DEVELOPING A REGIONAL/LOCAL FREIGHT PROGRAM IN WNY

Richard Guarino, AICP
CDTC Freight & Fuels Conference
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Erie and Niagara County’s Metropolitan Planning Organization (MPO)
A Cooperative Association of Area Governments and Agencies

NYSDOT

NFTA

New York Thruway

Niagara County
What We Do

- Primary responsibility is planning and programming transportation improvements within the region
  - Long Range Transportation Plan (LRP)
  - Short Range Transportation Improvement Program (TIP)
  - Local and Area-wide Transportation Studies
Our Vision

- Reverse the current economic, land use, social and demographic trends
- Rebuild and maintain the region’s infrastructure and encourage growth in those areas
- Establish the economic and environmental health of the region
TIP and RTP Freight Integration

- Increasing orientation toward a performance-based transportation system in MAP-21
  - Performance measures will be used to accomplish long and short-term MPO goals
    - Decision making
    - Planning
    - Forecasting and modeling
    - Performance management

- Increased federal and NY State emphasis on economic development freight projects
Urban Area Freight Study

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Content</th>
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<tbody>
<tr>
<td>Tech Memo 1</td>
<td>• Economic overview of the region</td>
</tr>
<tr>
<td>Tech Memo 2</td>
<td>• Air, highway, rail, marine profiles</td>
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<td>• Cross-border freight system profile</td>
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<td>• Preliminary identification of opportunities</td>
</tr>
<tr>
<td>Tech Memo 3</td>
<td>• Rail, truck, marine, cross-border traffic flow profile</td>
</tr>
<tr>
<td></td>
<td>• Forecasted freight volumes</td>
</tr>
<tr>
<td>Tech Memo 4</td>
<td>• Needs assessment (summary of stakeholder input, freight performance</td>
</tr>
<tr>
<td></td>
<td>indicators, network analysis)</td>
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<tr>
<td></td>
<td>• Proposed projects</td>
</tr>
<tr>
<td></td>
<td>• Freight issues/solutions matrix</td>
</tr>
<tr>
<td>Tech Memo 5</td>
<td>• Evaluation of maritime, rail, highway projects</td>
</tr>
<tr>
<td></td>
<td>• Evaluation of potential logistic center in Buffalo</td>
</tr>
<tr>
<td></td>
<td>• Presentation of marketing plan outline, FAC</td>
</tr>
<tr>
<td>Final Report, Executive Summary</td>
<td>• Summary of previous tech memos</td>
</tr>
<tr>
<td></td>
<td>• More detailed marketing plan</td>
</tr>
<tr>
<td></td>
<td>• Summary and prioritization of project recommendations</td>
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</tbody>
</table>

All deliverables are available at: www.gbnrtc.org/planning/freight
National/International Freight Trends
Respond to Public Perceptions of Freight

- “Moving Freight is Dangerous and Dirty”
  - More efficient and cleaner diesel engines
  - Electric delivery vehicles
  - Impressive safety records of truck, rail and marine operators
  - Designated freight routes, altered delivery times, sound insulation
- “Moving freight is unnecessary”
  - Increased demand for cheap global goods
  - “Public Money should not be spent on private freight operators”
  - Focus on economic development, safety, environment, high cost of infrastructure improvements and high investment of Private freight companies
ROOT CAUSES OF FREIGHT CONGESTION

SHIPPERS / CARRIERS
1. GROWTH OF INT’L IMPORTS
2. WEST COAST PORT CONGESTION
3. DRIVER SHORTAGE
4. HWY CONGESTION NEAR URBAN AREAS

GOVERNMENT
1. HWY CONGESTION NEAR URBAN AREAS
2. LACK OF STATE FUNDING FOR FREIGHT INFRASTRUCTURE
3. LACK OF FEDERAL FUNDING FOR FREIGHT INFRASTRUCTURE
4. LACK OF FUNDING BY RAILROADS

SOURCE: SURVEY BY MIT CENTER FOR TRANSPORTATION LOGISTICS
ESTIMATED INCREASE IN FREIGHT BY 2020

- Freight traffic within U.S will increase 100%
- Foreign trade moving through American ports will increase almost 200%
- Containerized cargo will experience a 350% increase
- Freight transportation capabilities are not keeping pace with demand
  - Higher cost
  - Longer transit times
  - Increased strain on infrastructure
  - Security requirements
  - Environmental issues
Vehicle Miles of Travel and Lane Miles, 1980-2004

VMT has doubled over the last decades, tracking population and economic growth (GDP); truck VMT has grown faster than auto VMT in recent years.

VMT Index/Lane-mile Index (1980 = 100)

Source: Federal Highway Administration, Highway Statistics
Rail Network Today

Today’s rail network has been rationalized and downsized to a core network that is descended directly from the 19th Century design.

Class I Railroads Track-Miles Owned

Sources: L. Thompson/World Bank and American Association of Railroads
Changing Global Freight Patterns

Lines Have Adequate Vessel Capacity for Suez and Panama Routes
Southeast Asia Growth Supports Suez Routings
America’s Marine Highways
Designated August 2010
Panama Canal Expansion Project

- Will double the capacity of the Panama Canal by 2015 by allowing more and larger ships to transit.
- Project started in September, 2007
- The $5.2B expansion will create demand along the US Eastern Seaboard for ports to handle post-Panamax ships
Impacts of Panama Expansion on PANYNJ

- The **Bayonne Bridge**
  - The fourth-longest steel arch bridge in the world. It connects Bayonne, New Jersey with Staten Island
  - The current bridge clearance will not allow newer, larger post-Panamax ships to pass
  - PANYNJ has allocated $1 billion to raise the roadbed 60 feet within the existing arch to allow larger container ships to pass underneath.
- PANYNJ is working to deepen the harbor to accommodate larger, deeper-draft vessels (2014 completion)
- Despite numerous capacity expansion projects, congestion will likely worsen
  - ExpressRail (direct ship to rail) service can feed IPDNs via Class I railroads
International Traffic by Market
(981 Million Tons)
Growth of Containerization

- Largest and fastest growing cargo category at most ports worldwide
- 1 TEU = a 20 feet equivalent unit container
- 2 TEU can mean a 40 feet container like the one below or 2 20-feet containers
# Modern Supply Chains Use Many Modes

<table>
<thead>
<tr>
<th>Mode</th>
<th>Cost ($)</th>
<th>Speed</th>
<th>Efficiency (Ton Miles)</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>VERY LOW</td>
<td>VERY LOW</td>
<td>VERY SLOW</td>
<td>576</td>
<td>Crowded Ports, Pollution, Bridge Heights, Drayage</td>
</tr>
<tr>
<td>LOW</td>
<td>SLOW</td>
<td>413</td>
<td>Competition, Access, Switching Costs and Delays, Rail Infrastructure</td>
<td></td>
</tr>
<tr>
<td>MODERATE</td>
<td>MODERATE</td>
<td>155</td>
<td>Fuel Costs, Pollution, Highway Congestion, Pavement Deterioration, Driver Shortages, New Driver Rules</td>
<td></td>
</tr>
<tr>
<td>HIGH</td>
<td>VERY FAST</td>
<td>25*</td>
<td>Size and Weight restrictions, Security Issues, Backhaul, Competition</td>
<td></td>
</tr>
</tbody>
</table>

* Assuming Boeing 747 with cargo capacity of 124 Tons and using 5 gallons of fuel per mile
Highway Infrastructure

Ability to Meet Future Freight Demands in Question

Primary Highway Freight System

<table>
<thead>
<tr>
<th>Road</th>
<th>Lanes</th>
<th>AADT</th>
<th>Speed</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>I-90</td>
<td>6-8</td>
<td>109,100</td>
<td>55</td>
<td>Unstable Flow/Breakdown Flow</td>
</tr>
<tr>
<td>I-190</td>
<td>4-6</td>
<td>50,219</td>
<td>60</td>
<td>Approaching Unstable Flow</td>
</tr>
<tr>
<td>I-290</td>
<td>6</td>
<td>102,494</td>
<td>55</td>
<td>Unstable Flow/Breakdown Flow</td>
</tr>
<tr>
<td>I-990</td>
<td>4-8</td>
<td>33,830</td>
<td>60</td>
<td>Stable Flow</td>
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</table>

Secondary Highway Freight System

<table>
<thead>
<tr>
<th>Road</th>
<th>Lanes</th>
<th>AADT</th>
<th>Speed</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR 78</td>
<td>2-5</td>
<td>23,688</td>
<td>45</td>
<td>Unstable Flow/Breakdown Flow</td>
</tr>
<tr>
<td>SR 33</td>
<td>2-7</td>
<td>52,248</td>
<td>60</td>
<td>Approaching Unstable Flow</td>
</tr>
<tr>
<td>SR 62</td>
<td>2-6</td>
<td>15,064</td>
<td>55</td>
<td>Unstable Flow/Breakdown Flow</td>
</tr>
<tr>
<td>SR 5</td>
<td>4-6</td>
<td>29,410</td>
<td>60</td>
<td>Approaching Unstable Flow</td>
</tr>
<tr>
<td>SR 198</td>
<td>4-6</td>
<td>51,520</td>
<td>50</td>
<td>Unstable Flow/Breakdown Flow</td>
</tr>
</tbody>
</table>
Cross-Border Highway Infrastructure

- Two mixed passenger car and truck bridges
  - Peace Bridge, Queenston-Lewiston Bridge
- Two passenger car only bridges
  - Rainbow Bridge, Whirlpool Rapids Bridge
- Processing and enforcement plazas at the bridgeheads on both sides
### Level of Service on International Bridges

<table>
<thead>
<tr>
<th>Bridges</th>
<th>Direction Capacity</th>
<th>No SUMMER Age Wick Dry Rack</th>
<th>SUMMER Age Wick Dry Rack</th>
<th>SUMMER Age Wick Bulk Rack</th>
<th>LOS NSWD</th>
<th>LOS SWD</th>
<th>LOS SWE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EastBound</td>
<td>200</td>
<td>886</td>
<td>1042</td>
<td>1168</td>
<td>B</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>WestBound</td>
<td>200</td>
<td>1080</td>
<td>1390</td>
<td>1480</td>
<td>C</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Total</td>
<td>340</td>
<td>1766</td>
<td>2432</td>
<td>2648</td>
<td>C</td>
<td>C</td>
<td>D</td>
</tr>
</tbody>
</table>

### Quantum-Leafston Bids

<table>
<thead>
<tr>
<th>Bridges</th>
<th>Direction Capacity</th>
<th>No SUMMER Age Wick Dry Rack</th>
<th>SUMMER Age Wick Dry Rack</th>
<th>SUMMER Age Wick Bulk Rack</th>
<th>LOS NSWD</th>
<th>LOS SWD</th>
<th>LOS SWE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EastBound</td>
<td>150</td>
<td>452</td>
<td>568</td>
<td>681</td>
<td>B</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>WestBound</td>
<td>200</td>
<td>681</td>
<td>885</td>
<td>980</td>
<td>B</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Total</td>
<td>350</td>
<td>1133</td>
<td>1453</td>
<td>1661</td>
<td>B</td>
<td>B</td>
<td>B</td>
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</tbody>
</table>

### Rainbow Bids

<table>
<thead>
<tr>
<th>Bridges</th>
<th>Direction Capacity</th>
<th>No SUMMER Age Wick Dry Rack</th>
<th>SUMMER Age Wick Dry Rack</th>
<th>SUMMER Age Wick Bulk Rack</th>
<th>LOS NSWD</th>
<th>LOS SWD</th>
<th>LOS SWE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EastBound</td>
<td>200</td>
<td>300</td>
<td>486</td>
<td>545</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>WestBound</td>
<td>200</td>
<td>451</td>
<td>560</td>
<td>589</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Total</td>
<td>400</td>
<td>851</td>
<td>1046</td>
<td>1134</td>
<td>A</td>
<td>A</td>
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</tbody>
</table>

### Windup Rick Bids

<table>
<thead>
<tr>
<th>Bridges</th>
<th>Direction Capacity</th>
<th>No SUMMER Age Wick Dry Rack</th>
<th>SUMMER Age Wick Dry Rack</th>
<th>SUMMER Age Wick Bulk Rack</th>
<th>LOS NSWD</th>
<th>LOS SWD</th>
<th>LOS SWE</th>
</tr>
</thead>
<tbody>
<tr>
<td>EastBound</td>
<td>150</td>
<td>24</td>
<td>30</td>
<td>34</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>WestBound</td>
<td>150</td>
<td>24</td>
<td>32</td>
<td>33</td>
<td>A</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>Total</td>
<td>300</td>
<td>48</td>
<td>62</td>
<td>67</td>
<td>A</td>
<td>A</td>
<td>A</td>
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</table>
Processing Delays

<table>
<thead>
<tr>
<th>Bridge</th>
<th>Travel to US Passenger Cars</th>
<th>Travel to US Cargo Shipments</th>
<th>Travel to Canada Passenger Cars</th>
<th>Travel to Canada Cargo Shipments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of hours delay occurred within 24 hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rainbow Bridge</td>
<td>3</td>
<td>No commercial vehicles</td>
<td>No commercial vehicles</td>
<td></td>
</tr>
<tr>
<td>Lewiston-Queenston</td>
<td>5</td>
<td>9</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Peace Bridge</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Average delay in minutes during delay periods

<table>
<thead>
<tr>
<th>Bridge</th>
<th>Travel to US Passenger Cars</th>
<th>Travel to US Cargo Shipments</th>
<th>Travel to Canada Passenger Cars</th>
<th>Travel to Canada Cargo Shipments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rainbow Bridge</td>
<td>13</td>
<td>No commercial vehicles</td>
<td>No commercial vehicles</td>
<td></td>
</tr>
<tr>
<td>Lewiston-Queenston</td>
<td>15</td>
<td>27</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Peace Bridge</td>
<td>10</td>
<td>30</td>
<td>20</td>
<td>10</td>
</tr>
</tbody>
</table>

Cross Border Rail Infrastructure

- **Canadian Pacific Rail**
  - Intermodal in Vaughan (the biggest in Canada)
  - Transload facilities in GTA and Niagara Peninsula
  - Services east of Buffalo through Norfolk Southern

- **Canadian National Railway**
  - Intermodal in Brampton
  - Distribution Centres and CargoFlo facility in Hamilton
  - Focus on Montreal-Toronto-Detroit-Chicago corridor
International Rail Crossings

- **International Railroad Bridge**
  - Owned by CN Rail
  - Canadian Pacific and Norfolk Southern have trackage rights
  - Five trains per day in each direction
  - No double stack capacity

- **Whirlpool Bridge**
  - VIA/Amtrak’s Toronto – New York City route
  - No freight traffic
## WNY Railroad Infrastructure

### Rail Carriers

#### Class I
- **CSX Transportation (CSXT)**: 100 route miles
- **Norfolk Southern (NS)**: 76 route miles
- **Canadian National (CN)**: 1 route mile
- **Canadian Pacific (CP)**: 0 route miles

#### Class II
- **Buffalo & Pittsburgh Railroad (BPRR)**: 10 route miles

#### Class III
- **Falls Road Railroad (FRR)**: 13 route miles
- **Depew, Lancaster and Western (DLWR)**: 4 route miles
- **Somerset Railroad (SOM)**: 16 route miles
- **South Buffalo (SB)**: 0 route miles
- **Buffalo Southern Railroad (BSOR)**: 30 route miles
WNY Railroad Infrastructure

Strengths

- **North-South Connection** - CN International Bridge, and CSXT’s Niagara Branch and Beltline in Buffalo -- provides connection to Canada

- **East-West Connection** - CSXT’s Chicago line and NS’s Southern Tier line provide major connections between NY/ NJ ports and western or southern stations in the US

Weaknesses

- **Terminal capacity and switching operations** - Interchange arrangement between various rail carriers and excessive dwell times in the major terminals

- **Congested Bridges** - CP Draw Bridge over Buffalo River and railroad bridge over the Genesee River

- **Inadequate competition** - No direct access to local customers and high switching charges
Portage Bridge (NS)

- Critical component of Norfolk Southern’s Southern Tier route
- At the end of its useful life as a freight structure; requires continuous inspection and frequent repair
- Imposes restrictions on the entire Southern Tier route
- Safety concerns for park users who trespass on the bridge
CP Draw Bridge (CSX)

- Buffalo (south) River Crossing
  - Provides access to industrial lands and freight facilities
  - Controlled by CSX
  - Complaints of long waits to cross by other Class 1 and short line RRds
  - Twinned span locked in “up” position
  - Large barges still serve businesses on Buffalo River
Air Cargo Infrastructure

Strengths
- Proximity to major Interstates.
- Excellent access, available warehousing and room for expansion.
- Proximity to border crossings and Canadian markets
- Foreign Trade Zones - FTZ 23 (BUF) and FTZ 34 (IAG)

Weaknesses
- Limited belly space capacity for freight forwarders.
- No direct international lift – backhaul remains an issue.
- Competition - Proximity to major international gateways
Aviation Recommendations

- Use air cargo as a component of economic development
  - Market air cargo services to automotive and medical device industries
- Recruit an anchor tenant
  - NY 3rd nationally in grape production, although seasonal cargo
  - Retailer
  - Pharmaceutical and bio sciences is a growth area
- Use of dormant/underused Niagara Falls airport and facilities
  - Develop NFIA as an “industrial” airport, directed at manufacturers of aircraft and equipment to support the aviation industry
- Market to overhead cargo, determine what is passing, whether there is a reason to stop
Maritime Infrastructure

- 28 terminals
  - 8 government
  - 20 private
- Maritime activity at 12 of 20 private terminals
- Diverse cargo base
- Rail service: 9 terminals
- Gateway Metroport principal third party terminal
Benefits of Maritime Initiatives

- Focus on potential growth areas
  - Intermodal Short Sea Shipping
- Bring un/underused ports back to life
- Maritime is the safest and most fuel-efficient mode of transportation
- Leverage Marine Highway program to improve and expand current port facilities
  - Buffalo port could further serve western ports via Great Lakes (Cleveland, Toledo, Detroit, etc.)
  - Lake Ontario port could further serve Southern Ontario and eastern ports via St. Lawrence Seaway (Montreal, Quebec, Halifax)
Stakeholder Input

- Most dealt with the region’s rail network
- Rail bridges at the end of their life
- Bottlenecks NOT an issue!
- Lack of competitive access
- Lines in poor condition
- Funding issues
Main Freight Study Finding:

The WNY Region is a Promising Location for a Logistics Center
Western New York is well-positioned to develop as a primary international hub for transportation, logistics and distribution.

The region enjoys a prime geographic location, robust transportation network, a strong base of professional knowledge and skilled workforce. Strategic investments in this sector are likely to produce significant returns in jobs, firms and income.

The region perches on the U.S.-Canada border within one day’s drive of three fifths of the Canadian and two-fifths of the US population.

It is part of an expanding bi-national market of nearly nine million people encompassing Toronto, Buffalo and Rochester.

We possess strong links and multi-modal connections for truck, rail, ship and air transport and plentiful sites for assembly, storage, processing and distribution.

The region hosts a cluster of professionals in customs brokerage, international trade law, insurance, banking and other key specializations as well as expertise in supply chain management at area universities.

With an appropriate plan of action, WNY can capitalize on this important — but time-sensitive — opportunity to take a primary position in the global trade, transportation and logistics network.
REDC Action Plan

- Create a bi-national logistics council
  - The council could be led by an existing economic development entity and would encompass representatives from five WNY counties and Southern Ontario including stakeholders from industry, government and academia.

- Develop key transport and logistics facilities
  - Expand regional multi-modal capacity to move, store and process goods

- Invest in regional facilities for light manufacturing and distribution
  - establish state-of-the-art manufacturing, warehousing, motor freight and distribution facilities that maximize product flow and storage

- Convene New York State/Ontario Leaders Summit
  - Highlight the substantial positive impact that our cross-border commerce has on our economies and to shine a spotlight on the vital services and infrastructure WNY has in support of this commerce

- Improve international crossings
  - Enhanced coordination among the five Niagara river crossings will further facilitate commerce and tourism
Path Forward: International Trade Gateway (ITG)

- **Research**
  - Concept, vision, and execution strategy
  - Case Studies (KC, Edison, Dallas)
  - Identify possible locations in region

- **Education**
  - Business community, policymakers, the media and other stakeholders

- **Consensus**
  - Stakeholder buy-in

- **Marketing**
  - Selling concept to private logistics industry

- **Investment**
  - Regional/National/International
  - Public/Private
  - Domestic/Foreign
  - Intermodal Connections
  - Maintain State of Good Repair
Contact Information:

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