Context and Rationale for a Multimodal Transportation Vision and Strategy for the Great Lakes-St. Lawrence Region

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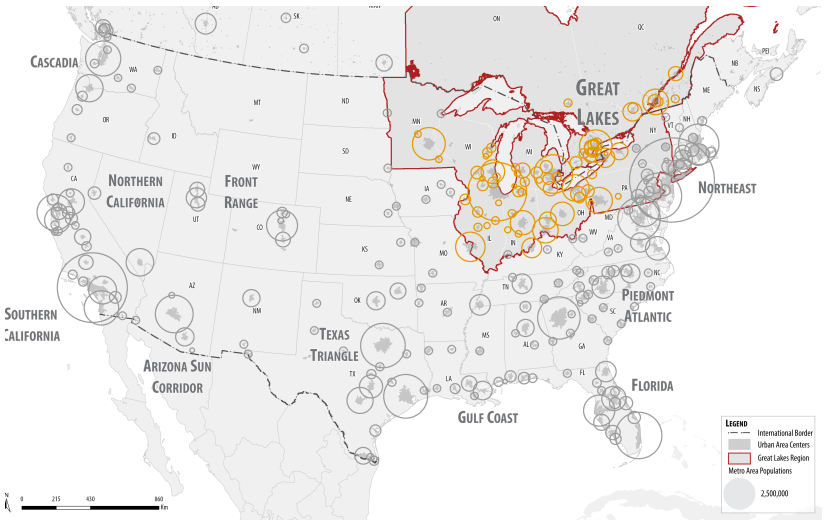
Trade and transportation connections helped shape the Great Lakes and St. Lawrence Region into the megaregion it is today. They will be as critical to the Region's future.

Starting with First Nations and the Coureurs de Bois that followed, the Great Lakes and St. Lawrence Region grew around the waterways that provided transportation connectivity. These maritime connections, as well as the port facilities, rail, road and air connections that followed, facilitated economic activity and trade. Manufacturing and other industries gravitated to the region, generating jobs and attracting migration. Today, Region has grown to be an interconnected megaregion comprising[1]:

- 107 million inhabitants, or roughly 30% of the total population of Canada and United States.
- 50 million jobs, or approximately a third of the combined U.S. and Canadian workforce, across a wide range of sectors – many critically dependent on transportation.
- 15 U.S. and Canadian metro areas with populations above 1 million residents.
- US$5.8 trillion in annual economic activity, representing 8% of global GDP. If the Region formed a country, it would have the third in the world, after the U.S. and China.
- US$1.3 trillion in annual merchandise trade, across a range of sectors.

There is a high concentration of population in the Great Lakes Region

Megaregion population centers

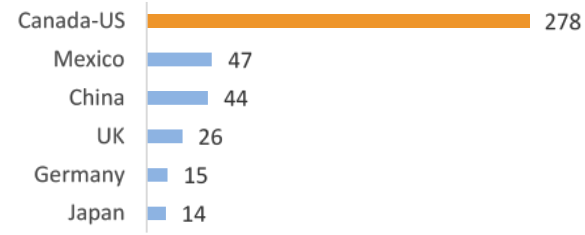


Source: US Census Bureau, Statistics Canada (2011), CPCS analysis

[1] Sources: US Census Bureau, US BEA, US BLS, Statistics Canada

The Great Lakes-St. Lawrence Region is the critical point of economic connection between the U.S. and Canada. Goods also stream into this continental Region from all over North America and beyond. The volume of trade between the Great Lakes states and provinces is also significant in its own right. U.S. and Canadian regions of the Great Lakes trade more with each other, than with any other country in the world.

Top destinations for merchandise exports from the Great Lakes Region, $US billions, 2015 data

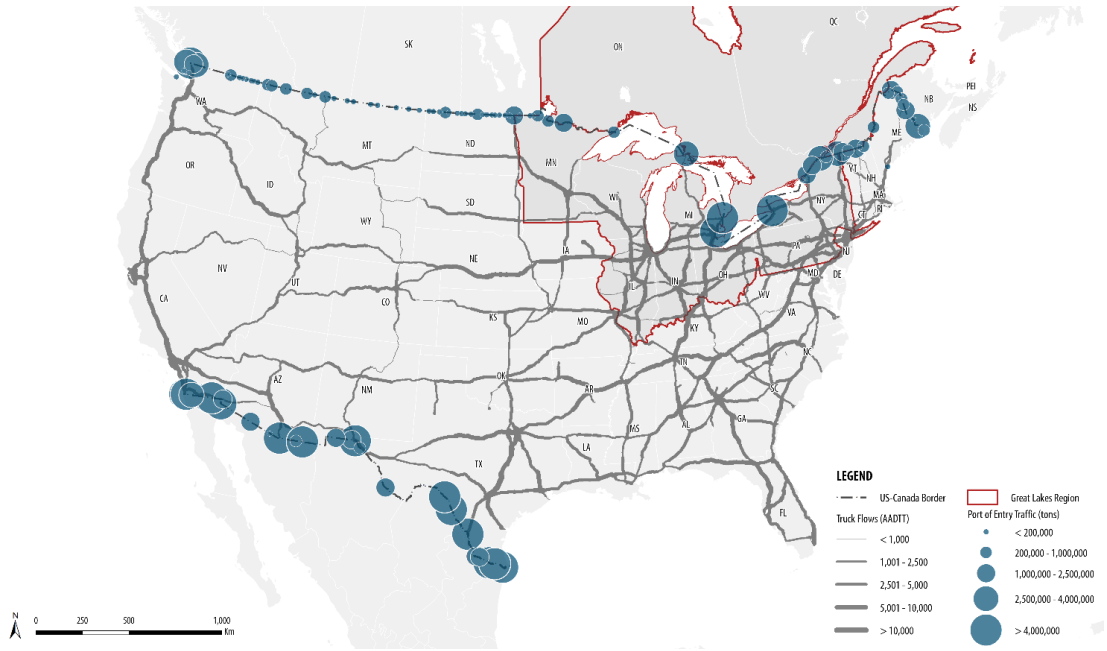


Source: CPCS analysis, Statistics Canada, US census Bureau

> *"We don't just sell stuff to each other, we make it together"*
>
> *-Dr. Stephen Blank, NAFTA Scholar*

Border crossings in the Great Lakes and St. Lawrence Region are among the busiest in the world. The largest share of goods crossing between the two countries is not finished products, but parts and components moving along deeply integrated supply chains. The integration of automotive supply chains is a notable example, but there are many others. Not surprisingly, the most significant regional trans-border trading pair is between Ontario and Michigan. This trade alone accounts for over 1.4 million jobs, $513 billion in gross output, $139 billion in GDP, and $103 billion in personal income.

Border truck traffic in the Great Lakes is concentrated in a few busy crossings
Port of entry traffic, 2014



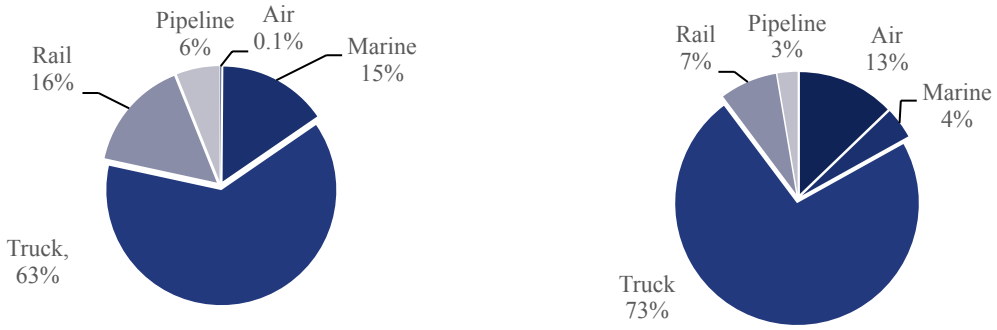
Source: CPCS analysis of border crossing data

The Region's significant interconnectedness and related economic activity is enabled by its multimodal transportation system, which serves both passengers and freight.

By any measure, the Region's multimodal transportation system is extensive.

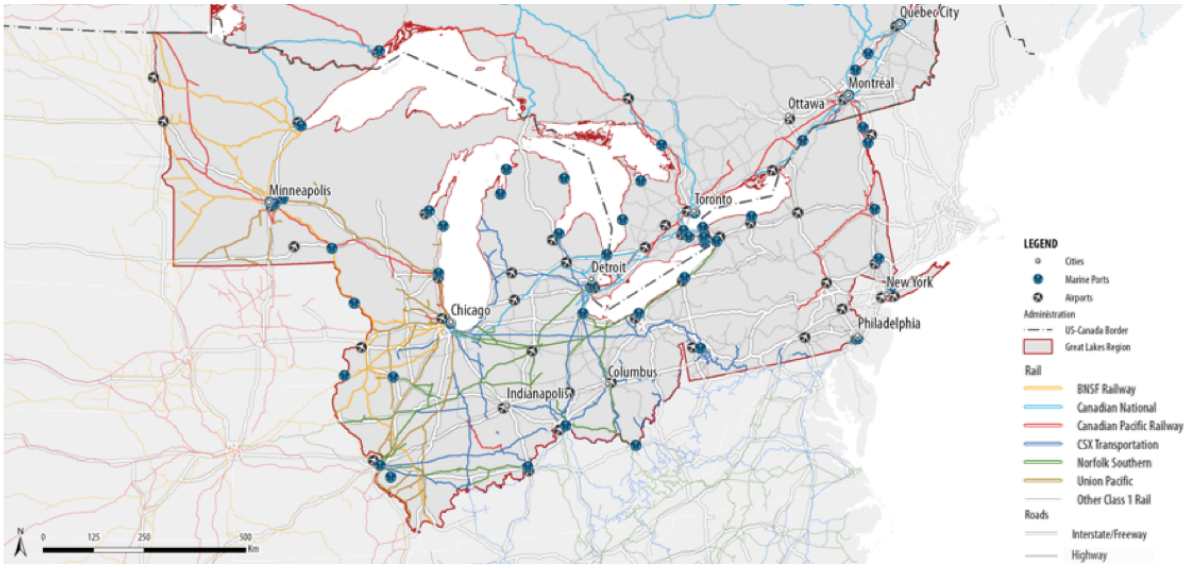
- 20,000 miles of highways
- 50,000 miles of rail lines and close to 70 intermodal terminals
- 15 large international marine ports and 50 regional marine ports
- 12 of the top 50 North American airports

Region Transportation Flows by Mode by Volume (Left) and Value (Right)



Source: CPCS, NCFRP Report 17

Multimodal infrastructure assets



Source: US BLS, US BEA, Statistics Canada, Freight Analysis Framework, TransBorder Data Sets, CPCS analysis

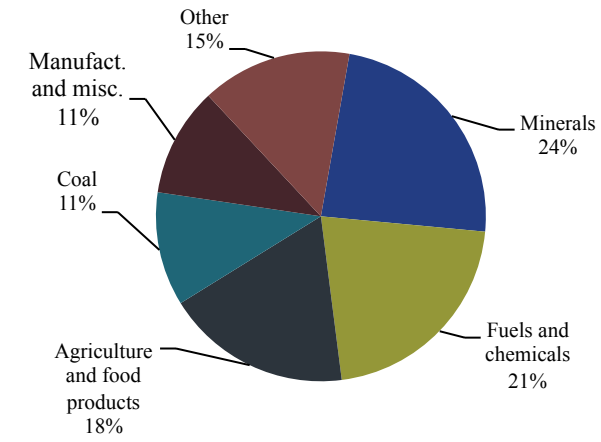
The economic importance of the Region's transportation system goes far beyond transportation jobs.

The transportation sector – as an industry – generates significant economic activity in the Region. Close to 2 million individuals are directly employed in transportation activity in the Region – driving trucks, buses, operating trains, planes and ships, and working in ports, warehouses and other logistics facilities. One study estimated that freight transportation generated 4 million direct, indirect and induced jobs in the Region, over US$300 billion in annual GDP and $87 million in taxes. [2] The economic contribution of marine shipping alone is estimated to be more than 227,000 direct, indirect and induced jobs, and contributing more than $33.5 billion GDP and $4.6 billion in taxes annually.[3]

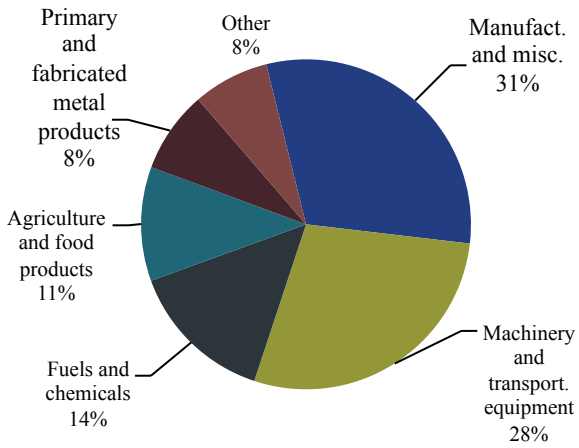
But to focus on these numbers – as significant as they are - misses the point. The true economic contribution of the transportation system is in enabling other economic activity. Without transportation infrastructure and services, there would be no trade, there would be no functional supply chains, there would be no goods producing industries, and there would be no associated jobs. Simply put, an efficient and competitive multimodal transportation system is critical to all economic activity that relies on transportation and to the overall performance and competitiveness of the economy of the Great Lakes and St. Lawrence Region.

The following figures - showing top commodities moving in the Great Lakes by weight and by value - indicate that a broad base of industries are dependent on the Great Lakes multimodal transportation system.

Top commodities by weight (all modes)



Top commodities by value (all modes)



Source: NCRRP Report 17: Multimodal Freight Transportation within the Great Lakes Saint-Lawrence Basin

[2] Adapted from Transportation Research Board, NCRRP Report 17, Multimodal Freight Transportation within the Great Lakes-Saint Lawrence Basin

[3] Martin Associates, The Economic Impacts of the Great Lakes-St. Lawrence Seaway System (2011)

Though highly interconnected, and critical to the Region's economy, the multimodal transportation system is hindered by fragmentation and silos.

Jurisdictional silos

Transportation planning, policy and regulation typically ends at jurisdictional boundaries. The bi-national nature of the Region exacerbates this challenge.

Modal silos

Regional transportation strategies are often mode-centric and focused on either passenger or freight issues; investments in many cases poorly recognize modal connectivity considerations.

Institutional silos

There are many public and private interests as well as regional-institutions around the Great Lakes and the St. Lawrence River, covering economic development, environmental, water, among other interests. But most of these institutions and the stakeholders they represent have a poor track record of collaborating, neglecting the interrelated nature of many of the Region's key issues, including the Region's transportation system.

This fragmentation has resulted in many barriers to the performance of the Region's multimodal transportation system. It also creates challenges to addressing the most pressing issues, which include:

- **Capacity constraints**
  Road and rail infrastructure around major markets and transportation hubs – such as Chicago, Toronto - are capacity constrained. In many cases, capacity constraints are limited to peak periods. Other parts of the system – including the marine transportation system – are currently underutilized.

- **Regulatory inconsistencies**
  Regulations can vary greatly from one state or province to another. Differences in truck size and weight limits are persistently flagged as an issue. Recent discussions on ship ballast water regulation, or national inspection regimes, are other examples of regulatory inconsistencies. These differences often impose additional costs on the users of the transportation system, and make the system less resilient.

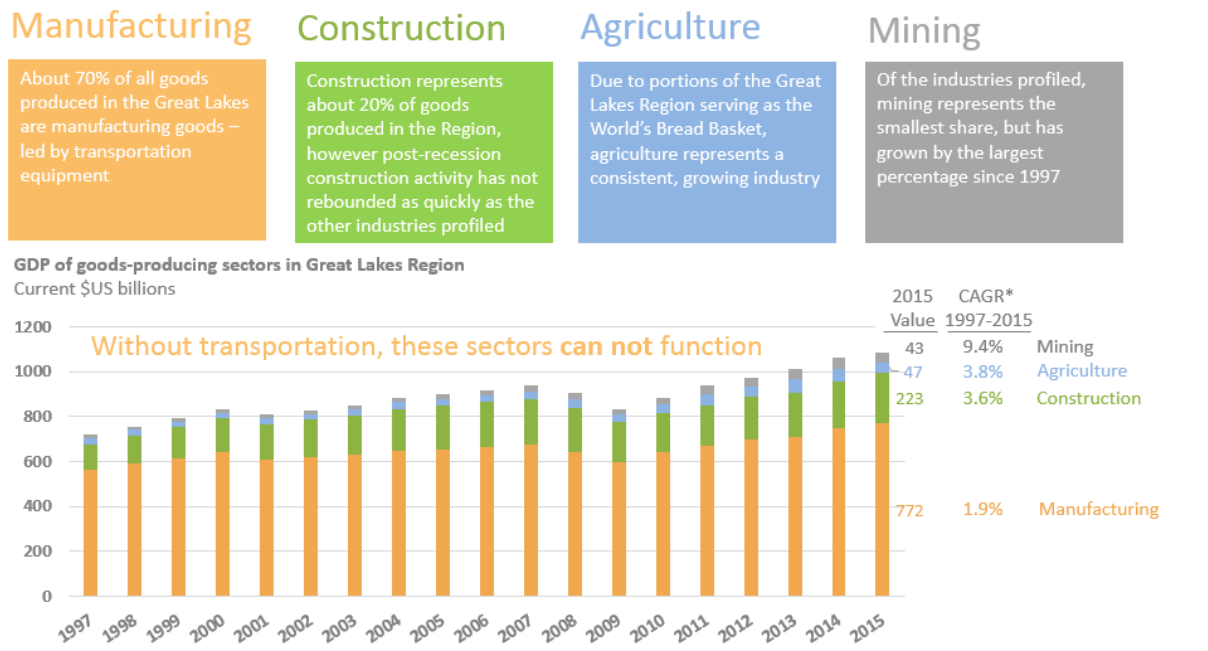
- **Funding and related coordination challenges**
  It is not news that transportation system investment needs in the Great Lakes Region (or any region for that matter) exceed available public funding. The multijurisdictional nature of the Great Lakes Region further challenges coordination of funding of strategic regional transportation priorities than span more than one jurisdiction. Challenges with respect to funding the planned Gordie Howe Bridge between Detroit and Windsor are a notable example.

A shared vision and shared responsibility for the Region's multimodal transportation system is lacking.

The multimodal transportation strategy that will be developed by the Council of the Great Lakes Region and CPCS Transcom Limited would seek to address this limitation by identifying opportunities and associated priorities to enable a more connected, more efficient regional transportation system, across borders, across modes, recognizing diverse stakeholder interests. This is a tall order. But it is also critical to the long-term growth and competitiveness of the Region.

Why Getting Transportation Right is So Important for the Region?

Transportation moves the economy of the Great Lakes and St. Lawrence Region. People and goods move in, across and out of the Region. Many sectors, including those below could not operate without an effective transportation system.



Sources: Statistics Canada, US BEA, CPCS analysis

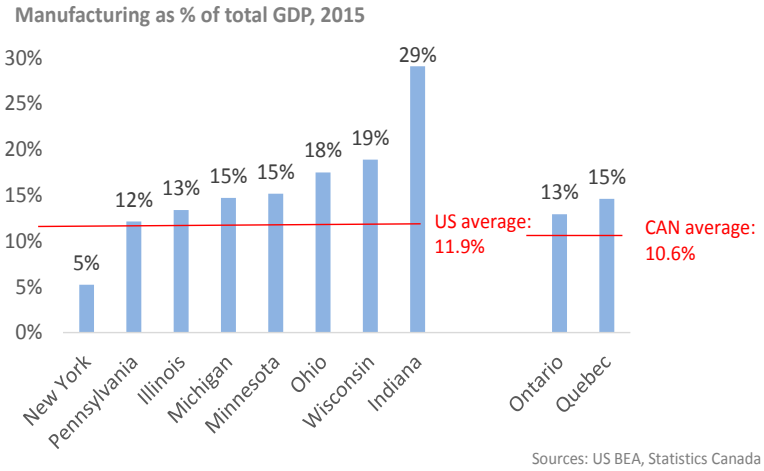
* CAGR = Compound annual growth rate

The manufacturing sector is by far the largest goods producing sector in the regional economy, and contributes a disproportionately large share to the regional GDP compared to the U.S. and Canadian average.

Automotive manufacturing is the largest segment of the Region's manufacturing sector. The Great Lakes states produce 53% of U.S. motor vehicles and 48% of U.S. primary metal manufacturing. Ontario and Quebec, on the other hand, account for 81% of primary metal manufacturing and 98% of motor vehicle manufacturing in Canada.

Manufacturing in the Great Lakes and St. Lawrence Region is growing, contrary to public belief, particularly in advanced manufacturing – that is, manufacturing using innovation and technology to improve production processes.

The Region's manufacturing success rests heavily on efficient freight transportation. Transportation connectivity is critical in extended, often cross border, production systems.



Sources: US BEA, Statistics Canada

As important as transportation is to manufacturing, as well as other industrial sectors, an efficient transportation system is also critical to moving and connecting the Region's more than 100 million inhabitants. Chicago, Toronto, Montreal, Detroit, Columbus and many other cities in the region face significant congestion challenges, such as crowded transit systems and underperforming intercity connections. Chicago, for example, was recently singled out as having the single worst road bottleneck in all of the U.S. and Canada.[4]

Efficient passenger transportation systems are known to help attract and retain talent and promote higher productivity. This Strategy will seek to identify opportunities to improve passenger mobility in the Region.

The Strategy Must be Responsive to an Unknown Future

The Region, and the world, face many unknowns and significant potential disruptors: climate change, new game changing technologies such as automated vehicles and 3D printing, demographic shifts and associated preferences, including decreasing use of personal cars, the growth of the sharing economy, among other factors. The pace of change and introduction of disruptors is also faster than ever before.

What these and other factors mean to the Region and the Region's transportation system remain unclear. Certainly, they make planning for long-term infrastructure very difficult, and risky.

This necessitates new thinking and a common vision for regional transportation connections – one that reflects a shared regional view: bi-national and multi-jurisdictions, multimodal, works for passengers and goods, private and public sector stakeholders.

Next Steps

This short paper - on the context and rationale for a multimodal transportation vision and strategy for the Great Lakes and St. Lawrence Region - is the first in a series of papers.

[4] CPCS for the American Highway Users Alliance, *Unclogging America's Arteries 2015*. A similar study is soon to be released by the CAA, specific to Canada.

The next paper will address regional passenger and freight transportation trends, issues, irritants and their implications for the region's long-term economic prosperity, competitiveness and the quality of life of the Region's inhabitants. It will also identify the most significant opportunities that can be unlocked by improving the Region's transportation system.

The third and final paper will put forward a vision and strategy for addressing priority issues and opportunities, as well as policy, planning, funding, financing and operational considerations.