“Observations on Future Infrastructure Needs”

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The World is Changing…

- Operational Changes
  - Port Strikes
  - Rail meltdowns
  - Growing Vessel Capacity
  - Lock and Dam Closures
- Regulatory Policies
- Shifting trade patterns
- Cost Variability
- Natural Disasters/climate change
- Terrorism and Security
- Economic Downturns
- “Green” Pressures
- Funding Challenges
- Reducing Risks
### Current and Forecasts of Total Freight Shipments - FHWA FAF²

#### Table 2-1. Shipments by Mode and Weight: 2002 and 2035 (Millions of Tons)

<table>
<thead>
<tr>
<th>Mode</th>
<th>2002</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Domestic</td>
</tr>
<tr>
<td>Total</td>
<td>(P) 19,326</td>
<td>17,670</td>
</tr>
<tr>
<td>Truck</td>
<td>11,539</td>
<td>11,336</td>
</tr>
<tr>
<td>Rail</td>
<td>1,879</td>
<td>1,769</td>
</tr>
<tr>
<td>Water</td>
<td>701</td>
<td>595</td>
</tr>
<tr>
<td>Air, air &amp; truck</td>
<td>(P) 10</td>
<td>3</td>
</tr>
<tr>
<td>Intermodal¹</td>
<td>1,292</td>
<td>196</td>
</tr>
<tr>
<td>Pipeline &amp; unknown²</td>
<td>3,905</td>
<td>3,772</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mode</th>
<th>2035</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(P) 37,178</td>
<td>33,668</td>
<td>(P) 1,105</td>
</tr>
<tr>
<td>Truck</td>
<td>22,814</td>
<td>22,231</td>
<td>262</td>
</tr>
<tr>
<td>Rail</td>
<td>3,525</td>
<td>3,292</td>
<td>57</td>
</tr>
<tr>
<td>Water</td>
<td>1,041</td>
<td>874</td>
<td>114</td>
</tr>
<tr>
<td>Air, air &amp; truck</td>
<td>(P) 27</td>
<td>10</td>
<td>(P) 7</td>
</tr>
<tr>
<td>Intermodal¹</td>
<td>2,598</td>
<td>334</td>
<td>660</td>
</tr>
<tr>
<td>Pipeline &amp; unknown²</td>
<td>7,172</td>
<td>6,926</td>
<td>5</td>
</tr>
</tbody>
</table>

#### % Change 2002-2035

<table>
<thead>
<tr>
<th>Mode</th>
<th>2002</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>92%</td>
<td>91%</td>
</tr>
<tr>
<td>Truck</td>
<td>98%</td>
<td>96%</td>
</tr>
<tr>
<td>Rail</td>
<td>88%</td>
<td>86%</td>
</tr>
<tr>
<td>Water</td>
<td>49%</td>
<td>47%</td>
</tr>
<tr>
<td>Air, air &amp; truck</td>
<td>170%</td>
<td>233%</td>
</tr>
<tr>
<td>Intermodal¹</td>
<td>101%</td>
<td>70%</td>
</tr>
<tr>
<td>Pipeline &amp; unknown²</td>
<td>84%</td>
<td>84%</td>
</tr>
</tbody>
</table>

**Key:** P = preliminary
Does Inland Navigation Matter?

Can we say:
- How did the system evolve?
- How are users approaching the inland system?

Considerations regarding future use
- Alleviate congestion in other modes
- “Endless Capacity”?
- Integration with other modes, including deep-sea ports
- Environmental advantages and exposures
- Inconsistent policies stymie evolution-adaptation in maritime sector
- Geography constraints do exist
How Can One Look At the Inland Navigation Industry?

- Inventory Functions – physical characteristics, numbers of facilities, labor, equipment, infrastructure
- Engineering – structural integrity, deterioration
- Operational Reliability – delay, closures
- Economical and Financial – Cost/Benefit Analysis, capital and financial resources, jobs and taxes
- Safety, Security, Regulatory – number of accidents, exposure, fees, taxes, inspections, etc.
- Markets – hinterlands, multimodal services, shippers, carriers
- Equipment and Traffic – number of barges, age of fleet, etc.
- Non Navigational Users – Recreation, flood control, hydropower, Fish and Wildlife, water supply
Who Gains from Inland Transportation Improvements?

- Carriers – reduction in operating expenses, improved reliability, profits
- Ports – additional revenues, prestige, local employment
- Governments and other local industries – additional revenues, employment
- Shippers – minimized disruption, reduced out of pocket costs, valuation of time, modal choice
- Other users – less traffic, etc.

Who does not benefit? Externalities and NED benefits?
Without Planning This Would Have Been a Mess
What kind of transportation system do we (nationally) want? Now? Or In 30 years?

- Safe, Secure, Environmental Responsible, Efficient/Reliable
  - Common theme across Corps, US DoT, State DoT’s, etc.
- Customers (Shippers/Carriers/Public) assume this plus
  - cost effectiveness and accessibility
Options for Operations Improvement

- Build (improve) system capacity
  - Privatization
  - Flexibility
- Increase Operations (system velocity)
  - Reduce delays, notifications, technologies
- Create or Support emerging transportation options
  - Marine Highways
  - Inland ports as Logistics centers
Infrastructure development complicated by several factors

- Equity: Can’t build everything everyone wants everywhere
- Project Determination: Balance project needs with relevant policy goals
- Communication: Failure to communicate needs, especially to non-technical decision makers
- Lack of common analytical models, datasets and guidance
- Uncertain, dynamic Policy expectations
  - energy use, environment, unintended consequences
- Financing
  - More costly new projects chasing less federal/state funds
  - Maintenance costs continue consuming larger share of available funds
- Perception: Transportation is a “Free Lunch”, so don’t make me pay again to use it
- Maintenance verse New Project Funding – Match to previous level.
- State Laws Regarding Spending Limitations
How much will an improved Freight system cost?

- ASCE 2005 (first issued in 1988)
- AASTHO Freight Bottom Line Reports
- FHWA – Condition and Needs for Highways
- USACE – IWR – Dredging Needs Studies
- Estimation of Value of Capital Stock Replacement
- National Surface Transportation Policy an Revenue Study Commission

No consistent National Investment Model
  - Various numbers, forecasts, etc., distort message
  - Lack of analytical models and data that match planning and policy needs
Public Sector Development – Estimating the Real Need

- Current
- Unconstrained Need
- Current program plans
- Operational Improvements
- Private Sector Efficiencies

Remaining Need

Public Strategies
One Consideration – Strengthen Federal Approach to Waterways

- Reestablish the Strong Federal Leadership Role in Market Access and Economic Development
  - A promise made – a promised kept
  - Without a “moon shot” perspective, hard to sustain interest.

- Evolution from Systems to Multimodal Planning
- Develop multiyear capital budgeting at system level
- Integrate life cycle costing with appropriate budgets
Where does the Money come from…

- **Federal Sources**
  - Indexed Fuel Taxes, User Fees, registrations, Infrastructure Banks, etc.

- **State Sources**
  - Linking waters and economic development (brownfields, greenfields), developing state champions

- **Public Private Partnerships**

If we receive new funds, but authorizations and approvals occur in the same manner, did anything improve?

Projects must match goals, and demonstrate returns to the Federal Government
Conclusion

- Improving navigation different from past years
- System’s use not fully understood or appreciated
- New institutional approaches needed to “relink” transportation to economic growth
- Economic development = people development

  Example - Tenn-Tom
  - Congressional and State members involved
  - Sees the Region wins if the components win
  - Benefits are consistent with regional economic development goals in region