Rail Freight and Economic Development

Glen Weisbrod
Economic Development Research Group, Inc.
2 Oliver Street, 9th Floor
Boston, MA 02109 USA

www.edrgroup.com
Three Themes

1. **Underlying Trends:** changing due to national & global economic markets.

2. **Intermodal Rail Freight Projects:** reducing costs & expanding services to improve competitiveness.

3. **Economic Development:** depends on market access & cost competitiveness.
1. UNDERLYING TRENDS

Freight Growing Faster than Population
PA -- Freight O-D by Mode

Rail Freight
Imbalance:

Ratio: \text{outgoing} / \text{incoming}

Tons = 0.86
$\text{Val} = 0.38$
Intermodal Importance (US)

Intermodal accounts for a small part of the tonnage, but a large part of the value moving by rail.

COFC: 83% of all Intermodal Imports + Exports > Domestic by 2035
PA -- Rail Freight Flows
Appalachian Exports

FOOD PROCESSING MACHINERY
Origin:
• PA
• GA
• SC
• OH

Key Ports:
• Laredo TX
• New York NY
• Detroit MI

Source: Appalachian Regional Commission
March 12, 2012
PA -- NAFTA Trade via Rail

PA to Canada  $758 million  (+83% from 2000)
Canada to PA  $2.698 Billion  (+85% from 2000)

PA to Mexico $311 million  (+44% from 2000)
Mexico to PA  $104 million  (-21% from 2000)

International Trade Administration 2006
PA -- Exports to Canada by Rail

- Locomotives & Traffic Signals
- Organic Chemicals
- Iron & Steel and Products
- Plastics
- Mineral Fuels, Oils & Waxes
- Wood and Wood Articles
- Boilers, Machinery and Parts
- Chemical Products

*Contrast to Domestic Rail Flows that feature Coal, Petroleum, Pulp & Paper*
2. RAIL FREIGHT ROLES & PROJECTS

Modal Spectrum: Service & Cost Tradeoffs

Higher ← SERVICE CONTINUUM (Speed, etc.) → Lower

SPACE  AIR  TRUCK  RAIL IMX  RAIL CL  WATER

$10K  $1.50  $.05 - .10  $.03  $.01  $.005

COST CONTINUUM ($ / LB)

Intermodal Strong in the 750+ mile range.
Can it penetrate the 200+ mile markets?
Rail Freight to Reduce Hwy Traffic

NCHRP Guide:

- Converging interests: private carriers, public agencies
- Motor carriers (facing labor shortages, truck delays, rising fuel prices) see rail freight as a positive option.
- Reducing congestion and road/rail conflicts can enhance public safety & economic development
- Guide for evaluation & public-private partnerships
Successful Short-Haul

170 Miles Seattle - Portland
Northwest Container Services, Inc.

- Daily dedicated service
- 60,000 containers/year
- Private terminals & equipment
- Private, purchased train

Keys to Success:
- Single-end dray
- Stack economics
- Economic geography
- Turnkey set of services
Expanding Regional Capacity

Regional Rail-Hwy Access Strategies
– Vancouver Gateway System
– Chicago CREATE

Inland Ports and Feeder Systems
– Netherlands: European Container Port Venlo
– Virginia Inland Port
– Nilai Inland Port (Malaysia)
– NY: Port Inland Distribution Network

Rail to Satellite Facilities
– Betuwe Line - Netherlands
– Alameda Corridor - California
Example: Vancouver BC International Trade Gateway

Connected by an increasingly congested urban road network
Example: Chicago Rail Yards

- 74 rail yards, 17 for intermodal
- Delays at 600 grade crossings
- Congestion from truck trips moving cargo from yard to yard
- Abandoned & under-utilized rail yards
Inland Ports

- **European Container Terminal Venlo**
  - 120 miles from Rotterdam
daily shuttle trains

- **Virginia Inland Port**
  - 220 miles from Hampton Roads
daily shuttle trains

- **Nilai Inland Port (Kuala Lumpur)**
  - 25 miles from Port Klang
daily shuttle trains
Port Inland Distribution Network
Rail Service to Satellite Facilities

Betuweroute Freight Line
100 miles
Netherlands port to Germany
Shuttle trains

Alameda Corridor
20 miles (future 55 miles)
San Pedro Ports to Los Angeles
Shuttle trains
3. Economic Development

- Business growth & attraction depends on many cost, quality and market size factors.
- Freight connections alone do not create economic development.
- But failure to provide access or service can constrain it.
- International trends will create more opportunities for intermodal services.
PA – Rail Intermodal Terminals

(Pittsburgh, Harrisburg, Scranton, Allentown, Philadelphia)
## Local Econ Assessment Package

### Summary Comparison of Factors

<table>
<thead>
<tr>
<th></th>
<th>Study Area</th>
<th>Comparison Area</th>
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<tbody>
<tr>
<td><strong>Cost Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Labor Cost (per year in RETAIL)</td>
<td>$22.99%</td>
<td>$22.49%</td>
</tr>
<tr>
<td>Average Electricity Cost ($/kWh)</td>
<td>$0.10</td>
<td>$0.08</td>
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<tr>
<td>Average Total Tax Burden per Person ($ per year)</td>
<td>$1,199.45</td>
<td>$439.91</td>
</tr>
<tr>
<td>Average Housing Cost ($ for a single family home)</td>
<td>$64,000</td>
<td>$65,300</td>
</tr>
<tr>
<td>Average Rental Cost ($ per month)</td>
<td>$339.00</td>
<td>$360.00</td>
</tr>
<tr>
<td><strong>Market Factors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>137,143</td>
<td>280,844</td>
</tr>
<tr>
<td>Population Density (population per square mile)</td>
<td>129.1</td>
<td>350.2</td>
</tr>
<tr>
<td>Skilled Workers (% with bachelor's degree or higher)</td>
<td>16.90%</td>
<td>20.90%</td>
</tr>
<tr>
<td>Population Within 45 Minutes</td>
<td>53,272</td>
<td>122,406</td>
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### Transportation (access in avg. minutes peak period)

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<table>
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<tbody>
<tr>
<td>Access to Commercial Airport</td>
<td>18</td>
<td>19</td>
</tr>
<tr>
<td>Access to Freighter Port</td>
<td>92</td>
<td>9</td>
</tr>
<tr>
<td>Access to Rail Intermodal Loading</td>
<td>75</td>
<td>97</td>
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<tr>
<td>Average MPH Travel Speed</td>
<td>69</td>
<td>20</td>
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<tr>
<td>Airport Annual Operations</td>
<td>2,979</td>
<td>14,493</td>
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### Technology & Education Quality (1-10)

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<tr>
<td>Labor-Advanced Skills Training (net active)</td>
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<tr>
<td>Broadband Access</td>
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### Development Constraints & Incentives (1-10)

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<tbody>
<tr>
<td>Availability of Highway-Related Commercial Land</td>
<td></td>
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<tr>
<td>Availability of Industrial Park Sites with Full Infrastructure</td>
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<tr>
<td>Availability of Office/Commercial Development Sites</td>
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### Chautauqua County - Nearest Rail Intermodal Facility

- **Location**: Buffalo, NY
- **Distance**: 70 miles
- **Location**: Buffalo, NY
- **Driving Time**: 75 minutes
- **Distance**: 70 miles

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[Link to more information](http://www.cayuga-leap.com/#!/type:Statistics;state:NewYork;city:ChautauquaCounty)
## LEAP: Barriers to Economic Development

### Barriers Factors by Industry (1=Critical, 2=Important)

**Performance Measurement = Employment**

**Actual Number of Jobs**

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<tr>
<td>115</td>
<td>Support for Agriculture &amp; Forestry</td>
<td>170</td>
<td>2</td>
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<tr>
<td>323</td>
<td>Printing &amp; Related Support Activities</td>
<td>177</td>
<td>1</td>
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<td>2</td>
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<tr>
<td>325</td>
<td>Chemical Manufacturing</td>
<td>104</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2</td>
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<tr>
<td>332</td>
<td>Fabricated Metal Products</td>
<td>229</td>
<td>1</td>
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<tr>
<td>333</td>
<td>Machinery Manufacturing</td>
<td>367</td>
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<td>2</td>
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<tr>
<td>334</td>
<td>Computer &amp; Electronic Products</td>
<td>518</td>
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<td>-</td>
<td>-</td>
<td>2</td>
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<tr>
<td>335</td>
<td>Electric Equipment, Appliances, etc.</td>
<td>92</td>
<td>1</td>
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<td>-</td>
<td>2</td>
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<tr>
<td>339</td>
<td>Miscellaneous Manufacturing</td>
<td>153</td>
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<td>420</td>
<td>Wholesale Trade</td>
<td>4,272</td>
<td>1</td>
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<tr>
<td>481-487</td>
<td>Transportation</td>
<td>3,880</td>
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<tr>
<td>491-493</td>
<td>Mail, package delivery &amp; warehousing</td>
<td>240</td>
<td>1</td>
<td>2</td>
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<td>-</td>
<td>2</td>
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<tr>
<td>511</td>
<td>Publishing Industries (except Internet)</td>
<td>1,270</td>
<td>-</td>
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<td>2</td>
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PA – Rail Freight & Development

- **Rail Freight Properties Directory** (205 listings)
- **Rail Freight Assistance Program** (track, bridge, siding, spurs for industrial development)
- **Intermodal Warehousing & Logistics Centers**
- **Int. Port Connections** (e.g., reverse logistics for military equip. repair (Phila to Ft. Drum, Dix...), future PIDN to Pittsburgh, etc.)
Future: Public-Private Cooperation

<table>
<thead>
<tr>
<th>Element</th>
<th>Leadership</th>
<th>Support</th>
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<tbody>
<tr>
<td>Rail capacity limits</td>
<td>Rail Carriers</td>
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<tr>
<td>Rail capacity investment needs</td>
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<tr>
<td>Freight market projections</td>
<td>FAC &amp; Public Agency</td>
<td>Rail Carriers</td>
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<tr>
<td>Trans-modal effects of investment</td>
<td>Public Agency</td>
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<tr>
<td>New market assessments</td>
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<td>FAC &amp; Rail Carriers</td>
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<td>Public education</td>
<td>Public Agency</td>
<td>Freight Advisory Council</td>
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<tr>
<td>Environment</td>
<td>Public Agency</td>
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<td>Multi-jurisdiction coordination</td>
<td>Rail Carriers</td>
<td>Public Agency</td>
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<tr>
<td>Media coordination</td>
<td>Public Agency</td>
<td>FAC &amp; Rail Carriers</td>
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