Transportation & WSU

• James C. Nelson (1947-1975)
  • Early proponent of deregulation (truck, rail)
  • Shaped subsequent changes to ICC

• Ken L. Casavant (1968-2018)
  ✓ $1.25m (1993-1998) Eastern Washington Intermodal Transportation Study (EWITS)
  ✓ $2.43m (2003-2009) Strategic Freight Transportation Analysis (SFTA)
  ✓ $1.67 m (2009-2019) Freight Policy Transportation Institute (FPTI)

• Eric L. Jessup (2001-2019)
  • Director: Freight Policy Transportation Institute
Why Transportation?
What is the function of Transportation...?

- Transportation creates time and place utility
- Movement of people & products
- Creation of markets ... and value that otherwise would not exist
- This is not a recent phenomenon (driven by technological change)
- Transportation affects almost everything

- Especially when considering global supply-chains:
  - Food
  - Energy
  - Environment
  - Health

Issues are often quite complicated
The Road Ahead...

- PNW Ports are gateways to businesses beyond the region
  - Inbound: Consumer Markets
  - Outbound: Export Markets for Ag. & Food Products

- Size does matter......The race to survive
  - Port of Portland?

- Columbia/Snake River

- Current & recent FPTI research projects
What are the primary markets served via PNW Ports?
Containerized Grain Exports
Changes in Ocean Freight and Impact on PNW Ports?
Generational Development of Container Vessels

TEU (end-to-end) Distance (miles) by Vessel Size

OOCL Hong Kong: 21,413 TEU Capacity
Ship Operating Costs per TEU Mile

- Cents per TEU Mile
- Container Ship Capacity

Costs decrease as the container ship capacity increases.
Example: Economies of Scale / Size on the High Seas

Long Beach - Hong Kong: 6,356 miles
Approx. 20 days

Option A: 20 vessels, 10,000 TEU capacity per ship
Option B: 10 vessels, 24,000 TEU capacity per ship

20 → 10,000 TEU → 1,200,000 per year
10 → 24,000 TEU → 1,440,000 per year

12,650 miles X 20 X 6 = 1,518,000 Total Miles
12,650 miles X 10 X 6 = 759,000 Total Miles

20 → 1,518,000 X $2.83 = $4,295,940
10 → 759,000 X $1.62 = $1,229,580

$3,066,360 lower costs with 20% more volume

About 6 turns per year (counting port days, roughly one month per trip, two months per round trip.)
Columbia / Snake River Navigation
Snake River Grain Tons

Ritzville (Templin) Grain
McCoy Grain
High Line Grain
Lacross Grain

2.1 million tons

Snake River Grain Tons
Current Wheat Rail Tariff ($/bu) and Year-Over-Year Change (as of March 1, 2018)
Freight Policy Transportation Institute

- Recently Completed Projects:
  - WSDOT: Improved Methodology to Evaluate Benefits of Highway Preservation
  - USDA: Infrastructure Investment & Economic Modeling: Export Supply Chains
  - USDA: PNW Container Availability Study
  - USACE: Upper Mississippi Transportation Study

- Current Projects:
  - Idaho Transportation Dept. Freight Supply Chain Analysis (EROADS)
  - PacTrans: Confounding Factor Analysis of Commercial Vehicle Accidents
  - USDA: Agricultural Truck Safety Study
  - USDA: PNW Inland Terminal Optimization Model
  - USDA: Livestock Transportation and ELD Mandate
  - USDOT: Freight Data Warehouse:

http://ses.wsu.edu/fpti/freight-data-warehouse/