



The Soo Locks: A Key Part of Great Lakes Infrastructure, Economic Growth

January 11, 2016 | 2 pm CST/3 pm EST



GREAT LAKES
LEGISLATIVE CAUCUS



Agenda

Housekeeping

Lisa Janairo, Program Director, CSG Midwest

Welcome and Introductions

Representative Cory Mason (Wisconsin), Chair, Great Lakes Legislative Caucus

Background on the Soo Locks

James H.I. Weakley, President, Lake Carriers Association

The Perils of Efficiency: An Analysis of an Unexpected Closure of the Poe Lock and its Impact

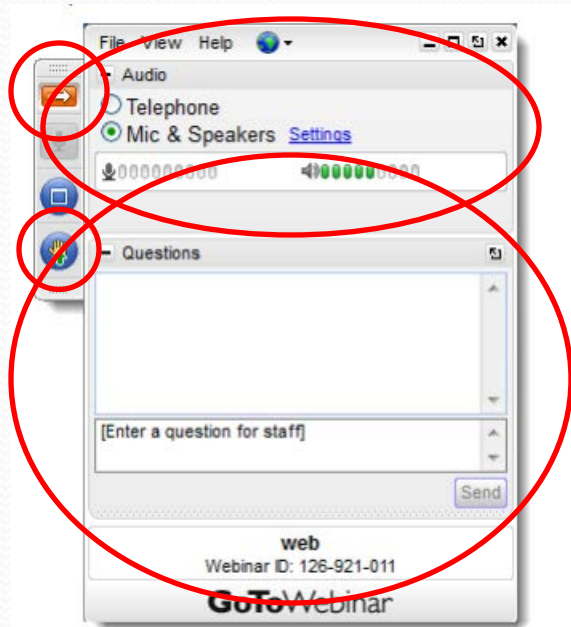
Craig Gordon, NISAC Program Manager for Capability Development, Modeling, and Crisis Action, U.S. Department of Homeland Security

Announcements

Adjourn

Housekeeping

- **This webinar is being recorded.** The recording will be available later today at www.greatlakeslegislators.org.
- To reduce noise on the phone lines, all participants will be in “listen-only” mode during the presentation.
- The speakers will answer questions after the presentations.
 - Click on the “raise hand” icon in the webinar console.
 - Type questions using the “questions” pane in the webinar console.
- Telephone users who wish to ask a question must enter the audio PIN.
- If you selected “Mic & Speakers” as your audio choice, please test your system’s settings prior to asking a question.



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gllc@csg.org

About the GLLC

- The GLLC is a binational, nonpartisan group of state and provincial lawmakers from the Great Lakes region.
 - Eight U.S. states: Illinois, Indiana, Michigan, Minnesota, New York, Pennsylvania, Ohio and Wisconsin
 - Two Canadian provinces: Ontario and Québec
- The Caucus has three primary goals:
 - Facilitate the regional exchange of ideas and information on key Great Lakes issues;
 - Strengthen the role of state and provincial legislators in the policymaking process; and
 - Promote the restoration and protection of the Great Lakes.

Speakers

James H.I. Weakley

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Our Goal: Improve understanding of

- National Economic Significance of Soo Locks (especially the Poe Lock)
- National Economic Significance of GLNS
- Department of Homeland Security's conclusions

Great Lakes Economy

- World's 3rd Largest
- Contains:
 - 50% of U.S. Steelmaking Capacity
 - 70% of U.S. Auto Manufacturing
 - 55% of All U.S. Manufacturing

Great Lakes Shipping

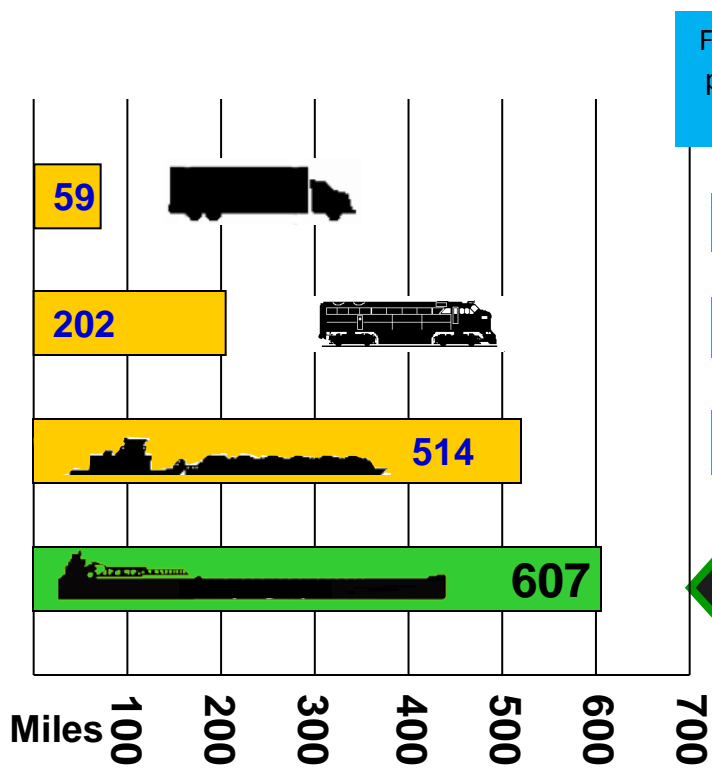
- **Great Lakes Shipping** is Integral to the U.S. and Canadian Economies. It Creates:
 - 227,000 Jobs;
 - \$ 33.5 Billion in business revenue;
 - \$14.1 Billion in annual personal income;
 - \$6.4 Billion in local purchases;
 - \$4.6 Billion in tax revenue; and
 - \$3.6 Billion in Transportation Rate Savings

WATERBORNE TRANSPORTATION IS ...

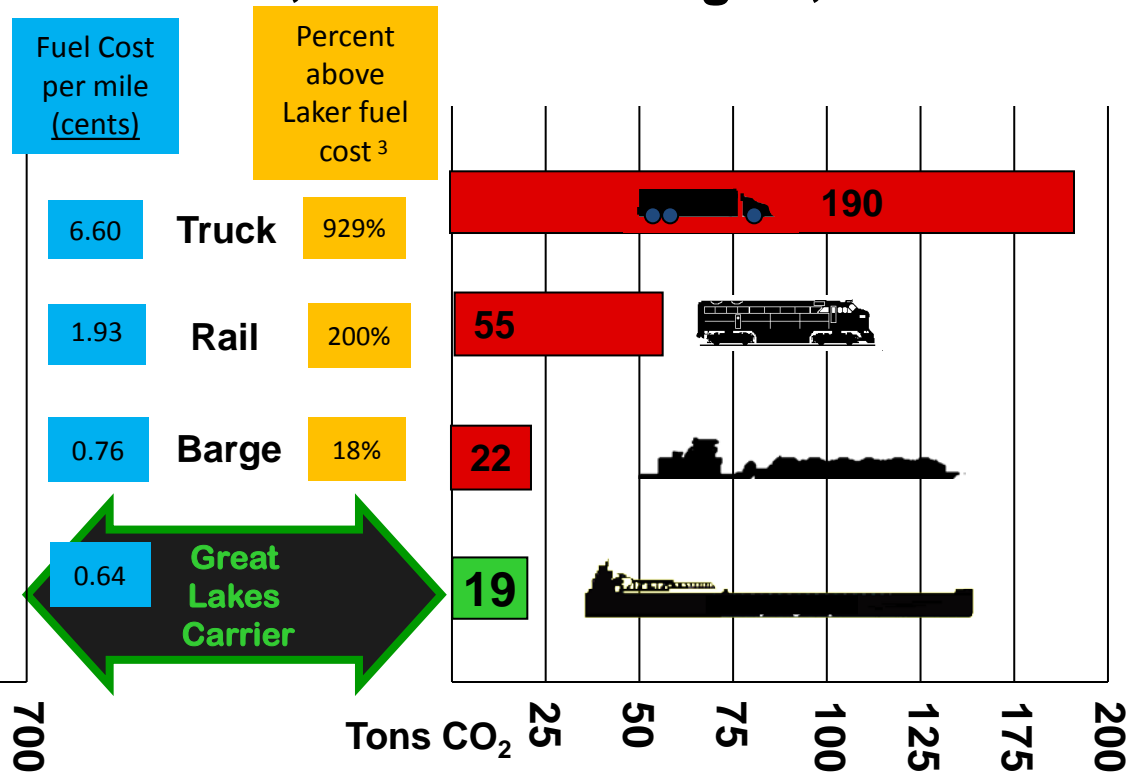
👍 *Safer* 👍 *More Fuel-Efficient* 👍 *Fewer Emissions*

THAN RAIL OR TRUCK TRANSPORTATION

Miles 1 Ton of Cargo Carried Per Gallon of Fuel ¹



Tons of CO₂ Produced to Transport 1,000 Tons of Cargo 1,000 Miles ²



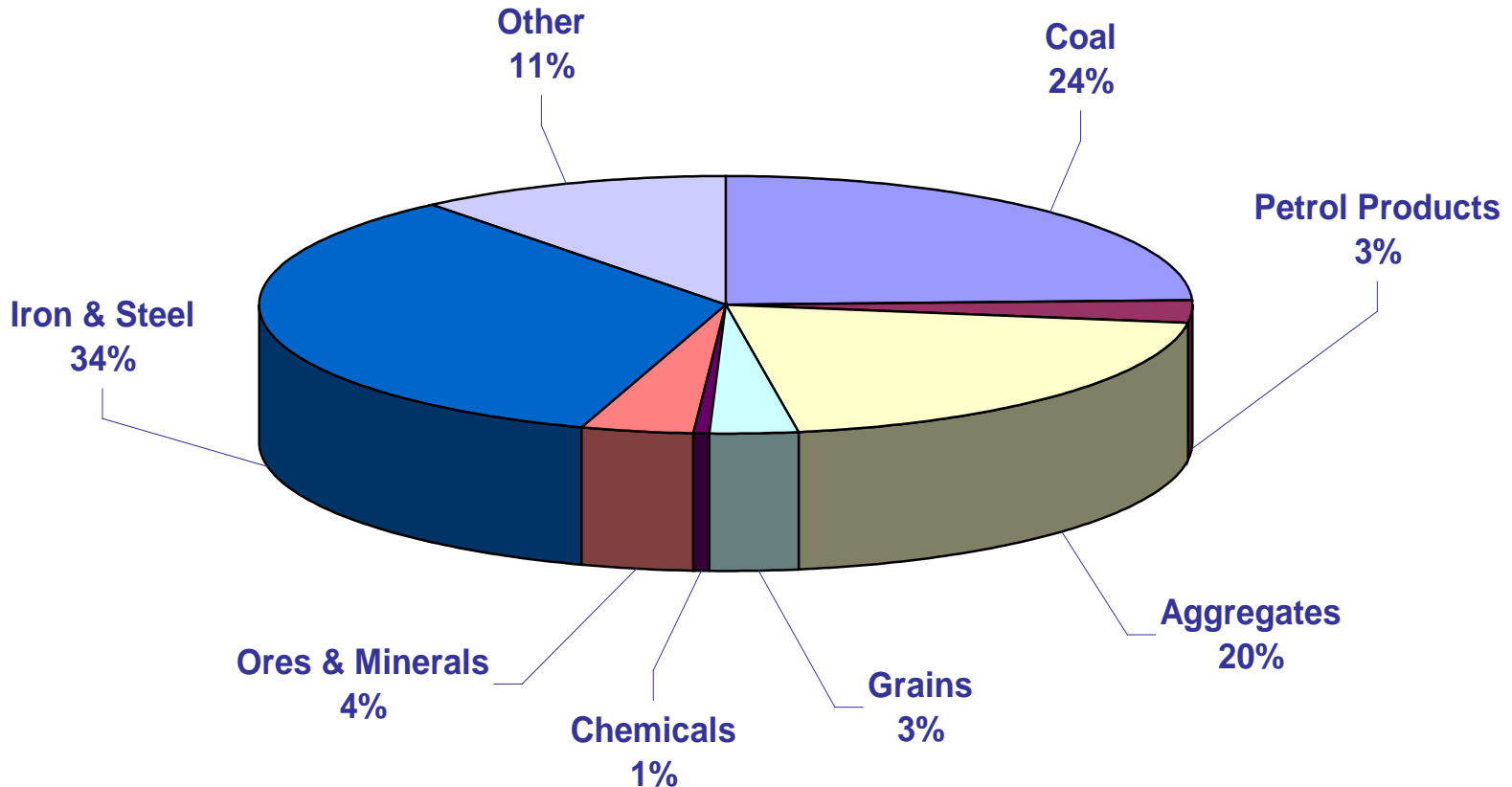
1. Source: USDOT Maritime Administration and Minnesota Department of Transportation

2. Assumes US DOE Fuel and Energy Emission Coefficient of 22.38 lbs of CO₂ per gallon (No. 1,2,4 Fuel Oils and Diesel) for GL Carrier

3. Based on Aug 12, 2013 price for on-highway diesel of \$3.896

Great Lakes Navigation: A Great Investment

\$3.6+ Billion in annual
transportation cost savings



Soo Locks



Sabin
(closed)

Davis (too
shallow to use)

Poe

MacArthur

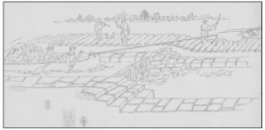


US Army Corps of Engineers

A Quick History of the Soo Locks

1798 First Lock on St. Marys River

To support the growing fur trade, the Northwest Fur Company built a canoe lock on the north shore of the river. This lock was approximately 40 feet-long and 9 feet-wide.



1855 "State Lock" opens

Built in only two years this tandem lock used two chambers each measuring 350' X 70' and each with a lift of 10 feet to bypass the rapids.

This lock was operated and maintained by the State of Michigan.



1896 Poe Lock opens

Built on the site of the former State Lock, the Poe lock was 800 feet long and 100 feet wide.



1919 Sabin Lock opens

An exact twin of the Davis Lock, it was begun even before the Davis was finished. It is also the only lock on the site named for a civilian, Louis Sabin, the only civilian to ever serve as the Detroit District Engineer.



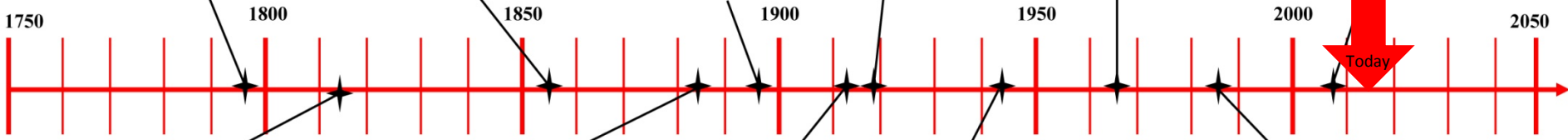
1968 Second Poe Lock opens

As the design for a new lock neared completion it became clear that an even larger lock would be needed as boats measuring 1,000 feet-long were being planned. Originally set to be 1,000 feet-long and 100 feet-wide it was redesigned to its current size of 1,200 feet-long and 110 feet-wide.



2009 Preparatory work for new lock completed

Funds were provided to build coffer dams at each end of the Sabin Lock and to dredge the approach channels to 28.5 feet.



1814 Lock Destroyed

During the War of 1812 American forces destroyed the British lock. Goods had to be unloaded and stored in warehouses at either end of the falls and transported on a railway running down Portage Avenue.



1883 Wietzel Lock opens

This lock was the first one to fill and empty the chamber through openings in the floor, reducing turbulence in the lock.

During its construction in 1881 the entire facility was transferred from the state to the U.S. Army Corps of Engineers.



1914 Davis Lock opens

At 1,350 feet-long the Davis lock held the honor of being the longest lock in the world when it opened.



1943 MacArthur Lock opens

Opening of a new, deeper lock became a matter of national security during World War II and the MacArthur Lock was built in 15 months. During the war thousands of soldiers were stationed at the Soo to protect the locks and the flow of iron ore.



1986 New Lock Authorized

As part of the Water Resources Development Act, Congress authorized the construction of a new lock to be built on the site of the Sabin and Davis Locks. This new lock will be the same size as the Poe Lock.



Soo Locks Condition

- Recent MacArthur Lock failure
 - Closed between July 29 and August 17, 2015
 - **TIME TO REPLACE THIS 72 YEAR OLD LOCK**
- Poe Lock needs substantial repairs
 - During above MacArthur outage, Poe was down for an hour for total system closure
- Significant backlog of maintenance and repair items are resulting in increased unscheduled outages (\$70 million)
- Some repairs exceed normal winter maintenance timeframe and others may require warmer temperatures



REPLACEMENT LOCK

Poe Rehabilitation & MacArthur Replacement

- “Youngest” Soo Lock, the Poe is 47 years old
- State Lock (1855) to Poe (1968): ave. 1 new lock every 19 yrs.
- Needs rehabilitation
- Linchpin for the Great Lakes Navigation System
- **Only** route for large vessels (almost 70% of Laker capacity)
- 57 million tons of commerce annually
- 30-day economic consequence: \$160 million - ranked #1 (#5 by tonnage)
- Construct authorized replacement (combine Davis and Sabin)
- **Need a sense of urgency!**



Re Poe

- 1986 – Second lock authorized at dimensions equivalent to the Poe. Great Lakes Commission is local sponsor
- 2004 – Based on flawed assumptions, updated benefit to cost ratio calculated at 0.73
- 2007 – Second lock authorized at full Federal expense
- 2014 – Railroads validate no alternate means of transportation. Estimate \$5 years and \$5 billion to construct rail alternative to Poe.



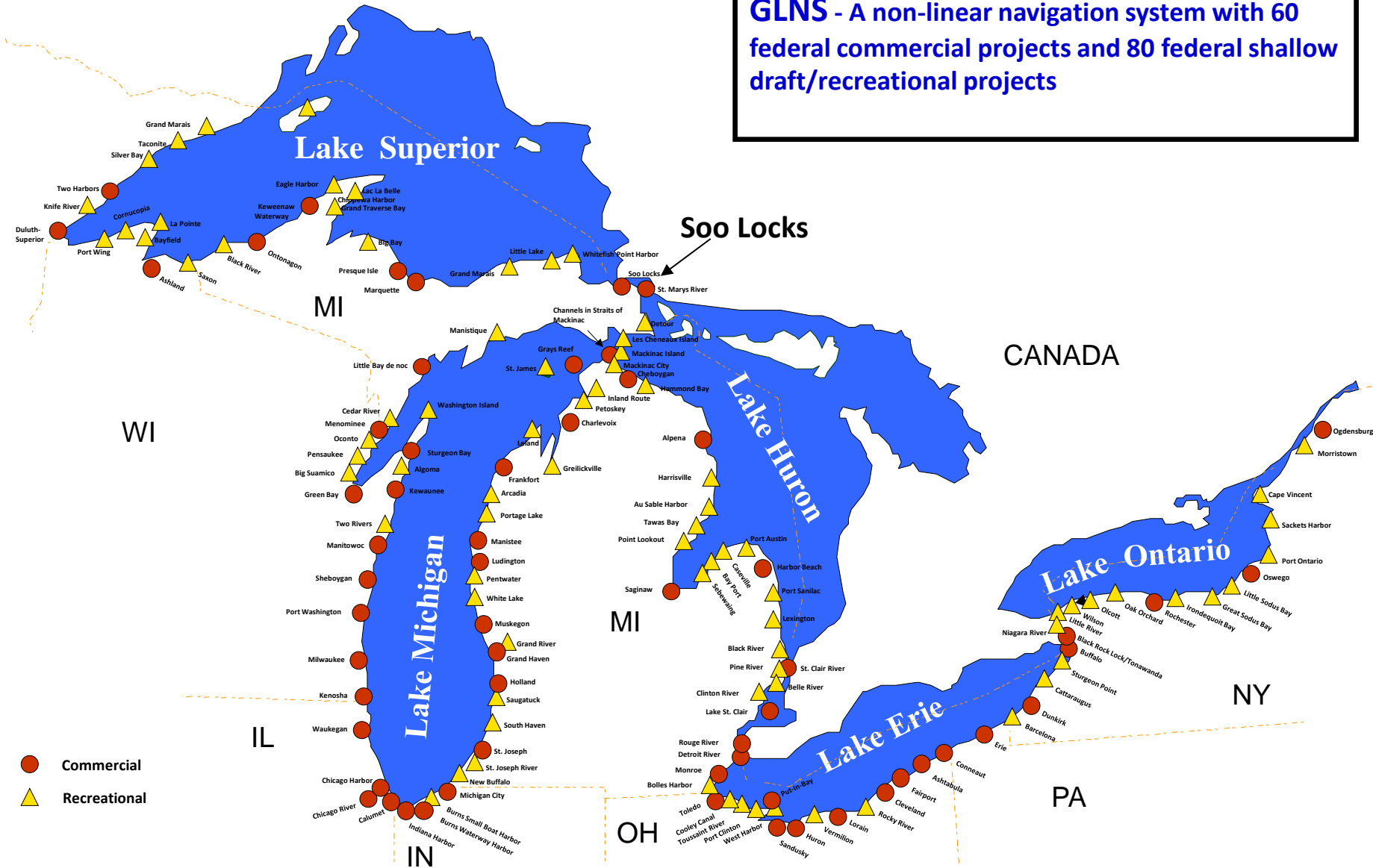
Re Poe

- 2014 “Sensitivity Study” (results not released) – BCR above 1.0 is needed for funding eligibility. Confirmed flaws in previous BCR.
- 2015
 - DHS Analysis – report not publicly released
 - Economic Reevaluation Report (ERR) – funded at \$1.3M. 24 - 36 Months to complete?
 - Major Rehabilitation Report (MRR)
 - Ongoing evaluation of current condition of locks

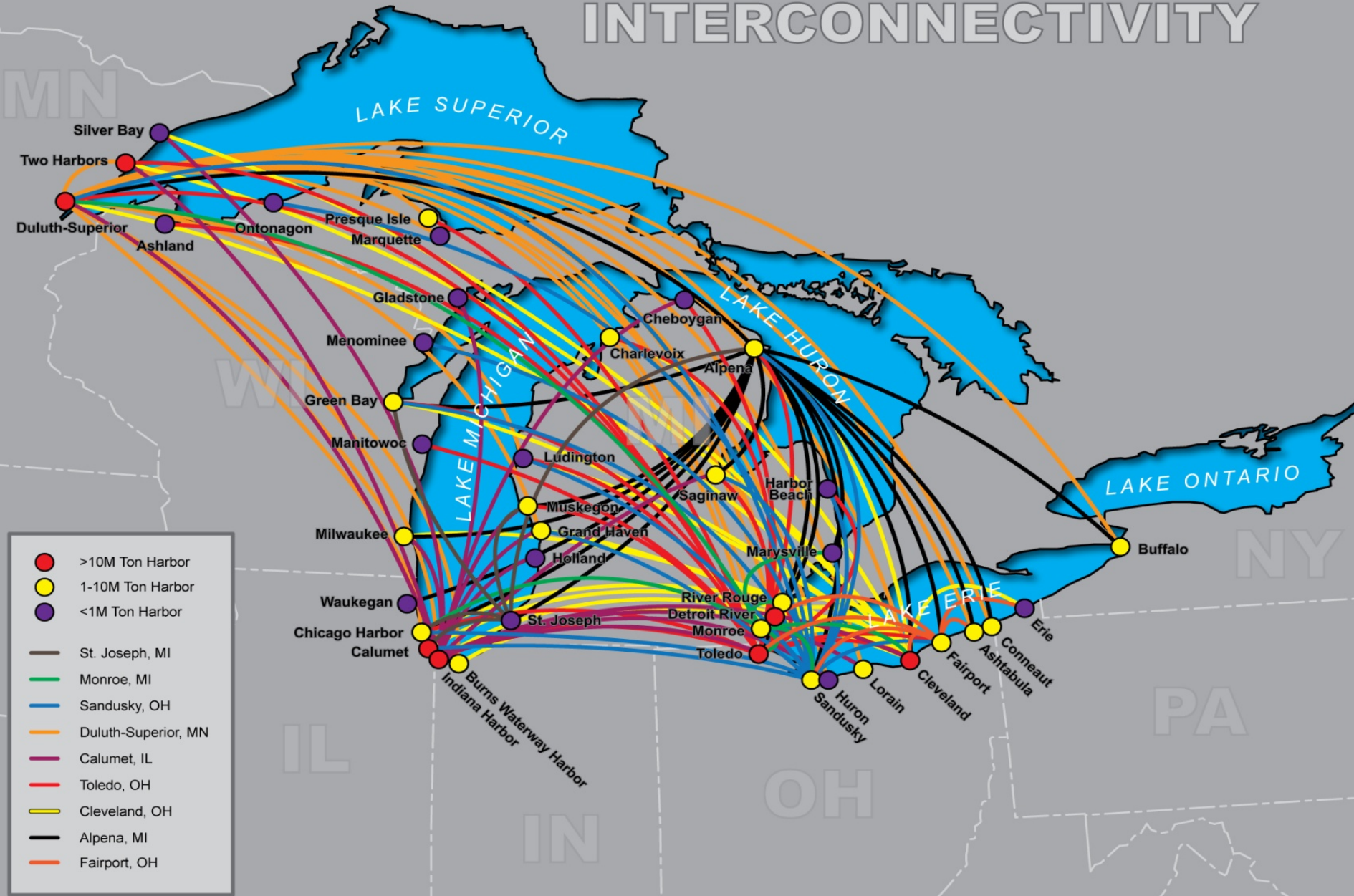
The Solution



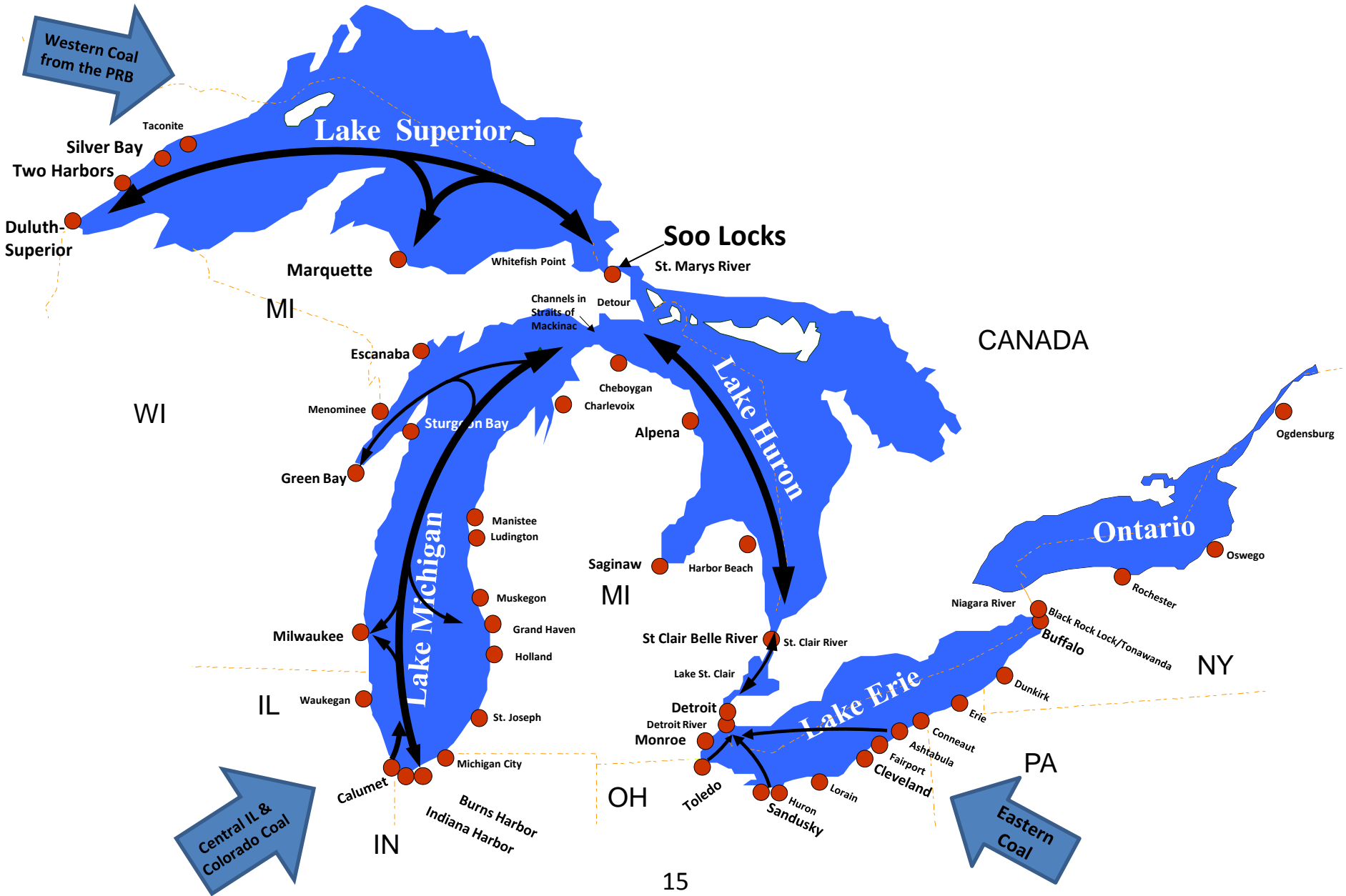
GLNS - A non-linear navigation system with 60 federal commercial projects and 80 federal shallow draft/recreational projects



GREAT LAKES HARBORS INTERCONNECTIVITY



Coal Movements



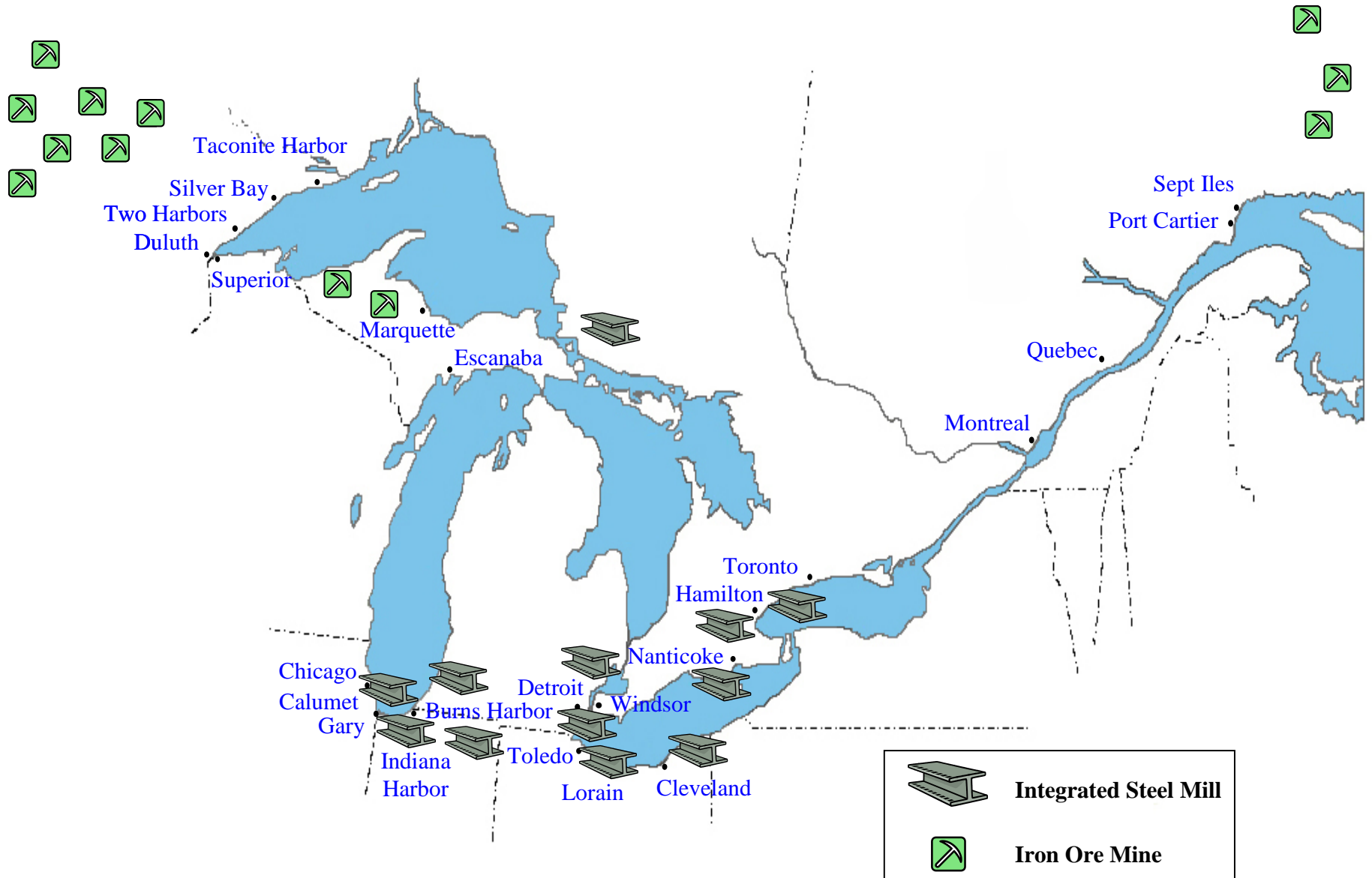
Limestone Movements



Iron Ore Movements



Great Lakes Iron Ore Mines and Lakeside Steel Mills



Announcements

- Membership in the GLLC
 - Open to all state and provincial legislators in the Great Lakes region.
 - Learn more and enroll at greatlakeslegislators.org.
- GLLC Activities in 2016
 - Webinars
 - Waukesha Diversion Application
 - Great Lakes Legislation
 - Great Lakes Policy Workshops
 - Annual Meeting: July 15-16 in Milwaukee

Ways to engage

- GLLC Website: greatlakeslegislators.org
- CSG Midwest YouTube channel: bit.ly/CSGMidwestYT
- GLLC Membership Online Enrollment: bit.ly/joinGLLC
- Follow the Caucus on Twitter: [@GLLCaucus](https://twitter.com/GLLCaucus)