HAZARDOUS MATERIAL TRANSPORT OUTREACH NETWORK

2023 – 2024 Strategic Plan

HazMaTON Strategic Plan (final). Contact: Kelsey Prihoda at priho011@d.umn.edu. Published January 13, 2023.

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This strategic plan is a living document, and the Hazardous Material Transport Outreach Network will revise the plan as needed with input from HazMaTON members, their home organizations, and interested parties. The HazMaTON Strategic Planning Committee is responsible for reviewing this plan at least annually and revising the plan to reflect latest information.

Introduction

Background

The Hazardous Material Transport Outreach Network (HazMaTON) is a binational collaborative of specialists from the Great Lakes, Lake Champlain, Hudson River, and St. Lawrence River regions (Figure 1) focused on reducing risks associated with multiple modes of oil and other hazardous materials transportation. The collaborative is committed to the dissemination of accurate, neutral, and data-driven information through education, outreach, and relationship building in order to improve public safety, the region's economy, and environmental stewardship of our water resources.

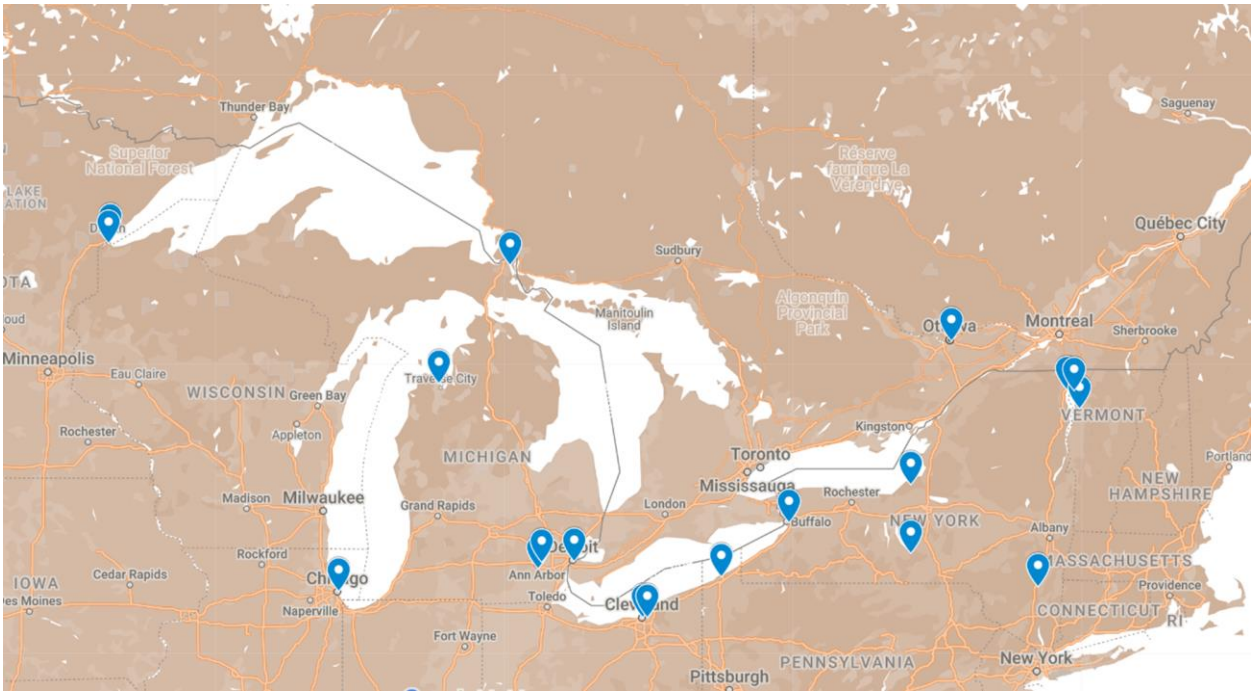

Figure 1. Map showing the location of HazMaTON member organizations in the Great Lakes, Lake Champlain, Hudson River, and St. Lawrence River regions of the United States and Canada.

Since approximately 2010, there has been an increasing trend in the domestic production of crude oil in the United States (Figure 2), in part due to the extraction of crude oil from oil and shale sands (e.g., Bakken Oil Fields in North Dakota). Pipelines are the dominant mode of transportation for crude oil and its refined products but increasing domestic production puts pressure on other forms of transportation such as rail and truck.

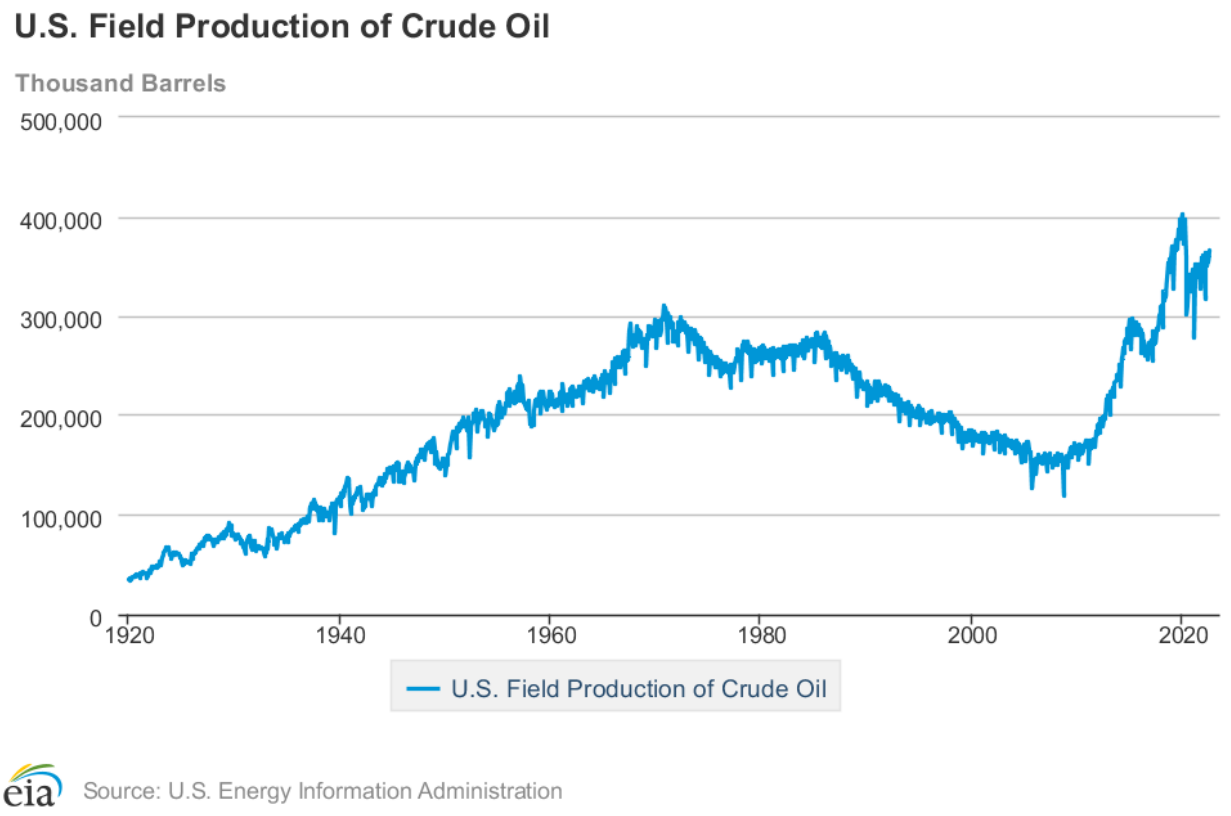

Figure 2. U.S. domestic production of crude oil from 1920 to present day in million barrels per year.

In 2014, a regional extension program began with a commitment from the Great Lakes Sea Grant Network (GLSGN) directors to better understand the social, economic, and environmental impacts of hazardous materials movement throughout the Laurentian Great Lakes. The program's goal was to provide interested parties with resources, promote the use of science to inform decision making, and to create a forum for sharing knowledge, concerns, challenges, and progress. In 2015, the GLSGN hosted two workshops. The purpose of the first workshop was to determine the key issues involved in the transportation of crude oil from a diversity of perspectives (Figure 3). During the second 2015 workshop, attendees discussed and identified research needs with respect to crude oil transportation in the Great Lakes Basin. In 2017, members of the GLSGN partnered with the Great Lakes Commission and the International Joint Commission to amplify their individual efforts toward understanding these vital issues. This collaboration became known as Crude Move. In June 2017, the organizations hosted the Crude Move Symposium, which featured presentations on Great Lakes-focused research topics related to crude oil transportation, infrastructure, economics, hazards, and risks. In conjunction with the symposium, the collaborative hosted a series of 4 webinars and created a website as a repository for information and resources on Great Lakes crude oil transport.

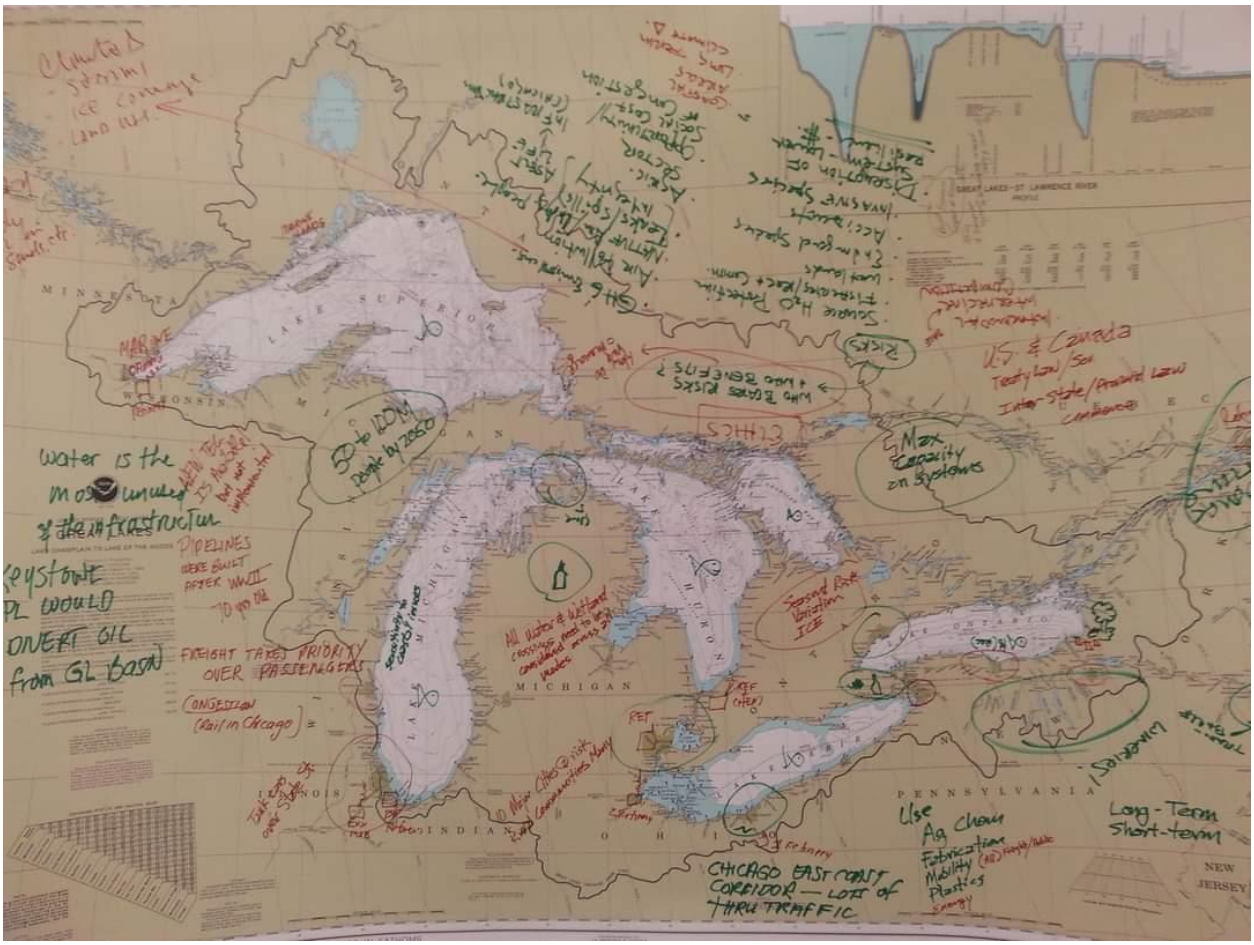

Figure 3. Output from 2015 workshop exercise in which participants wrote on a map key issues in the transportation of crude oil in the Laurentian Great Lakes region.

Beginning in August 2021, the eight programs within the Great Lakes Sea Grant Network (Illinois-Indiana, Lake Champlain, Michigan, Minnesota, New York, Ohio, Pennsylvania, and Wisconsin) agreed to provide 50% of the funding for Minnesota Sea Grant's Great Lakes Transportation Extension Educator (Kelsey Prihoda) to focus on hazardous materials transport work across the Great Lakes and coordinate the regional extension program. This funding ends July 31, 2024.

In 2022, the extension program and its members undertook a rebranding effort, and the program became known as the Hazardous Material Transport Outreach Network or HazMaTON. While the program has historically focused on the transportation of crude oil, HazMaTON's scope has expanded to include hazardous materials more broadly with an eye toward a future renewable energy economy. Membership increased and now includes representatives from the following organizations:

- Council of Canadian Academies
- International Association for Great Lakes Research (IAGLR)
- International Joint Commission (IJC)

- Lake Champlain Basin Program
- National Oceanic and Atmospheric Administration (NOAA)
- Sea Grant Great Lakes Network Programs:
    - Illinois-Indiana
    - Lake Champlain
    - Michigan
    - Minnesota
    - New York
    - Ohio
    - Pennsylvania
    - Wisconsin
- United States Coast Guard (USCG)
- United States Department of Transportation, Maritime Administration (MARAD)
- University at Buffalo

Target Audience

Hazardous materials transportation is a complex issue with varied perspectives. As such, HazMaTON's target audience is broad and includes the following (see Appendix 1 for more specific examples):

- Binational organizations
- Economic development organization
- Emergency managers and spill responders
- Energy industry
- Federal government
- HazMaTON home organizations
- Indigenous governments, including tribal, First Nations, and Métis
- Municipal government
- Non-governmental organizations
- Public and community groups
- Researchers and academia
- State and provincial government
- Supply chain and logistics managers
- Transportation industry

Methods used to Develop the Plan

The four-member HazMaTON Strategic Planning Committee was formed in November 2021 with the goal of establishing a vision and mission for HazMaTON, setting overall goals for the group, and developing a strategic plan to achieve those goals.

Needs Assessment

The HazMaTON Strategic Planning Committee conducted a needs assessment using data from existing sources. Identified needs were compiled by the committee from the following internal documents:

- 2014 scoping paper on forming a binational collaborative to examine crude oil movement
- 2015 Crude Move workshop reports
    - Workshop Report: Exploring and Visualizing the Issues Involved in Crude Oil Movement in the Great Lakes
    - Great Lakes Basin Crude Oil Movement: Building a Multidisciplinary Research Framework Workshop Notes
- 2017 Crude Move Symposium proceedings
- Crude Move survey conducted at the 13th Annual Great Lakes Restoration Conference

The committee used the following externally produced documents as references during the needs assessment:

- Donahue and Slawecki. November 2018. Toward a Great Lakes Early Warning System Final Report. Prepared for Great Lakes Early Warning System Workgroup, Science Advisory Board, International Joint Commission. 62 pp.
- Great Lakes Commission. February 2015. Issues and Trends Surrounding the Movement of Crude Oil in the Great Lakes - St. Lawrence River Region. Ann Arbor, MI. 47 pp.
- Great Lakes Science Advisory Board. October 2018. Potential Ecological Impacts of Crude Oil Transport in the Great Lakes Basin. Submitted to the International Joint Commission. 60 pp.
- International Joint Commission. July 2006. Report on Spills in the Great Lakes Basin with a Special Focus on the St. Clair-Detroit River Corridor. 59 pp.

The HazMaTON Strategic Planning Committee compiled and categorized (ecological impacts, economic impacts, social impacts, physical infrastructure and data, spill preparedness and emergency response, and geospatial vulnerability and risk analysis) the needs identified by these existing sources.

Prioritization Process

The HazMaTON Strategic Planning Committee prioritized the needs in each category by considering (a) needs that could be eliminated because they've already been met or are currently being met, (b) HazMaTON's strengths and the products and services the program provides to interested parties, (c) HazMaTON's capacity and ability (given resources and expertise), and (d) which needs can best be addressed by HazMaTON given the program's strengths. There were fourteen needs that the Strategic

Planning Committee gave high priority to, and the committee included those needs in a strategic planning survey that it sent to all HazMaTON members. The committee asked members to identify the top three needs that they felt HazMaTON should address within the next two years. There were sixteen responses to that survey, and the committee brought forward the top four needs for discussion during a group visioning meeting.

Visioning Meeting

The HazMaTON Strategic Planning Committee held a visioning meeting on May 6, 2022. There were fourteen participants at that meeting, which represented 64% of HazMaTON members. The members reached consensus on the four needs that the current strategic plan should address, and for each priority need the group discussed four questions:

1. What goal do we want to accomplish?
2. What are the objectives?
3. What stakeholders do we hope to reach?
4. What metrics can we use to measure our accomplishments and impacts?

The committee used Google Jamboard to capture feedback from the group. The Strategic Planning Committee used the data gathered during the meeting to develop strategic goals and objectives, strategies for implementation, and program evaluation methods.

Goals, Objectives, and Activities

Implementation of the HazMaTON Strategic Plan will begin January 1, 2023. Funding from the GLSGN to support HazMaTON coordination will end on July 31, 2024. Therefore, this strategic plan will be effective from January 1, 2023, to July 31, 2024. To implement the activities in this strategic plan, HazMaTON will seek additional, external project-based funding. This timeline may be extended, depending upon resources available to support plan implementation beyond July 31, 2024. The HazMaTON Strategic Planning Committee will be responsible for reviewing and revising this strategic plan, no later than February 1, 2024, to reflect HazMaTON's priorities and implementation timeline as a result of funding decisions and successful procurement of external funding.

Goal 1 - Emergency Response Planning

Expand awareness of emergency preparedness, response plans, and coordinated networks.

Objectives

1. Promote the work of HazMaTON member organizations that are responsible for spill preparedness and response planning.

2. Improve visibility of HazMaTON among spill preparedness and response networks, and in collaboration with these networks, identify emergency response needs that HazMaTON can address.

3. Determine target audiences' existing knowledge and assess knowledge gaps with respect to federal, state, and local spill preparedness and response plans. Design an outreach plan to fill these knowledge gaps.

4. Synthesize existing federal/national, state/provincial, and local hazardous material spill preparedness and response plans within our organization's geographic scope and disseminate this information in a publicly available and accessible format.

Activities

Activities for which additional external funding and/or resources (e.g., undergraduate or graduate student, fellowship, or internship support) are likely needed are marked with an asterisk (*).

1. Publish two to four newsletters annually providing updates from the NOAA Scientific Support Coordinator for the Great Lakes, USCG Great Lakes Center of Expertise (GLCoE), and/or other HazMaTON member organizations.

2. Host at least one online seminar annually geared toward a non-technical audience and focused on the topic of hazardous material spill preparedness, response planning, and their associated networks.

3. Actively work to expand HazMaTON's network to include U.S. regional response teams (Region 5, Region 3, and Region 2) and their Canadian equivalent, U.S. local area committees and their Canadian equivalent, and other organizations responsible for emergency response to hazardous materials spills within our geographic area of concern. Identify ways in which HazMaTON members and member organizations can contribute to emergency planning and response efforts by identifying needs at the local level, including communication to the public before, during, and after a hazardous materials spill.

4. *Design and implement a perception and awareness survey (Schneller et al., 2020) to determine what HazMaTON home organizations, public/community groups, economic development organizations, local governments, and non-governmental organizations know and want to know about hazardous material spill preparedness and response. Use the results from this survey to design an outreach program to support Goal 1 of this strategic plan and to gauge effectiveness of our outreach efforts over time through repeatedly surveying our target audience.

5. Create social media posts for HazMaTON members to share through existing networks, website content, and/or factsheets to increase our target audience's knowledge of coordinated networks involved in spill preparedness and response. An example of a potential deliverable

could be modeled after the Great Lakes Harmful Algal Bloom Collaborative's "Who Does What? A Guide to Agencies' Roles in HABs" factsheet.

Goal 2 - Ecological Impacts of Spills in Freshwater Environments

Increase interconnectedness among researchers, policy makers, and members of the public to increase knowledge of the potential ecological impacts of hazardous materials spills in freshwater environments through science outreach.

Objectives

1. Identify the roles and responsibilities of federal/national and state/provincial environmental regulatory agencies within our organization's geographic scope and disseminate this information in a publicly available and accessible format.

2. Aggregate the available data on the potential ecological impacts of hazardous substances and mitigation tools for spill response in freshwater environments.

Activities

Activities for which additional external funding and/or resources (e.g., undergraduate or graduate student, fellowship, or internship support) are likely needed are marked with an asterisk (*).

1. Host at least one online seminar annually geared toward a non-technical audience and focused on the topic of ecological effects of hazardous materials in freshwater environments.

2. In collaboration with the GLCoE, update the resource library on HazMaTON's website to reflect the most current literature on freshwater impacts of hazardous materials, including references identified during GLCoE's literature review on the impacts of oil in freshwater systems.

3. Actively work to expand HazMaTON's network to include scientists from private industry and public institutions, policy makers, and community members within our geographic area of concern.

4. Create social media posts for HazMaTON members to share through existing networks, website content, and/or factsheets to increase our target audiences' knowledge of the potential ecological impacts of hazardous materials spills in freshwater environments.

5. *Whenever possible, and where appropriate, collaborate with lead agencies to develop, review, and/or update Environmental Sensitivity Index maps or other tools used in environmental emergency preparedness and response within the HazMaTON geographic area of concern.

Goal 3 - Transport Industry Structures/Flow of Hazardous Materials

Function as a bridge between the transportation industry (e.g., freight brokers, supply chain, and logistics organizations), researchers, and regulatory agencies, and enhance public knowledge of the flow of hazardous materials by packaging publicly available information about hazardous material cargo type, volume, transport mode(s), etc. through HazMaTON's geographical area of concern.

Objectives

1. Increase knowledge, coordination, and communication among HazMaTON members and within member organizations to better understand the transport industry structures and flow of hazardous materials throughout the region.

2. Improve public access to information on the flow of crude oil within our geographic area of concern.

Activities

Activities for which additional external funding and/or resources (e.g., undergraduate or graduate student, fellowship, or internship support) are likely needed are marked with an asterisk (*).

1. Host 6 - 12 team meetings annually where HazMaTON members share information and collaborate to plan and implement HazMaTON's strategic goals and objectives.

2. *Conduct a literature/data review to determine the status of existing information and geospatial datasets that HazMaTON could use to develop outreach products in support of Goal 3.

3. *Curate and publish website content that will provide information on the flow of crude oil within our geographic area of concern. Examples of potential products include infographics, publications and other literature resources, and maps and other data visualization mechanisms.

Goal 4 - Economic and Social Impacts of Hazardous Material Transportation

Disseminate information to improve the collective understanding of the economic and social impacts of hazardous material transportation through HazMaTON's geographical area of concern.

Objectives

1. Engage with communities in HazMaTON's geographic area to better understand the hazards of concern related to multiple modes of transportation and hazardous material cargo type, the relative importance of those hazards (perception of risk) and identify indicators of severity to inform the development of a multi-criteria decision analysis tool to support hazardous material transportation mode choice.

2. In collaboration with the U.S. Department of Transportation Volpe Center, provide a forum for engagement of the potential users and benefactors of a multi-criteria decision analysis tool to

better understand end-user needs, ways in which the tool could be used, and the desired features of the tool.

3. Examine regional policies (e.g., Canada-U.S. treaties, Indigenous treaty rights, and federal regulations) and how they apply to energy infrastructure projects and hazardous materials transportation.

Activities

Activities for which additional external funding and/or resources (e.g., undergraduate or graduate student, fellowship, or internship support) are likely needed are marked with an asterisk (*).

1. *Utilize community/stakeholder engagement software or other tools (e.g., Social Pinpoint) to identify hazards of concern associated with multimodal transport of crude oil and other substances and perception of risk with respect to these hazards.

2. *Host a workshop to bring together potential users of a multi-criteria decision analysis tool and initiate/facilitate discussions that would help HazMaTON and Volpe to understand the features, metrics, etc. that would be most useful to include in the tool.

3. *Conduct a case study on a portion of the HazMaTON region to assess the socioeconomic vulnerability of lakeshore communities to oil spills (Omene, 2019).

4. *Develop outreach products that can be used by communities on a local level to provide information and resources to residents about existing international, federal, and Indigenous laws and regulations.

Program Evaluation and Reporting

The HazMaTON coordinator, a position currently held by Minnesota Sea Grant, is responsible for the preparation of HazMaTON's annual report. HazMaTON members will contribute data to this report and will review the report prior to finalization. Table 1 outlines the performance measures that HazMaTON will report on.

Table 1. HazMaTON performance metrics and measures to be included in annual reporting.

Goal 1 - Emergency Response Planning ***Expand awareness of emergency preparedness, response plans, and coordinated networks.***		
Target Audience: HazMaTON home organizations, Council of the Great Lakes Region, Great Lakes Observing System, Indigenous government, local government, state/provincial government, non-governmental organizations, public and community groups, and economic development organizations.		
Activity ***Indicates additional resources needed.**	**Outputs** ***What are the tangible products of our activities?***	**Outcomes** ***What changes do we hope to see over time?***

Publish two to four newsletters annually providing updates from the NOAA Scientific Support Coordinator for the Great Lakes, USCG Great Lakes Center of Expertise (GLCoE), and/or other HazMaTON member organizations.	• Number of newsletters published annually. • Number of newsletter subscribers.	• *Short-term*: HazMaTON members, their home organizations, and newsletter subscribers are more connected to and informed of activities taking place within NOAA, USCG GLCoE, and other HazMaTON member organizations.
Host at least one online seminar annually geared toward a non-technical audience and focused on the topic of hazardous material spill preparedness, response planning, and their associated networks.	• Number of spill preparedness and response webinars hosted annually. • Number of community groups and organizations engaged.	• *Short-term*: HazMaTON members, their home organizations, and public and community groups are aware of spill preparedness and response planning efforts in their region.
Actively work to expand HazMaTON's network to include U.S. regional response teams and their Canadian equivalent, U.S. local area committees and their Canadian equivalent, and other organizations responsible for emergency response. Identify ways in which HazMaTON members and member organizations can contribute to emergency planning and response, including communication to the public before, during, and after a hazardous materials spill.	• Maintained list of emergency response experts and public affairs specialists organized by area committee or sub-region within HazMaTON's geographic scope.	• *Short-term:* HazMaTON members are engaged with local emergency response networks and can answer the question "What happens if there's a spill?" for their local communities. • *Long-term*: Target audience, including HazMaTON members and their home organizations, know where to go for information and can find the plans and regulations that are relevant to their geographical area and/or the communities they serve.
*Design and implement perception and awareness surveys (Schneller et al., 2020) to determine what HazMaTON home organizations, public/community groups, economic development organizations, local government, and non-governmental organizations know and want to know about hazardous material spill preparedness and response.	• Number of submitted applications for external funding. • Reports or publications of survey results.	• *Short-term*: HazMaTON's outreach program is informed by survey results and designed to target knowledge gaps identified in surveys. • *Long-term*: Increasing knowledge among HazMaTON home organizations, public/community groups, economic development organizations, local government, and non-governmental organizations as measured through repeated surveys (frequency to be determined).

Create social media posts for HazMaTON members to share through existing networks, website content, and/or factsheets to increase our target audience's knowledge of coordinated networks involved in spill preparedness and response.	● Quantity of digital and print content created.	● *Short-term*: Increase in audience engagement with HazMaTON website and its resources as measured by online analytics and publications requested.
Goal 2 - Ecological Impacts of Spills in Freshwater Environments ***Build relationships and function as a liaison between researchers, policy makers, and members of the public to identify gaps in knowledge about the potential ecological impacts of hazardous materials spills in freshwater environments and communicate what is known to stakeholders through science outreach.***		
Target Audience: HazMaTON home organizations, transportation industry, researchers/academia, supply chain/logistics managers, Indigenous government, federal government, state/provincial government, local government, public and community groups.		
Activity ***Indicates additional resources needed.**	**Outputs** ***What are the tangible products of our activities?***	**Outcomes** ***What changes do we hope to see over time?***
Host at least one online seminar annually geared toward a non-technical audience and focused on the topic of ecological effects of hazardous materials in freshwater environments.	● Number of ecological impacts webinars hosted annually. ● Number of online seminar registrants.	● *Short-term*: Increase in knowledge of ecological impacts of spills among the public and community groups as measured by pre- and post-webinar surveys.
In collaboration with the GLCoE, update the resource library on HazMaTON's website to reflect the most current literature on freshwater impacts of hazardous materials, including references identified during GLCoE's literature review on the impacts of oil in freshwater systems.	● Number of resources added to HazMaTON's online resource library.	● *Short-term*: Increase in audience engagement with HazMaTON website and its resources as measured by website analytics. ● *Long-term*: HazMaTON's target audience views its resource library as a "go to" place for up-to-date information and research publications.
Actively work to expand HazMaTON's network to include scientists from private industry and public institutions, policy makers, and community members within our geographic area of concern.	● Number of HazMaTON members. ● Number of Google Group subscribers.	● *Short-term*: Identified points of contact, including toxicologists and other experts, within U.S. and Canadian federal regulatory agencies. ● *Long-term*: Greater connection and collaboration among our target audience because of HazMaTON.

Create social media posts for HazMaTON members to share through existing networks, website content, and/or factsheets to increase our target audiences' knowledge of the potential ecological impacts of hazardous materials spills in freshwater environments.	• Quantity of digital and print content created.	• *Short-term*: Increase in audience engagement with HazMaTON website and its resources as measured by online analytics and publications requested.
*Whenever possible, and where appropriate, collaborate with lead agencies to develop, review, and/or update Environmental Sensitivity Index (ESI) maps or other tools used in environmental emergency preparedness and response within the HazMaTON geographic area of concern.	• Number of submitted applications for external funding. • Number of ESI maps or tools contributed to.	• *Short-term*: Increase in audience engagement with ESI maps or other tools.
Goal 3 - Transport Industry Structures and Flow of Hazardous Materials ***Function as a bridge between the transportation industry (e.g., freight brokers, supply chain, and logistics organizations), researchers, and regulatory agencies, and enhance public knowledge of the flow of hazardous materials by packaging publicly available information about hazardous material cargo type, volume, transport mode(s), etc. through HazMaTON's geographical area of concern.***		
Target Audience: HazMaTON home organizations, transportation industry, researchers/academia, regulatory agencies, non-governmental organizations, emergency managers, public and community groups, economic development organizations.		
Activity ***Indicates additional resources needed.**	**Outputs** ***What are the tangible products of our activities?***	**Outcomes** ***What changes do we hope to see over time?***
Host 6 - 12 team meetings annually where HazMaTON members share information and collaborate to plan and implement HazMaTON's strategic goals and objectives.	• Number of HazMaTON team meetings held annually. • Number of active collaborators participating in HazMaTON team meetings or on HazMaTON projects.	• *Short-term*: Increased coordination among HazMaTON members and member organizations, and between HazMaTON and its collaborators. • *Long-term*: Increased number of collaborative projects.
*Conduct a literature/data review to determine the status of existing information and geospatial datasets that could be used to develop outreach products in support of Goal 3.	• Number of submitted applications for external funding. • Findings from literature review summarized in a report or publication, including an analysis of data gaps.	• *Short-term*: Determination of what geospatial datasets HazMaTON needs to obtain or develop. • *Long-term*: Identify potential partners to fill the geospatial datasets gap.

*Curate and publish website content that will provide information on the flow of crude oil within our geographic area of concern. Examples of potential products include infographics, publications and other literature resources, and maps and other data visualization mechanisms.	● Number of submitted applications for external funding. ● Number of resources added to HazMaTON's online resource library. ● Data visualization through the creation of infographics and/or maps.	● *Short-term*: Increase in audience engagement with HazMaTON website and its resources as measured by website analytics.
Goal 4 - Economic and Social Impacts of Hazardous Material Transportation ***Disseminate information to improve the collective understanding of the economic and social impacts of hazardous material transportation through HazMaTON's geographical area of concern.***		
Target Audience: HazMaTON home organizations, transportation industry, supply chain/logistics managers, public and community groups, binational organizations, energy industry, and researchers/academia.		
Activity ***Indicates additional resources needed.**	**Outputs** ***What are the tangible products of our activities?***	**Outcomes** ***What changes do we hope to see over time?***
*Utilize community/stakeholder engagement software or other tools (e.g., Social Pinpoint) to identify hazards of concern associated with multimodal transport of crude oil and other substances and perception of risk with respect to these hazards.	● Number of submitted applications for external funding. ● Report or publication of results from research on risk perception.	● *Short-term*: Increased knowledge of what the public and community groups would be most concerned about in the event of a spill.
*Host a workshop to bring together potential users of a multi-criteria decision analysis (MCDA) tool and initiate/facilitate discussions that would help HazMaTON and Volpe to understand the features, metrics, etc. that would be most useful to include in the tool.	● Number of submitted applications for external funding. ● Workshop proceedings report.	● *Short-term*: MCDA tool planning informed by workshop participants and their feedback. ● *Long-term*: Increased number of MCDA tool users
*Conduct a case study on a portion of the HazMaTON region to assess the socioeconomic vulnerability of lakeshore communities to oil spills (Omene, 2019).	● Number of submitted applications for external funding. ● Report or other publication summarizing the case study results.	● *Short-term*: Inspire other lakeshore communities to assess their own socioeconomic vulnerability. ● *Long-term*: Lakeshore communities take measures to limit socioeconomic vulnerabilities.

*Develop outreach products that can be used by communities on a local level to provide information and resources to residents about existing international, federal, and Indigenous laws and regulations regardingenergy infrastructure projects and hazardous materials transportation.	● Number of submitted applications for external funding. ● Number of communities engaged. ● Number of outreach products developed.	● *Short-term*: Sources of information, including points of contact, are readily available when HazMaTON members, member organizations, and public/community groups have questions.

Appendix 1: HazMaTON Target Audience

The following list provides examples of organizations and communities that HazMaTON is seeking to engage through outreach activities, products, and services.

1. HazMaTON Home Organizations
    a. Great Lakes Sea Grant Network
    b. Great Lakes Commission
    c. International Joint Commission
    d. Lake Champlain Basin Program
    e. Council of Canadian Academies
    f. International Association of Great Lakes Research
    g. University of Ottawa
    h. University at Buffalo
    i. NOAA
    j. USCG
2. Binational Organizations
    a. Council of the Great Lakes Region
    b. Great Lakes and St. Lawrence Cities Initiative
3. Community Groups (Local/Regional)
    a. Local Chapters of Izaak Walton League
    b. Local Chapters of League of Women Voters
    c. Minnesota Environmental Partnership
    d. Lake Champlain Committee
    e. Adirondack Council
    f. Abenaki Nation of Missisquoi Swanton VT
    g. Citizens in general
4. Economic Development Organizations
    a. Council of Great Lakes Industries
5. Emergency Preparedness/Spill Response
    a. Regional Response Teams (RRTs): Region 5, Region 3, Region 2
    b. Offices of Emergency Services
    c. Coastal Response Research Center (partnership between NOAA OR&R and University of New Hampshire) and Center for Spills and Environmental Hazards
6. Energy Industry

a. Fossil Fuels
    i. Enbridge, Inc.
    ii. Marathon Petroleum Co.
    iii. Shell
    iv. Canadian Association of Petroleum Producers
    v. Ontario Petroleum Institute
    vi. American Petroleum Institute
    vii. Canadian Fuels Association
    viii. Michigan Petroleum Association
b. Renewable
    i. American Council on Renewable Energy
    ii. Great Lakes Renewable Energy Association
    iii. Brookfield Renewable Partners

7. Federal Government
    a. U.S. Environmental Protection Agency, Region 1, 2, and 5
    b. Transport Canada
    c. Canada Energy Regulator
    d. U.S. Department of Transportation
        i. Great Lakes - St. Lawrence Seaway Development Corporation
        ii. Pipeline and Hazardous Materials Safety Administration
        iii. Federal Railroad Administration
    e. National Transportation Safety Board
    f. U.S. Coast Guard, Ninth District
    g. U.S. Geological Survey
    h. National Oceanic and Atmospheric Administration
    i. Fisheries and Oceans Canada
    j. U.S. Fish and Wildlife Service
    k. U.S. Army Corp of Engineers
8. Indigenous Government (Métis Nation, First Nations, and Tribes)
    a. Aamjiwnaang First Nation
    b. Chippewa Ottawa Resource Authority
    c. Great Lakes Indian Fish and Wildlife Commission
    d. Nattawaseppi Huron Band of the Potawatomi

    e. Saginaw Chippewa Tribe of Michigan
    f. Sault Ste Marie Tribe of Chippewa
    g. Other federally recognized tribes and Indigenous peoples
9. Municipal/Local Government
    a. Officials in key cities/towns
10. Non-Governmental Organizations
    a. Alliance for the Great Lakes
    b. Great Lakes Protection Fund
    c. FLOW: For Love of Water
    d. The Nature Conservancy
    e. National Wildlife Federation
    f. Surfrider Foundation
11. Researchers/Academia
    a. University of Wisconsin-Superior's Transportation and Logistics Research Center
    b. University of North Carolina-Wilmington
    c. John Carroll University
    d. Transportation Research Board, AT040 Hazmat Transportation Committee
    e. RSI-AAR Railroad Tank Car Safety Research and Test Project
    f. Under-Ice Oil Spill Working Group
    g. TRANSCAER (Transportation Community Awareness and Emergency Response)
12. State/Provincial Government
    a. Minnesota - Pollution Control Agency
    b. Wisconsin - Department of Natural Resources
    c. Illinois - Department of Natural Resources
    d. Indiana - Department of Natural Resources
    e. Michigan - Department of Environment, Great Lakes, and Energy
    f. Ohio - Department of Natural Resources
    g. Pennsylvania - Department of Environmental Protection
    h. New York - Department of Environmental Conservation
    i. New York - Adirondack Park Agency
    j. Vermont - Agency of Natural Resources
    k. Ontario - Ministry of Natural Resources and Forestry
    l. Quebec

13. Supply Chain/Logistics
    a. Eastern Border Transportation Coalition
    b. Hwy H20
14. Transportation Industry
    a. Maritime
        i. Association of Great Lakes Ports
        ii. Lake Carriers' Association
        iii. Canadian Shipping Association
        iv. Chamber of Marine Commerce
        v. Great Lakes St. Lawrence Seaway Development Corporation
        vi. St. Lawrence Seaway Management Corporation
        vii. Great Lakes Captains Association
        viii. Green Marine
    b. Railroad
        i. CN Railways
        ii. CSX Transportation
        iii. Canadian Pacific Railway
        iv. Association of American Railroads
        v. Railway Supply Institute
    c. Truck
        i. World Oil Transportation
    d. Pipeline
        i. TransCanada
    e. Other
        i. International Council on Clean Transportation