



## Multimodal Freight Transportation within the Great Lakes St. Lawrence Basin

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Solutions for growing economies

Marc-André Roy September 11, 2012 Cleveland, Ohio



Study undertaken by: **CPCS** In association with: University of Toledo Economic Development Research Group **Prime Focus** Sustainable Ports **Richard Stewart of GLMRI** 

Full Report available at: <u>http://onlinepubs.trb.org/onlinepubs/ncfrp/nc</u> <u>frp\_rpt\_017.pdf</u>



What is the Great Lakes/ St. Lawrence multimodal freight system?

What traffic moves over this system?

Why does stuff move the way it does?

What does this mean for Great Lakes stakeholders?

What does the future hold for marine transport in the GLSLB?



#### **GLSLB** Port System



#### Port Throughput



#### Inland Waterway Traffic



#### **GLSLB** Rail System



#### GLSLB Highway System



#### Truck Traffic Volumes



#### **GLSLB** Pipeline Network



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The major commodities moving to, from or within the GLSLB include:

- **Coal** (largely for regional power production),
- Iron ore (for regional steel production and export),
- Grain and other agricultural products (local consumption and export),
- Automotive and machinery (supporting local manufacturing base), and
- **Other manufactured goods** (including containerized imports for regional distribution and consumption and exports)



#### **Top 5 commodities handled:**

Weight



#### Value





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#### "Performance" vis-à-vis transportation requirements:

- Different measurement by different stakeholders
- With respect to transport, most salient perspective is that of the shipper (user)
- Performance tradeoff:

## Performance is Supply Chain Specific





#### Coal Supply Chains: Coal Moves Largely by Rail and Marine Transport



#### Marine Container Supply Chains: Containers Move Inland Largely by Rail



#### Automotive Supply Chains: Car Parts Move Largely by Truck



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- Marine transport part of complex integrated, multimodal freight system
- *Shippers* decide if/how to use marine transport
- Great Lakes system supports movement of heavy, bulky and oversized traffic in particular
- Major economic contribution of marine transport
  \$35 billion in economic activity, 227,000 jobs

More significant contribution as enabler of competitiveness of regional industries and supply chains



#### Multimodal Freight System in GLSLB is Part of Larger System



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My crystal ball is no better or worse that anyone else's...

#### Two key lessons from TRB's NCHRP 20-83(1) project:

- Macro-economic and technology forces are impossible to predict and can have tremendous impact on supply chains
- **Preparing** for potential effects is more effective than **Predicting**



#### **More Marine Transport**

- \$300/ barrel of oil
- Natural resources boom (heavy, bulky, big volumes)
- Land transport capacity limitations(?)

#### Less Marine Transport

- Invasive species lockdown
- Water levels drop further
- Regulation and fees: death by a thousand cuts
- Failure of port and locks infra.
- Conversion of coal power plants to nuclear

## What future(s) should we be preparing for?

What can and can't be influenced?

#### Road and Rail Capacity Constraints will Drive Marine Traffic Growth?



Source: Census Bureau, County (2006); Statistics Canada, Census Subdivision (2006); Freight Analysis Framework 3 (2007); Ontario-Quebec Administrative Databases (2009)

- Marine transport is used where it provides a competitive supply chain solution for shippers
- Users of marine transport will react on their own to future exogenous scenarios
- Policy makers and planners can not on their own promote more marine transport unless acting in line with shipper interests
- Actions that hinder marine transport directly or indirectly will have repercussions on regional supply chains and competitiveness
- Beware of unintended economic consequences...

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## **Questions and Discussions**

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### CPCS

# Global management consulting firm (formerly consulting arm of CP (est. 1969))

- Focused on transportation sector
- Strategy, economic analysis and policy
- Multimodal

## Recent North American project experience:

TRB Chassis Supply Study TRB Great Lakes Multimodal Study Canadian Multimodal Studies Marine Transport Competitiveness Studies

Port/Rail Feasibility Studies

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#### Summary of Recent CPCS Experience

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