

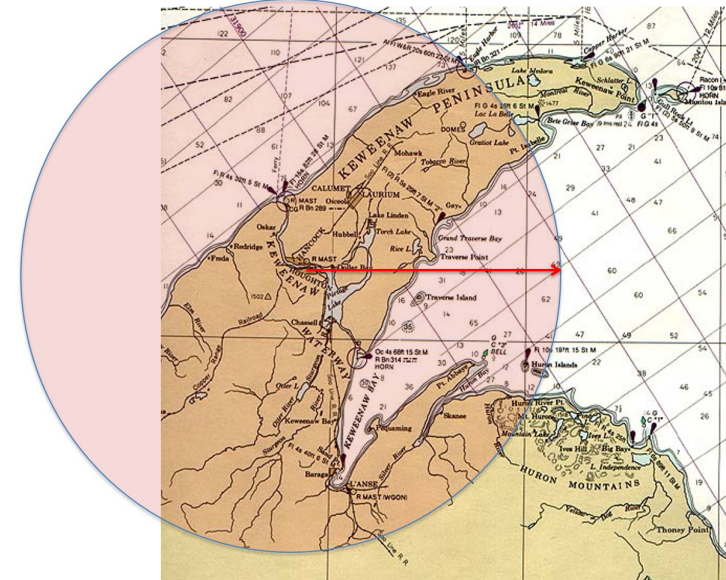
GREAT LAKES
ST. LAWRENCE
GOVERNORS
& PREMIERS



UNITED FOR GROWTH

Smart Ships Initiative

Mike Piskur
July 23, 2019





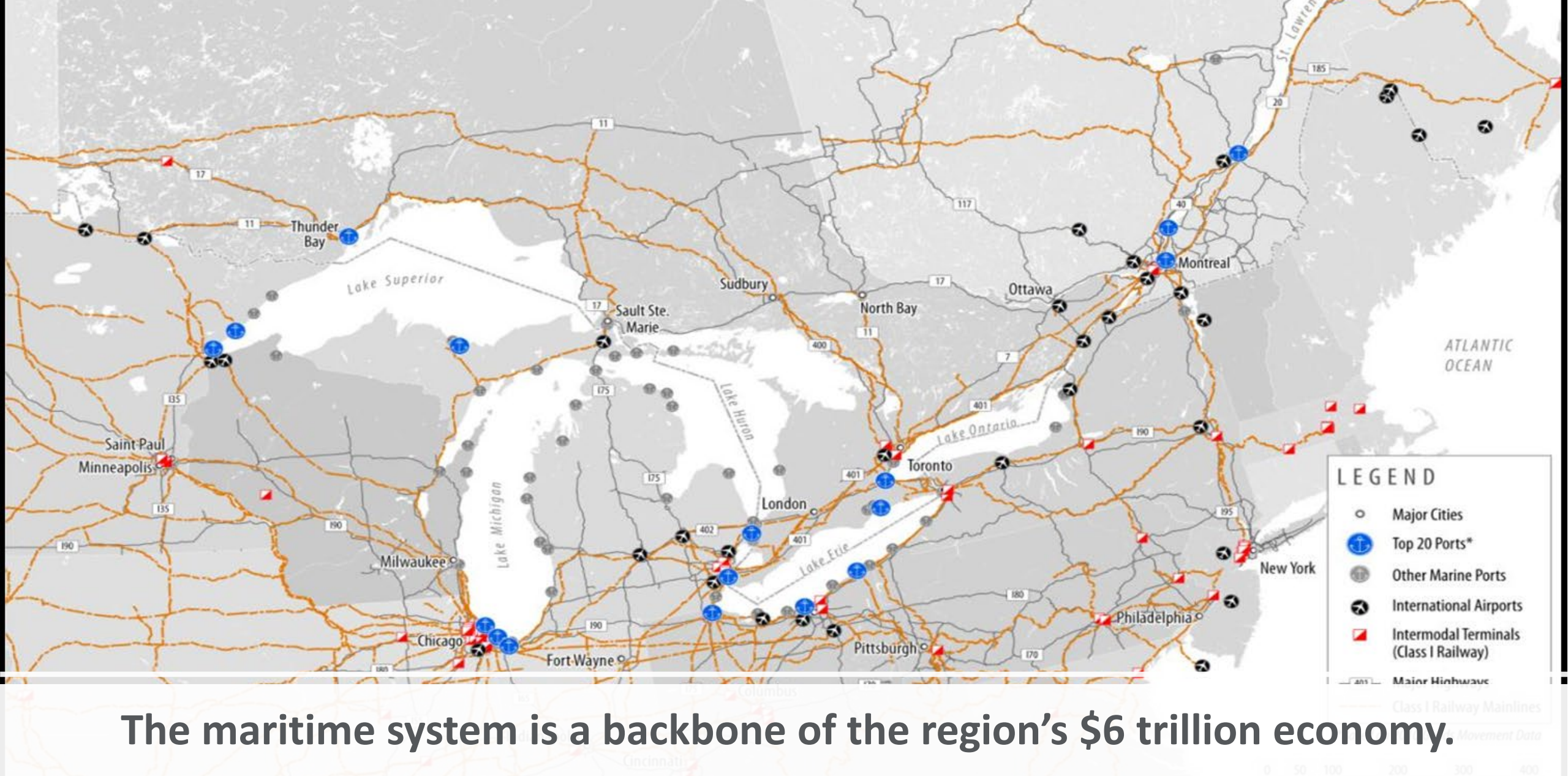
Great Lakes St. Lawrence Governors & Premiers

- More than 30 years of collaboration among the region's chief executives:



- Growing the region's economy and protecting the world's greatest freshwater system
 - Chair: Wisconsin Governor Tony Evers
 - Vice Chair: Ohio Governor Mike DeWine





The maritime system is a backbone of the region's \$6 trillion economy.



Maritime Initiative



World's largest inland waterway system

- More than 100 commercial ports
- A continuous waterway extending more than 2,300 miles (3,800 km)

Directly responsible for more than 220,000 jobs and US\$14 billion in annual wages

Generates more than US\$30 billion in annual business revenue



Regional Maritime Strategy

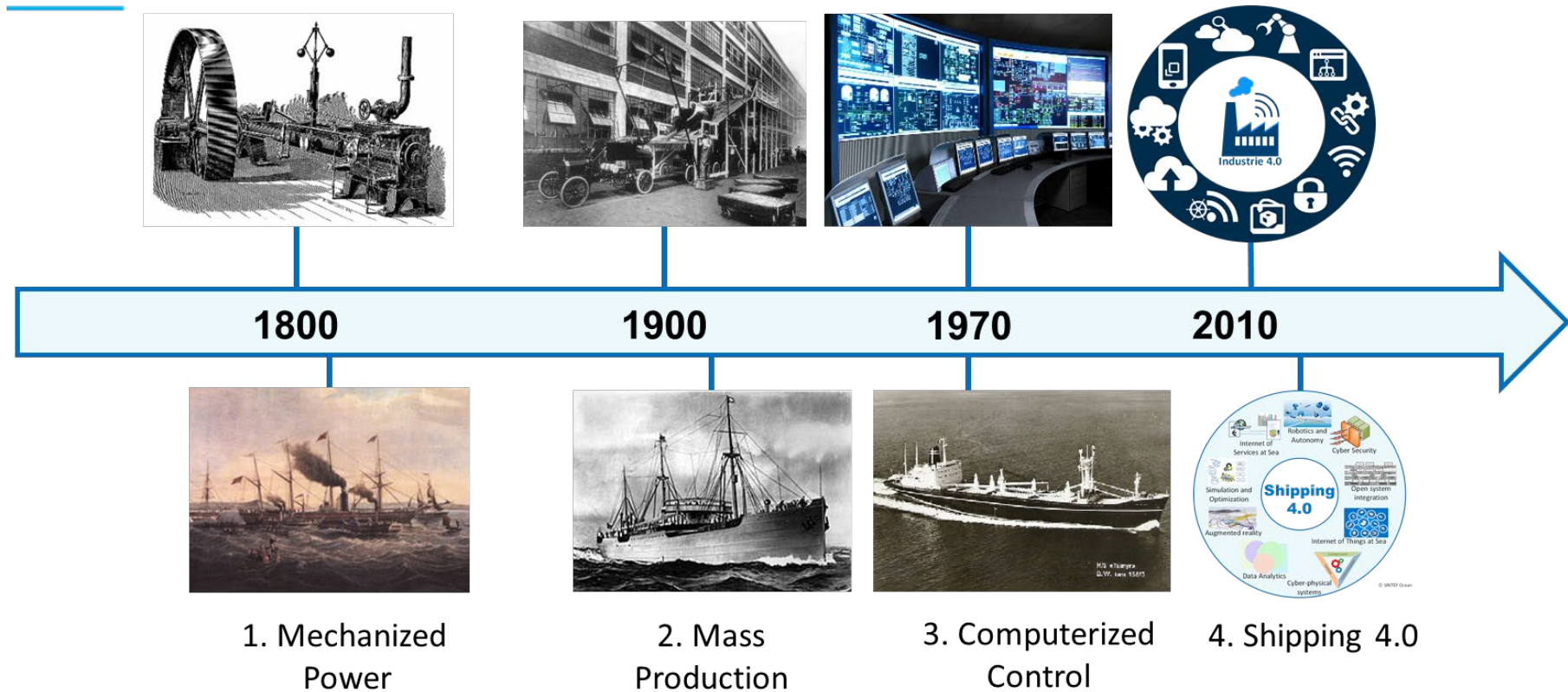


- Released in 2016
- Goals - Double maritime trade, shrink the environmental impact of transportation, and support the region's industrial core
- Collaborative process including government, industry, NGOs and other partners; public comments
- Policies, programs, and projects to grow the economy and create jobs

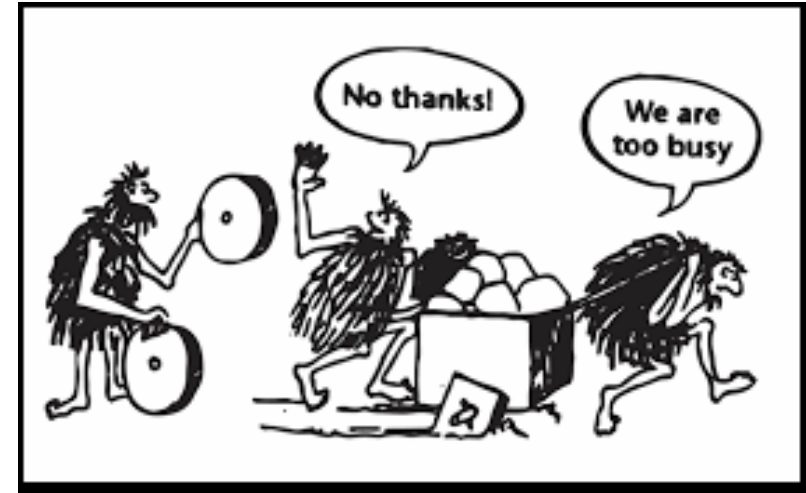


Smart Ships Initiative

The fourth shipping revolution is on



Smart Ships Initiative



Shipping 4.0



© SINTEF Ocean

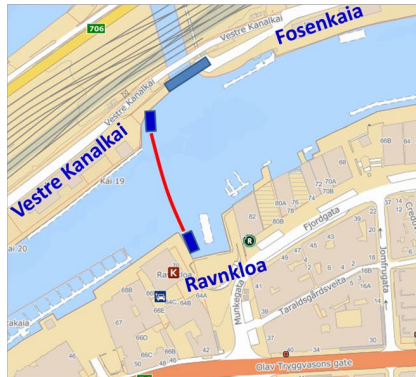
Possible **game changers** in Shipping 4.0:

- Digitalization of commercial shipping processes
- Autonomous and unmanned ships

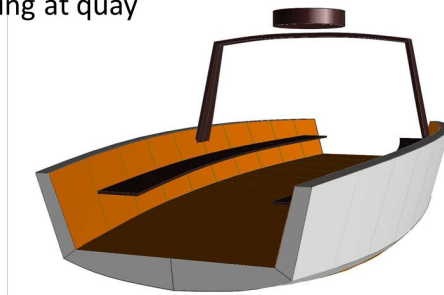


Smart Ships Initiative

Milli-Ampere



- On-demand passenger ferry
- Max 12 persons + bicycles
- Electrical propulsion, battery
- Inductive charging at quay



Linking center of Trondheim to
seaside and rail quay



- Yara fertilizer
- Kongsberg partner
- Replaces 40,000
truck trips a year



Smart Ships Initiative

- Builds on regional strengths including maritime, automobile manufacturing, and IT
- MOU creates collaboration with Norwegian Forum for Autonomous Ships (NFAS) and launches regional Smart Ships Coalition.
- Develop policy recommendations – **Smart Ships Action Plan**



Smart Ships Initiative

- Exponential growth
- Create new high-paying, high-skill jobs
- Near-term focus on research, hazardous response, and operation in dangerous conditions
- Enhance safety, security, and efficiency of maritime transportation



Smart Ships Initiative

- Smart Ships Coalition
- Marine Autonomy Research Site
- Smart Ships Action Plan



Smart Ships Coalition

- The Smart Ships Coalition is a broad stakeholder community of academic, state and federal agencies, private and non-profit industry, and international organizations who share a common interest in the advancement and application of autonomous technologies operated in marine environments. The Coalition will work to establish the region as a global center of excellence for researching, developing, testing, and producing this technology.
 - <http://www.smartshipscoalition.org/>



**SMART SHIPS
COALITION**
OF THE GREAT LAKES-ST. LAWRENCE



**Great Lakes
Research Center**
Michigan Technological University



Smart Ships Coalition



**SMART SHIPS
COALITION**
OF THE GREAT LAKES-ST. LAWRENCE

Current Membership



Learn More

www.smartshipscoalition.org

GREAT LAKES
ST. LAWRENCE
GOVERNORS
& PREMIERS



**Great Lakes
Research Center**
Michigan Technological University





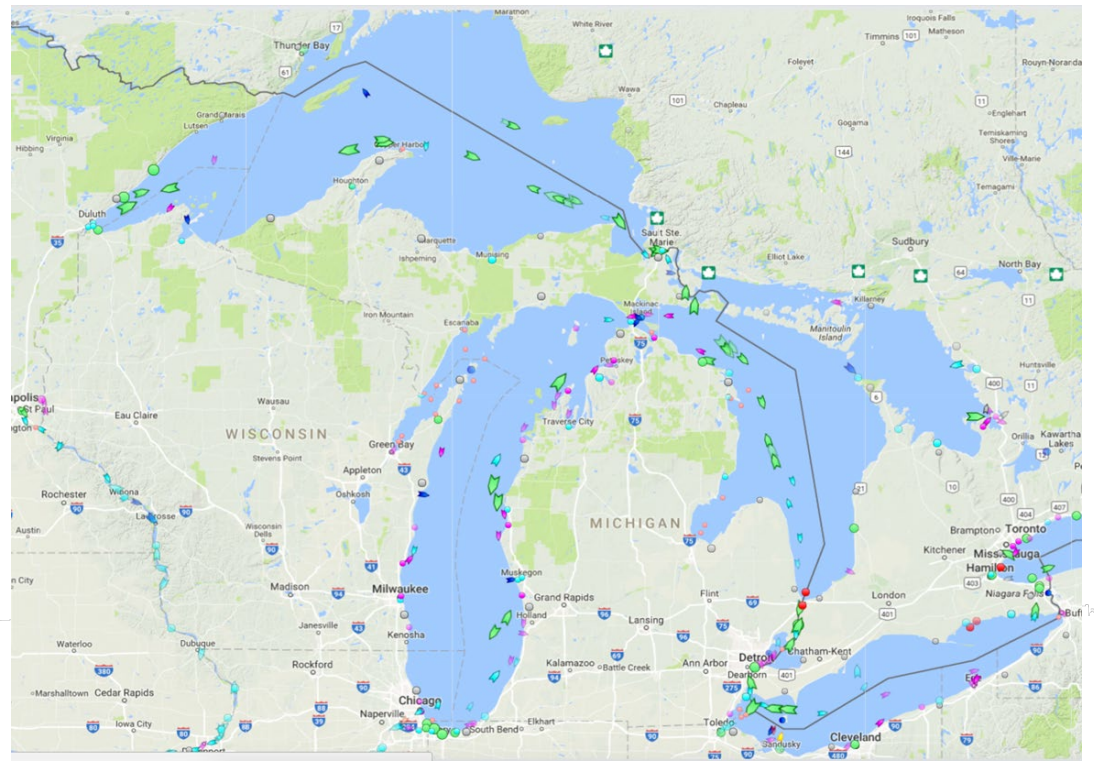
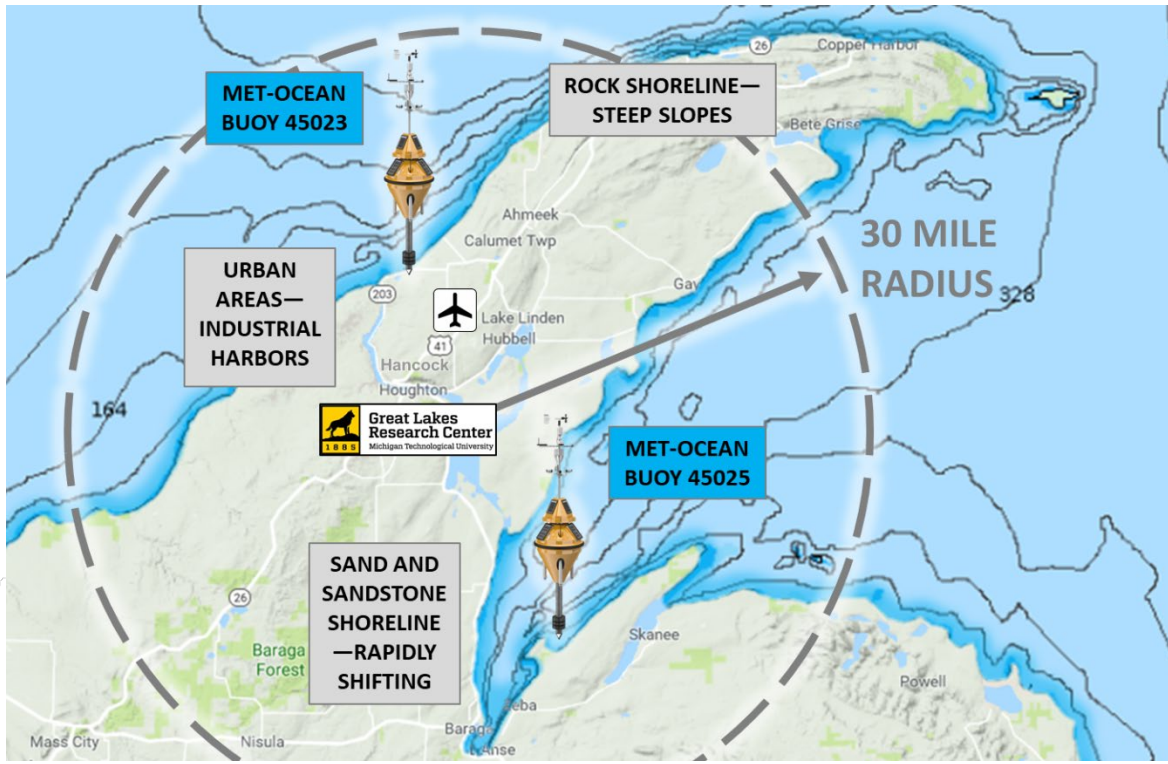
Smart Ships Initiative

Marine Autonomy Research Site

A Variety of Research Environments:

- Only freshwater test site
- Open “sea” conditions
- Fjord-like environments
- Sub-arctic conditions

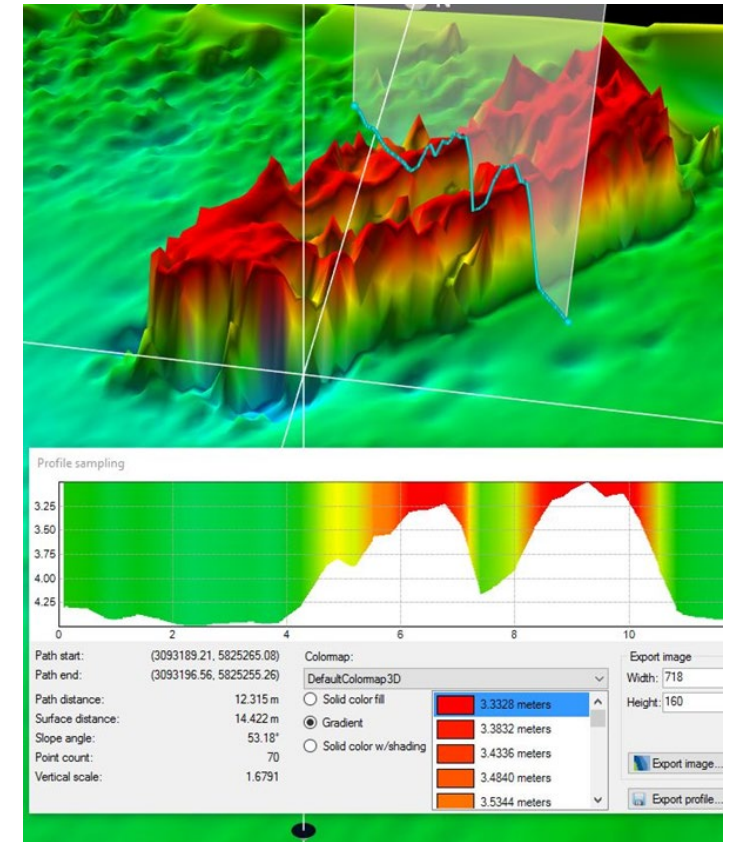
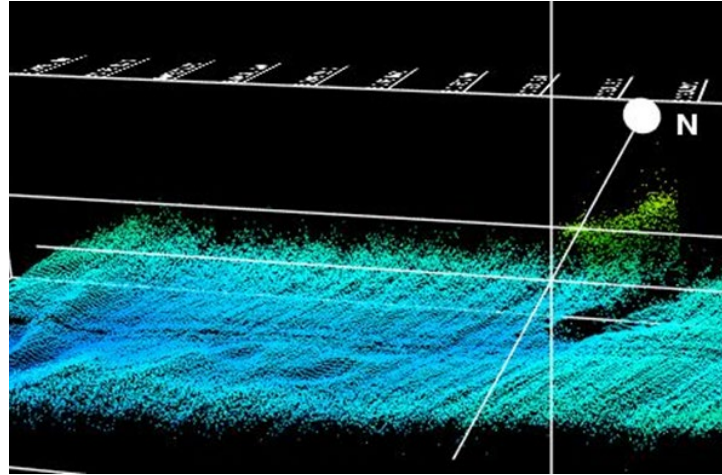
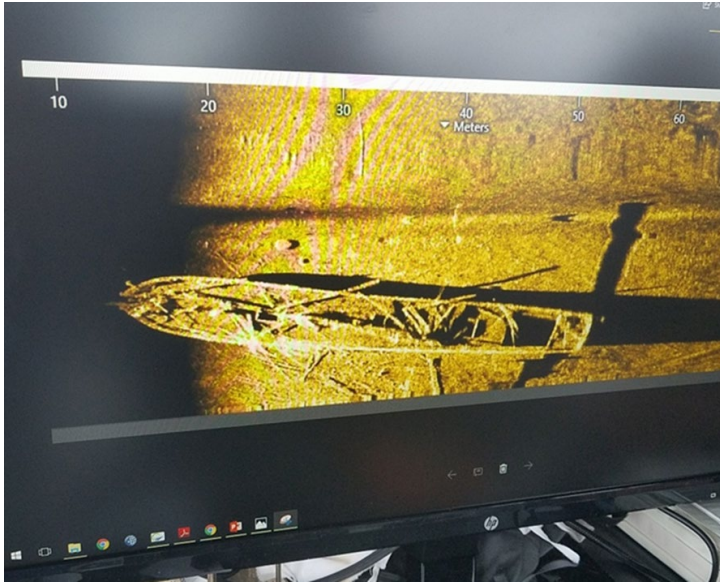




Smart Ships Initiative

Marine Autonomy Research Site





Research, surveying, and advanced 3-D mapping



Smart Ships Action Plan

- Harmonized regulatory framework to provide predictability
 - Create common standards and harmonized definitions of key terms.
 - Smart ship operations should be regulated in the same manner as conventional vessels. Ship owner/operator is responsible for operation.



Smart Ships Action Plan

- Encourage testing and certification of smart ship technologies by federal agencies at the Marine Autonomy Research Site
 - Coast Guard, Navy, NOAA
- Dedicated funding for research into fuel, emissions, and cost savings of this technology
 - Batteries, LNG, new vessel designs
- Support the Smart Ships Coalition's efforts to facilitate workforce development through training and education





Smart Ships Action Plan

- Encourage industry and governmental collaboration to ensure cybersecurity
 - Cybersecurity best practices should be identified and incorporated into the design of all connected components and vessels.
- Work through IMO to put in place global regulatory standards that provide long-term certainty for the operation of smart ships.



Smart Ships Action Plan

- The States and Provinces should explore strategic partnerships with universities, research institutions, and the private sector to promote research and development.
- Industry should develop a basic code of conduct that can be used to provide predictability for near-term technology deployment and that could be the basis for future governmental regulation.



Governors' and Premiers' Leadership Summit

- June 14, 2019 in Milwaukee
- Demo of C-Worker 5 Autonomous Survey Vehicle
- Sponsored by L3 Technologies and Michigan Tech University
- Attended by governors, other elected officials, key stakeholders



Next Steps

- Smart shipping scope of work under development
- Systemwide hands-free mooring
- Creating alignment with Government of Canada initiatives
- Collaboration with US federal government agencies
- Continue building international partnerships (e.g. INAS)





MIKE PISKUR



312.407.0177



MPISKUR@GSGP.ORG



GSGP.ORG



Questions?

