee Final Cut Recommendation
- Board Review and Approval

WSDOT Process

- Call for Projects
- WSDOT Staff Scoring
- Secretary Decision

Break Time ! !

Truck Freight Economic Corridors in Washington State



State TFEC Mileage

- T-1 and T-2 corridors: 3166 miles
- Alternative corridors: 275 miles
- First/Last mile connectors and missing links: 835 miles
- **Total: 4276 miles**

NHFN Mileage

- Primary Highway Freight Network: 816.6 miles
- Other Interstates: 17.4 miles
- CUFCs: 81.7 miles
- CRFCs: 163.3 miles
- **Total: 1079.1 miles**

LEGEND

- Major Cargo Airports
- Rail Intermodal Terminals
- Barge Loading Facilities
- Marine Port Terminals

Freight Economic Corridors

- T1 Truck Freight Economic Corridors: Freight corridors carrying more than 10 million tons per year
- T2 Truck Freight Economic Corridors: Freight corridors carrying 4 million to 10 million tons per year.
- Alternative Freight Economic Corridors: Corridors carrying 600,000 to 4 million tons per year and serve as alternatives to T1 freight routes
- Missing Links in T-1/T-2 network
- First/Last Mile Connector Routes to T1/T2 Corridors



Marine Cargo Forecast

Chris Herman
Sr. Director of Trade and
Transportation
Washington Public Ports
Association

BST Associates
Market Research & Strategic Planning



Background on Study

- ▶ Washington Public Ports Association conducted first one in 1975
- ▶ Updated approx. every 5 years
- ▶ Used to identify and prioritize investments
- ▶ New this year
 - ▶ FMSIB is co-sponsor
 - ▶ Coordination with JTC road-rail conflict study
 - ▶ Outreach to Ports to identify needed infrastructure improvements

Cargo Projections Overview

- ▶ 20-year projections
- ▶ Forecast Area:
 - ▶ Columbia River (including Oregon ports),
 - ▶ Puget Sound
 - ▶ Washington Coast
- ▶ Includes:
 - ▶ Deep-draft and shallow-draft
 - ▶ Public and private terminals
- ▶ Commodity types
 - ▶ Grain
 - ▶ Dry Bulks
 - ▶ Breakbulk/Neo-bulk
 - ▶ Vehicles
 - ▶ Containers
 - ▶ Liquid Bulks



Rail Capacity Analysis

Rail Capacity Analysis Methodology

- ▶ **Model simulation (RTC) of entire State main line rail corridors**
 - ▶ Base train volumes for 2015/2016 developed from various sources
 - ▶ Simulated 2020, 2025 and 2030 using RTC model
 - ▶ Analyzed 2035 growth train volumes with static analysis
- ▶ **Rail volume growth based on**
 - ▶ Waterborne cargo moving by rail from BST Associates
 - ▶ Domestic volumes based on other sources
 - ▶ High growth projections used in 2025, 2030 and 2035 analyses
 - ▶ For non-bulk commodities, growth was absorbed into existing trains before introducing new train starts
- ▶ **FMSIB can use road/rail crossing data for update of selected crossings statewide**

Rail Traffic Growth Factors (Examples)

▶ Grain

- ▶ International volume from BST Associates
- ▶ Because grain is seasonal, the model used estimated peak volumes

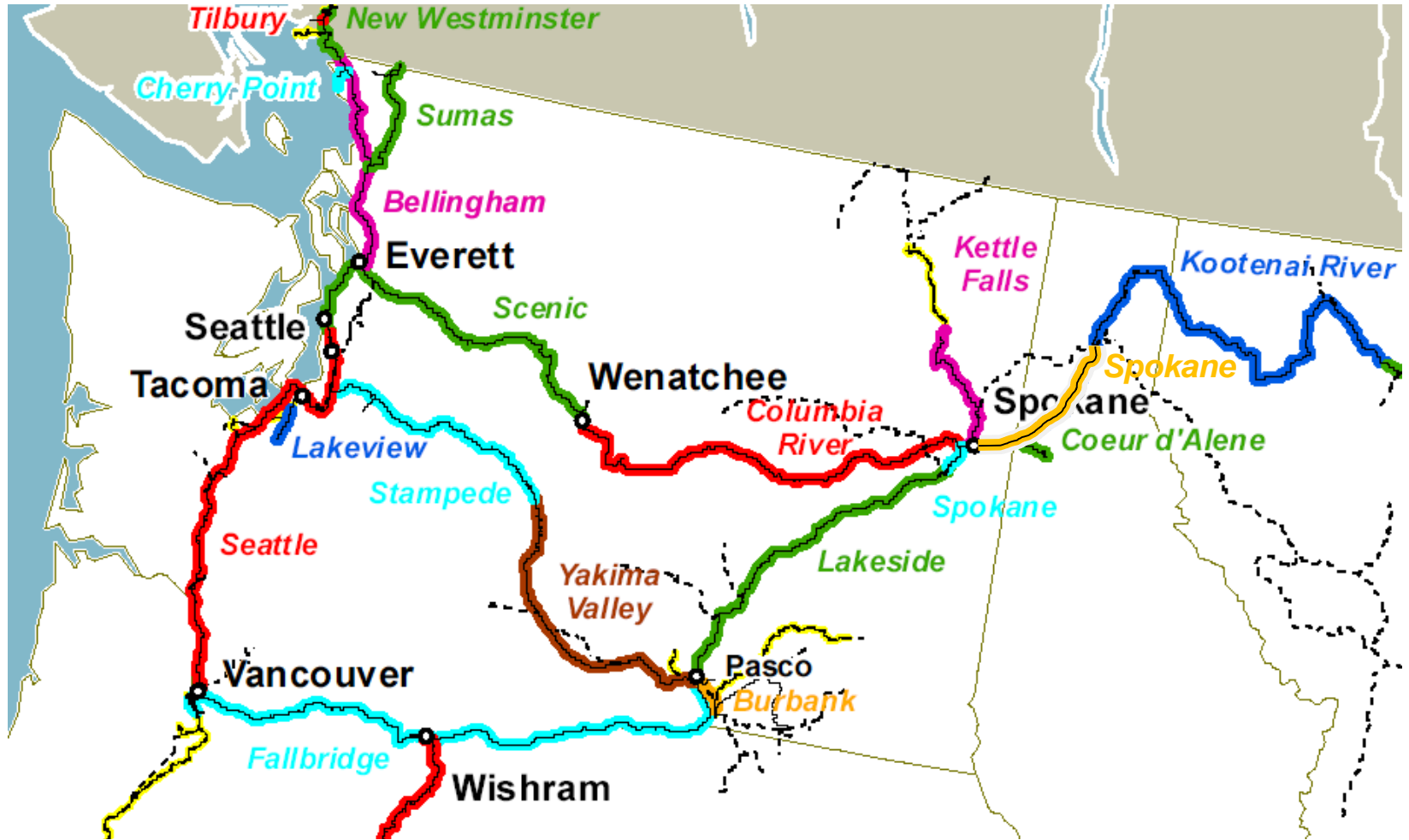
▶ Coal

- ▶ Assumes the Millennium Bulk Terminals handles 25 million MT by 2025 and 44 million MT by 2030
- ▶ Exports through Roberts Bank (BC) increases by 6 million MT by 2030
- ▶ Domestic moves to Centralia and Boardman end by 2025

▶ Crude by Rail

- ▶ Refinery moves drop 35% between 2016 and 2020, growth resumes from 2025 forward in high growth projection
- ▶ Vancouver Energy included from 2025 through 2035

BNSF Subdivisions in Washington



Rail Capacity Criteria

- ▶ The following criteria were used to estimate the level of capacity consumption for line segments and terminals

| Location | Line Segment | Terminal |
|-------------------|---|--|
| Well below | $D/10 < 4 \text{ mins}/10 \text{ miles}$ | $D/10 < 10 \text{ mins}/10 \text{ miles}$ |
| Within | $4 < D/10 < 8 \text{ mins}/10 \text{ miles}$ | $10 < D/10 < 20 \text{ mins}/10 \text{ miles}$ |
| Approaching or at | $8 < D/10 < 12 \text{ mins}/10 \text{ miles}$ | $20 < D/10 < 24 \text{ mins}/10 \text{ miles}$ |
| Above | $D/10 > 12 \text{ mins}/10 \text{ miles}$ | $D/10 > 24 \text{ mins}/10 \text{ miles}$ |

Capacity Utilization

| BASE CASE | | | | |
|--------------------|-------|--------|----------------------|-------|
| Segment/Terminal | Below | Within | Approaching or at | Above |
| Hauser Terminal | X | | | |
| Spokane Sub | X | | | |
| Spokane Terminal | X | | | |
| Lakeside Sub | X | | | |
| Pasco Terminal | | X | | |
| Fallbridge Sub | X | | | |
| Vancouver Terminal | X | | | |
| Seattle Sub | X | | | |
| Sea Tac Terminal | X | | | |
| Scenic Sub West | X | | | |
| Everett Terminal | | X | | |
| Bellingham Sub | | X | | |
| Scenic Sub East | | X | | |
| Columbia River Sub | X | | | |
| Stampede Sub | X | | | |
| Yakima Valley Sub | X | | | |

| CAPACITY - 2020 | | | | |
|--------------------|-------|--------|----------------------|-------|
| Segment/Terminal | Below | Within | Approaching or at | Above |
| Hauser Terminal | X | | | |
| Spokane Sub | X | | | |
| Spokane Terminal | X | | | |
| Lakeside Sub | X | | | |
| Pasco Terminal | | X | | |
| Fallbridge Sub | X | | | |
| Vancouver Terminal | X | | | |
| Seattle Sub | X | | | |
| Sea Tac Terminal | X | | | |
| Scenic Sub West | X | | | |
| Everett Terminal | | X | | |
| Bellingham Sub | X | | | |
| Scenic Sub East | | X | | |
| Columbia River Sub | X | | | |
| Stampede Sub | X | | | |
| Yakima Valley Sub | X | | | |

Capacity Utilization

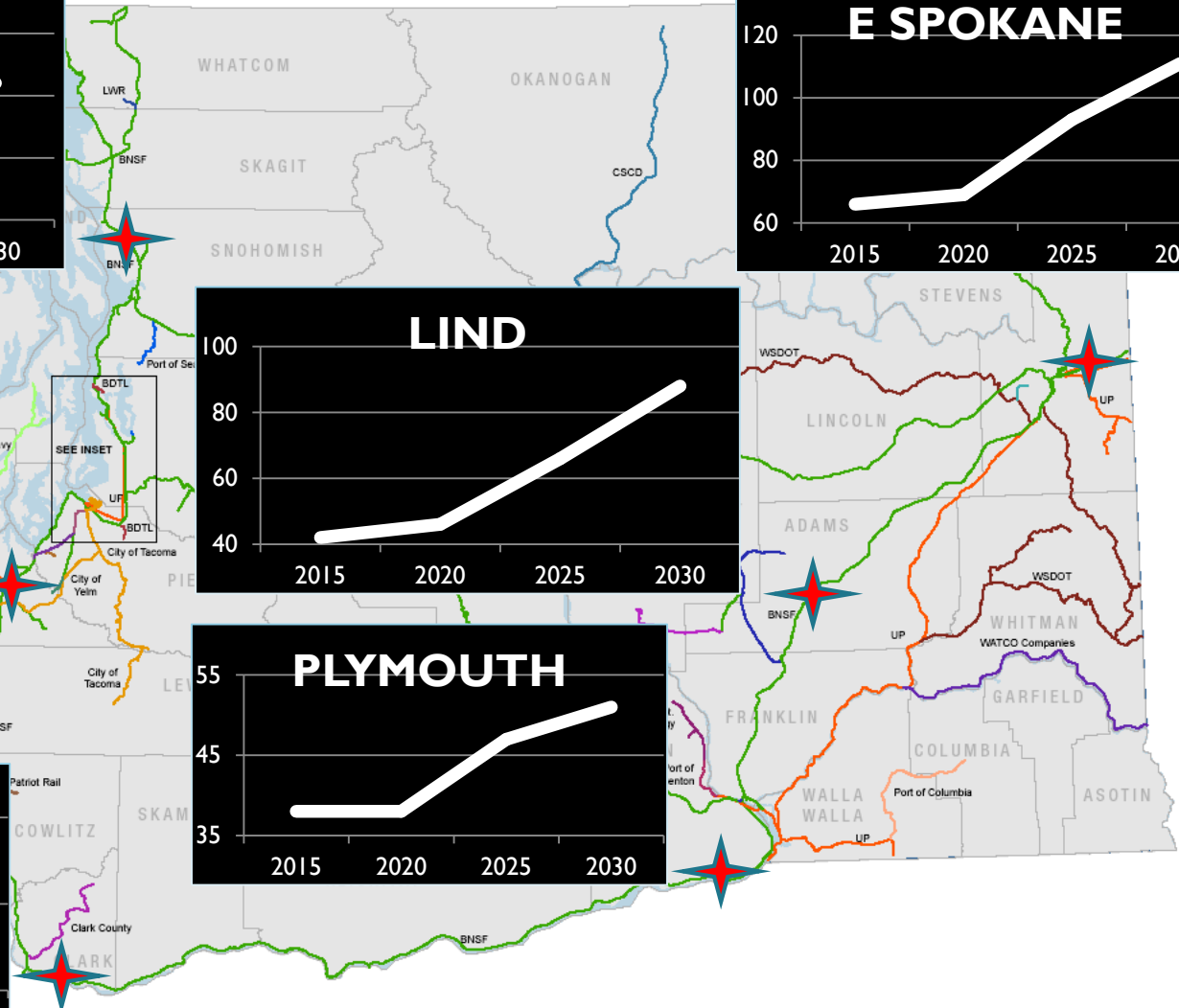
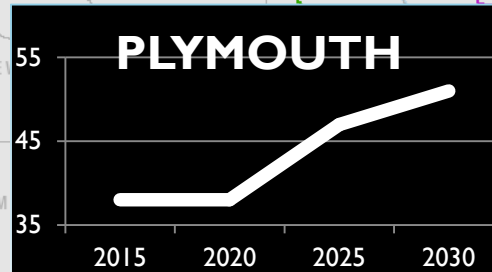
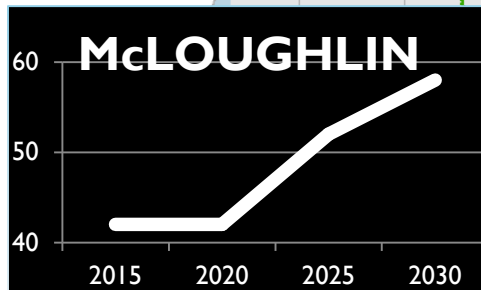
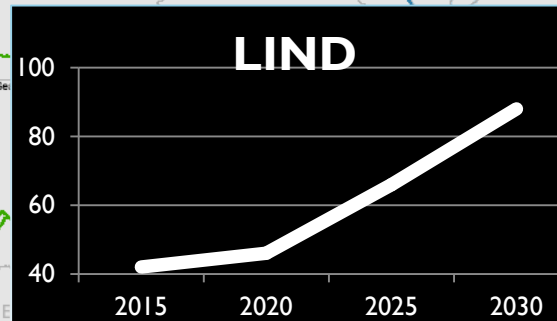
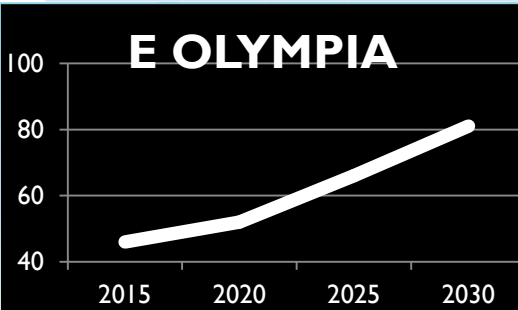
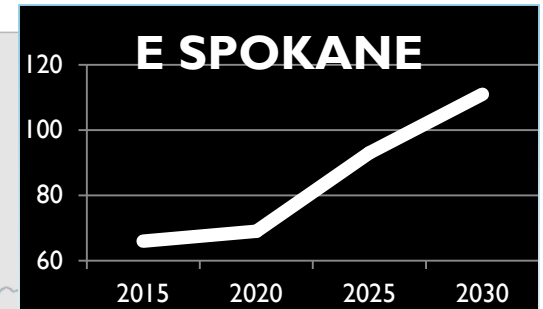
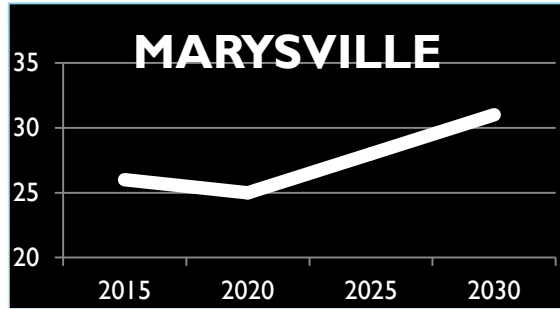
CAPACITY – 2025

| Segment/Terminal | Below | Within | Approaching or at | Above |
|--------------------|-------|--------|----------------------|-------|
| Hauser Terminal | X | | | |
| Spokane Sub | X | | | |
| Spokane Terminal | X | | | |
| Lakeside Sub | X | | | |
| Pasco Terminal | | X | | |
| Fallbridge Sub | X | | | |
| Vancouver Terminal | | X | | |
| Seattle Sub | X | | | |
| Sea Tac Terminal | X | | | |
| Scenic Sub West | X | | | |
| Everett Terminal | | X | | |
| Bellingham Sub | | X | | |
| Scenic Sub East | | X | | |
| Columbia River Sub | X | | | |
| Stampede Sub | X | | | |
| Yakima Valley Sub | X | | | |

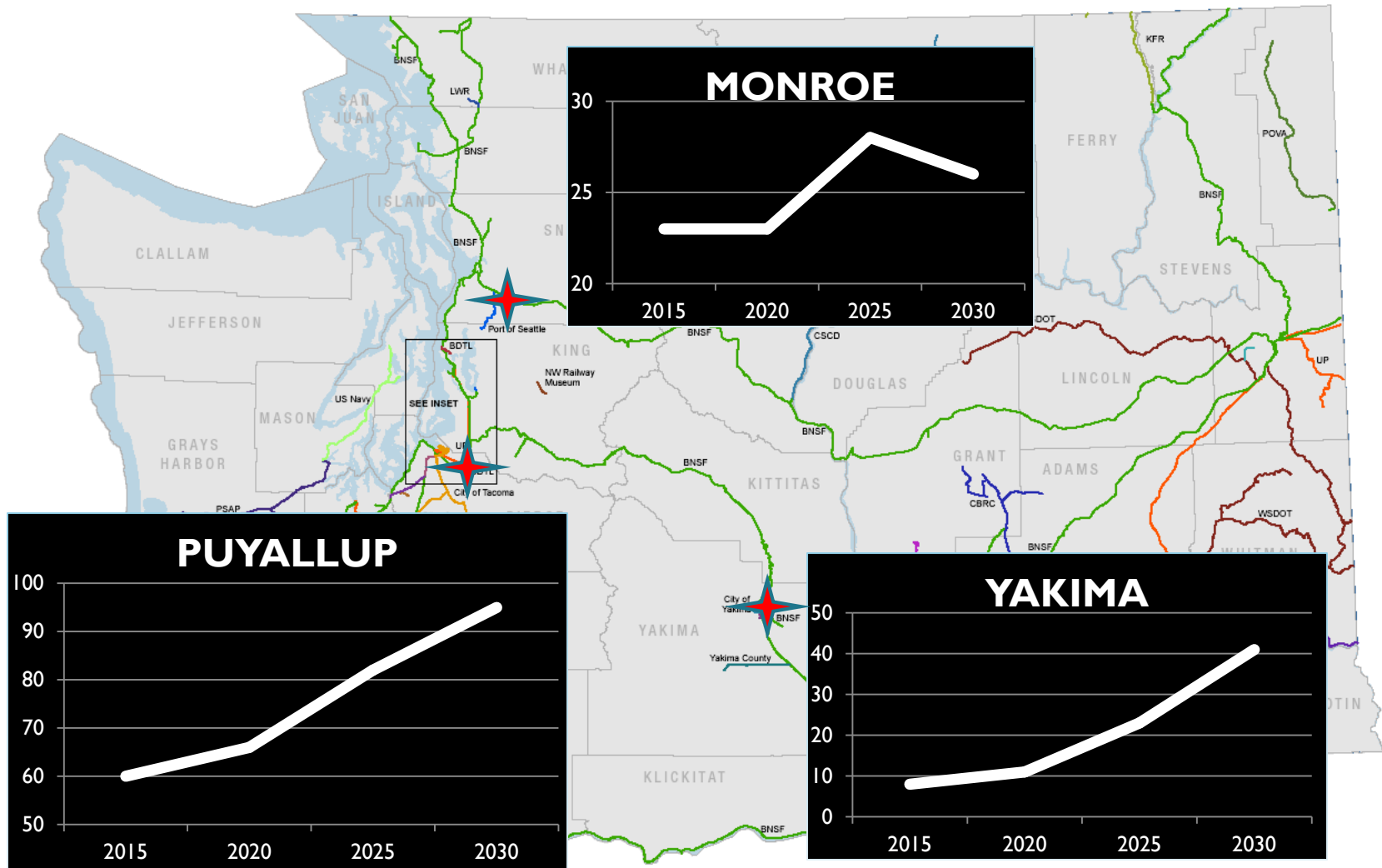
CAPACITY - 2030

| Segment/Terminal | Below | Within | Approaching or at | Above |
|--------------------|-------|--------|----------------------|-------|
| Hauser Terminal | X | | | |
| Spokane Sub | X | | | |
| Spokane Terminal | X | | | |
| Lakeside Sub | X | | | |
| Pasco Terminal | | | | X |
| Fallbridge Sub | X | | | |
| Vancouver Terminal | | X | | |
| Seattle Sub | X | | | |
| Sea Tac Terminal | X | | | |
| Scenic Sub West | X | | | |
| Everett Terminal | | | X | |
| Bellingham Sub | | X | | |
| Scenic Sub East | | X | | |
| Columbia River Sub | X | | | |
| Stampede Sub | X | | | |
| Yakima Valley Sub | X | | | |

MCF Average Daily Train Volume



MCF Average Daily Train Volume



Summary

- ▶ While the study highlights specific locations (including classification yards) where capacity enhancements could occur, we expect BNSF (or UP) to make those improvements only when increased business warrants.
- ▶ The model shows limitations of infrastructure, such as the Columbia River Bridge (Pasco), and the Pend Oreille Bridge begin to cause delays between 2030-2035.
- ▶ The model also suggest system capacity would benefit from operational flexibility achieved through removing height restrictions on Stampede Pass route.
- ▶ While not modeled, mobility enhancements on UP in Oregon would support continued growth at Washington Ports.



Port Infrastructure Projects

16 Participating Ports



Port Projects Categorized by Type

▶ Cargo facilities

- ▶ Modernization of aging facilities
- ▶ Conversion of aging facilities to new lines of business
- ▶ New facilities
- ▶ Expansion of existing facilities
- ▶ Maintenance dredging

▶ Port access

- ▶ Road access to port facilities through urbanized areas
- ▶ Road / rail grade crossing conflicts
- ▶ Road access to new facilities through rural areas

Public Port Project List*

| 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

* Gathered from 16 participating Ports and cross-walked with the 2016 WAFAC Priority List. Not all Port Project Needs have been included in the WAFAC list.



Themes

- ▶ **Modernization of aging facilities**

- ▶ Container facilities preparing for “Big ships”

- ▶ Northwest Seaport Alliance

- North Harbor

- South Harbor

- ▶ Everett

- ▶ Modernization of Non-Container facilities

- ▶ Longview



- ▶ **Conversion of Aging facilities to new Lines of Business**

- ▶ Port of Port Angeles – Marine Trades

Themes - continued

► New Facilities

- Longview – Barlow Point – Terminal, Road and Rail improvements
- Kalama – Kalama Methanol Manufacturing and Exporting Facility (KMMEF)
- Grays Harbor – Terminal 3 Terminal and Rail improvements for Bulk handling

► Expansion of Facilities

- Vancouver, WA – Terminal 5
- Grays Harbor – Terminal 1 Liquid Facility



Themes - continued

► Maintenance Dredging

► Columbia River

- Longview
- Kalama
- Vancouver, USA

► Snake River

- Clarkston

► Northern Puget Sound

- Bellingham



Summary

- ▶ Ports are placing a stronger emphasis on non-port projects, recognizing freight and/or congestion mitigation will be needed in order to keep growing.
- ▶ There are local access/ congestion issues that will require improvements to meet future growth.
- ▶ The process for accessing Federal funds is changing as the new administration changes project selection criteria.



Port Takeaways & Strategies

Coalitions – Great Northern Corridor Coalition



Why it's important? Strong Trade Corridors are critical to the PNW Gateway's success.

Coalitions

▶ Goals

- ▶ **Commercial Strategy** that drives new way to increase economic development.
- ▶ Collaborative effort that seeks increased competitiveness through targeted infrastructure spending.

▶ Other Coalitions or Collaborative Efforts

- ▶ West Coast Corridor Coalition
- ▶ Columbia River Channel Deepening
- ▶ PNW Inland OSOW Corridor
- ▶ WA/OR River Crossings

Data, Performance & Solutions

- ▶ Consider establishment of a Statewide Infrastructure Bank
- ▶ Consistent, dedicated state funding for dredging projects
- ▶ JTC Road/Rail Conflict Study - UPDATED
- ▶ Washington State Freight Transportation Network Optimization Strategy
 - ▶ By employing dynamic modeling tools and by leveraging both private and public sector supply chain data sets Washington State will develop a Statewide Freight Transportation Network Optimization Strategy that will ensure infrastructure investments are meeting performance objectives such as increased economic vitality and reduced transportation costs.

Questions?

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360-943-0760
cherman@washingtonports.org



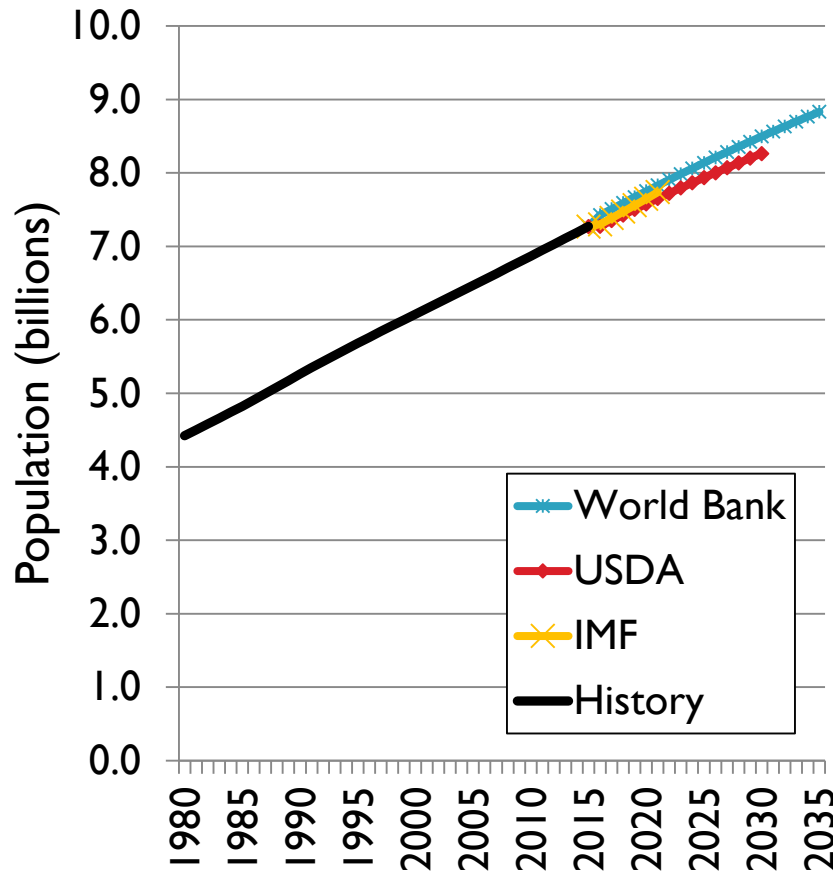
For Discussion

- ▶ 1. All forecasts are up, and could be REALLY up depending on key project approvals.
- ▶ 2. Road/Rail conflicts continue to be a major concern for many ports. and maybe not well highlighted (or prioritized?) in the JTC Study
- ▶ 3. Mailine rail capacity is available through about 2030. How can Washington State leverage that asset?
- ▶ 4. Does FMSIB support using NHFP set-aside of SPR (State Planning and Research) on freight-related issue?



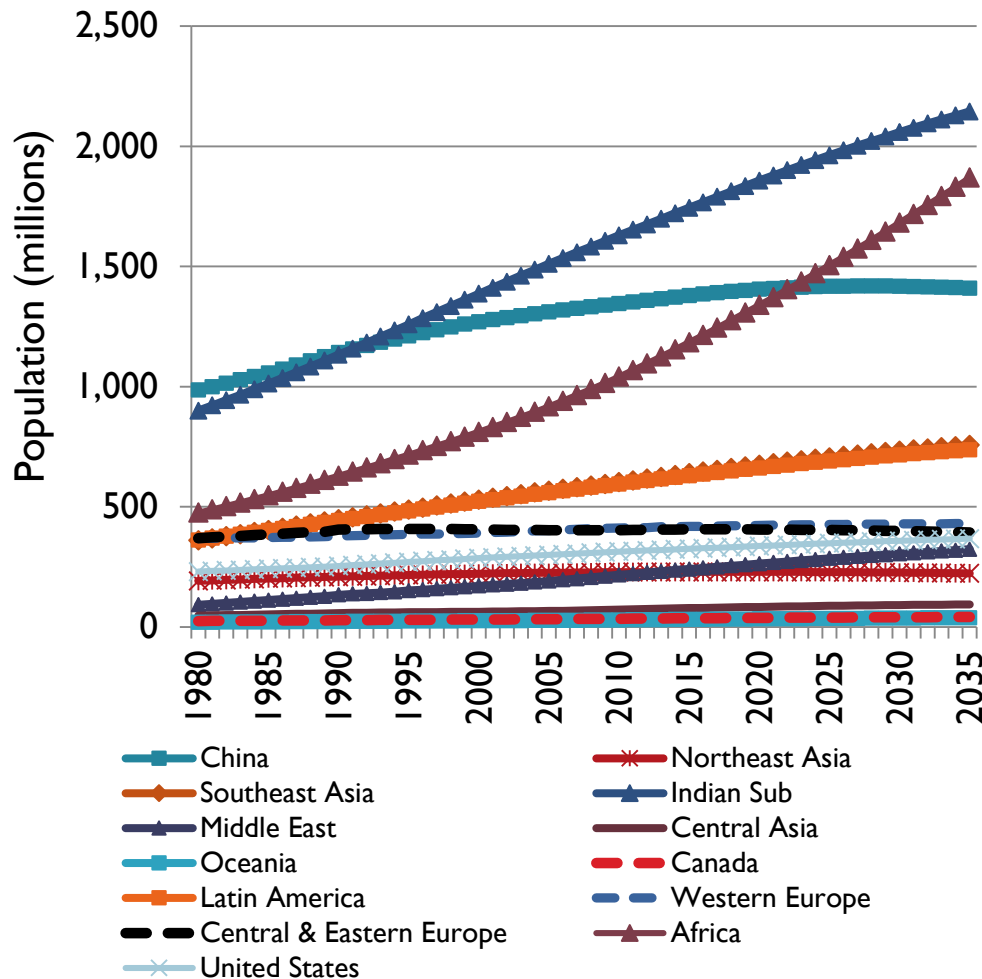
Economic Background Appendix

World Population Forecast



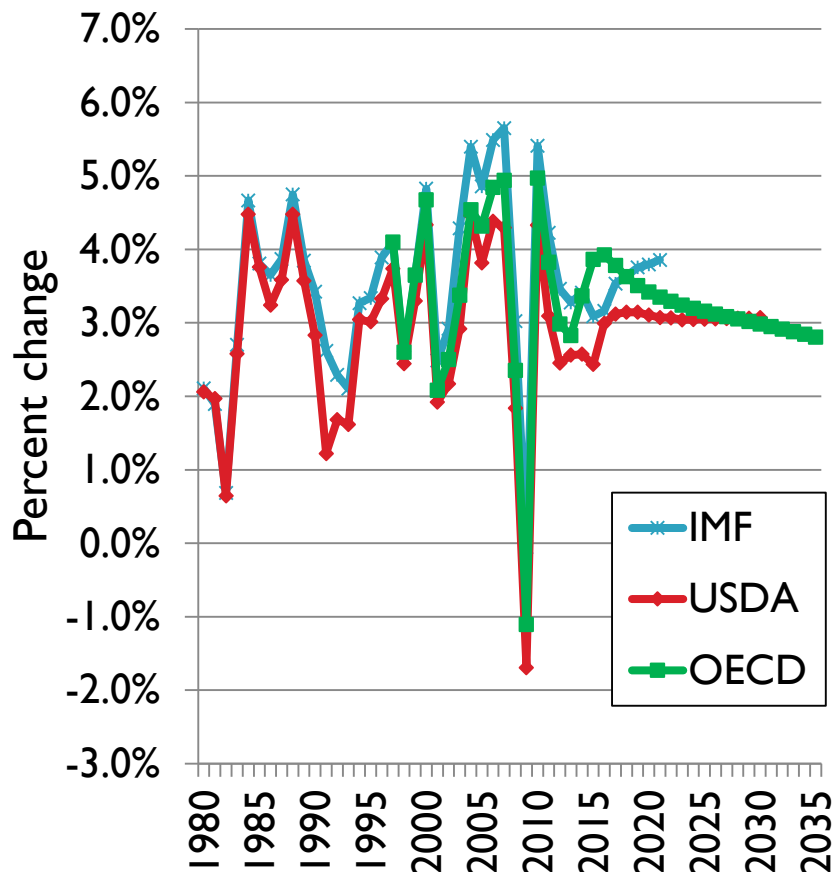
- ▶ World population growth slows over time
 - ▶ From 2015 to 2020, annual growth of 1.0% to 1.2%
 - ▶ 0.9% to 1.0% annual growth 2020 to 2025
 - ▶ 0.8% to 0.9% annual growth 2025 to 2030
 - ▶ 0.8% annual growth 2030 to 2035
- ▶ World population to grow by 1.5 billion over 20 years
- ▶ Population grew by 1.6 billion over past 20 years

Population Forecast by World Region



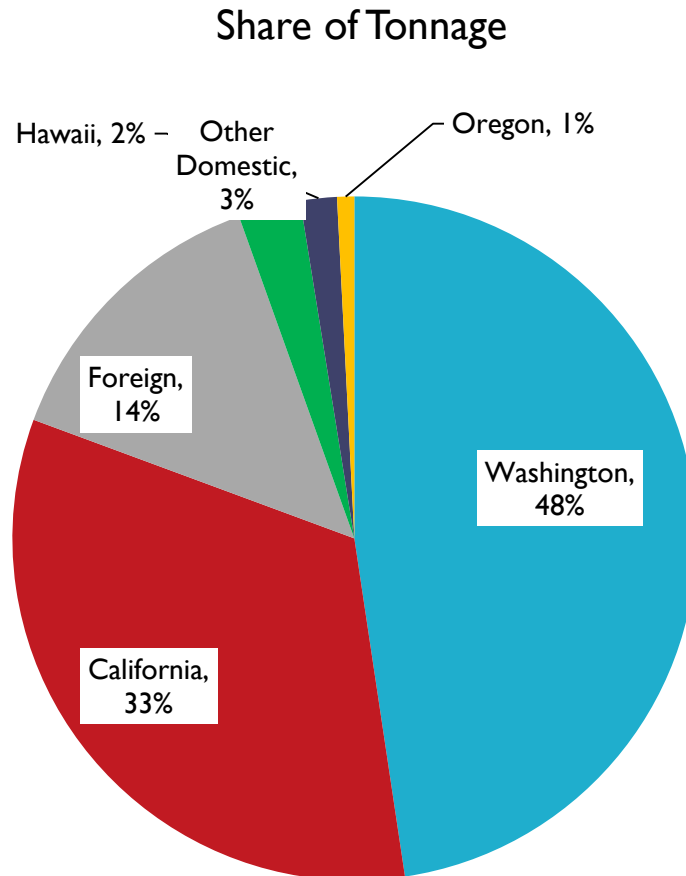
- ▶ China levels off
- ▶ India keeps growing
 - ▶ From 1.7 billion in 2015 to 2.1 billion in 2035
- ▶ Africa keeps growing
 - ▶ From 1.2 billion in 2015 to 1.9 billion in 2035
- ▶ Population growth is also strong in Latin America, Middle East, and SE Asia
- ▶ Slow growth in NE Asia, Canada, Oceania, Central Asia, Central & Eastern Europe

World GDP Forecast



- ▶ Long-term growth rate of approximately 3%
- ▶ Growth rates can vary widely from year to year
- ▶ Long-term forecasts of GDP don't include big year-to year fluctuations

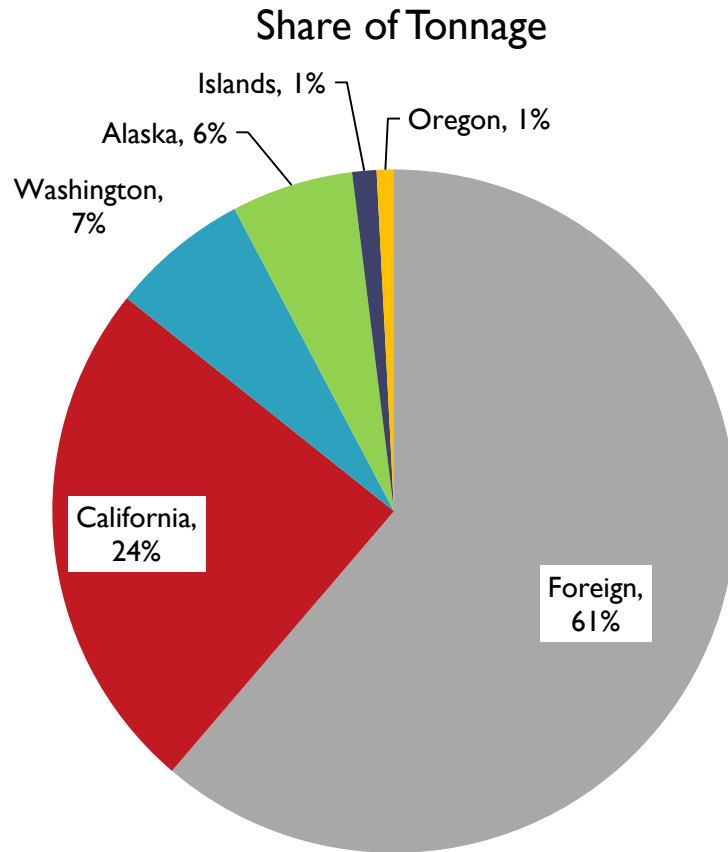
Domestic Trade – Alaska



Source: USACE Waterborne Commerce;

- ▶ Economy of Alaska consists of three equal parts
 - ▶ Oil production
 - ▶ Government (largely funded by oil revenues)
 - ▶ Everything else (tourism, fisheries, other sectors)
- ▶ Oil production decline has significantly impacted the Alaskan economy
 - ▶ Future trade volumes expected to decline then stabilize
- ▶ Trade partners
 - ▶ Washington (48% of tonnage):
 - ▶ Northbound – consumer goods, building materials, petroleum products
 - ▶ Southbound - crude oil, fish/seafood
 - ▶ Oregon (1% of tonnage)
 - ▶ Building materials, fertilizers

Domestic Trade – Hawaii



Source: USACE Waterborne Commerce;
average from 2001 to 2014

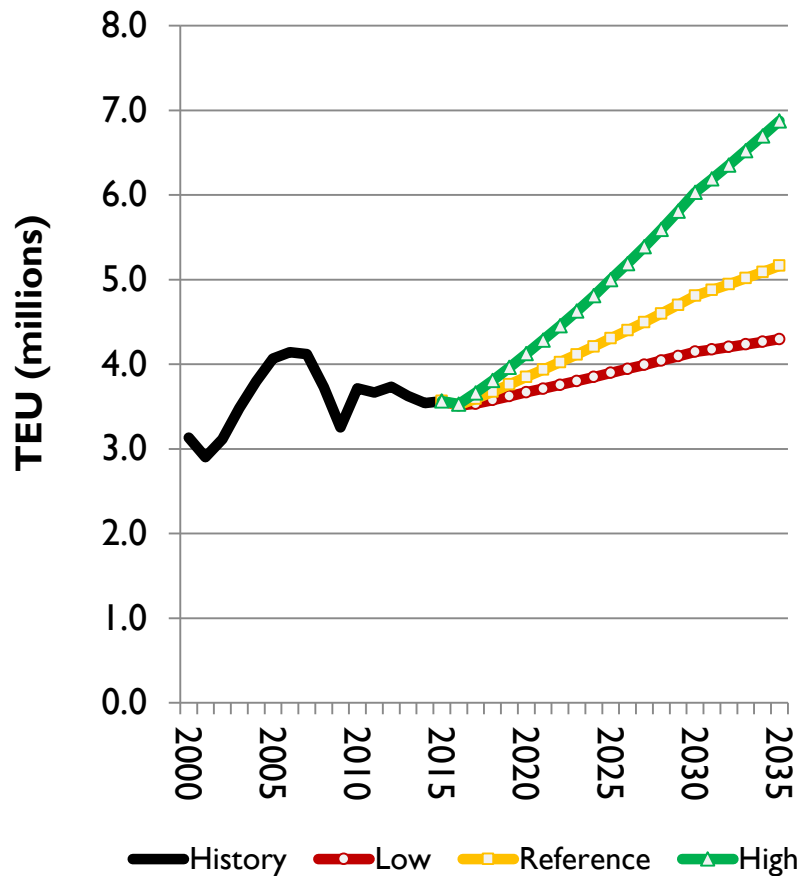
- ▶ Economy of Hawaii dominated by:
 - ▶ Tourism (~17% of GDP)
 - ▶ 8.6 million visitors in 2015
 - ▶ Government (~22% of GDP)
 - ▶ Military bases are big component
 - ▶ Other sectors (retirement, high tech)
- ▶ Modest growth projected
 - ▶ Economy expected to grow at ~2%.
- ▶ Trade partners:
 - ▶ Washington (7% of tonnage)
 - ▶ Consumer products, autos
 - ▶ Oregon (1%)
 - ▶ Building materials, consumer products



Preliminary Forecasts

Appendix

Containers



▶ Growth rates

- ▶ Historical: 0.9%
- ▶ Forecast
 - ▶ Low: 0.9%
 - ▶ Reference: 1.9%
 - ▶ High: 3.3%

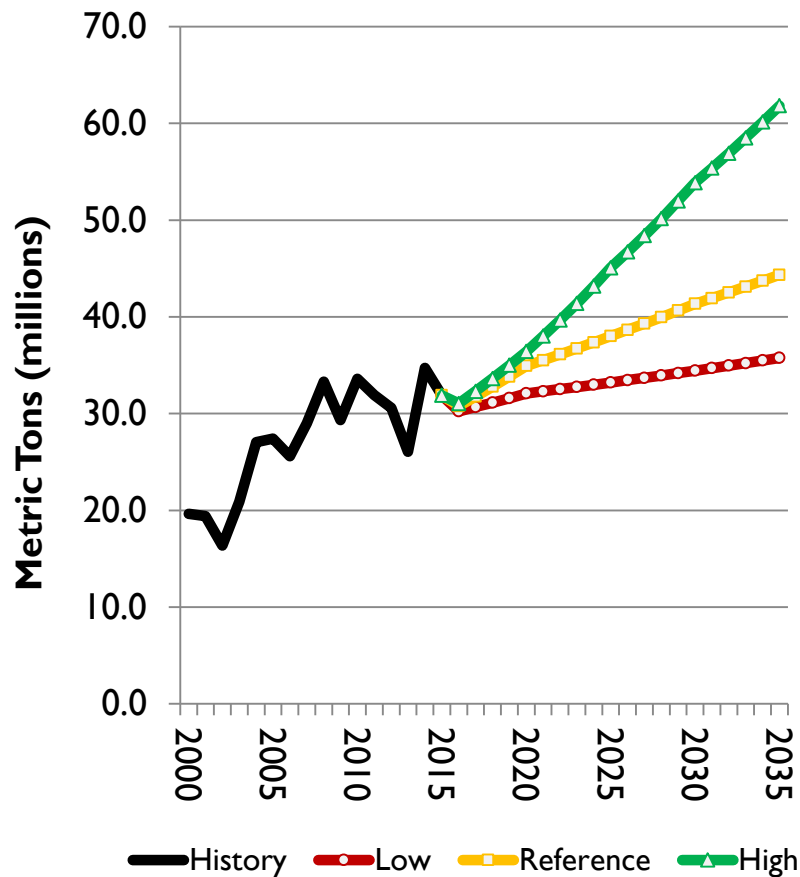
▶ Key factors

- ▶ Ocean container on rail decreasing (diversion to British Columbia)
- ▶ Increase in transloaded containers
- ▶ Slow growth in Alaska and Hawaii

▶ Modal split

- ▶ Rail: 76% (Imports), 40% (Total)
- ▶ Barge/raft: 0%
- ▶ Truck: 24% (Imports), 60% (Total)
- ▶ Pipeline: 0%

Grain – Exports



▶ Growth rates

- ▶ Historical: 3.3%
- ▶ Forecast
 - ▶ Low: 0.6%
 - ▶ Reference: 1.7%
 - ▶ High: 3.4%

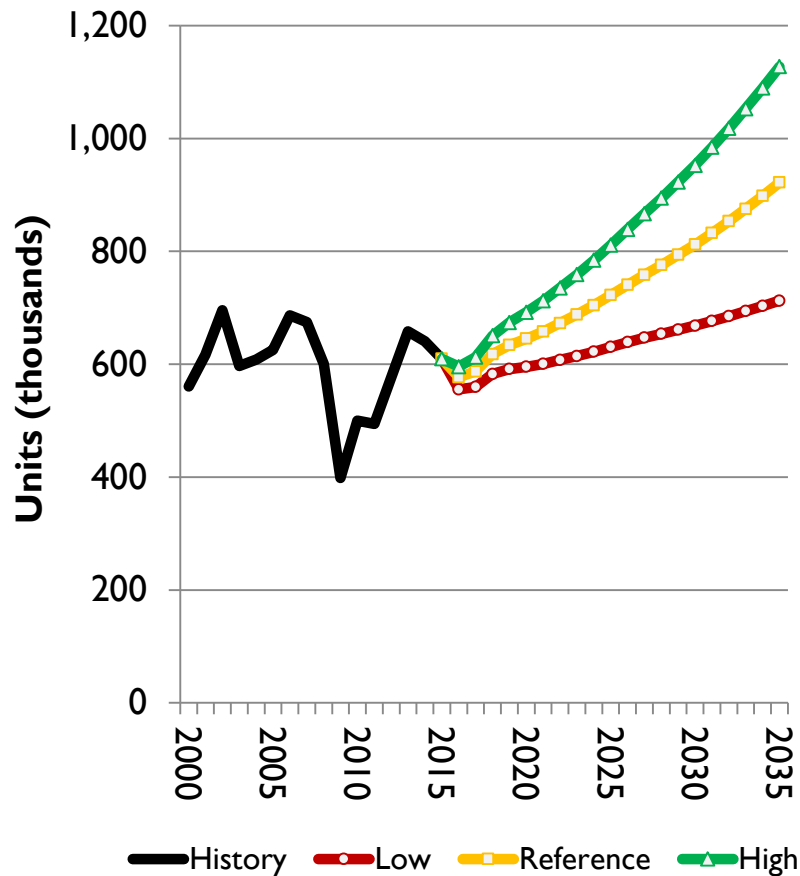
▶ Key factors

- ▶ Corn, soybean, and wheat account for most PNW tonnage
- ▶ Corn has the fastest growth projection
- ▶ Potential for some diversion to Panama Canal, especially corn & soybeans

▶ Modal split

- ▶ Rail: 75%
- ▶ Barge/raft: 25%
- ▶ Truck: 0%
- ▶ Pipeline: 0%

Automobile – Imports & Exports



▶ Growth rates

- ▶ Historical: 1.7%
- ▶ Forecast
 - ▶ Low: 0.8%
 - ▶ Reference: 2.1%
 - ▶ High: 3.1%

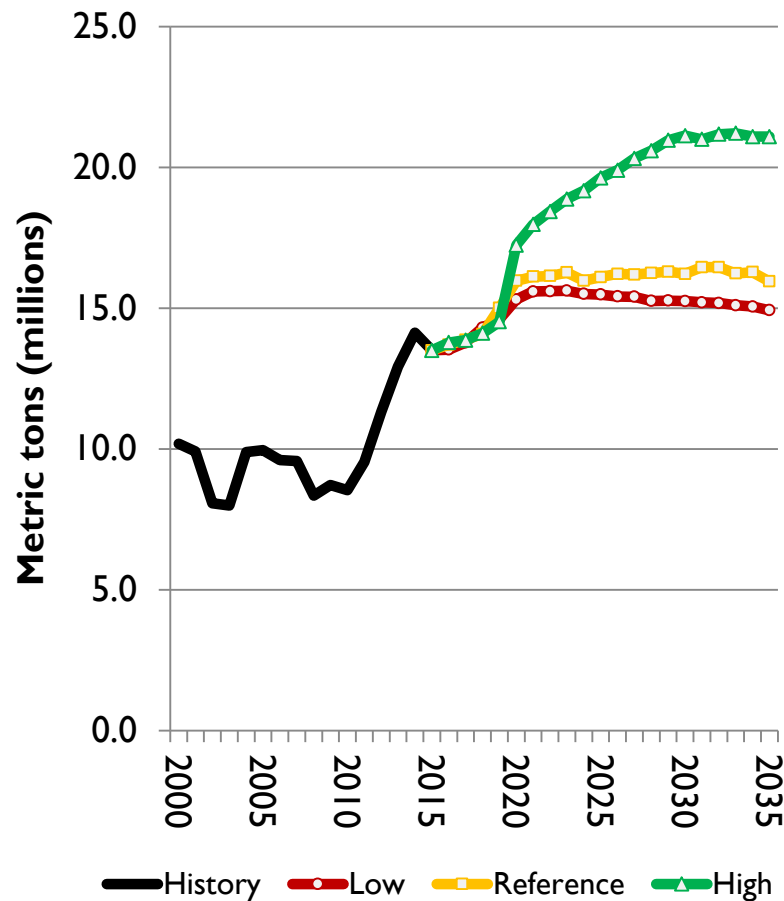
▶ Key factors

- ▶ Imports grow moderately from 0.2% per year (low) to 2.5% (high) per year from 2015-35.
 - ▶ More production is occurring in North America than in prior years (Mexico).
- ▶ Exports grow more robustly: from 2.4% (low) to 4.8% (high) per year from 2015-35
 - ▶ Driven by growth of middle class in Asia
- ▶ Impacts of driverless cars are unknown at this time but could also impact auto volumes

▶ Modal split

- ▶ Rail: 80%
- ▶ Barge: 0%
- ▶ Truck: 20%
- ▶ Pipeline: 0%

Liquid Bulks – Other Products



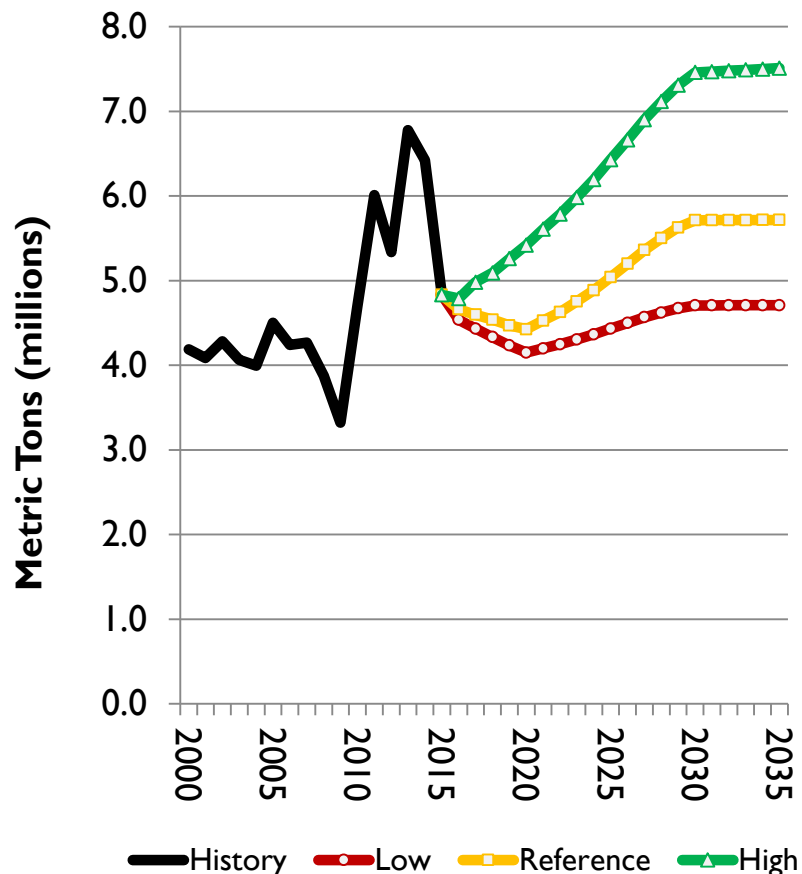
▶ Growth rates

- ▶ Historical: 1.9%
- ▶ Forecast
 - ▶ Low: 0.5%
 - ▶ Reference: 0.8%
 - ▶ High: 2.3%

▶ Key factors

- ▶ Petroleum products dominate liquid bulk cargoes
 - ▶ Exports represent the largest component, with strong growth in past few years (43% - mainly to Canada)
 - ▶ Coastwise shipments to domestic market is next largest (33% - to Oregon, Alaska, and other markets)
 - ▶ Imports accounted for 16% of total in 2015; coastwise receipts at 7%
- ▶ There are also smaller quantities of animal and vegetable oils/fats and liquid fertilizers/chemicals
- ▶ High scenario includes methanol
- ▶ Products primarily move from shore-based plants and distribution centers to other distribution facilities.

Log – Imports & Exports



▶ Growth rates

- ▶ Historical: 1.0%
- ▶ Forecast
 - ▶ Low: -0.1%
 - ▶ Reference: 0.8%
 - ▶ High: 2.2%

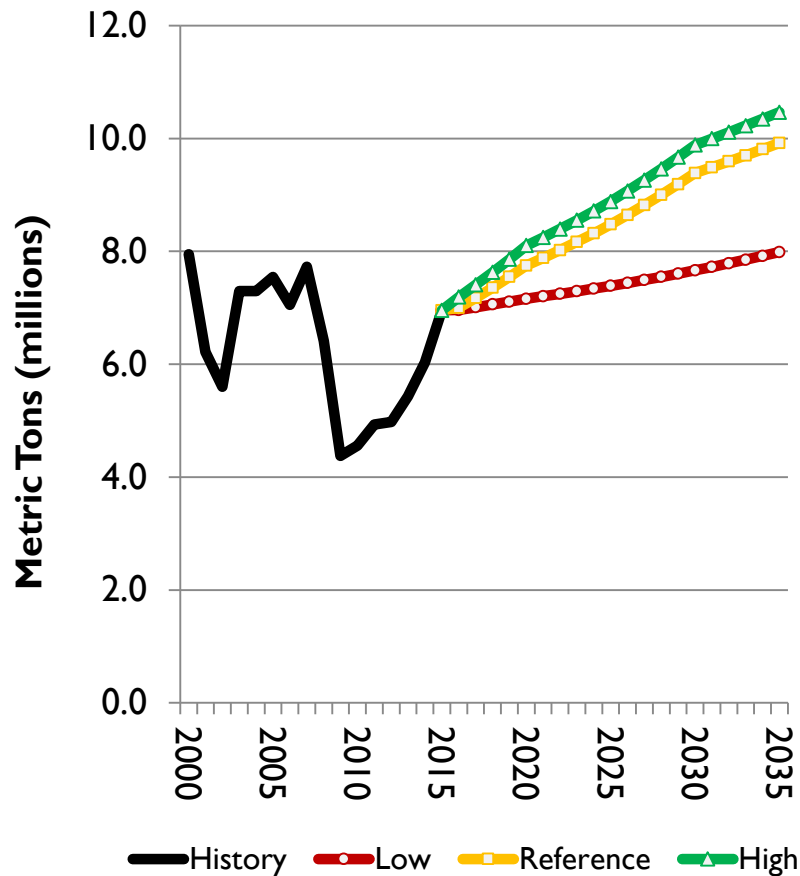
▶ Key factors

- ▶ Exports
 - ▶ Chinese demand grows but at a slower pace than in past under low and reference cases, more reliance on imports under high case.
 - ▶ Japanese demand declines as local harvests increase under all cases.
- ▶ Imports (from Canada) continue modest growth to support specific mill requirements

▶ Modal split

- ▶ Rail: ?0%
- ▶ Barge/raft: 5%
- ▶ Truck: 95%
- ▶ Pipeline: 0%

Dry Bulk – Imports



▶ Growth rates

- ▶ Historical: -0.9%
- ▶ Forecast
 - ▶ Low: 0.7%
 - ▶ Reference: 1.8%
 - ▶ High: 2.1%

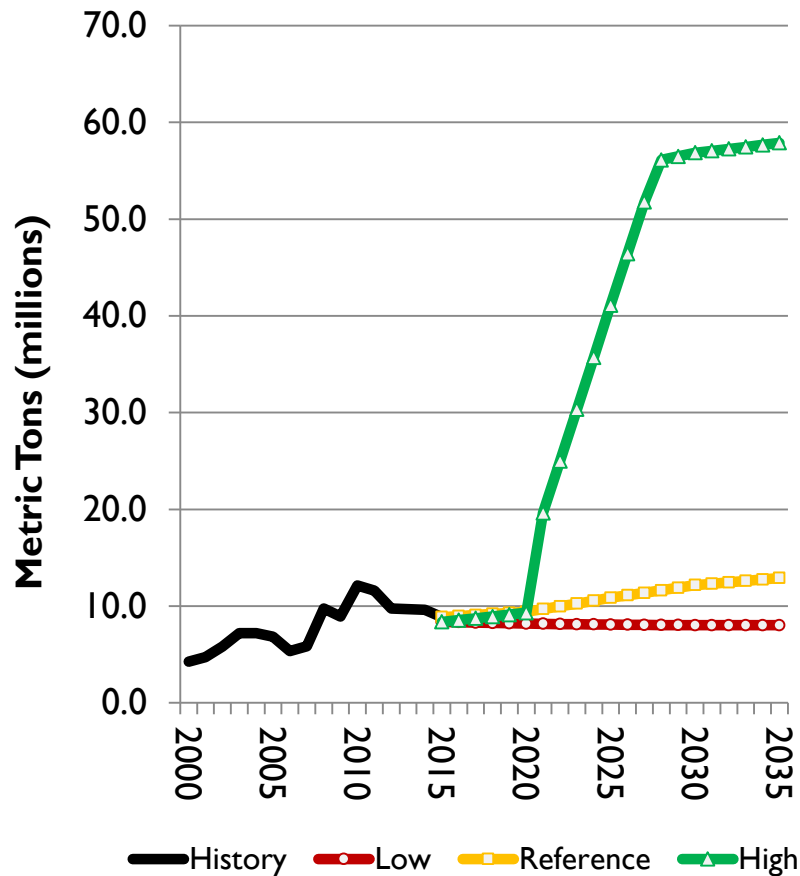
▶ Key factors

- ▶ Alumina caused the historical decline
- ▶ Construction material accounts for most tonnage (i.e. gypsum, limestone, cement, sand & gravel)
- ▶ Fertilizers and chemicals account for most of the remainder

▶ Modal split

- ▶ Rail: 11%
- ▶ Barge/raft: >10%
- ▶ Direct: 70%
- ▶ Truck: 10%
- ▶ Pipeline: 0%

Dry Bulk – Exports



► Growth rates

- Historical: 5.0%
- Forecast
 - Low: -0.2%
 - Reference: 1.9%
 - High: 10.2%

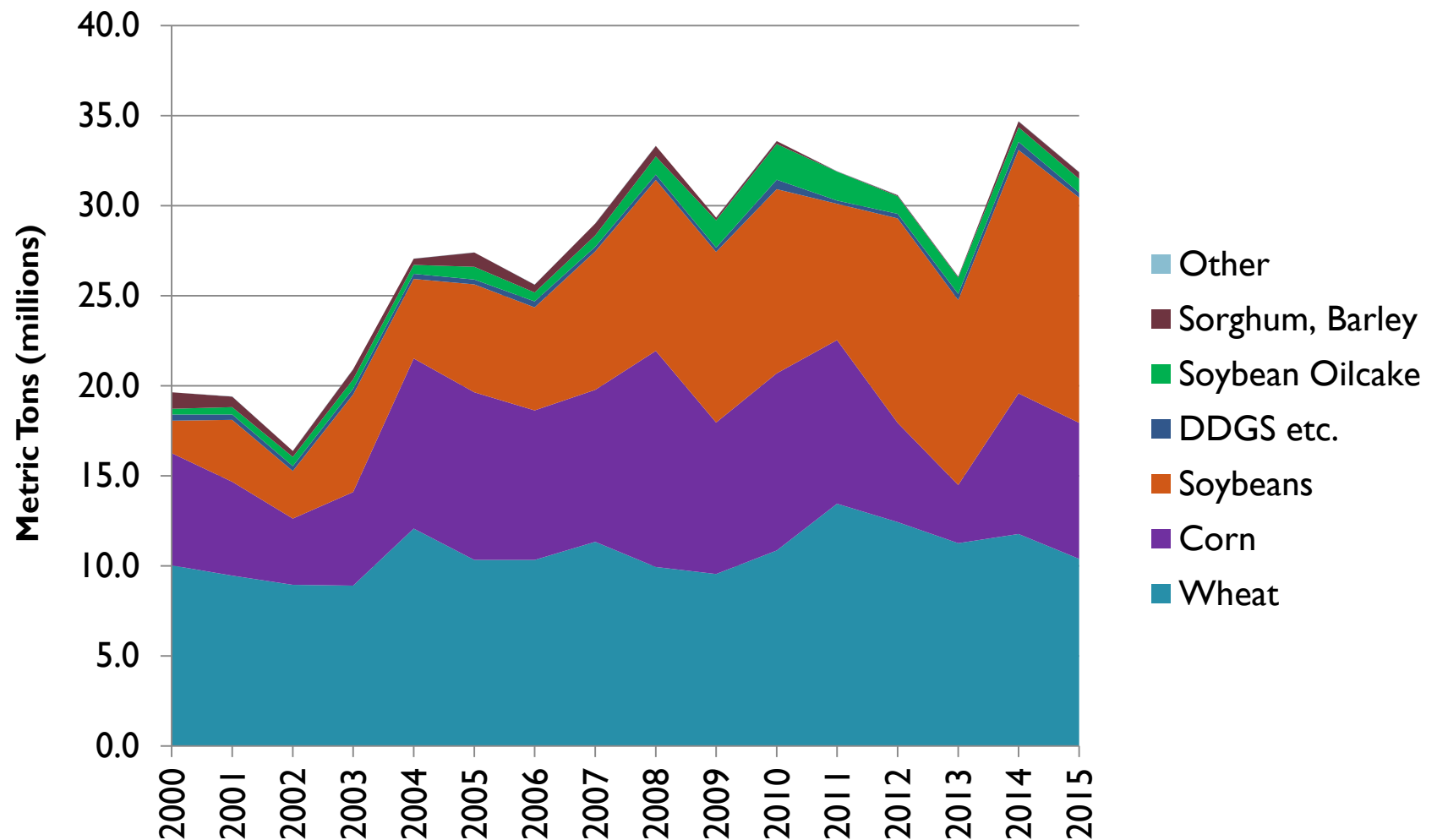
► Key factors

- Potash, scrap metal, soda ash, pet coke, and hay pellets led the historical growth
- Millennium is built under the high case

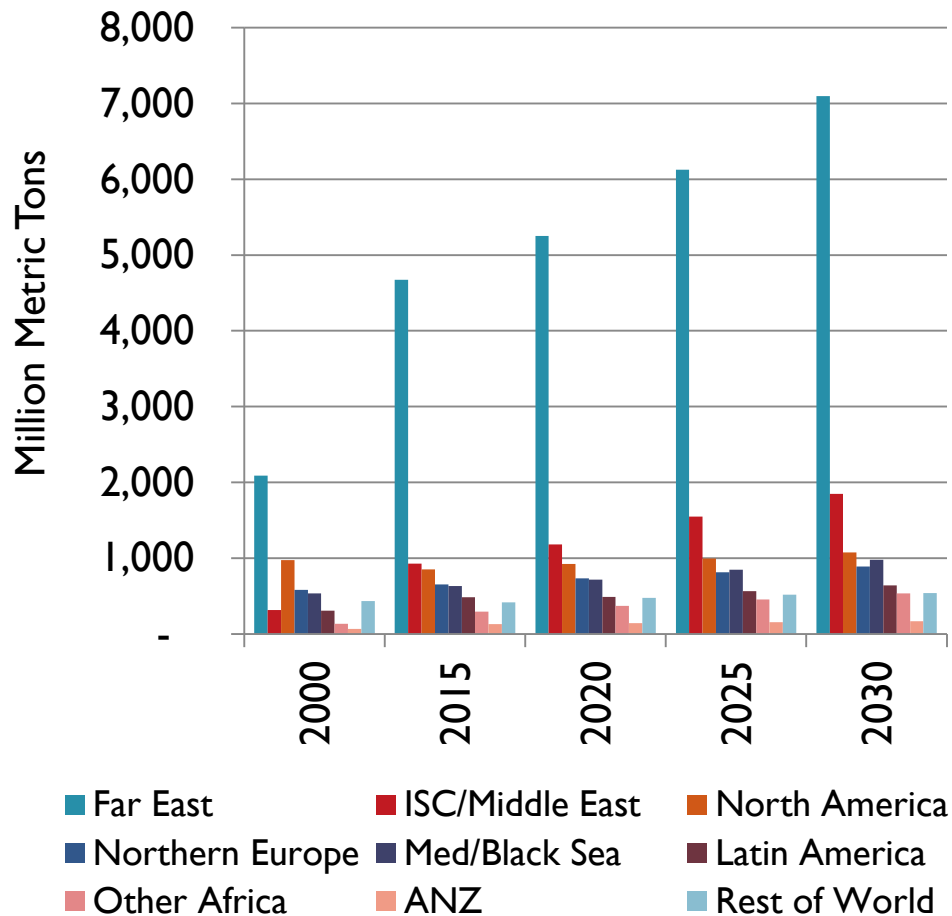
► Modal split

- Rail: ~90%
- Barge/raft: ~5%
- Truck: ~5 %
- Pipeline: 0%

PNW Grain Exports by Commodity



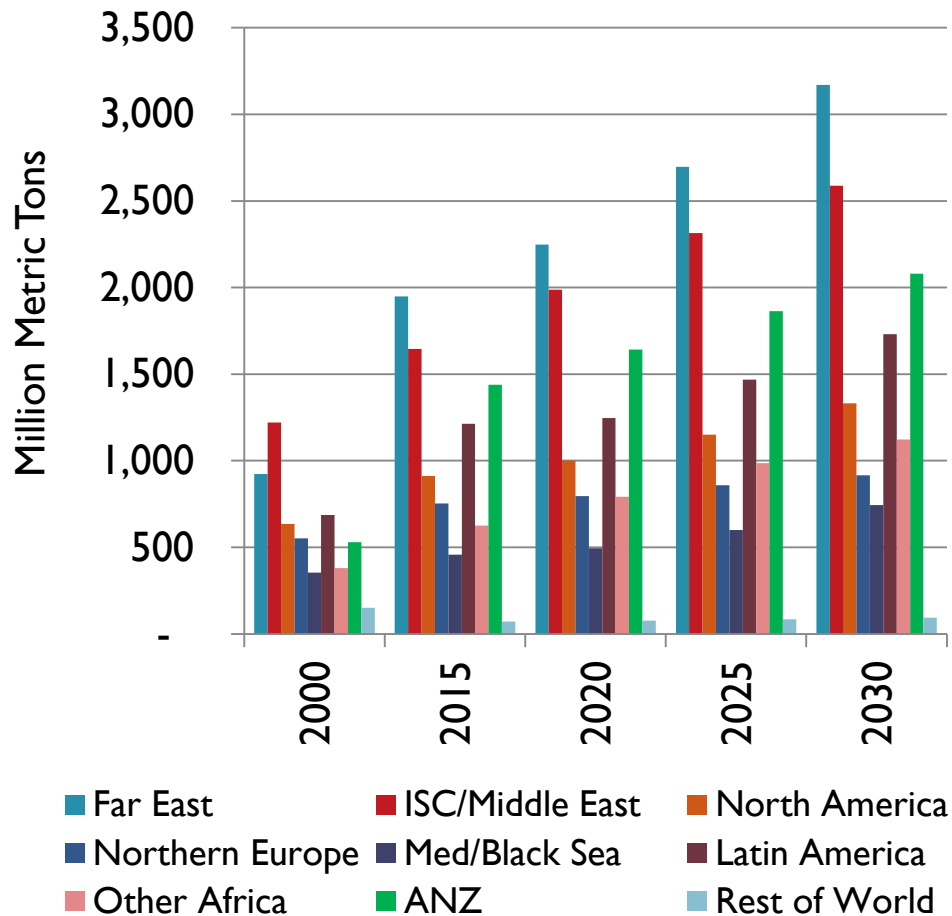
Seaborne Imports Forecast



Source: IHS

- ▶ Far East dominates seaborne trade
 - ▶ Grew from 38.5% of total in 2000 to 51.5% in 2014, 6.0% AAGR
 - ▶ Projected to slow to 2.6% per year (same as world average)
- ▶ Indian Subcontinent /Middle East
 - ▶ Grew from 5.8% of total to 10.5%
 - ▶ Projected to grow at 4.3% per year through 2030, and reach 13.4%
- ▶ Other Africa share will increase
- ▶ North America and Northern Europe share will decline

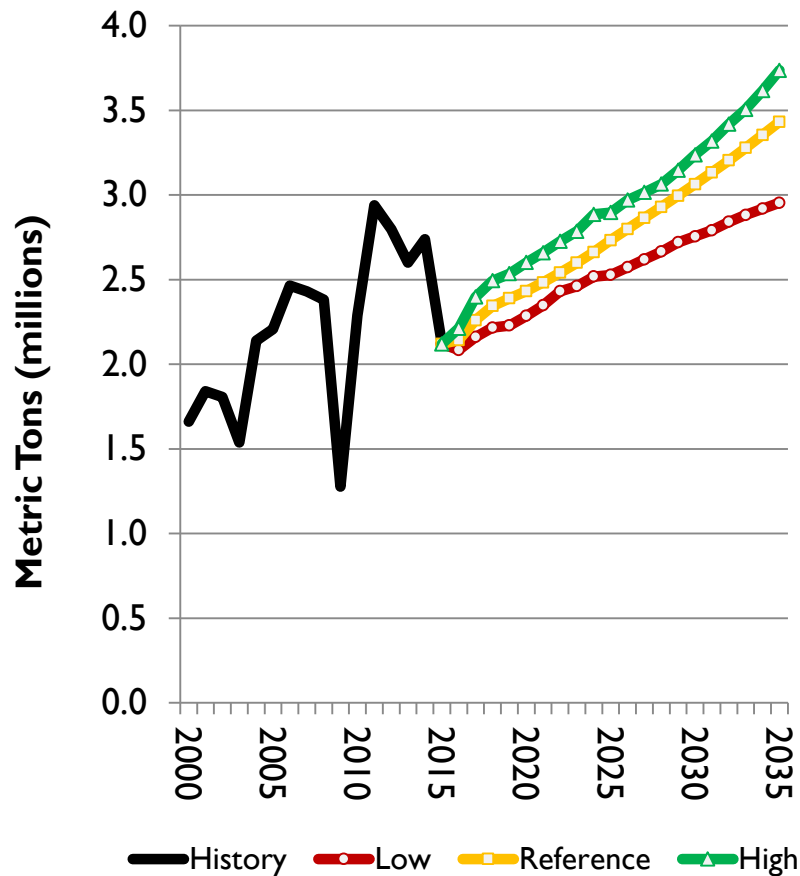
Seaborne Exports Forecast



Source: IHS

- ▶ **Bulk commodities dominate the shipments of top seaborne exporters**
 - ▶ Australia, Indonesia, Brazil, and Southern Africa are primarily dry bulk exporters
 - ▶ Saudi Arabia, Other Western Asia, Venezuela, and the United Arab Emirates export predominantly liquid bulk commodities
- ▶ **Indian Subcontinent /Middle East**
 - ▶ Grew from 5.8% of total to 10.5%
 - ▶ Projected to grow at 4.3% per year through 2030, and reach 13.4%
- ▶ **Bulk commodities account for most seaborne exports from:**
 - ▶ United States (dry bulk, 47.5%, and liquid bulk, 25.8%)
 - ▶ Canada (dry bulk, 67.4%, and liquid bulk, 13.6%)
 - ▶ South Korea (dry bulk, 21.8%, and liquid bulk, 37.4%),

Breakbulk – Imports & Exports



▶ Growth rates

- ▶ Historical: 1.6%
- ▶ Forecast
 - ▶ Low: 1.7%
 - ▶ Reference: 2.4%
 - ▶ High: 2.9%

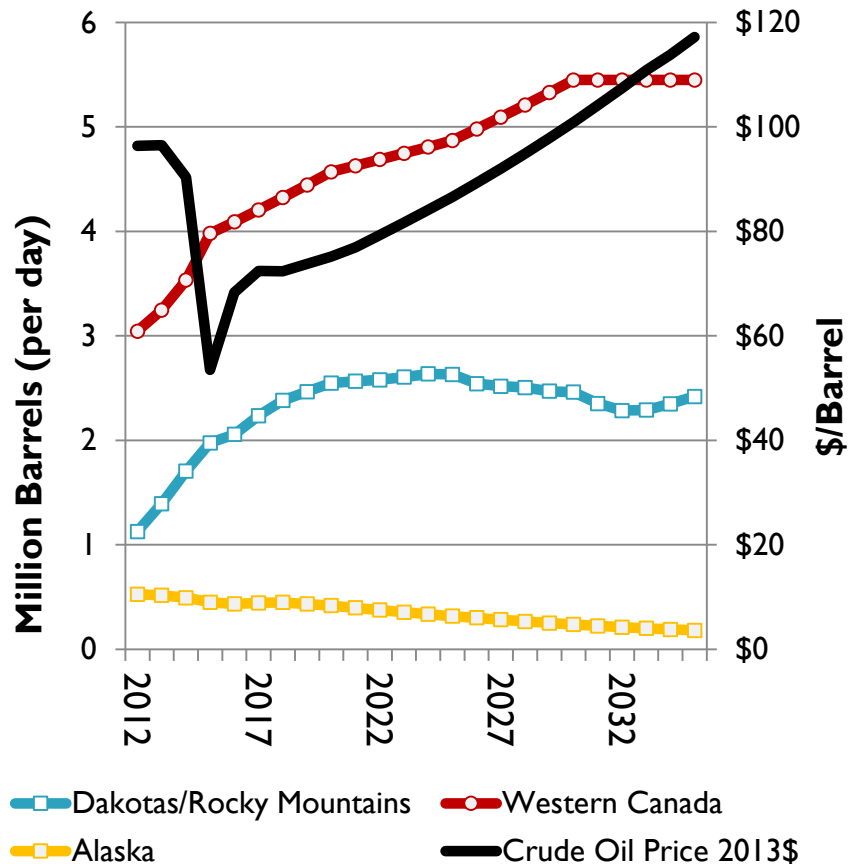
▶ Key factors

- ▶ Exports consist of forest products, machinery and equipment and to a lesser extent metal products.
- ▶ Imports are dominated by steel and metal products as well as machinery/equipment and a small volume of forest products

▶ Modal split

- ▶ Rail: 30%
- ▶ Barge/raft: 0%
- ▶ Truck: 70%
- ▶ Pipeline: 0%

Crude Oil Production



Sources: EIA (US Energy Information Administration, NEB (National Energy Board of Canada)

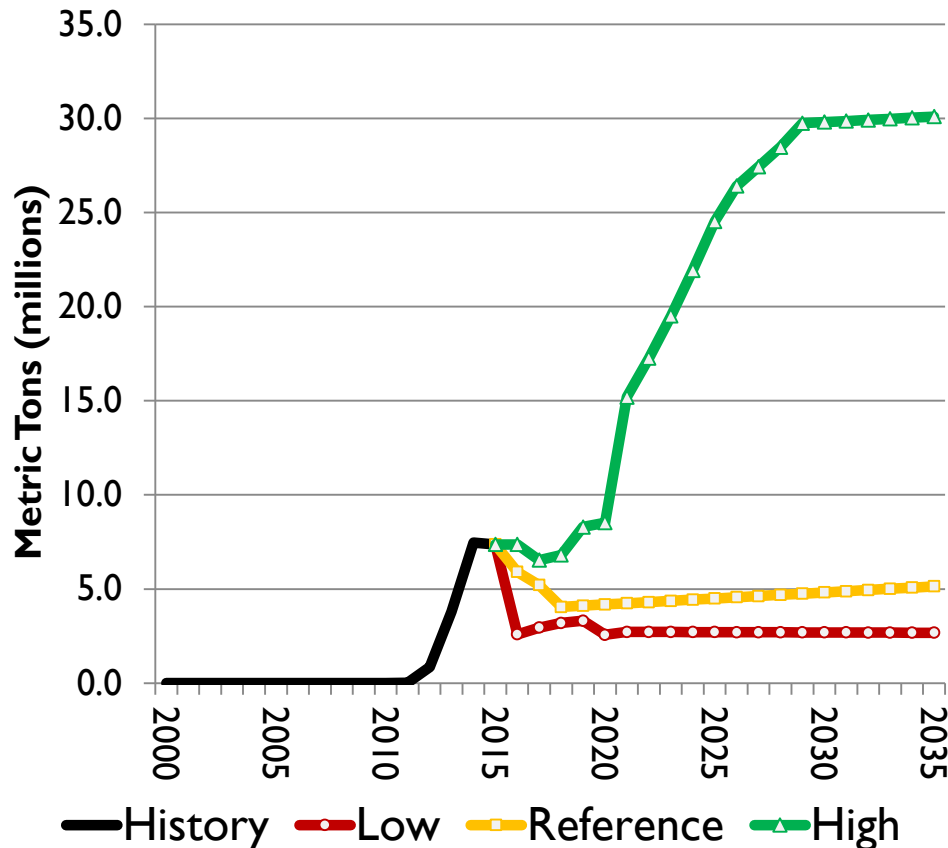
Production forecast:

- ▶ Alaska production declines by 66% from 2015 to 2035 (US EIA)
- ▶ Dakotas/Rockies increases by 22% (US EIA)
- ▶ Western Canada increases by 37% (Canada NEB)

Key factors

- ▶ Price margins have declined, which has increased the relative price for crude from Bakken. However, it is still priced in line with Alaska crude received at refineries.
 - ▶ Crude oil prices expected to return to \$100 per barrel by 2030
 - ▶ Bakken and Western Canadian prices are close to par with international prices
- ▶ The flow of crude from Dakotas/Rockies and Western Canada depends on pipeline access and capacity.
 - ▶ Trans Mountain pipeline is planned for expansion
 - ▶ Pipelines from North Dakota (Dakota Access Pipeline) are being challenged
- ▶ Crude by rail is the next best option for producers.

Crude By Rail



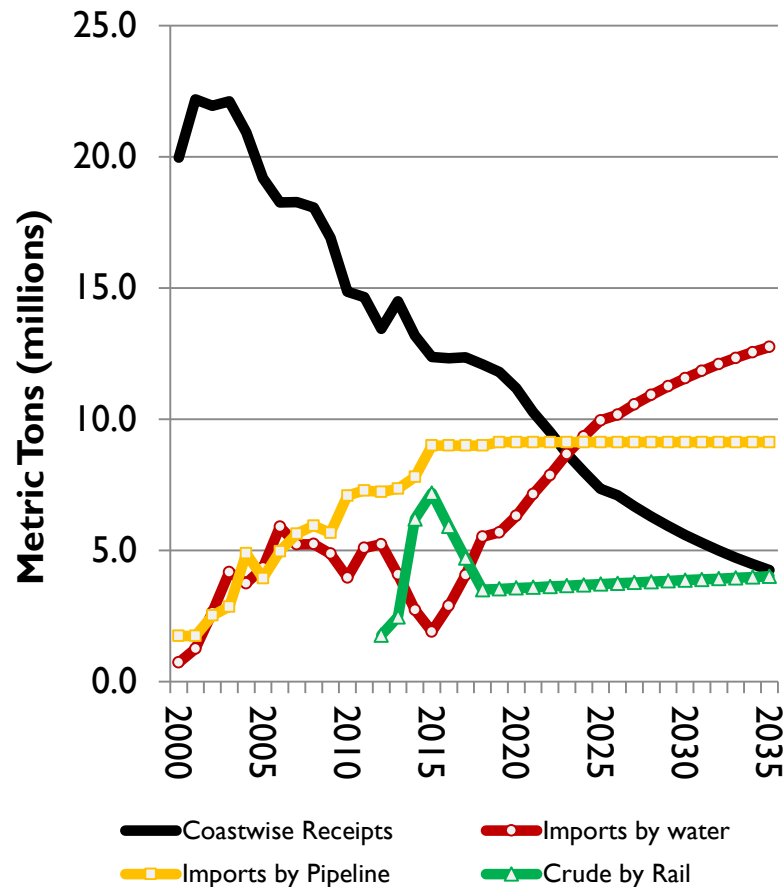
Growth rates

- ▶ Historical: from 0 to a peak of 7.5 million tons in 2014
 - ▶ Price differential was very high in 2014-2015
- ▶ Forecast
 - ▶ Low: -4.9%
 - ▶ Reference: -1.8%
 - ▶ High: 7.3%

Key factors

- ▶ Low and reference case only include refineries (with permits/facilities)
- ▶ High case incorporates proposed facilities (Vancouver, Grays Harbor...)
 - ▶ Plans include domestic use of crude oil (delivered to USWC refineries) and exports.
- ▶ CBR depends on pipeline access which is uncertain
- ▶ In 2016, CBR has declined to most PADDs except for PADD V, which includes Washington and Oregon.

Liquid Bulks – Crude Oil Receipts by Source to Refineries (Reference Case)



► Growth rates

- Historical: 0.6% growth/yr in refinery capacity
- Forecast (2015-35)
 - Coastwise from Alaska: -5.2%/yr
 - Imports by water: 10.0%/yr
 - Imports by pipeline: 0.1%/yr
 - Crude by Rail: -2.9%/yr

► Key factors

- Refineries respond to loss of Alaskan crude oil
- Imports by pipeline from Canada are constrained by pipeline capacity
- Crude by rail declines but still represents ~12-13% share of receipts in forecast years
- Imports by water (from Canada and overseas) accounts for residual requirements

► Modal split in 2035

- Rail: 13%
- Alaska by water: 14%
- Imports by water: 42%
- Pipeline: 30%



Rail Capacity Analysis

Appendix

Rail Traffic Growth Factors (continued)

▶ International Containers

- ▶ Projected growth provided by BST Associates
- ▶ Domestic containers estimated at same growth rates as Int'l

▶ Manifest

- ▶ Breakbulk volumes provided by BST only small portion of manifest volumes in PNW.
- ▶ CAGR of 1.5% (base) and 1.7% (high) used based on other projects

▶ Other Dry Bulk

- ▶ Majority of other dry bulk was potash to Portland via UP, which was outside scope of study
- ▶ Other lesser dry bulk growth would likely move in existing manifest trains rather than create new dry bulk unit trains

Train Count – Base Case

| Location | Detail | Base Case |
|--------------|--------------------------|-----------|
| E. Spokane | Spokane Sub, MP 63 | 66 |
| Lind | Lakeside Sub, MP 91 | 42 |
| Plymouth | Fallbridge Sub, MP 190 | 38 |
| McLoughlin | Fallbridge Sub, MP 14 | 42 |
| Ridgefield | Seattle Sub, MP 122 | 59 |
| Vader | Seattle Sub, MP 77 | 51 |
| East Olympia | Seattle Sub MP 35 | 46 |
| SeaTac Term | ~MP32X, Puyallup | 60 |
| SeaTac Term | ~MP2X, Spokane St | 68 |
| SeaTac Term | ~MP2, Broad St | 53 |
| Mukilteo | Scenic Sub, MP 28 | 42 |
| Marysville | Bellingham Sub, MP 38 | 26 |
| Bow | Bellingham Sub, MP 79 | 20 |
| Border | Bellingham Sub, MP 117 | 15 |
| Monroe | Scenic Sub, MP 1770 | 23 |
| Harrington | Columbia River, MP 1527 | 24 |
| Ravensdale | Stampede Sub, MP 91 | 6 |
| Yakima | Yakima Valley Sub, MP 90 | 8 |

Rail Model Conclusions – 2020

- ▶ BNSF has sufficient line segment capacity with the improvements included in the model to accommodate the growth projected for five years.
 - ▶ The analysis assumed that Millennium coal trains and Vancouver Energy oil trains would not start by 2020.
- ▶ Terminals appear to be a larger concern for rail capacity.
 - ▶ Hauser, Pasco and Everett terminals experienced the greatest number of delays.
 - ▶ Intermittent constraints may occur at Sea Tac Terminal, due largely to commuter passenger trains.
 - ▶ Pasco showed signs of potential congestion.

Train Count – 2020

| Location | Detail | Base Case | 2020 |
|--------------|--------------------------|-----------|------|
| E. Spokane | Spokane Sub, MP 63 | 66 | 69 |
| Lind | Lakeside Sub, MP 91 | 42 | 46 |
| Plymouth | Fallbridge Sub, MP 190 | 38 | 38 |
| McLoughlin | Fallbridge Sub, MP 14 | 42 | 42 |
| Ridgefield | Seattle Sub, MP 122 | 59 | 64 |
| Vader | Seattle Sub, MP 77 | 51 | 56 |
| East Olympia | Seattle Sub MP 35 | 46 | 52 |
| SeaTac Term | ~MP32X, Puyallup | 60 | 66 |
| SeaTac Term | ~MP2X, Spokane St | 68 | 79 |
| SeaTac Term | ~MP2, Broad St | 53 | 58 |
| Mukilteo | Scenic Sub, MP 28 | 42 | 47 |
| Marysville | Bellingham Sub, MP 38 | 26 | 25 |
| Bow | Bellingham Sub, MP 79 | 20 | 20 |
| Border | Bellingham Sub, MP 117 | 15 | 16 |
| Monroe | Scenic Sub, MP 1770 | 23 | 23 |
| Harrington | Columbia River, MP 1527 | 24 | 23 |
| Ravensdale | Stampede Sub, MP 91 | 6 | 9 |
| Yakima | Yakima Valley Sub, MP 90 | 8 | 11 |



Track Improvements in Model - 2020

▶ Seattle Sub

- ▶ 15.67 miles of third main track, MP 95.30 to MP 110.97, between Ostrander and Kelso, WA on the Seattle Sub (this improvement was part of WSDOT Cascades improvements)
- ▶ Pt. Defiance Bypass passenger route, Nisqually Jct. to TR Jct. near Reservation (Tacoma)
- ▶ 6.13 miles third main track, MP 9.62 – MP 15.75 between Black River Jct. and Kent, WA within the Seattle/Tacoma terminal

▶ Lakeside Sub

- ▶ 3.26 miles of second main track between Glade and East Pasco, WA on the Lakeside Sub
- ▶ 4.97 miles third main track within Pasco Terminal, MP 140.35 to MP 145.32, replacing crossover track at Husky with North/South yard connections. (this track is used for spraying coal trains with an agent to minimize coal dust)

▶ Spokane Sub

- ▶ 7.84 miles DT East Ramsey to East Hauser, MP 36.69 to MP 44.53, absorbing Ramsey siding on the Spokane Sub
- ▶ A second lead track on the east end of Hauser Fueling Facility from the main track to the fueling tracks.

Track Improvements in Model - 2025

- ▶ **Seattle Sub**
 - ▶ A north leg of wye, Port of Vancouver to Seattle Sub so empty Port unit trains can move north towards Auburn, WA.
 - ▶ A power switch at Centralia where the Puget Sound and Pacific connects to BNSF's Seattle Sub
- ▶ **Lakeside Sub**
 - ▶ 3.22 miles of second main track at Cheney, MP 11.79 – MP 15.0
 - ▶ 2.7 miles of second main track at Fishtrap, MP 27.05 – MP 27.90
 - ▶ 2.1 miles of second main track at Keystone North, MP 48.8 – MP 50.9
 - ▶ 3.1 miles of second main track Lamphere to Sprague, MP 39.02 – MP 42.15
 - ▶ 2.33 miles of second main track Essig to Paha, MP 70.1 – MP 72.5
 - ▶ 6.47 miles of second main track Lind to Sand, MP 78.43 – MP 84.90
 - ▶ 3.3 miles of second main track Connell to Cactus, MP 109.9 – MP 113.3
 - ▶ 2.7 miles of second main track at Eltopa, MP 123.8 – MP 126.4
 - ▶ 4.34 miles of second main track Glade to Sagemore, MP 132.58 – MP 137.02
- ▶ **Extend Bay siding south 1.64 miles, MP 77.43 – MP 79.07**
- ▶ **Fallbridge Sub**
 - ▶ 3.4 miles of second main track Camas to Washougal, MP 24.47 – MP 27.79
 - ▶ 1.84 miles of second main track through Wishram Yard, MP 105.90 – MP 107.81
 - ▶ 10.76 miles of second main track Hover to Yellepit, MP 216.98 – MP 227.66
 - ▶ Extend following sidings to a minimum 8,800 feet in length: Maryhill, Bates, Roosevelt, McCredie, Paterson, Berian, Wishram
- ▶ **Spokane Sub**
 - ▶ 2.3 miles of second main track Algoma to Cocolalla, MP 14.14 – MP 16.47
 - ▶ 3.2 miles of second main track Athol to Ramsey, MP 33.5 – MP 36.7
 - ▶ 4.1 miles of second main track Otis Orchards to Irving, MP 58.88 – MP 62.98
 - ▶ Improvements complete second main track from Sandpoint to Spokane, with exception of bridge over Lake Pend Oreille

Track Improvements in Model - 2030

- ▶ **Spokane Sub**
 - ▶ Install power switches at Trentwood, Velox and Coeur d'Alene industrial spurs
- ▶ **Lakeside Sub**
 - ▶ Crossover from UP Ayer Sub (Hinkle, OR to Spokane) to BNSF Lakeside Sub near Mullinix Rd. in Cheney
 - ▶ Modify operations so UP trains use crossover to BNSF
 - ▶ Complete second main track between Lakeside Jct. and Glade
 - ▶ Extend third main track 3.04 miles at East Pasco to allow simultaneous staging of two loaded coal trains
- ▶ **Stampede Sub**
 - ▶ Clear tunnels for double stack trains
 - ▶ Some manifest and intermodal trains use Stampede Sub
 - ▶ Upgrade signal system to full CTC to facilitate additional capacity
- ▶ **Yakima Valley Sub**
 - ▶ Upgrade signal system to full CTC to facilitate additional capacity
- ▶ **Fallbridge Sub**
 - ▶ 2.63 miles second main track at Roosevelt, MP 144.43 – MP 147.06
 - ▶ 7.71 miles second main track Camas to McLoughlin, MP 7.71 – MP 27.05
- ▶ **Seattle Sub**
 - ▶ Second Vancouver Bypass track for northbound crew changes in Vancouver Terminal
- ▶ **Scenic Sub**
 - ▶ Upgrade Bayside route in west Everett as follows:
 - ▶ Upgrade signal system to two main track CTC for 25 MPH operations
 - ▶ 5.72 miles of second main track Hawthorn Park to Delta Jct., MP 31.44 – MP 36.87
 - ▶ Modify operations to utilize Bayside route for north/south crew changes rather than using Delta Yard

Rail Model Conclusions – 2030

- ▶ Rail traffic growth continued to be significant, and required infrastructure and operating modifications.
 - ▶ Additional capacity was added to Lakeside, Fallbridge, and Stampede Subs.
 - ▶ Stampede Sub tunnels were cleared for double-stack trains.
 - ▶ Additional train types were routed via the Stampede Sub.
- ▶ Unit traffic increased again in a large increment as final trains to Millennium and Roberts Bank were added.
- ▶ Terminals remain a concern.

Rail Model Conclusions – 2035

- ▶ Since the 2030 analysis required completion of a second main track across the Spokane and Lakeside subdivisions, there is little opportunity for constructing additional second main track on the routes between Sand Point and Pasco.
 - ▶ If additional infrastructure is required, it would likely include a third main track in strategic locations over those subdivisions.
 - ▶ The bridge over Lake Pend Oreille at Sand Point was left as single track in the 2030 simulation case. A second track across the bridge may become necessary, but could not be fully tested with current simulation network.
- ▶ The 2035 train volume projections do not include significant growth in energy trains from the 2030 analysis.
- ▶ Passenger train volumes and operations (Sound Transit and Amtrak Cascades) were held constant after 2020.
 - ▶ Significant changes in passenger train volumes and operations could have a significant impact on freight operations in the Portland / Seattle / Vancouver, BC corridor.

Train Count – 2035

| Location | Detail | Base Case | 2020 | 2025 | 2030 | 2035 |
|--------------|--------------------------|-----------|------|------|------|------|
| E. Spokane | Spokane Sub, MP 63 | 66 | 69 | 93 | 111 | 119 |
| Lind | Lakeside Sub, MP 91 | 42 | 46 | 66 | 88 | 93 |
| Plymouth | Fallbridge Sub, MP 190 | 38 | 38 | 47 | 51 | 54 |
| McLoughlin | Fallbridge Sub, MP 14 | 42 | 42 | 52 | 58 | 61 |
| Ridgefield | Seattle Sub, MP 122 | 59 | 64 | 79 | 93 | 100 |
| Vader | Seattle Sub, MP 77 | 51 | 56 | 71 | 85 | 91 |
| East Olympia | Seattle Sub MP 35 | 46 | 52 | 66 | 81 | 87 |
| SeaTac Term | ~MP32X, Puyallup | 60 | 66 | 82 | 95 | 99 |
| SeaTac Term | ~MP2X, Spokane St | 68 | 79 | 85 | 90 | 94 |
| SeaTac Term | ~MP2, Broad St | 53 | 58 | 65 | 70 | 74 |
| Mukilteo | Scenic Sub, MP 28 | 42 | 47 | 53 | 59 | 62 |
| Marysville | Bellingham Sub, MP 38 | 26 | 25 | 28 | 31 | 31 |
| Bow | Bellingham Sub, MP 79 | 20 | 20 | 22 | 25 | 25 |
| Border | Bellingham Sub, MP 117 | 15 | 16 | 17 | 20 | 20 |
| Monroe | Scenic Sub, MP 1770 | 23 | 23 | 28 | 26 | 28 |
| Harrington | Columbia River, MP 1527 | 24 | 23 | 28 | 25 | 27 |
| Ravensdale | Stampede Sub, MP 91 | 6 | 9 | 20 | 40 | 42 |
| Yakima | Yakima Valley Sub, MP 90 | 8 | 11 | 23 | 41 | 43 |



Rail Model Conclusions – Base Case

- ▶ BNSF does not currently have capacity issues on most line segments in the PNW, based on the estimated volumes simulated.
 - ▶ Between terminals, trains ran efficiently for the most part.
 - ▶ Most delays occurred where there were many meets and passes on single track (with sidings), or where line segments transitioned into terminals.
 - ▶ Access to some of the terminals did create queues of trains that impeded some operations.
- ▶ ***Terminals appear to be a larger concern for rail capacity.***
 - ▶ Hauser, Pasco and Everett terminals experienced the greatest number of delays.
 - ▶ Even with these delays, however, the terminals did operate to a level that allowed all trains to finish their operations throughout the network.
- ▶ The project scope did not include detailed simulation of operations within the terminals. This likely understated delays associated with terminal operations.

Train Count – 2025

| Location | Detail | Base Case | 2020 | 2025 |
|--------------|--------------------------|-----------|------|------|
| E. Spokane | Spokane Sub, MP 63 | 66 | 69 | 93 |
| Lind | Lakeside Sub, MP 91 | 42 | 46 | 66 |
| Plymouth | Fallbridge Sub, MP 190 | 38 | 38 | 47 |
| McLoughlin | Fallbridge Sub, MP 14 | 42 | 42 | 52 |
| Ridgefield | Seattle Sub, MP 122 | 59 | 64 | 79 |
| Vader | Seattle Sub, MP 77 | 51 | 56 | 71 |
| East Olympia | Seattle Sub MP 35 | 46 | 52 | 66 |
| SeaTac Term | ~MP32X, Puyallup | 60 | 66 | 82 |
| SeaTac Term | ~MP2X, Spokane St | 68 | 79 | 85 |
| SeaTac Term | ~MP2, Broad St | 53 | 58 | 65 |
| Mukilteo | Scenic Sub, MP 28 | 42 | 47 | 53 |
| Marysville | Bellingham Sub, MP 38 | 26 | 25 | 28 |
| Bow | Bellingham Sub, MP 79 | 20 | 20 | 22 |
| Border | Bellingham Sub, MP 117 | 15 | 16 | 17 |
| Monroe | Scenic Sub, MP 1770 | 23 | 23 | 28 |
| Harrington | Columbia River, MP 1527 | 24 | 23 | 28 |
| Ravensdale | Stampede Sub, MP 91 | 6 | 9 | 20 |
| Yakima | Yakima Valley Sub, MP 90 | 8 | 11 | 23 |

Rail Model Conclusions – 2025

- ▶ Projected growth trains over the 10 year time frame will create congestion if no line segment infrastructure improvements are constructed.
 - ▶ With infrastructure improvements, such as those added in the simulation, each of the major line segments operated efficiently.
 - ▶ MLM placed improvements at locations where the simulation indicated they were needed.
 - ▶ BNSF will perform their own analyses and may make improvements in locations that are different from MLM's.
 - ▶ We are confident that BNSF will address the capacity issues as they arise, when the traffic actually materializes.
- ▶ Large unit train operations increase train volumes in sudden increments rather than in a slow building fashion. This puts intense pressure on network capacity and it is imperative that it is immediately addressed.
- ▶ Terminals remain a larger concern for rail capacity.
- ▶ Columbia River Bridge and coal spraying shed at Pasco become concerns.

Train Count – 2030

| Location | Detail | Base Case | 2020 | 2025 | 2030 |
|--------------|--------------------------|-----------|------|------|------|
| E. Spokane | Spokane Sub, MP 63 | 66 | 69 | 93 | 111 |
| Lind | Lakeside Sub, MP 91 | 42 | 46 | 66 | 88 |
| Plymouth | Fallbridge Sub, MP 190 | 38 | 38 | 47 | 51 |
| McLoughlin | Fallbridge Sub, MP 14 | 42 | 42 | 52 | 58 |
| Ridgefield | Seattle Sub, MP 122 | 59 | 64 | 79 | 93 |
| Vader | Seattle Sub, MP 77 | 51 | 56 | 71 | 85 |
| East Olympia | Seattle Sub MP 35 | 46 | 52 | 66 | 81 |
| SeaTac Term | ~MP32X, Puyallup | 60 | 66 | 82 | 95 |
| SeaTac Term | ~MP2X, Spokane St | 68 | 79 | 85 | 90 |
| SeaTac Term | ~MP2, Broad St | 53 | 58 | 65 | 70 |
| Mukilteo | Scenic Sub, MP 28 | 42 | 47 | 53 | 59 |
| Marysville | Bellingham Sub, MP 38 | 26 | 25 | 28 | 31 |
| Bow | Bellingham Sub, MP 79 | 20 | 20 | 22 | 25 |
| Border | Bellingham Sub, MP 117 | 15 | 16 | 17 | 20 |
| Monroe | Scenic Sub, MP 1770 | 23 | 23 | 28 | 26 |
| Harrington | Columbia River, MP 1527 | 24 | 23 | 28 | 25 |
| Ravensdale | Stampede Sub, MP 91 | 6 | 9 | 20 | 40 |
| Yakima | Yakima Valley Sub, MP 90 | 8 | 11 | 23 | 41 |



Summary of Observations

- ▶ Large unit train facilities will drive much of the growth to/from PNW. New coal and oil facilities, and existing grain facilities, will be responsible for a very high percentage of total train volume growth.
- ▶ Growth of unit traffic will noticeably increase volumes on Spokane and Lakeside Subs because of BNSF unit train routing protocol in PNW.
- ▶ Additional capacity for line segments can likely be constructed for most of the critical locations.
- ▶ Operational modifications will likely have to be made to create capacity on some line segments (Fallbridge and Scenic).
- ▶ Terminals are likely to be greatest capacity constraints in PNW.
- ▶ Expanded passenger operations will compete with freight for existing capacity, particularly between Everett, Seattle and Tacoma.



Port Infrastructure Projects

Appendix

Port Summaries – Example Port of Bellingham- continued

▶ Description of Access

- ▶ Truck
- ▶ Rail
- ▶ Barge
- ▶ Pipeline

▶ Future Cargo Activities

▶ List of New Terminals

▶ Identification of Access Challenges/ Projects

▶ Other Challenges/ Issues



Port Summaries – Example Port of Bellingham

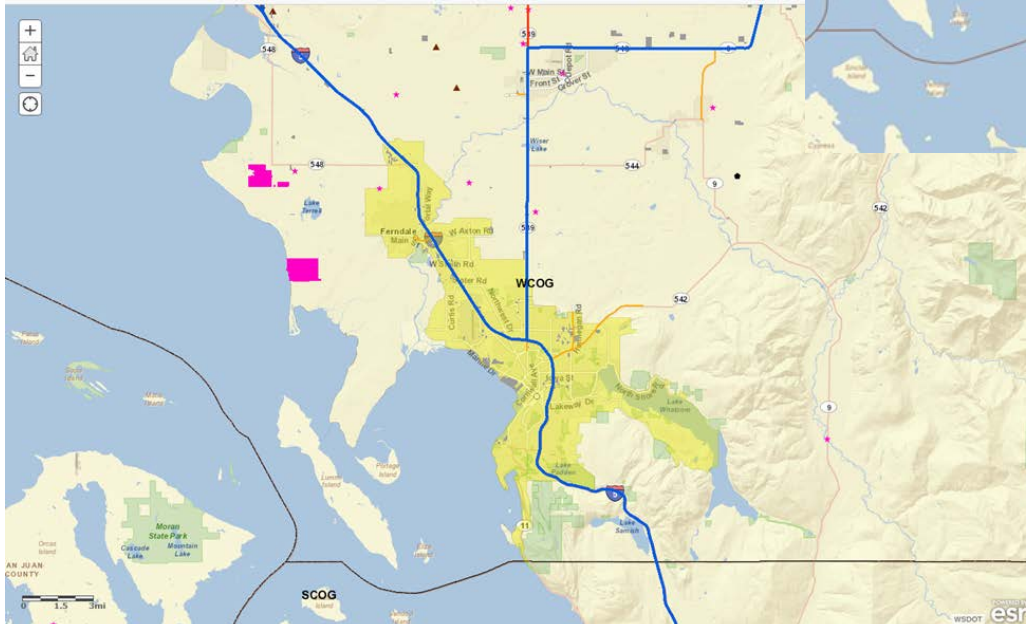
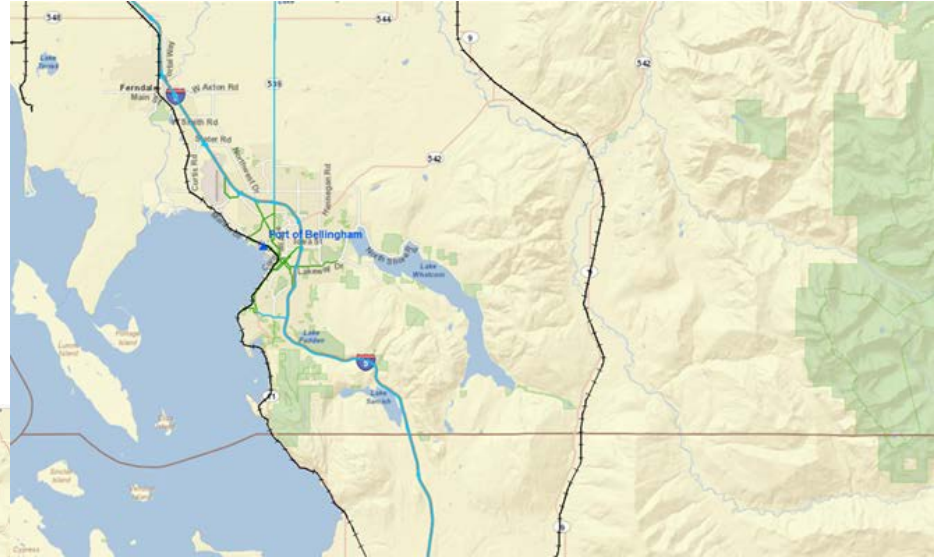
Intent to provide current overview of the Port facilities and identify future port projects and access projects / issues

| Public/ Private | Terminal Name | Owner | Operator | City/ Area | Purpose |
|--------------------|-------------------------------------|-------------------------|-------------------------|---------------|--|
| Public | Bellingham Shipping Terminal | Port of Bellingham | Port of Bellingham | Bellingham | General cargo, logs, bulks |
| Private | BP Cherry Point Refinery north dock | British Petroleum | British Petroleum | Cherry Point | Crude oil unloading |
| Private | BP Cherry Point Refinery south dock | British Petroleum | British Petroleum | Cherry Point | Petroleum product loading |
| Private | Gateway Pacific | SSA | SSA | Cherry Point | Exports of coal, mineral bulks, grain |
| Private | Intalco Company Aluminum Wharf | Intalco | Intalco | Cherry Point | Alumina receipts |
| Private | Conoco Phillips Ferndale Refinery | Conoco Phillips | Conoco Phillips | Cherry Point | Crude oil receipts and petroleum product shipments |
| Private | Bellingham Cold Storage | Bellingham Cold Storage | Bellingham Cold Storage | Bellingham | Fish/seafood |

Port Summaries – Example Port of Bellingham- continued

► Maps

- Location and Access
(Example to right)
- WSDOT map



Abbreviations

- ▶ DDGS - Distiller's Dried Grains with Solubles
- ▶ EIA – U.S. Energy Information Administration
- ▶ FMSIB – Freight Mobility Strategic Investment Board
- ▶ GDP – Gross Domestic Product
- ▶ IHS - IHS Markit
- ▶ IMF - International Monetary Fund
- ▶ JTC - Joint Transportation Committee of the Washington State Legislature
- ▶ MPO - Metropolitan Planning Organization
- ▶ NEB - National Energy Board of Canada
- ▶ OECD - Organization for Economic Co-operation and Development
- ▶ PADD - Petroleum Administration for Defense District
- ▶ PNW – Pacific Northwest
- ▶ RTC – Rail Traffic Controller software model
- ▶ RTPPO - Regional Transportation Planning Organization
- ▶ USACE – U.S. Army Corps of Engineers
- ▶ GPT – Gateway Pacific Terminal
- ▶ USDA – U.S. Department of Agriculture
- ▶ USWC – U.S. West Coast
- ▶ WAFAC – Washington State Freight Advisory Committee
- ▶ World Bank – The World Bank
- ▶ WSDOT – Washington State Department of Transportation
- ▶ WPPA – Washington Public Ports Association

Board Assessment of FMSIB Performance Using Plus/Delta Tool

Purpose: To conduct regular reviews of various Board functions and products in order to identify, prioritize, and implement improvement opportunities.

Process:

1. Conduct Plus/Delta brainstorming session
2. Record and report success (Plus) and improvement opportunities (Delta)
3. Prioritize improvement opportunities (Balloting, dot-voting, consensus, etc.)
4. Develop action plans for implementing selected improvement opportunities

Results: Better FMSIB operations, efficiency, and/or credibility

Initial Topics:

1. Meeting Agendas (Topics, Decision Making, Length, Frequency, Project Update detail/frequency)
2. Meeting Venues (East/West, Project Locations, Public/Private Facilities, Workshop Location)
3. Meeting Tours (Every meeting, Projects vs. Issues, Old/Current/Upcoming Projects)
4. Agenda Packets (Electronic/paper, Level of detail, Freight Articles, Advance notice)
5. FMSIB Staff (Responsive, knowledgeable, productive)

Freight Mobility Strategic Investment Board

Technical Assistance

Brian Ziegler
Director

Email: ziegleb@fmsib.wa.gov

P.O. Box 40965
Olympia, WA 98504-0965

Telephone: (360) 586-9695

FMSIB Board Members

Dan Gatchet
Chair

John Creighton
Port Districts Representative

Leonard Barnes
Port Districts Representative

Tom Trulove
City Representative

Pat Hulcey
City Representative

Vacant
County Representative

Art Swannack
County Representative

Erik Hansen
Governor's Representative

Matt Ewers
Trucking Industry

Johan Hellman
Railroad Industry

Bob Watters
Marine Representative

Roger Millar
WSDOT

Aaron Hunt
Ex Officio
UP Railroad

Please visit our website for grant application
and guidelines www.fmsib.wa.gov



Freight Mobility Strategic Investment Board



2018 Call For Projects

State of Washington Freight Mobility Strategic Investment Program

The mission of the Freight Mobility Strategic Investment Board is to create a comprehensive and coordinated state program to facilitate freight movement to local, national, and international markets, which enhances trade opportunities. The Board is also charged with finding solutions that lessen the impact of the movement of freight on local communities.

Freight Mobility Strategic Investment Program

Funding Outlook

The 2015 Legislature and Governor supported an increase in funding for the Freight Mobility Strategic Investment Board (FMSIB) as part of the new transportation package. FMSIB is issuing a call for projects that would be ready to go to construction during 2019-20XX. An estimated \$xx million will be available in 2019-2021 and \$xx million to \$xx million is anticipated in 2021-20xx. Additionally, inclusion on the FMSIB project list may better position your project to compete for other partnership funding. After selection, FMSIB works with project sponsors to assist them with partnership development and agreements.

Board Priorities

Projects must directly improve freight movement and/or mitigate freight movement on communities. Funding for studies will not be accepted at this time due to the large unmet backlog of freight construction needs. Only fully completed applications will be considered. Eligible project sponsors will be asked to attend a review panel discussion after the initial scoring is completed. Statements indicating project benefits for rail, truck or port operations will need to be supported by endorsement letters from the beneficiary freight mode.

Eligible Project Sponsors (Lead Agencies)

Cities, counties, ports, and WSDOT

Fund Match Requirements

A 35 percent match is required by statute and higher match ratios will improve project scores. Nearly all successful projects have a match at or above 50 percent. The Legislature favors projects with higher partnership match ratios.

Call for Projects Schedule

- | | |
|-------------------------------|------------------------|
| • Call for Projects Initiated | February xx, 2018 |
| • Submittals Due | March xx, 2018 |
| • Preliminary Selection | Week of April xx, 2018 |
| • Project Interviews | Week of May xx, 2018 |
| • Final List Adoption | May xx, 2018 |

Project Priority Criteria

Evaluation Criteria

Initial project evaluation will be made on the following criteria.

Freight Mobility for the Project Area **35 points**

| | |
|--|----|
| Reduce truck, train, or rail car delays | 25 |
| Increase capacity for peak truck or train movement | 10 |

Freight Mobility for the Region, State and Nation **35 points**

| | |
|--|----|
| Importance to regional freight system and regional economy | 10 |
| Importance to state freight system and state economy | 10 |
| Direct access to ports or international border | 10 |
| Provide a corridor/system solution | 5 |

General Mobility **25 points**

| | |
|--|----|
| Reduce vehicular traffic delay | 10 |
| Reduce queuing and backups | 7 |
| Reduce delay from use of alternative railroad crossing | 5 |
| Address urban principal arterials | 3 |

Safety **20 points**

| | |
|---|---|
| Reduce railroad crossing accidents | 5 |
| Reduce non-railroad crossing accidents | 5 |
| Provide emergency vehicle access | 5 |
| Close additional related railroad crossings | 5 |

Freight and Economic Value **15 points**

| | |
|--|---|
| Benefit mainline rail operations | 5 |
| Access to key employment areas | 5 |
| Support faster freight train movements | 5 |

Environment **20 points**

| | |
|---|---|
| Non-attainment area | 5 |
| Reduce train whistle noise in crossing vicinity | 5 |
| Air quality or improved carbon footprint | 5 |
| Environmental and other permits/agreements required | 5 |

Partnership **25 points**

| | |
|--|--------|
| Public sector/Private sector participation | 20 max |
| Critical timing of partner investments | 5 |

Consistency with Regional and State Plans **5 points**

| | |
|--|---|
| Address in regional and/or state-level transportation plan | 5 |
|--|---|

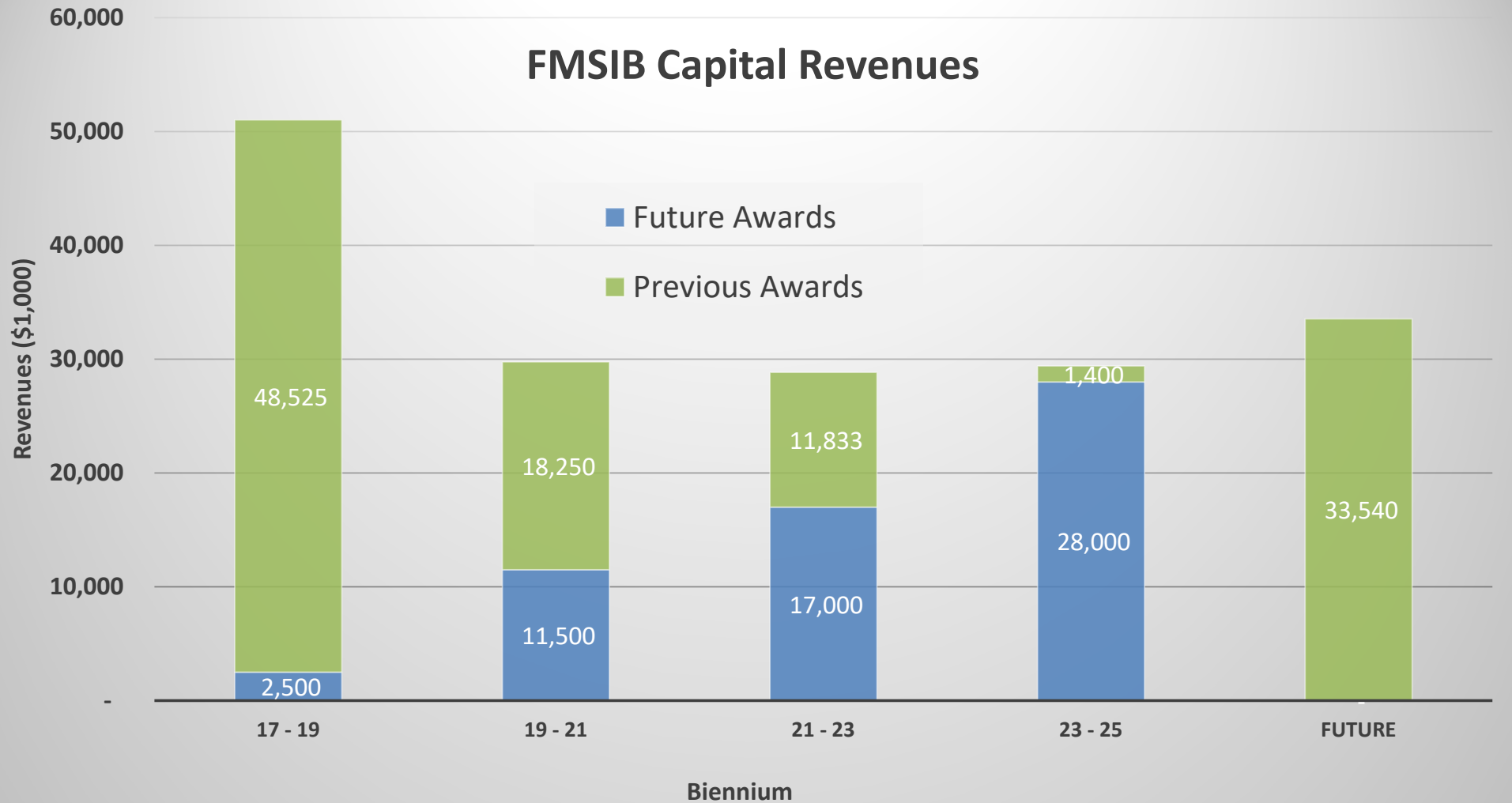
Cost **10 points**

| | |
|--|---|
| Cost-effectiveness | 7 |
| Degree to which least-cost alternatives are considered | 3 |

Special Issues **8 points**

| | |
|---|---|
| Address special or unique circumstances | 8 |
|---|---|

FMSIB Capital Revenues



Data Source Rev. 4/20/17

2016-17 FMSIB Committees

Board & Executive

Chair ~ Dan Gatchet
Leonard Barnes
John Creighton
Matt Ewers
Erik Hansen
Johan Hellman
Pat Hulcey
Roger Millar
Arthur Swannack
Tom Trulove
Bob Watters
Aaron Hunt, Ex-Officio
*Counties (1)

Legislative

Chair ~ Tom Trulove
John Creighton
Dan Gatchet
Johan Hellman
Pat Hulcey
Bob Watters

Project Selection

**Chair ~ Vacant*
Pat Hulcey
Tom Trulove
Bob Watters

Administrative

Chair ~ Tom Trulove
Dan Gatchet
Vacant

Outreach

**Chair ~ Vacant*
John Creighton
Tom Trulove

**Vacant*

Action Item: 2018 FMSIB Meeting Schedule

FMSIB meetings are traditionally scheduled on the third Friday of every odd-numbered month.

| 2018 Meeting Options | |
|-----------------------------|-----------------|
| January 18 | Day on the Hill |
| January 19 | Olympia |
| March 16 | _____ |
| May 31 | Workshop |
| June 1 | _____ |
| September 21 | _____ |
| November 16 | _____ |

Previous Board Meetings

| 2014 Board Meetings | 2015 Board Meetings | 2016 Board Meetings | 2017 Board Meetings |
|----------------------------|----------------------------|----------------------------|----------------------------|
| Olympia* | Olympia* | Olympia* | Olympia* |
| Kent | Tacoma* | Fife* | Fife* |
| Vancouver | Marysville | Kalama | |
| Suquamish Workshop* | Suquamish Workshop* | Suquamish Workshop* | Suquamish * |
| Yakima | Spokane | Spokane | Tri-Cities Workshop |
| Everett* | Seattle | SeaTac | Vancouver |

*= No airport

2017 Active Project Locations:

Puget Sound

Des Moines
Fife (2)
Kent (2)
Port of Vancouver
Port of Seattle (2)
SeaTac
Seattle (2)
Sumner
Tacoma (2)
Tukwila

Western WA

Everett
Lacey
Longview
Skagit County

Eastern WA

Spokane County
Spokane Valley (2)

FMSIB Supply Chain Logistics Tour

September 14, 2017

Tri-Cities, WA

Tour Hosted by Port of Benton and City of Richland

2:30 am–5:00 pm Supply Chain Logistics Tour

Using Local Revitalization Financing (LRF) the City of Richland and Port of Benton have seen their investment flourish. Tour will included Central Washington Corn Processor operations (rail loop track), Preferred Freezer Solutions and discussion with project leaders on the concept of an Inland Port.

| | |
|-----------|---|
| 3:30-3:00 | Preferred Freezer Solutions |
| 3:30-4:00 | Central Washington Corn Processors |
| 4:00-4:15 | Inland Port concept |
| 4:15-4:30 | Overview of 1,341 acre mega site industrial property and barge facilities |

5:30 pm Bookwalter Winery



Experience Tri-Cities style at J Bookwalter Winery. Named one of the best tasting rooms in the United States by Sunset magazine. Dinner will be held at its full service restaurant, Fiction. This location includes J. Bookwalter Wines and opportunity to visit Barnard Griffin and Tagaris Winery and Taverna located right next door.

| | |
|------|--|
| 5:30 | Bookwalter Winery 894 Tulip Lane, Richland John Bookwalter, owner/winemaker <i>Dinner is not hosted</i> |
|------|--|

| | |
|---------|---|
| 7:30 pm | Bus leaves for Best Western Hotel/Pasco Airport (25 minute drive) |
|---------|---|



Expanding Inland Seaport Facilities in Partnership with City of Richland, Port of Benton, Northwest Seaport Alliance, Central Washington Corn Processors and Beneficial Cargo Owners

December 2016

Summary

Recently, representatives from the City of Richland, Port of Benton, The Northwest Seaport Alliance (NWSA), as well as stakeholders in varied local industries have initiated discussion on an inland seaport concept. This focused area for trade would be located at or adjacent to the existing rail loop owned by the City of Richland and located within Horn Rapids Industrial Park in Richland WA.

Developing an inland port facility in Richland, WA would provide greater opportunities for regional producers and manufacturers to export their commodities, goods and services to international markets. The creation of an inland port would also allow for supply-chain optimization for local manufacturing, agribusiness and commodities to gain greater access to global trade markets, and would establish the Tri-Cities as a recognized partner in the international trade market.

Ports have been proven to be economic drivers throughout the nation, and Richland is a desirable market for importers and manufacturers looking to be strategically located near a port. Such businesses ventures would have access to a skilled workforce, lower operational costs, land, and multi-modal transportation (rail specifically, dually served by both Union Pacific (UP) and Burlington Northern Santa Fe (BNSF)). This strategic public-private partnership is dependent upon the support of the Class I Railroads in order to be fully successful. It is also essential to keep Washington a globally competitive place to do business in Asia and beyond.

What is an inland seaport?

Inland seaports are defined as short haul intermodal facilities carrying trains of containers from a terminal located inland to a seaport for loading onto ocean-going vessels. This concept has been discussed regionally over the past thirty years; however, as market conditions have changed, and as opportunities for industry have grown in Richland within the manufacturing, processing, logistics and distribution sectors, so too has the need for an inland port facility. The recent investment by Central Washington Corn



Processors, Preferred Freezer Solutions, and Lamb Weston are key examples. The City of Richland and the Port of Benton actively provided foundational support for economic development in both direct development dollars as well as the provision of modern infrastructure including the Richland rail loop in order to catalyze growth in the aforementioned sectors and to provide a market for an inland seaport to thrive.

Why Now?

Currently, over 250,000 trucks are generating over 500,000 truck trips within 150 miles of the Tri-Cities region conveying local products to the Ports of Seattle and Tacoma, which attempt to deliver their goods and return the same day (Source: The Northwest Seaport Alliance, 2016). The truck trip origination from this region of the state accounts for 30-40% of the trucking volume in the Seattle/Tacoma region which contributes to significant traffic problems for the Ports of Seattle and Tacoma, causing region-wide concern. Terminal congestion is a main concern for the NWSA; however, beginning in 2017 there will be profound changes in the trucking industry such as electronic logging device (ELD) requirements, and 2018 will bring changes to truck requirements for entrance to the NWSA as well as legal changes to allowable hours of service. All this will lead to a reduction in truck drivers and an anticipated increase of over 20% in costs for trucking, which can significantly and negatively impact the NWSA's efficiency and output.

Compounding the congestion problem, Washington's population is expected to rise above 8.1 million by year 2030 (State of WA. OFM). As the population grows, business growth will increase along with the demand to move goods and services efficiently and economically as possible (in both time and cost) along the state's already over-stressed transportation corridors. This increase in freight movement will place increasing pressure on the industry to lower emissions near residents and workers.

An inland port using a short haul rail program provides an opportunity to alleviate the burden trucking brings to the entire state. Additionally, it provides local logistics firms, agri-business, manufacturing, and distribution companies more opportunities to transport their goods for export to a location closer to their primary points of origin. This further solves throughput for other uses and provides the Beneficial Cargo Owners (BCOs, aka local business engaged in shipping) more efficient options beyond trucking to capture efficiencies in the market. Currently 85% of all WA, ID and OR exports are constrained by trucking time and regulations. All of the Marine terminals at the NWSA operate truck gates on a single day shift consisting of 8 hours. That shift can be flexed to start 1 hour early or extended 1 hour later but not both. Realistically, the 8 hour shift means that trucks have only 7 hours and 15 minutes to get through the gate and then processed through the terminals. Occasionally the terminal will operate for an additional day or additional time, but, at an additional cost. As business continues to grow, these issues will worsen unless there are changes in the business model such as shifting some of these gate transactions to move by short haul rail, in addition to terminals working Monday –Friday one shift operations.



Central Washington Corn Processors (CWCP) initialized this concept working with BNSF using the rail loop. CWCP has made an estimated initial \$12M investment in buildings and infrastructure to support their current business. They are now looking to expand use of the rail loop as an initial Phase I project to test and prove the Inland Seaport concept.

Potential Benefits

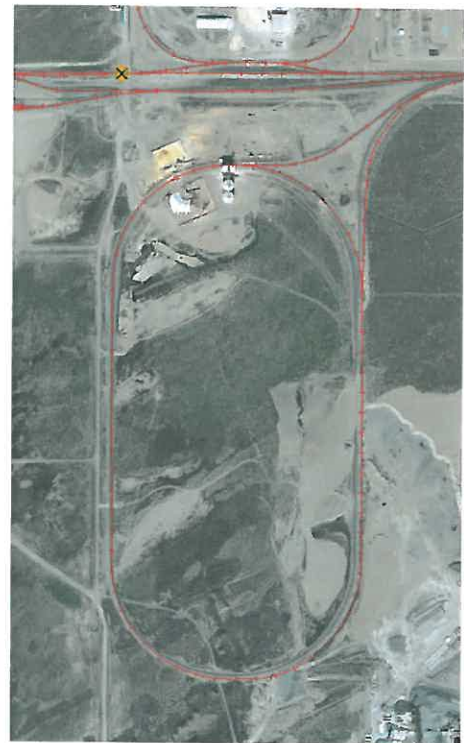
The Northwest Seaport Alliance (NWSA) desires to develop an inland intermodal terminal. This would allow trucks already going through our region to deliver product directly to Richland instead of travelling a longer distance, crossing Snoqualmie Pass to wait outside the port marine terminals of Tacoma and Seattle in que lines prior to entering the terminals. The product would be loaded onto trains in Richland, then taken to the existing port terminals that have on-dock rail services available 24 hours per day, seven days per week versus truck access which is limited to Monday –Friday, 7 hours per day. To prove this concept, a trial of one unit train per week is desired. It is anticipated, based upon current demand, that one unit train per day may be necessary to meet the needs of existing BCOs, potentially expanding to additional trains as the market grows.

Next Steps

The City of Richland is the owner of 90 acres within the Richland Rail Loop, which is the subject site of the inland port proposal. Additionally, the City of Richland and Port of Benton have completed the process of master planning of 1,341 acres of future industrial property, which can provide supplementary land for this opportunity. In addition to the master plan, they are also conducting a Rail Master Plan that includes examinations of feasibility of upgrades and costs in order to provide quiet zone crossing signals, grade separated crossings, and approximations for rail maintenance costs (estimated completion February 2017). The City of Richland is the current owner of the land and is part of the collective ownership of the utilities, infrastructure, roadways and access to rail, in addition to the in-kind support of staff, to support the inland port project in accordance with their respective missions. The beneficial cargo operators and ocean liner shipping companies will provide the market for opportunities to develop their business model with the Class I railroads to meet their storage and movement needs.

A leadership team has been established consisting of public entities and industry stakeholders. They will be developing an Action Plan and Communications Plan, including (but not limited to):

- Feasibility Study including case studies, environmental and economic impact of overall project (estimated cost \$150K, yet to be determined, funded partially by all entities)
- Determine further infrastructure development and investment necessary for Phase I and future phases of project (being completed by city and port Rail Masterplan, est. completion February 2017).



Risks/Timing

The development of a large inland port project will involve many players throughout Washington. There are interests from the Ports of Seattle and Tacoma looking to partner with the City of Richland on the land

and interlocally with the Port of Benton for mutual operation. While there are many considerations to take in planning such an endeavor, the leadership committee believe that this will be of great benefit to both western Washington and to eastern Washington, provide a boost to the local, regional and state-wide economy and provide greater, more efficient means by which local business can access global markets. With the careful planning and studying of the feasibility and economic impacts as listed above, the leadership intends to pursue an aggressive schedule of study, looking to complete the initial stages of planning by the 2nd quarter of 2017 for a decision to move forward or not.

There is great concern that the market in Richland is emerging and the window of time is slipping to meet market needs. The current overall goal of the leadership committee is to implement this project before the end of 2017.

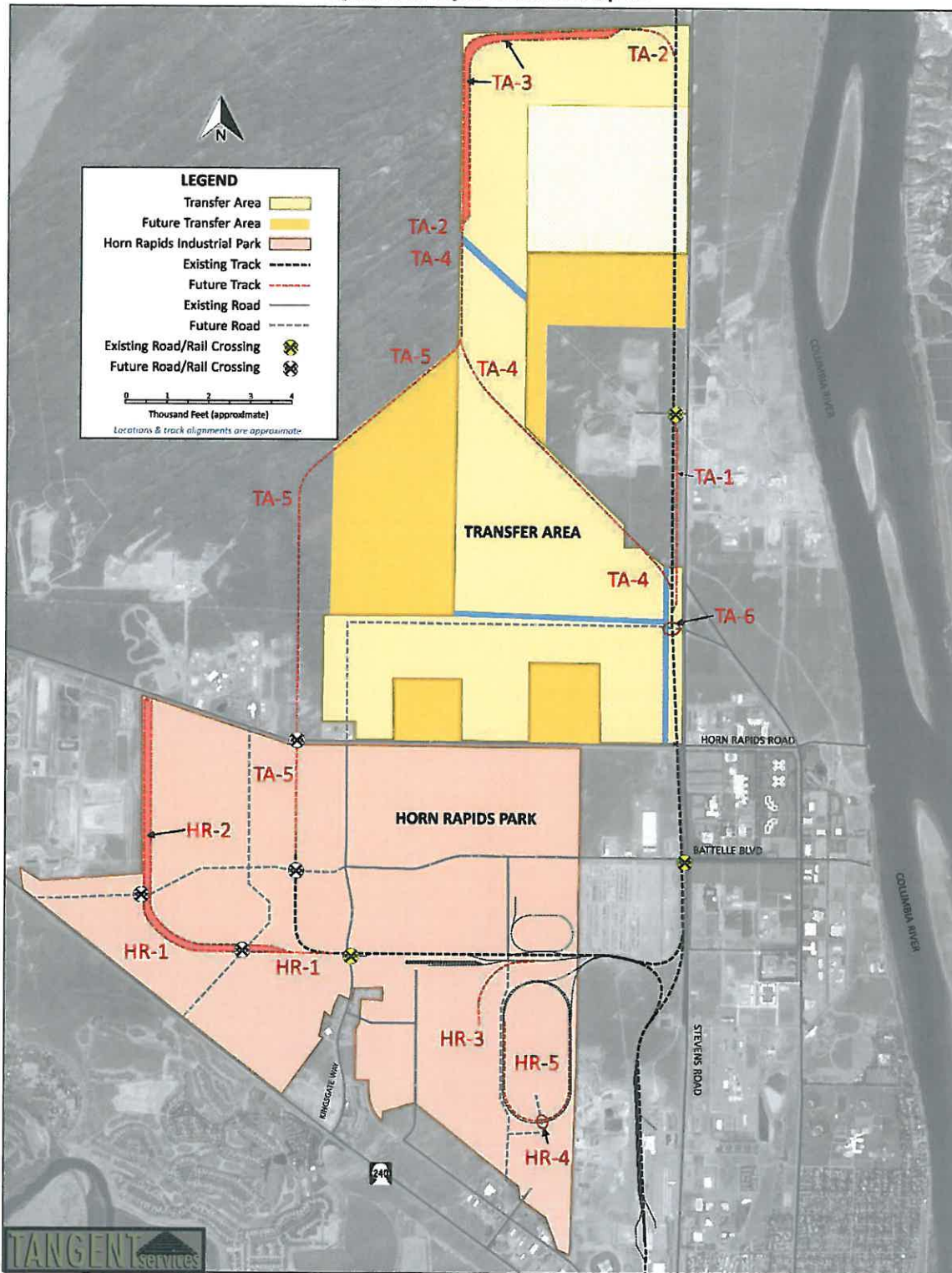
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Figure 11: Project Location Map #1



See Figure 12: Project Location Map #2 (p. 29) for the location of Project ET-1.

RICHLAND INLAND PORT PROJECT

THE SHORTEST DISTANCE BETWEEN 2 POINTS IS A
DIRECT ROUTE

SHORT HAUL RAIL OPPORTUNITY

THE **MOST EFFICIENT** ROUTE IS RAIL



The inland port project is a partnership dedicated to improving the transportation and shipping of commodities by rail between the Tri-Cities area and the Northwest Seaport Alliance (port of Seattle and Tacoma.)



ADVANTAGES

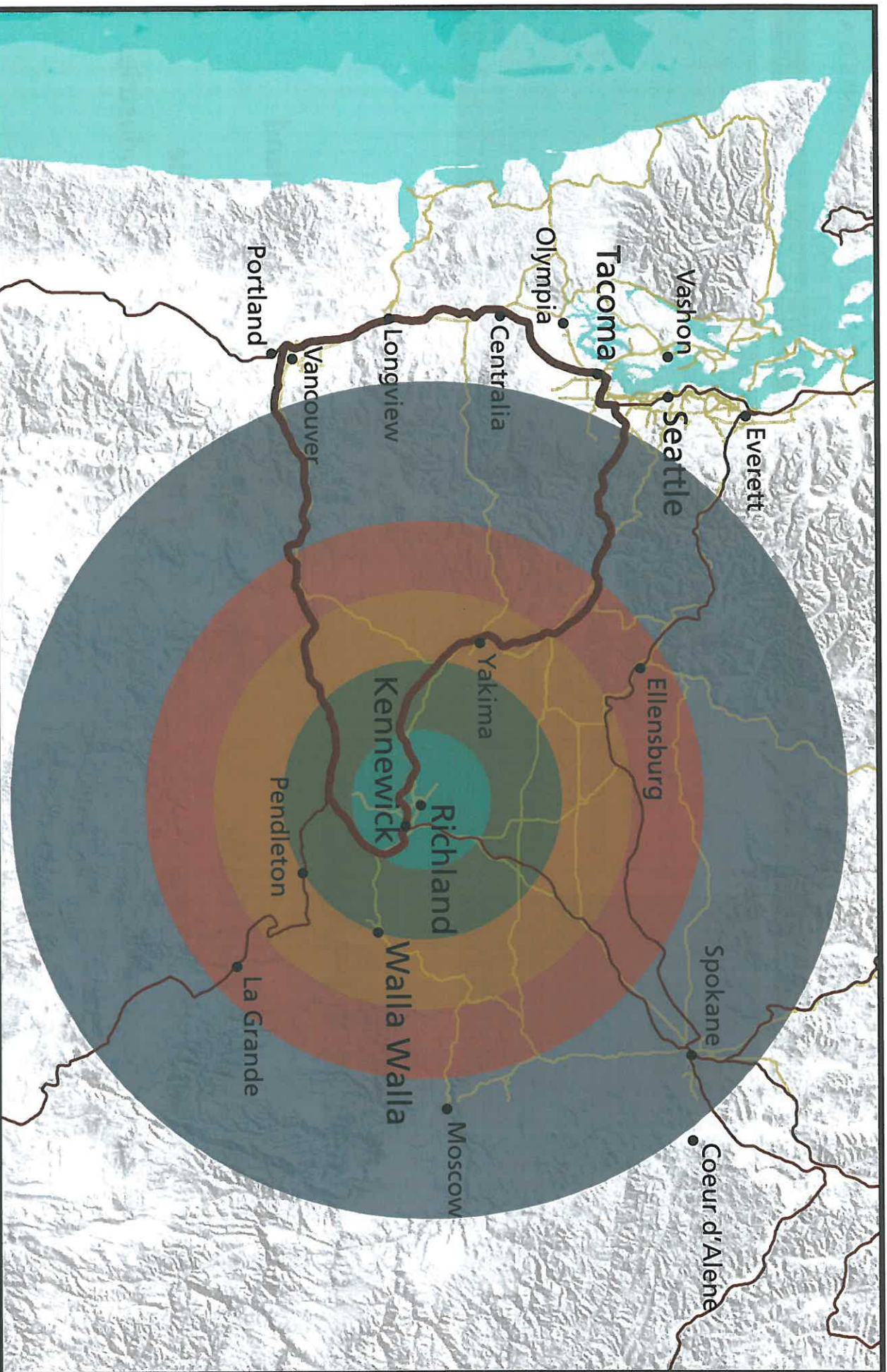
- Lower Cost
- Reduced Wait Times & Port Traffic
- 30% Reduction of Truck Trips
- Competitive Advantage with Canada
- Economic Opportunities for Richland
- 24/7 Rail Operation Availability
- Alleviate Traffic on I-90 into Seattle
- Benefits Trucking, Rail & Shipping Industries

PROJECT PARTNERS



THE NORTHWEST
SEAPORT ALLIANCE





- 25 Miles
- 50 Miles
- 75 Miles
- 100 Miles
- 150 Miles
- Rail

RICHLAND INLAND PORT PROJECT

Target Market