



**Washington State  
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To: Washington State Freight Advisory Committee Chair Dan Gatchet  
Members of the Washington State Freight Advisory Committee  
Freight Mobility Strategic Investment Board (FMSIB) Executive Director Karen Schmidt  
FMSIB Deputy Director Ashley Probart

From: Katy Taylor, Washington State Department of Transportation (WSDOT) Chief of Staff  
Barbara Ivanov, WSDOT Freight Systems Division Director

**RE: Summary of freight trends identified in customer interviews for the Washington State Freight Plan**

WSDOT is glad to work with the Washington State Freight Advisory Committee to identify trends that will significantly impact demand on our freight systems. We will use this information to:

- Test assumptions in the Washington State Freight Plan's 20-year forecasts, and
- Inform the analysis of needs and development of prioritized freight strategies in the Freight Plan.

The following near-term (three-to-six year) and longer-term (seven-to-20 year) freight system trends were identified during 75 interviews conducted by the WSDOT Freight Systems Division across the state from March 2012 to April 2013, as part of development of the Washington State Freight Plan. In addition to other questions, the Freight Systems Division asked freight industry and regional experts what global and/or local industry trends are likely to impact freight system demand in Washington in the future. We interviewed representatives from:

- Companies in the state's key freight-dependent industry sectors: manufacturing, agribusiness, timber/wood products, construction, retail and wholesale trade,
- Freight transportation carriers,
- Metropolitan Planning Organizations (MPOs) and Regional Transportation Planning Organizations (RTPOs),
- Ports, and
- Tribes.

While the overarching drivers are global and U.S. economic growth and population growth, many industry- and modal-specific trends will determine future freight demand on our trade lanes.

We are very interested in discussing these and additional trends identified by the other members of the Washington Freight Advisory Committee at the meeting on May 13. Please note that the freight trends aren't listed in priority order, numbering is shown for reference purposes, only.

### Freight Carrier-related Trends

#	Time Period	Trend	Potential Outcome
1	Near Term	<ul style="list-style-type: none"> <li>Shortage of qualified long-haul truck drivers will lead to more freight rail combined with local truck moves</li> </ul>	<ul style="list-style-type: none"> <li>Improved rail service could result in higher rail prices as well as increased market share</li> <li>Long-term, freight rail capacity limitations in western states won't support modal shift</li> </ul>
2	Near Term	<ul style="list-style-type: none"> <li>Shortage of qualified truck drivers in all sectors</li> </ul>	<ul style="list-style-type: none"> <li>Higher prices for trucking services and consumer goods</li> </ul>
3		<ul style="list-style-type: none"> <li>Population growth along the I-5 corridor; there isn't highway capacity to handle it</li> </ul>	<ul style="list-style-type: none"> <li>Increased congestion in I-5 corridor</li> </ul>
4	Near Term	<ul style="list-style-type: none"> <li>Regionalization of retailers' distribution centers</li> <li>Streamlining processes: dropping smaller amounts at more frequent intervals at stores</li> </ul>	<ul style="list-style-type: none"> <li>Shorter average long-haul truck trips, except for Less-than-Truckload (LTL) carriers</li> </ul>
5		<ul style="list-style-type: none"> <li>Significant pressure on shippers and goods receivers to lower inventory costs</li> </ul>	<ul style="list-style-type: none"> <li>Increased demand for on-time deliveries in very short appointment windows (to the minute) and more reliable truck freight corridors</li> </ul>
6	Near Term	<ul style="list-style-type: none"> <li>Increased federal regulation of trucking companies</li> </ul>	<ul style="list-style-type: none"> <li>Shorter Hours-of-Service (HOS) regulations will require more truck drivers and potentially more equipment to transport the same amount of goods</li> <li>Need increased formal training to meet regulatory requirements</li> </ul>
7	Near and Longer Term	<ul style="list-style-type: none"> <li>Market shift from ever-more-expensive diesel to plentiful, low-cost LNG (liquefied natural gas) and/or CNG (compressed natural gas)</li> </ul>	<ul style="list-style-type: none"> <li>Need to retrofit or replace existing equipment; high cost in the near term</li> <li>Need LNG fuel stations every 400 miles on major truck corridors; Public Private Partnerships (PPP) opportunities in build-out of this infrastructure</li> <li>As truck fuel costs decrease, trucking will be more price competitive with freight rail</li> </ul>

8	Near & Longer Term	<ul style="list-style-type: none"> <li>Continued growth of e-commerce</li> </ul>	<ul style="list-style-type: none"> <li>Greatly increased number of shorter trips in urban areas via parcel trucks; more point-to-point shipments</li> </ul>
9	Near & Longer Term	<ul style="list-style-type: none"> <li>Autonomous truck technologies</li> </ul>	<ul style="list-style-type: none"> <li>Near-term: Intelligent cruise control will eliminate congestion-related shock waves and reduce non-recurring congestion, thereby improving system reliability and safety</li> <li>Longer term: Help mitigate the long-term truck driver shortage, but many legal and regulatory issues to resolve</li> </ul>
10	Longer Term	<ul style="list-style-type: none"> <li>Future price competition between diesel and LNG</li> </ul>	<ul style="list-style-type: none"> <li>Diesel prices are very volatile and current forecasts suggest LNG prices will remain low into the future, but ultimately low LNG prices may bring down the price of diesel</li> </ul>

**Port-related Trends**

#	Time Period	Trend	Potential Outcome
11	Near Term	<ul style="list-style-type: none"> <li>Demand for 'Made in Washington' agribusiness products is growing fastest in Asia and India as consumer income there increases</li> </ul>	<ul style="list-style-type: none"> <li>West coast ports are increasingly important for state exports, but (1) outbound container prices are significantly (\$1,000+) higher in Washington than in southern California, (2) continued equipment imbalance results in poor container availability. Resulting in lost economic growth opportunities for Washington State and increased growth in California.</li> </ul>
12	Near Term	<ul style="list-style-type: none"> <li>The Port of Portland may lose more ship calls</li> </ul>	<ul style="list-style-type: none"> <li>The Ports of Seattle and Tacoma could gain container business, resulting in increased congestion, increased drayage cost, and less equipment availability</li> </ul>
13	Near Term	<ul style="list-style-type: none"> <li>In 2015 the Panama Canal will accommodate larger ships</li> </ul>	<ul style="list-style-type: none"> <li>Will result in increased equipment imbalance and lower congestion at west coast ports if retailers shift to all-water route</li> </ul>

			<ul style="list-style-type: none"> <li>• May shift +/- 5% of goods, but container lines want to turn equipment fast so they'll continue to drop containers on the West Coast.</li> </ul>
14	Near Term	<ul style="list-style-type: none"> <li>• Major trucking firms seeking market opportunities will move into the drayage business</li> </ul>	<ul style="list-style-type: none"> <li>• Can more readily afford initial capital investment to meet regulations mandating improved truck engines to reduce emissions</li> </ul>
15	Near Term	<ul style="list-style-type: none"> <li>• Residents demand lower freight emissions</li> </ul>	<ul style="list-style-type: none"> <li>• Increased emissions requirements for rail and trucks, especially in port cities</li> </ul>
16	Near Term	<ul style="list-style-type: none"> <li>• Infill of commercial, residential and schools land use next to railroads and ports</li> </ul>	<ul style="list-style-type: none"> <li>• Port of Seattle and other ports will continue to have limited space for expansion, face gentrification and increased competition for use of access routes</li> </ul>
17	Near Term	<ul style="list-style-type: none"> <li>• More bulk commodities such as coal, oil, and agricultural products will be exported through Washington marine ports</li> </ul>	<ul style="list-style-type: none"> <li>• New and/or expanded bulk export facilities will be built in Washington State</li> </ul>
18	Long Term	<ul style="list-style-type: none"> <li>• U.S. advanced agribusiness produces Genetically Modified (GM) crops and food products</li> </ul>	<ul style="list-style-type: none"> <li>• Continued resistance to GM products in the EU and China may impact growth of U.S. agricultural exports</li> </ul>
19	Near and Longer Term	<ul style="list-style-type: none"> <li>• Europe sources more agricultural products from Africa and S. America</li> </ul>	<ul style="list-style-type: none"> <li>• Less demand for Washington State agricultural products in the EU, leading to more dependence on Asian markets</li> </ul>
20	Near Term	<ul style="list-style-type: none"> <li>• Domestic market for air freight is flat</li> <li>• International market for air freight is growing, but slowing</li> </ul>	

### **Manufacturing-related Trends**

<b>#</b>	<b>Time Period</b>	<b>Trend</b>	<b>Potential Outcome</b>
21	Near Term	<ul style="list-style-type: none"> <li>• Re-shoring of advanced and other manufacturing to the U.S. as (1) Chinese-made quality of goods is poor and labor costs are increasing, (2) transit time from Mexico is less complex</li> </ul>	<ul style="list-style-type: none"> <li>• More time-sensitive freight services will be needed to move goods manufactured domestically</li> </ul>
22	Near Term	<ul style="list-style-type: none"> <li>• New digital manufacturing technology that allows for more domestic manufacturing and potential for manufacturing without traditional manufacturing plants</li> </ul>	<ul style="list-style-type: none"> <li>• Manufacturing may become more geographically distributed, shortened supply chains, and increased need for</li> </ul>

			shipping of bulk materials (plastics, other component materials)
23	Near Term	<ul style="list-style-type: none"> <li>Manufacturing sector growth in Mexico, South America, and Africa</li> </ul>	<ul style="list-style-type: none"> <li>Increased traffic on freight lanes to these places</li> </ul>
<b>Urban Goods Delivery Trends</b>			
<b>#</b>	<b>Time Period</b>	<b>Trend</b>	<b>Potential Outcome</b>
24	Near Term	<ul style="list-style-type: none"> <li>Major distributors' delivery hours to urban centers shifting to off-peak (midnight to 5:00 am) hours</li> </ul>	<ul style="list-style-type: none"> <li>May not slow congestion in peak am delivery hours as total number of truck trips grow</li> <li>Shippers implement operational strategies to improve reliability</li> </ul>
25	Near Term	<ul style="list-style-type: none"> <li>Land use regulations prevent large trucks from entering urbanized areas</li> </ul>	<ul style="list-style-type: none"> <li>More smaller straight trucks operating in urban areas leading to more total truck trips</li> </ul>
<b>U.S. Domestic Freight Trends</b>			
<b>#</b>	<b>Time Period</b>	<b>Trend</b>	<b>Potential Outcome</b>
26	Near Term	<ul style="list-style-type: none"> <li>Less demand for paper/wood products as consumers shift to electronic communications</li> </ul>	<ul style="list-style-type: none"> <li>Fewer heavy truckloads from timber mills to paper mills in Washington</li> </ul>
27	Near & Long Term	<p>Agribusiness –</p> <ul style="list-style-type: none"> <li>Tree fruit farmers in Columbia Basin adding production acreage to meet increased demand</li> <li>Dairies: higher property values along I-5 corridor are driving farming to eastern Washington</li> <li>Growth in corn and wheat demand</li> </ul>	<ul style="list-style-type: none"> <li>Increased importance of export facilities, and demand for domestic intermodal facilities</li> <li>Increased importance of I-90 corridor</li> </ul>
28	Near Term	<p>Trade with Alaska -</p> <ul style="list-style-type: none"> <li>Alaska crude production is decreasing</li> <li>Salmon production is stable</li> </ul>	<ul style="list-style-type: none"> <li>More oil transported by train/barge to Washington refineries from the mid-west</li> <li>Potential for increased ethanol imports</li> </ul>
29	Near Term	<ul style="list-style-type: none"> <li>No new transcontinental east-west pipelines will be built in the U.S.</li> </ul>	<ul style="list-style-type: none"> <li>More oil will transported by train to Washington from the mid-west</li> <li>Bulk and crude oil from North Dakota will come to the lower Columbia River and be barged to refineries in Northwest Washington</li> </ul>
30	Near Term	<ul style="list-style-type: none"> <li>Less coal burned in the United States due to U.S. EPA standards</li> </ul>	<ul style="list-style-type: none"> <li>Higher coal prices in international markets driving increased coal exports by rail</li> </ul>

<b>31</b>	Long Term	<ul style="list-style-type: none"><li>• Nuclear renaissance that was coming is delayed for 10 to 15 years by effects of Japanese tsunami</li></ul>	<ul style="list-style-type: none"><li>• Increased reliance on oil and gas in the near term</li></ul>
<b>32</b>	Long Term	<ul style="list-style-type: none"><li>• Potential for mining rare minerals in space</li></ul>	<ul style="list-style-type: none"><li>• Unknown</li></ul>