U.S. 95 Freight Multi-Modal Corridor Supply Chain: A Pilot Study

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Overview of Project Purpose

a. Defining economic corridors in Idaho
b. Identification and examination of the US 95 Corridor: Use and importance of the freight network system for local and regional commerce.
c. Evaluation of freight movement on all modes within the corridor.
d. Develop repeatable process for data collection on other Idaho corridors.
Defining an ‘Economic Corridor’

- Freight Corridor
- Volume Based
Defining an ‘Economic Corridor’

- Freight Corridor
  - Volume Based
Defining an ‘Economic Corridor’

• Freight Corridor
  • Volume Based

• What might we be missing through a simple volume consideration?
Defining an ‘Economic Corridor’

• Freight Corridor
  • Volume Based

• What might we be missing through a simple volume consideration?
  • Intra-Flows
  • Connectors
  • Critical Facilities
  • Inter-Modal

<table>
<thead>
<tr>
<th>Commodity</th>
<th>Inbound</th>
<th>Outbound</th>
<th>Intra-State</th>
<th>Total</th>
<th>% Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereal Grains</td>
<td>9,386</td>
<td>4,540</td>
<td>25,345</td>
<td>39,271</td>
<td>34</td>
</tr>
<tr>
<td>Other Ag. Products</td>
<td>891</td>
<td>2,303</td>
<td>7,033</td>
<td>10,227</td>
<td>9</td>
</tr>
<tr>
<td>Gravel</td>
<td>1,323</td>
<td>931</td>
<td>6,775</td>
<td>9,029</td>
<td>8</td>
</tr>
<tr>
<td>Wood Products</td>
<td>4,831</td>
<td>2,045</td>
<td>2,065</td>
<td>8,941</td>
<td>8</td>
</tr>
<tr>
<td>Logs</td>
<td>21</td>
<td>12</td>
<td>7,443</td>
<td>7,476</td>
<td>7</td>
</tr>
</tbody>
</table>

Thousand of Tons – 2010 FAF3
Today’s Intermodality
Washington state economic waterway corridors

Legend:
- Waterway economic corridors:
  - W1: Greater than 25 million tons
  - W2: 10 million to 25 million tons
  - W3: 5 million to 10 million tons
  - W4: 2.5 million to 5 million tons
  - W5: 0.9 million to 2.5 million tons
- County line
- Major air cargo airport
- Major marine port
- Barge port
- Barge intermodal facility (non-port)

<table>
<thead>
<tr>
<th></th>
<th>Eastern Oregon</th>
<th>Northern Idaho</th>
<th>Southern Idaho</th>
<th>Northern Washington</th>
<th>Southern Washington</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>1.0%</td>
<td>0.3%</td>
<td>33.3%</td>
<td>14.0%</td>
<td>0.9%</td>
</tr>
<tr>
<td>Truck-Barge</td>
<td>91.8%</td>
<td>78.9%</td>
<td>21.7%</td>
<td>14.6%</td>
<td>97.5%</td>
</tr>
<tr>
<td>Rail</td>
<td>7.2%</td>
<td>20.8%</td>
<td>45.0%</td>
<td>71.4%</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Source: Elevator Firm Survey (Washington, Oregon and Idaho) - Washington State University
Moving goods down, and up the river.

### Columbia-Snake River System

<table>
<thead>
<tr>
<th>Downstream</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wheat</td>
<td>4,750,234</td>
</tr>
<tr>
<td>Forest Products (Lumber, Logs &amp; Woodchips)</td>
<td>811,240</td>
</tr>
<tr>
<td>Other</td>
<td>402,361</td>
</tr>
<tr>
<td>Sand, Gravel, Stone; Limestone Flux &amp; Calcereous Stone; Phosphate Rock</td>
<td>376,607</td>
</tr>
<tr>
<td>Rye, Barley, Rice, Sorghum &amp; Oats</td>
<td>2,240</td>
</tr>
<tr>
<td><strong>Total Shipments (tons)</strong></td>
<td><strong>6,342,682</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upstream</th>
<th>Tons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillate, Residual &amp; Other Fuel Oils</td>
<td>946,151</td>
</tr>
<tr>
<td>Gasoline, Jet Fuel &amp; Kerosene</td>
<td>732,747</td>
</tr>
<tr>
<td>Waste Material (Garbage, Landfill, Sewage Sludge &amp; Waste Water)</td>
<td>238,062</td>
</tr>
<tr>
<td>Other</td>
<td>122,309</td>
</tr>
<tr>
<td>Fertilizer (Nitrogenous, Potassic, Phosphoric)</td>
<td>45,460</td>
</tr>
<tr>
<td><strong>Total Shipments (tons)</strong></td>
<td><strong>2,084,729</strong></td>
</tr>
</tbody>
</table>
Considering Corridors as a Watershed

- For the main corridor to function, its tributaries must flow.

- Can we incorporate a process by which an agency may evaluate effects on flow?
  - National Data?
  - Traffic Counts?

- Need more intimate information
  - Stakeholder engagement
Stakeholder Interviews

• The US 95 corridor has three distinct regions
  • Panhandle
  • Clear Water
  • Southwest

• Using the economic development associations of each region, we’ve identified preliminary sets of stakeholders to interview – Establishment Survey.
  • Major Businesses in freight dependent industries
  • Carriers
  • Relevant Public Agencies
  • Hubs
Establishment Survey Goals

• How do you use the corridor?

• What are the attributes of the corridor that constrain efficient movement?

• If these constraints are reduced, would your use change?
Major Themes in Survey Results

• **Spring Break-up**

• **Issues Caused**
  • **Safety:** Impatient vehicles behind slow moving trucks
  • **Cost:** The significantly increased Travel Times per truck on the reduced speed roadways.

• **Issues Contributing to Concern**
  • Lack of general knowledge by other drivers on roadway (Many just assume truck is driving slow.)
  • Lack of suitable passing lanes or sufficient turnouts to allow vehicle back log to clear.
Major Themes in Survey Results

• **Weight Limit Connectivity**

  • **Issues Caused**
    • Lack of ability to take advantage of a higher weight segment due to lower weight restrictions on other links in travel.
    • Idaho limits restrict ability to fully utilize higher limits in neighboring State/Province (e.g. In Idaho, US 2 is 105k, while MT is 129k).
    • Ability to get onto and off of the higher limited roadways due to lower limited connectors.
Major Themes in Survey Results

• Issues Contributing to Concern

• Changing limits/regulations throughout the trip(s) becomes a cumbersome process for drivers/companies that not only has the potential to cost extra (fines, permits, time); but may also lead to reduced efficiency in travel for the trucks, costing them more.
Major Themes in Survey Results

• Coeur D’Alene

• Issues Caused
  • One of the most significant slowdowns in operating region for northern segments of movement.
  • Lack of Reliability and thus constrained ability to properly estimate travel time and efficiently plan trips.

• Issues Contributing to Concern
  • Traffic Volume (Volume to Capacity)
  • Light Synchronization
Other Themes in Survey Results

- Road Condition (e.g. Roughness)
- Truck Diversion due to Bridges
- Safety
- Segment or Route Avoidance
- Expansion Needed
- Equipment availability
- Driver Shortages
- HOS
Corridor Management

• Can we take the information gained from the Stakeholders and incorporate it into corridor planning and project prioritization?

• Practical Design
Practical Design

- Project decisions made based on the need for the project and looks for the cost-effective solutions.
- Decision-making focuses on maximum benefit to the system, rather than maximum benefit to the project.
- The goal is to allow more needs to be addressed system wide by reducing spending on lesser priority items on each project.
- How might this play into the outcomes of the stakeholder discussions?
  - Weight Limits
<table>
<thead>
<tr>
<th>Category</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Axle</td>
<td>33,000</td>
<td>30,000</td>
<td>27,000</td>
<td>25,500</td>
<td>24,000</td>
<td>22,500</td>
<td>Posted Bridges</td>
<td>Unk.</td>
</tr>
<tr>
<td>Two-Axle Tandem</td>
<td>56,000</td>
<td>51,500</td>
<td>46,000</td>
<td>43,500</td>
<td>41,000</td>
<td>38,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three-Axle Tandem</td>
<td>70,500</td>
<td>64,500</td>
<td>57,500</td>
<td>54,500</td>
<td>51,500</td>
<td>48,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Other Venues for Practical Design

- Bridge Maintenance
  - Which bridges pose the greatest threat to freight movement if deemed unusable?
The Take Home

• Multiple Items may be constraining movement.

• Including stakeholder decision processes early can help identify those pieces that are most limiting.

• Enables more cost effective decisions that promote economic development.
  • Accessibility
  • Interconnectivity
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