EMERGENCY PREPAREDNESS AND RESPONSE PROGRAMS
FOR OIL AND HAZARDOUS MATERIALS SPILLS

CHALLENGES AND PRIORITIES FOR THE GREAT LAKES – ST. LAWRENCE RIVER

A Report of the
Emergency Preparedness Task Force

To the
Great Lakes Commission

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Preface

The following report is presented to the Great Lakes Commission as a product of the Emergency Preparedness Task Force. The Task Force, established by the Commission at its 2010 Annual Meeting, is comprised of members from state and provincial environmental protection and/or emergency management agencies. The Task Force membership is included as Appendix A to this report.

At its 2010 Annual Meeting held October 7-8 in Toronto, Ontario the Great Lakes Commission convened a panel session on Oil and Hazardous Material Preparedness and Response in the Great Lakes-St. Lawrence River Region. The Commissioners were interested in hearing from the panelists about the state of preparedness and response in the region, to hear lessons learned regarding the Enbridge Pipeline Spill near Marshall Michigan that occurred in July 2010, and to begin a dialogue about identifying opportunities for improving preparedness and response in the region.

During its business session on October 8, 2010, the Great Lakes Commission voted to establish an Emergency Preparedness Task Force. This Task Force, formed in mid-2011, was charged with following tasks:

1. Review the status of emergency preparedness response programs and regulations to document consistency and uniformity of state and provincial programs.
2. Review the relationship between federal preparedness and response programs and those managed by the states and provinces with an eye toward how those programs and relationships might be improved.
3. Review previous Great Lakes Commission policy in the area of emergency preparedness and response and making recommendations to the Commission for improving and enhancing the region's preparedness and response capabilities in order to better protect the land and water resources of the Great Lakes-St. Lawrence River region.
4. Develop (if applicable) a policy resolution or policy statement for the Commission to consider for communicating to the two federal governments and the U.S. Congress.

The Task Force has met approximately bi-monthly via conference calls beginning in July 2011. Early on in its deliberations the Task Force decided to prepare a report detailing state and provincial programs that address emergency preparedness and response within each jurisdiction. This report was intended to help the Task Force better understand the programs in place within neighboring jurisdictions and helped form the basis for the findings and recommendations included in this report. The programs report, titled *Status of Oil Spill Preparedness and Response Programs in the Great Lakes St. Lawrence River Basin*, is provided as Appendix D of this report or can be found at *http://wiki.glin.net/download/attachments/20546736/StatusOfOilSpillPrograms1995.pdf*.

While working on its programmatic report, the Task Force considered how to best present the priority preparedness and response-related issues facing the Great Lakes-St. Lawrence River basin. In late 2011, the Task Force began working on in-depth summaries of four priority topics which it considered to be the main ones of interest to the Great Lakes Commission. These four topics are:

- Oil pipeline spill preparedness and response
- Cold weather and under-ice spill preparedness and response
- Vessel-based spill preparedness and response
- Land-based facilities spill prevention and response

In addition to the ongoing work and contributions from the Task Force members, the summaries of these priorities were greatly enhanced by the input, participation and collaboration of numerous additional individuals from the United States and Canada representing federal, state and provincial agencies having a role or mandate in one or more of the issue areas. These individuals participated in numerous conference call meetings in early 2012 and in a workshop held on June 18, 2012 in conjunction with the Region 5 Regional Response Team (RRT) meeting in Ann Arbor, Michigan. These individuals were instrumental in helping the Task Force better understand the issues being discussed. A list of these partners can be found in Appendix B.

Findings and recommendations related to these four topics, along with extended background and discussion on each of these issues is included later in this report.

Key Recommendations of the Task Force

The Task Force report makes more than 26 recommendations for actions to improve emergency preparedness and response in the Great Lakes-St. Lawrence River system. The Task Force presents these recommendations as priorities for building upon and sustaining the progress that has been made over the past twenty years to improve spill prevention, preparedness and response in order to ensure that the Great Lakes and St. Lawrence River are well protected in the event of a spill. The Task Force highlights the recommendations below as having special importance to advance spill preparedness and response efforts in the region.

- Reliable, consistent and adequate long-term funding is needed at the federal, state and provincial levels for implementing and maintaining preparedness and response programs in all four spill categories in the report. Specific priorities include support for: training and exercising; inspection and enforcement; research; data collection and reporting; and, conducting risk assessments. To address this need, a comprehensive study of federal, state and provincial funding of programs for emergency preparedness and response is called for to document funding history and trends at all levels of government and identify specific funding priorities to ensure that the region continues to be well protected from the threat of spills to the land and water of the Great Lakes-St. Lawrence River basin.

- Programmatic authorities for funding spills cleanup must be reviewed and modified as necessary to address the gaps in the use of current programs for cleaning up spills/sites containing a mixture of oil and other substances. For instance, neither the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) nor the Oil Spill Liability Trust Fund (OSLTF) funding provisions allow for cleanup of spills at certain sites that contain a mixture of oil and other substances.

- Communication between pipeline companies, the pipeline regulatory agencies (U.S. DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) and Canada's National Energy Board (NEB)) and response agencies (federal, state and provincial) needs to be improved. Specifically in the U.S., pipeline contingency plans required by PHMSA need to be coordinated with other federal agencies doing contingency planning for vessels and facilities (e.g., U.S. EPA and U.S. Coast Guard) under the OPA and communicated directly with the Federal On-Scene Coordinators (FOSCs) assigned to the geographic area in question.

- Uniform, consistent and seamless protocols for pipeline inspection should be established at the state and provincial level and coordinated with PHMSA and the NEB and other federal response agencies. These protocols should be established through existing authorities where applicable. New legislative authorities should be pursued if the current authorities are deemed to be inadequate to provide maximum safety and protection of the public and the environment.

- The lead federal and state/provincial response agencies in both countries should continue to develop and conduct exercises for the four spill categories identified in the report; vessel-based spills, facility-based spills, cold weather spills and pipeline spills to ensure coordination, effective communication, identification of research needs, and identification of

personnel, technical assistance and overall resource needs. Larger exercises involving multiple states or both U.S. and Canadian participants should include invitations to other response entities not directly involved in the exercise which will help improve coordination and fill planning gaps in order to improve preparedness and response.

- There is a need to develop a response strategy for heavily polluted waterways in the Great Lakes-St. Lawrence River basin, due to the unique challenges associated with spill reporting and response in these areas.

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Introduction

The Great Lakes are one of the world's greatest freshwater resources. Along with the St. Lawrence River, the Great Lakes have exerted a profound influence in the establishment, advancement and sustainment of the regional and national economies of the U.S. and Canada. Through their geographical, ecological and climatological characteristics, the Great Lakes and the St. Lawrence River have shaped the socio-economic heritage of the region.

The Great Lakes system is a series of large interconnected lakes that drains to the ocean via the St. Lawrence River. The lakes and their connecting channels contain more than 90% of the freshwater of the United States and more than 20% of the world's supply of fresh surface water. The Great Lakes have lengthy water retention times (the overall mean time that the water spends in the lake), meaning that substances that enter the lakes tend to remain in them for a long time. For instance, the water retention time for Lake Superior is 191 years.

The Great Lakes-St. Lawrence River basin is a fragile, highly sensitive ecosystem (especially along the shorelines and in nearshore areas) that includes a valuable sport fishery and some of the most productive freshwater wetlands in the world.

The Great Lakes-St. Lawrence River region is home to numerous thriving metropolitan areas that support large population centers. The bi-national region makes up nearly 36% of the population of both countries and if the eight state-two province region stood alone as a country it would represent the 2nd largest economic unit on earth, second only to the United States.

The high quality freshwater contained in the Great Lakes and the St. Lawrence River is chief among reasons why businesses and industry choose to locate in the binational region and why more than 36 million people choose to live, work and recreate there. More than 40 million U.S. and Canadian residents also receive their drinking water from the Great Lakes or the St. Lawrence River.

However, the economic and commercial activities and services that support the multiple needs of the region also create the potential for oil and hazardous materials spills to occur. The Great Lakes-St. Lawrence River region produces, refines and transports substantial quantities of oil and natural gas and produces, transports and disposes of many different types of hazardous materials. The production, use, transport and disposal of these substances all contribute to the potential for spills to occur.

The environmental sensitivity of the Great Lakes and St. Lawrence River combined with their role in the complex economy of the region makes them highly vulnerable to oil and hazardous materials spills from ships, from pipelines and from land-based facilities. In addition, the Great Lakes and their connecting channels may, for a portion of the year, be covered by ice, which brings additional challenges to any spill response effort.

There were several spills that occurred both inside and outside the Great Lakes-St. Lawrence River region in 2010 which together heightened the awareness of the importance of spill preparedness and response with public officials and the general public. The much-publicized Deepwater Horizon spill in the Gulf of Mexico, along with pipeline spills in Marshall, Michigan, and Romeoville, Illinois, refocused attention on the Great Lakes-St. Lawrence River region's level of preparedness and ability to respond to and prevent oil and hazardous material spills.

Background and General Findings

There are numerous federal, state and provincial laws in both the United States and Canada aimed at preventing and responding to oil and hazardous materials spills in order to protect the environment and public health and safety. Often, these laws have been enacted in response to significant spill events that have prompted action from Congress, Parliament or state and provincial legislatures to ensure that the United States and Canada are well-protected in the event of a spill or release to the land, air or water resources of the two countries. A brief summary of these laws along with a description of the preparedness and response framework is provided in the companion report titled *Status of Oil Spill Preparedness and Response Programs in the Great Lakes St. Lawrence River Basin* included as Appendix D of this report.

An example of how the legal and regulatory regime can change in response to a particular spill event occurred in the aftermath of the Exxon Valdez oil spill in 1989. The spill, which happened on March 24 of that year, attracted worldwide attention and concentrated federal efforts on how to increase the effectiveness of spill prevention, preparedness and response. The event also precipitated the passage of the Oil Pollution Act of 1990 (OPA). OPA was enacted to strengthen the national response system in the United States, expand preparedness activities, and provide for better coordination of spill contingency planning and response among federal, state, and local authorities.

OPA amended the Federal Water Pollution Control Act (known as the Clean Water Act or CWA) the goals of which served to further link water quality issues directly with national contingency planning infrastructures and organizational response.

The Great Lakes region also took specific notice of the Exxon Valdez incident. In November 1990, through leadership of the Great Lakes Congressional delegation, Congress enacted the Great Lakes Critical Programs Act, which also amended the CWA and strengthened protection of the region's water resources. The Critical Programs Act required the states to adopt anti-degradation policies and set uniform and consistent water quality standards, and also established programmatic requirements for important regional initiatives such as the Remedial Action Plan (RAP) program and the Lakewide Management Plan (LaMP) program. Importantly, it also required the United States Environmental Protection Agency (U.S. EPA) Great Lakes National Program Office (GLNPO) to identify areas within the Great Lakes which are likely to experience numerous or voluminous spills of oil or other hazardous materials and identify weaknesses in U.S. federal and state programs to prevent and respond to such spills.

The Critical Programs Act also provided for study on the impacts of toxicities on human health in the Great Lakes Basin, created a mechanism for stepping up spill inspection of onshore facilities, and expanded the authorization for GLNPO.

Under the Critical Programs Act, GLNPO, in consultation with the United States Coast Guard (U.S. Coast Guard), was specifically charged with identifying areas within the Great Lakes region which are likely to experience numerous or voluminous spills of oil or other hazardous materials from land-based facilities, vessels, or other sources. Additionally, GLNPO, in a joint effort with the Great Lakes states, was charged with identifying weaknesses in federal and state programs and systems to prevent and respond to spills. That task was carried out in cooperation with the Great Lakes Commission, with a report entitled *Status of Oil Spill Preparedness and Response Programs in the Great Lakes Basin* (*http://wiki.glin.net/download/attachments/20546736/StatusOfOilSpillPrograms1995.pdf*) issued in December 1995.

Similarly in Canada, federal laws also govern spill preparedness and response, including the Transportation of Dangerous Goods Act, the Canadian Environmental Protection Act, the Fisheries Act, the Canada Water Act, the Canada Shipping Act, the Migratory Birds Convention Act and the Species at Risk Act, among others. These federal acts provide the foundation for numerous important national and regional plans developed to protect Canada's land, water and wildlife resources as well to as ensure the protection and safety of the public. Also, the Canada–Ontario Agreement (COA) between the federal and provincial governments sets goals and objectives to restore and protect the Great Lakes basin ecosystem. That agreement in turn helps Canada meet its commitments under the Canada–U.S. Great Lakes Water Quality Agreement.

Figure 1 below shows graphically spill incidents handled by and reported on by the U.S. Coast Guard. However, the patterns shown by these data match those observed for the U.S. and Canada as a whole (including maritime waters) and are presumed to reflect trends throughout the Great Lakes region. This graph reflects the progress that has been made as a result of the changes in the federal, state and provincial spill preparedness and response framework since the early 1990s. These changes have contributed to significant progress and improvement and the region seems better equipped overall to prevent, prepare for and respond to spills that might cause ecosystem harm and environmental and economic degradation. It should be noted that these data were available only through 2009 at the time this report was prepared. If 2010 data were shown a very large increase in the spill volume would be observed as a result of the Deepwater Horizon spill and the Enbridge pipeline spill in Marshall, Michigan among others.

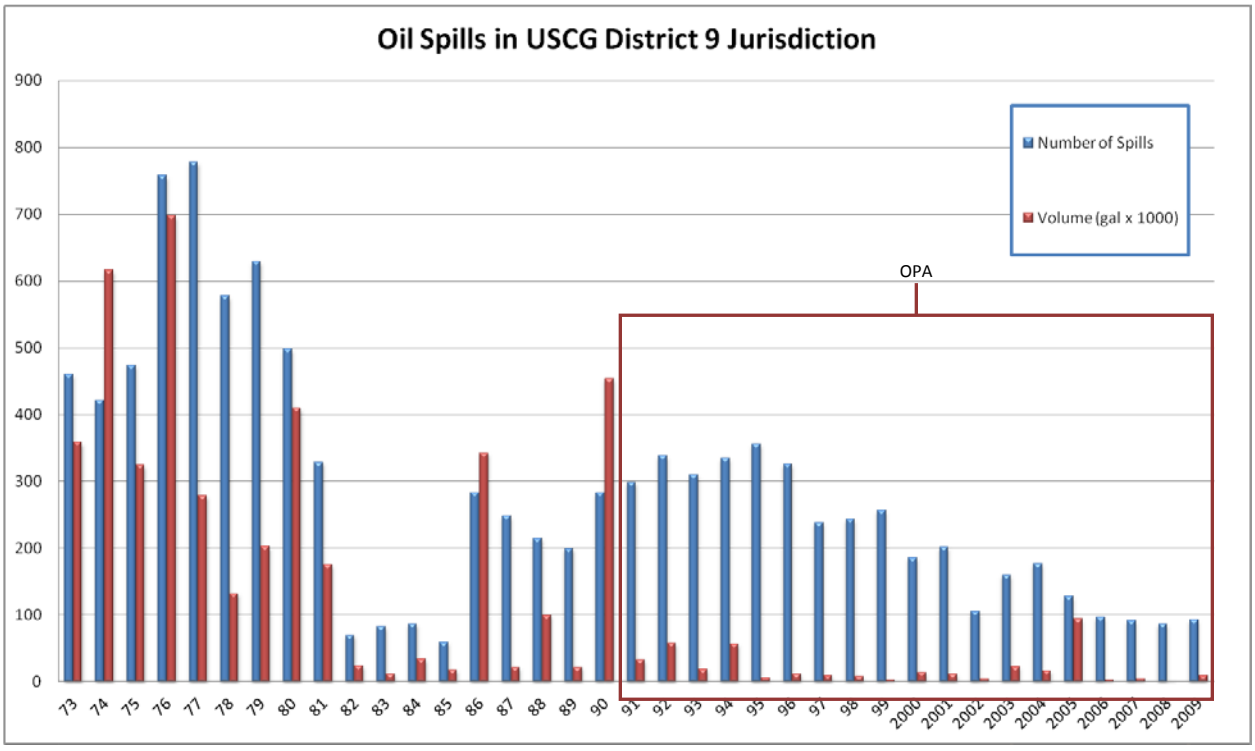

Figure 1: Number and volume of oil spills by year in U.S. Coast Guard District 9, 1973-2009. Data derived from "Polluting Incidents In and Around U.S. Waters, A Spill/Release Compendium: 1969 – 2009". U.S. Coast Guard Office of Investigations & Compliance Analysis (CG-545). April 2011.

While the trend for spills (especially regarding volumes) has been in the downward direction, caution should be exercised when considering whether the region has fully reached its goal in the area of preparedness and response. Individual spills do and still will happen and spill incidents cannot be predicted or fully stopped. The transportation, storage and use of oil and hazardous chemicals are necessary to support the workings of society and there are risks involved in these activities. The goal is always to reduce the risks associated with these activities. Also, spill statistics seem to correlate with the economy. When the economy is booming and the demand for industry goods and services is high, more spills tend to occur. During downturns in the economy, spill numbers tend to decrease.

An important additional note is that in both the U.S. and Canada, there has been a much greater emphasis placed on spill prevention since the early 1990s. Programs, resources and funding have targeted spill prevention and the important role that industry can and must play in spill prevention in the region. These programs have also fostered a cooperative relationship between regulatory agencies and industry which has contributed to the noticeable decline in spill incidents over the past twenty-plus years.

A hierarchy of contingency plans across the region has laid a foundation for prompt and efficient communication and coordination between agencies and across jurisdictions in the event of a spill. Canadian and U.S. federal agency spill response management is carried out using similar systems, with any differences worked out through binational contingency plans. U.S. federal and state agencies and the Province of Ontario use the Incident Command System (ICS), referred to as the Incident Management System in Ontario. ICS is a standard management hierarchy and set of procedures for managing emergency incidents. ICS procedures are pre-established and sanctioned by participating authorities, and key personnel are well-trained prior to an incident. The Canadian Coast Guard uses a similar set of procedures it developed, the Response Management System (RMS), for much of its response work. For multiple-jurisdiction responses, Canadian Coast Guard personnel are familiar with ICS and other response systems in use in the region. In Québec, incident management is coordinated by Public Safety Québec but carried out using a system of close collaboration between government agencies, each having its own set of responsibilities depending on the agency's field of expertise. Québec has protocols in place for responses that require participation and consultation with agencies from outside the province that align similar functions within the respective systems.

In the U.S., each federal region hosts a Regional Response Team (RRT) comprised of members from state and federal agencies committed to working efficiently to minimize the adverse effects of oil and chemical incidents that affect safety, human health and the environment. In Ontario, a Regional Environmental Emergency Team (REET) serves a similar function. REETs are multi-agency, multi-disciplinary groups that provide consolidated and coordinated direction, environmental advice and assistance during spills and emergencies. In both countries, these teams are in place to ensure the necessary ongoing communication and coordination between different federal agencies and between different levels of government. The Province of Québec has a similar structure. When the scope of an environmental emergency requires the intervention of several Québec government departments and agencies, the Ministry of Public Security (MSP) is called upon to provide leadership and coordinate government resources through the Regional Civil Protection Plan or, if needed, the National Civil Protection Plan.

Through the various important laws and regulations in the U.S. and Canada, there is also an established formal relationship between preparedness and response programs on the local, state,

provincial and federal levels. Various contingency plans provide the framework for implementing those programs. These plans are discussed in detail in the Appendix D report.

In the United States, federal law has established the National Response System, which provides guidance and procedures for preparing for and responding to discharges of oil and hazardous substances. This guidance comes in the form of contingency plans, which in the Great Lakes-St. Lawrence River basin include the U.S. National Oil and Hazardous Materials Contingency Plan (NCP), the U.S. Coast Guard District 9 Area Contingency Plan (ACP), Regional Contingency Plans (RCPs) for each of the three U.S. Federal Regions in the basin (2, 3 and 5), and more detailed subarea plans in certain areas within each of the larger federal jurisdictions.

In Canada, the National Spill Response Plan was prepared by the Canadian Coast Guard to address marine emergencies for the Great Lakes and their Inter-Connecting Channels. The plan addresses spills that impact Canadian waters from vessels in transit and during loading or unloading operations.

There are also binational contingency plans which provide for a coordinated and integrated response to pollution incidents in the Great Lakes system by designated federal, provincial, state and local agencies. These plans, the Canada–United States Joint Marine Pollution Contingency Plan and Canada–United States Joint Inland Pollution Contingency Plan, supplement national, provincial and regional plans of both countries.

Training and exercising is an important component of the preparedness and response framework in the Great Lakes-St. Lawrence River region. The Joint Marine Contingency Plan calls for a spill response exercise program developed around resource availability and the analysis of current risks. These exercises must be developed and documented cooperatively by the two countries and may include alerting or call-out exercises, table-top exercises, equipment deployment exercises, area exercises or other relevant activities. The plan does allow the joint exercises to be conducted in conjunction with required national exercise programs of the U.S. and Canada. Exercise goals may also be met through actual joint pollution responses. However, at a minimum, a table-top exercise must be carried out in the region at least once every two years. The Canadian Coast Guard and U.S. Coast Guard alternate hosting joint exercises and documenting lessons learned. The lessons learned, in turn, are taken into account when the Great Lakes annex to the Joint Marine Contingency Plan (CANUSLAK) is amended and updated. The counterpart to CANUSLAK, the CANUSCENT annex to the Joint Inland Contingency Plan, does not provide the detailed specifications found in its marine counterpart, but it does call for a similar two-year exercise cycle and binational inland planning efforts using a similar schedule.

All of these laws, programs, plans and inter-agency relationships provide a strong foundation for effective cooperation among the Great Lakes-St. Lawrence River jurisdictions in the event of a spill to the region's waters. Members of the response community cite various examples of spills which, while disastrous, were generally well handled by the principle agencies involved, including the Rouge River spill of 2002 and the Enbridge Pipeline spill of 2010. Although these were major spills with significant environmental consequences, professionals in the field believe the spill response efforts themselves were implemented quickly and smoothly.

At the highest level, the planning infrastructure and response framework are designed to handle a "worst case discharge" from a facility or vessel operating in or near the waters of the Great Lakes-St. Lawrence River basin and to mitigate or prevent a substantial threat of spills from these sources. Worst case discharges are defined differently by different agencies, with Transport Canada (TC) requiring its Level 4 response programs to be prepared to handle a spill of 10,000 cubic meters

(approximately 63,000 barrels or 2,640,000 gallons). The U.S. Coast Guard considers a worst case discharge for an onshore facility to be the largest foreseeable discharge in adverse weather conditions. For a vessel, it is the discharge, in adverse weather conditions, of the vessel's entire oil cargo. This may reach as much as 75,000 barrels (3,150,000 gallons or approximately 11,900 cubic meters) if the largest tank vessel currently operating on the lakes is considered. While the numbers differ somewhat between these definitions, both standards require that the spill response system be capable of handling extremely large amounts of oil. In addition, the planning process calls for a description of areas of special environmental, economic or cultural significance; delineates responsibilities of federal, state, provincial, local, and tribal agencies as well as those of facility and vessel operators; and details procedures for the coordination of response plans and equipment.

Spill reporting systems vary between the two countries. In the U.S., all spills are reported to the National Response Center (NRC) operated by the U.S. Coast Guard. In Ontario, spill reporting is handled by the Spills Action Centre (SAC), operated by the Ontario Ministry of the Environment. SAC also receives reports on behalf of Environment Canada (EC) as a one-window reporting centre for spills that fall under provincial and/or federal jurisdictions. Shore-based spills in Québec are reported to the Environmental Protection Operations Directorate, Québec, operated by EC. The spills are also reported to Urgence-Environnement, a 24 hour call line and task force operated by Québec's Environment Ministry. Marine spills along the upper St. Lawrence River are reported to the Montreal Marine Communications and Traffic Services Centre.

Initial spill reports provide an estimated amount of oil spilled, but the volumes recorded are those provided in the original reports to the notification center. Those reports often overestimate or underestimate the quantity of oil spilled, and multiple reports may be received that relate to the same spill. Thus, data from the spill reporting systems can be an unreliable source for any detailed analysis of oil spill volumes. Final reports on spill response actions, which would be a better source of data for analysis of spills and spill response in the region, are not summarized in a publicly available form that provides significant analytical data (including final spill volume), nor do they appear to be assembled into a common registry of incidents. Instead, they are maintained at individual agencies. One recommendation of this report is that U.S. and Canadian spill incident data not considered classified should be released to a regional agency such as the Great Lakes Commission to allow analysis and reporting of trends and conditions in and around the lakes. While spill frequency and volumes are probably similar to the national trends described in agency reports, the lakes are a sensitive enough resource to warrant consideration on their own.

While the overview provided above paints a relatively bright picture, budgets to support preparedness and response programs at all levels of government have been shrinking and threaten to compromise the programs that protect the region's waters from oil and hazardous materials spills. Agencies are being asked to do more with less and budget cuts have the potential to undermine the progress that has been made in the last 20 years. Budget cuts have been particularly dramatic in the past three to five years as states, provinces and the federal governments have struggled to keep programs going in the face of the economic recession that has occurred throughout the Great Lakes-St. Lawrence River region.

As an example, as part of federal budget cuts in Canada, the delivery model for the Environmental Emergencies Program of EC was dramatically changed in May 2012. Staffing in the EC Environmental Emergencies Program was reduced by 50% and all of the program's regional offices, including the Toronto office, were closed. One program staff person remains in each region to maintain relationships with provincial and regional agencies and to work with regulated industries. That person will support compliance efforts and spill awareness and preparedness at facilities, but

on a more limited basis than was previously possible. All other personnel have been relocated to Ottawa, Montreal or Gatineau. All future response activities will be coordinated through EC's office in Montreal. The budget for the Canadian Coast Guard is also being cut. Portions of response operations at the Canadian Coast Guard stations at Sarnia and Québec City are to be merged. Individual bases will stay the same, but management functions are being consolidated and moved to Montreal.

The state, provincial and federal governments in both the U.S. and Canada are continually faced with managing and maintaining effective programs in the face of budget constraints. Budgets need to be strengthened and maintained over time to ensure that state/provincial and federal agencies have the resources that they need to operate efficient and effective oil spill preparedness and response programs that provide maximum protection to the environment, economy and health of the region.

General Recommendations

(1) The lead federal and state/provincial response agencies in both countries should continue to develop and conduct exercises for the four spill types identified as priorities in this report.

a. Multi-jurisdictional exercises should continue to be conducted using scenarios involving a major release (e.g., "worst case discharge"[1]) due to vessel-based spills, facility-based spills, cold weather spills and pipeline spills to ensure coordination, effective communication, identification of research needs, and identification of personnel, technical assistance and overall resource needs.

b. These scenarios and exercises should involve all levels of government, contractors and industry participants as appropriate.

c. Larger exercises involving multiple states or both U.S. and Canadian participants should include invitations to other response entities not directly involved in the exercise. Representatives could choose to act as observers or play other roles. Their participation would be an opportunity for additional communication across jurisdictions and could improve the lessons learned process by providing opportunities for additional input and hands-on experience for a larger audience.

d. Information regarding exercises and other planned activities needs to be available for all agencies and organizations involved in spill response. A bulletin board service should be established on an accessible website where information about upcoming events in the region can be posted. These postings should include those from federal, state, provincial and local agencies as well as private sector hosted exercises.

e. Notification of exercise programs hosted by state and local agencies and industry should be provided to other states and federal agencies to ensure that they have an opportunity to participate.

(2) A comprehensive study of federal, state and provincial funding of programs for emergency preparedness and response is needed and should be conducted. This study should document funding history and trends at all levels of government and document funding needs and priorities to ensure that the region continues to be well protected from the threat of spills to the land and water of the Great Lakes-St. Lawrence River basin.

(3) The Task Force through this process has indentified the following priority funding needs and recommends that funding be enhanced for the following purposes:

a. Retaining or adding federal response agency personnel in or near remote or vulnerable areas to support regulatory activities, to promote familiarity with the geography, cultural and physical characteristics of the region, and to facilitate effective communication with state/provincial and local agencies

b. Creating and maintaining an inventory of response resources for use throughout the

[1] Worst case discharges are defined differently for each transport medium. For vessels, trucks and rail cars, a worst case discharge amounts to the loss of the entire cargo. Worst case discharges for oil storage and production facilities are calculated based primarily on oil storage tank sizes and well production capacities. Oil pipeline worst case discharges factor in pipeline capacity, time required to close control valves on a failed section of pipeline, and the volume of oil contained in the section of pipeline after valves have been closed.

region. The Environmental Information Exchange Network should be looked at as a potential partner for this effort, building on a current inventory project focusing on spill response resources in Michigan and Wisconsin.

c. Ensuring that state, provincial and federal spill response centers are staffed 24 hours per day 7 days a week to provide quick and efficient deployment of personnel and resources in the event of a spill.

(4) Maintaining strong regional and bi-national linkages between state, provincial and federal spill response partners/agencies through annual training, exercise, and/or regional team meetings to be better prepared for significant inter-jurisdictional spill events.

(5) Spill incident data not considered classified should be released to a regional agency such as the Great Lakes Commission to allow analysis and reporting of trends and conditions in the Great Lakes-St. Lawrence River basin. Data submission practices for all reporting agencies should be revised so that spill incident after-action report data for the region can be compiled and made readily accessible for analysis. Better organized and more complete information from incident after-action reports is needed to support more effective analysis and will assist decisionmakers throughout the region, allowing them to discern progress or lack thereof in the area of spill prevention, preparedness and response.

(6) Data regarding oil transportation in the region, in particular infrastructure and routing data (pipelines, shipping, rail and road), should be assembled into a regional planning framework for use by state, provincial and federal authorities. The data are important to understanding the movement of oil in the region and to help agencies at all levels of government prepare for emergencies.

(7) The Great Lakes Commission should establish the Emergency Preparedness Task Force as a standing Task Force or Committee in order to maintain a forum for dialogue and discussion between the Great Lakes States and Provinces as well as the main federal response agencies in both countries.

Pipeline Spill Preparedness and Response

Background

There is renewed awareness of the issue of pipeline spill preparedness and response in the Great Lakes–St. Lawrence River region, sparked by two spills that occurred in the summer of 2010, one outside of Marshall, Michigan and the other in Romeoville, Illinois. These incidents have captured the attention of the public and regulatory agencies and illustrate the vulnerability of the Great Lakes–St. Lawrence River region to environmental impacts from pipeline spills. The 2010 spills and the subsequent responses have also provided an opportunity for agencies to evaluate the state of preparedness and response within their agency/jurisdiction and to begin identifying areas where these programs can be improved.

An extensive network of pipelines traverses the Great Lakes–St. Lawrence River region. In the U.S. portion of the Great Lakes basin alone there are 293 pipelines that cover 5,833 miles (9,388 kilometers). Many of these pipelines carry oil and hazardous materials across the Canada/United States border. If one looks at the entire geography of the Great Lakes states the number of pipelines increases to 762 extending over 23,798 miles (38,300 kilometers).[2] There are approximately 45,000 miles (98,000 kilometers) of nationally regulated pipelines throughout Canada, overseen by the National Energy Board (NEB). Intra-province pipelines in Ontario and Québec are regulated separately. Total pipeline information for the provinces was not available for this report.

The rupture of the Enbridge pipeline on July 26, 2010, into Talmadge Creek (near Marshall, MI) caused the release of over 800,000 gallons of crude oil.[3] Talmadge Creek is a tributary of the Kalamazoo River, which in turn flows into Lake Michigan. The pipeline failure in Romeoville, IL, occurred on September 9, 2010 and released approximately 450,000 gallons of crude oil.[4] While Romeoville technically lies outside the Great Lakes basin, and the spilled oil flowed away from Lake Michigan rather than toward it, the pipeline that leaked is part of the same pipeline infrastructure, operator community and regulatory framework that exists throughout the region, both inside and outside the basin.

In the United States, the U.S. Department of Transportation's (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA), acting through the Office of Pipeline Safety (OPS), administers the national regulatory program to ensure the safe transportation of natural gas, petroleum, and other hazardous materials via pipeline. PHMSA develops regulations and other approaches to risk management to assure safety in design, construction, testing, operation, maintenance, and emergency response of pipelines. PHMSA is also responsible for issuing facility responde plans (FRPs) for pipelines. Since 1986, the entire pipeline safety program has been funded by a user fee assessed on a per-mile basis on each pipeline operator PHMSA regulates.

The National Transportation Safety Board (NTSB), in its report on the 2010 Enbridge pipeline incident in Marshall, Michigan,[5] indicated that PHMSA dedicates inadequate resources, including staff, to the review and oversight of pipeline FRPs. The report goes on to note PHMSA's regulatory requirements for response capability planning provide no specific guidelines for measuring the adequacy of a FRP. According to the NTSB report, unless PHMSA's reviews are thorough, the

[2] U.S. Department of Transportation – Pipeline and Hazardous Materials Safety Administration, 2011: "National Pipeline Mapping System". www.npms.phmsa.dot.gov

[3] U.S. EPA. Pollution/Situation Report #150, Kalamazoo River/Enbridge Spill – Removal Site #Z5JS. June 19, 2012.

[4] Estimate taken from U.S. EPA spill incident update site, http://epa.gov/region5/cleanup/romeoville/index.html

[5] National Transportation Safety Board. 2012. Enbridge Incorporated Hazardous Liquid Pipeline Rupture and Release, Marshall, Michigan, July 25, 2010. Pipeline Accident Report NTSB/PAR-12/01. Washington, D.C.

pipeline industry essentially determines for itself what constitutes an adequate response. Further, the report states that federal regulations do not provide clear requirements regarding repair versus remediation of pipeline defects, or for assessing pipeline integrity when certain types of defects are present.

While the U.S. federal government is primarily responsible for developing, issuing, and enforcing pipeline safety regulations, the pipeline safety statutes provide for state assumption of intrastate regulatory, inspection and enforcement responsibilities through an annual certification. To qualify for certification, a state must adopt the minimum federal regulations and may adopt additional or more stringent regulations as long as they are not incompatible. A state must also provide for injunctive and monetary sanctions that are substantially the same as those authorized by the federal pipeline safety statutes. Currently, three Great Lakes states are certified to regulate intrastate pipelines: Indiana, Minnesota and New York.

A state agency which does not satisfy the criteria for certification may still enter into an agreement to undertake certain aspects of the pipeline safety program for intrastate facilities on behalf of PHMSA. While the state agency under an agreement will inspect pipeline operators to ascertain compliance with federal safety regulations, any actual or suspected violations are reported to PHMSA for enforcement action.

In Canada, the National Energy Board (NEB) regulates interprovincial and international pipelines. It is NEB's responsibility to ensure that pipeline companies comply with regulations concerning the safety of employees and the public and the protection of property and the environment as they may be affected by the design, construction, operation, maintenance and abandonment of pipelines. To ensure that requirements are met, the NEB conducts audits, inspections and other compliance activities with pipeline companies in the areas of pipeline integrity, safety, emergency management, environmental protection and pipeline damage prevention.

An NEB regulated company is responsible for anticipating, preventing, mitigating and managing incidents of any size or duration. Each regulated company is required to file its up-to-date Emergency Procedures Manuals with the NEB. These manuals must outline the company's emergency management, environmental protection and worker and public safety procedures to be followed in the event of a pipeline-related incident. Additionally, companies are required to develop a training program and to conduct emergency response exercises to verify their capabilities to respond to incidents.

The NEB is authorized to sign Memorandums of Understanding (MOUs) with provincial government regarding certain aspects of pipeline safety, inspection and response. While no MOUs are currently in place in Ontario or Québec, the NEB does interact with provincial government to ensure proper coordination and communication in planning, response and cleanup. In Ontario this occurs through the REET (REET) process. The NEB is a regular participant in the REET meetings and in pipeline emergency response exercises that occur in the Great Lakes region.

In Ontario, pipelines that do not cross provincial boundaries are overseen by the Technical Standards and Safety Authority (TSSA), which enforces Ontario's Technical Standards and Safety Act of 2000. TSSA's roles include inspection of facilities and investigation of incidents. In the event of a major spill into the Great Lakes, the response would be a collaborative effort between the Ontario Ministry of the Environment, Canadian Coast Guard, Port or Seaway Authorities, EC, Emergency Management Ontario, the Ministry of Natural Resources and Conservation Authorities and local/municipal responders.

In Québec, pipelines that do not cross provincial boundaries are overseen by the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP) (Ministry of Sustainable Development, Environment and Parks). In event of a spill, its Urgence-Environnement service will lead the response in accordance with its Ministerial Emergency Plan.

Findings

Aging infrastructure throughout the oil pipeline network is a problem in both the U.S. and Canada. In the U.S., more than 50% percent of all hazardous liquid pipelines were installed prior to 1970, which makes them more than 40 years old.[6] Age alone, however, does not fully indicate the risk of a pipeline rupture. Factors such as type of material used, (e.g., cast iron, bare steel, copper, plastic), installation techniques, welding techniques, seam type, and whether corrosion preventatives were used will all impact the likelihood that a rupture might occur.

Pipelines are designed to carry a specific product, but pipeline companies do change products and operating parameters that can create additional challenges for agencies charged with regulating and inspecting the industry. In both the U.S. and Canada, pipeline companies must get prior approval to change products or to change operating pressure or reverse flow in a pipeline. These approvals are provided by PHMSA in the U.S. and the NEB in Canada.

Familiarity of pipeline routes is important to the understanding of the risks associated with pipeline operations in the Great Lakes-St. Lawrence River region. While individual agencies are aware of the location of pipelines under their jurisdiction, awareness across agencies, and therefore of the pipeline network as a whole, appears to be limited. The region covers a large geographic and climatological range and pipelines traverse many different types of terrain and land cover, including remote areas like northern Minnesota, populated areas like Northwest Indiana and unique areas such as the Straits of Mackinac between Michigan's Upper and Lower Peninsulas. U.S. EPA is conducting a risk assessment of petroleum pipelines, which is near completion and due to be published. This assessment will provide valuable insights to federal and state emergency management and response professionals and may highlight areas where information sharing can be improved.

An overarching goal for the region should be a strong federal/provincial/state partnership for pipeline safety preparedness and spill response that provides dedicated and consistent funding and encourages collaboration and leveraging of resources to ensure the maximum protection of the land and water resources of the Great Lakes–St. Lawrence River region.

Recommendations

(1)	PHMSA must participate as a regular partner with U.S.EPA and the Coast Guard in preparedness and response planning and exercising under OPA. Because PHMSA is not a response agency, its involvement in OPA-required planning and exercise programs is usually limited to participation in government sponsored or industry-led exercises through invitation. Similarly, Canadian exercises in the Great Lakes-St. Lawrence River basin must include the NEB along with other provincial and federal response organizations.
(2)	Exercise and planning efforts involving pipelines should be geared more toward High Consequence Areas (HCA) within the region. Exercises for "worst case discharges" should include pipeline spills in HCAs.

[6] PHMSA Hazardous Liquids Annual Data 2010. Available at http://phmsa.dot.gov/pipeline/library/data-stats

(3) Uniform, consistent and seamless protocols for pipeline inspection should be established at the state and provincial level and coordinated with PHMSA, the NEB and other federal response agencies. These protocols should be established through existing authorities where applicable. New legislative authorities should be pursued if the current authorities are deemed to be inadequate to provide maximum safety and protection of the public and the environment.

(4) The need for and the value of MOUs (or other formal mechanisms of cooperation) between the Great Lakes states and provinces, lead federal preparedness and response agencies and the NEB and PHMSA should be researched and evaluated to ensure that the lead federal agencies and the states and provinces are actively engaged in and properly informed about pipeline safety, preparedness and response within their jurisdictions.

(5) Pipeline contingency plans required by PHMSA need to be coordinated with other federal agencies doing contingency planning for vessels and facilities (e.g., U.S. EPA and U.S. Coast Guard) under OPA and communicated directly with the Federal On-Scene Coordinators (FOSCs) assigned to the geographic area in question.

(6) All of the Great Lakes States are encouraged to participate in the hazardous liquid pipeline safety program.

(7) Vulnerability assessments should be reviewed and refined by U.S. and Canadian agencies to determine areas in the Great Lakes-St. Lawrence River basin that are at high risk in the event of a pipeline spill due to ecology, location or accessibility to resources. Based on this assessment, the following actions should be considered:

a. Location-specific Geographic Response Plans should be developed for high risk areas

b. Pipeline-related planning and response exercises should be required that target those areas.

c. The adequacy of spill response resources located in those areas should be assessed and recommendations for deployment of additional resources should be developed. This process may be informed by the inventory development project currently underway in Michigan and Wisconsin with support from the Environmental Information Exchange Network. The Michigan-Wisconsin project should also be evaluated with regard to opportunities to expand this work into the entire Great Lakes-St. Lawrence River basin.

(8) Consistent and dedicated long-term funding from the U.S. and Canadian federal governments is necessary for implementing a more coordinated pipeline safety, preparedness and spill response program. Dedicated funding will be important to support a strong regional partnership and ensure that the risks of spills from pipelines are minimized through cooperation and sharing of planning resources.

Cold Weather/Under-Ice Spill Response

Background

The Great Lakes and the St. Lawrence River are located approximately between the 41st and 49th parallels north. Climatologically, water bodies in the region (including those as large as the Great Lakes) have the potential to be covered in ice for several months out of the year.

One of the concerns of emergency preparedness and response professionals at the federal, state, provincial and local levels is the challenge of responding to a cold weather spill that requires oil and/or hazardous substances to be recovered from on or under ice. Responding to a spill in ice conditions presents many challenges that are not present during warmer months of the year. Working through ice to recover oil, recovering oil from edge ice or from beneath ice sheets requires specialized training and equipment. Research and development of equipment and techniques is ongoing both in the U.S. and Canadian Arctic and on the Great Lakes.

Cold weather spills do occur in the Great Lakes – St. Lawrence River region and federal, state and provincial emergency response agencies routinely respond to oil spills during the winter months. Recent examples of cold weather spills include a tugboat spill in the Saginaw River in 2010, another tugboat spill near Grand Marais, Michigan in 2006, and a pipeline spill in the Nemadji River in 2003.

Findings

Response agencies in both the U.S. and Canada have recognized a need for more information, more resources and more work (i.e., training and exercising) to improve response capabilities in winter.

Cold weather spill response operations, in particular those involving ice, are fundamentally different from operations in open water and milder temperatures. The differences must be recognized to help responders determine the most appropriate strategy for recovering oil. This includes understanding the properties of oil in cold weather to inform the response strategy in conditions of freeze up, full ice and ice break up. While studies have been conducted by researchers in government, academia and the private sector, much of this research has focused on cold weather response in the maritime waters of Alaska and the Arctic region. This information is relevant for the Great Lakes – St. Lawrence River but many of the tools and spill response techniques need to be tested in the freshwater environment of the Great Lakes.

Time of year is an important factor in response in several ways. Extreme weather can make a spill response very difficult if not impossible and response actions will be delayed if responder health and safety are deemed to be at risk. Shorter days allow less time for response activities and may hinder initial assessments if the spill occurs in the late afternoon or early evening. Along tributaries and near-shore areas, fuel oil spills from seasonal homes can be an issue as owners are not always present and spills can go undetected as a result of their absence.

Knowing and understanding the traffic patterns of vessels is important when developing a cold-weather spill response regime. In winter months, there is much less vessel traffic than during the traditional shipping season, but vessels are still present and the movement of vessels in winter months needs to be tracked and documented.

The effects of climate change on the ice conditions of the Great Lakes and St. Lawrence River need to be better understood. Ice cover on the Great Lakes has declined 71% since 1973 according to a recent study published in the Journal of Climate by researchers at NOAA's Great Lakes

Environmental Research Laboratory.[7] The biggest change in ice coverage during the 1973 – 2010 time period occurred on Lake Ontario, which saw an 88% decline. During the same time period, Superior lost 79% of its ice cover, Michigan lost 77%, Huron lost 62%, and Erie lost 50%. The loss of ice is due to warming of the lake waters. Agencies will need to be aware of how these changes affect their planning and response capabilities. For instance, lake warming and reduced ice cover may allow authorities to extend the navigation season each year or open the St. Lawrence Seaway earlier in the spring if cover continues to decline.

Having adequate resources for a response can be challenging at any time of the year, but lack of resources (i.e., insufficient personnel and equipment) may be especially significant in winter. Access to remote locations is more difficult, with some stations closed or operating with reduced personnel. Specialized equipment may be required but available only in limited quantities. Austere budgets can hamper necessary training and professional development. Field training, for example, is often postponed or eliminated when budgets are tight. Regular cold weather field exercises are extremely important to ensure that responders are as prepared as they can possibly be for the challenges of a cold weather response. Budgets and resource requirements need to be reviewed and evaluated on a regular basis.

To enhance the region's understanding of the challenges of cold weather spill response, the U.S. Coast Guard recently began a project, with support from the Great Lakes Restoration Initiative (GLRI) to assess current cold weather spill response capabilities and identify operational performance gaps. The design of the overall project will leverage the needs and requirements of both Arctic and Great Lakes environments in order to identify equipment and techniques that would work in both locations to recover spilled oil. The first in a series of planned on-water exercises was held in mid-April 2011 in the St. Marys River near Sault Ste. Marie. During this exercise, a select group of Oil Spill Response Organizations (OSROs) had the opportunity to demonstrate selected equipment with potential for use in ice-infested waters. The U.S. Coast Guard held a second field exercise in the Straits of Mackinac during the week of January 23, 2012. Results from this exercise were recently released in draft form and will further inform cold weather response in the region.

A goal for the region should be the refinement and continuation of federal, state and provincial cold weather preparedness and response programs that provide maximum protection of the water resources of the Great Lakes – St. Lawrence River, supported by research, training, exercising and consistent regulations and protocols across jurisdictions.

The following recommendations are presented to help guide the further development of cold weather response programs in the Great Lakes-St. Lawrence River region.

Recommendations

(1) Reliable, consistent and adequate long-term financial support at the federal, state and provincial levels is necessary for implementing and maintaining cold weather preparedness and response programs. Specific funding priorities in this area include:

a. Support for a cooperative federal/state/provincial training program that occurs on a rotational basis between the states and provinces to ensure that state and provincial

[7] Wang, Jia, Xuezhi Bai, Haoguo Hu, Anne Clites, Marie Colton, Brent Lofgren, 2012: Temporal and Spatial Variability of Great Lakes Ice Cover, 1973–2010*. J. Climate, 25, 1318–1329. doi: http://dx.doi.org/10.1175/2011JCLI4066.1

agency staffs are well trained and prepared for cold weather emergencies.

b. Support for the U.S. Coast Guard and Canadian Coast Guard to continue regular exercises for under ice spills. These exercises should include the involvement of state and provincial agencies based on the geographic location of the exercises.

c. Support for scientific study and research related to cold weather spill response that specifically addresses large bodies of fresh water such as the Great Lakes.

d. Increased investment in research to help improve the ability to reliably detect and map oil in ice conditions.

(2) The protocols and procedures for cold weather response programs at the federal, state and provincial levels should be periodically reviewed by the two Coast Guards and revised as necessary.

(3) The RRTs for Regions 2, 3 and 5 should continue (or reestablish) their Science and Technology and Planning Committees to evaluate protocols, agreements and pre-approvals for response measures in cold weather/under ice conditions. The RRTs should regularly evaluate whether regulations are flexible enough to allow the use of all possible response tools and techniques for under-ice response. EC, the Canadian Coast Guard and/or the REETs should assume a similar role in Canada.

Oil and Hazardous Materials Spills from Vessels

Background

There are over 130 cargo vessels operating on the Great Lakes[8], as well as numerous commercial fishing boats, research vessels and pleasure craft. Some of the larger ships carry hundreds of thousands of gallons of diesel fuel or bunker C fuel oil. In addition, most of the tankers and many of the tank barges operating on the lakes are capable of carrying millions of gallons of product. A vessel accident could produce a major oil spill on the Great Lakes.

Analysis of recent spill data indicates that spills from vessels have decreased over time. Statistics from the Oil Spill Compendium maintained by the U.S. Coast Guard show that oil spills from vessels into Great Lakes waters have decreased in both frequency and volume over the last 20 years. Trends in Canadian waters are presumed to be similar. A report by the Auditor General of Canada on oil spills from ships[9] included several recommendations addressed to Canadian agencies but relevant to the Great Lakes as a whole. These recommendations relate to such things as the importance of conducting and updating risk assessments and emergency management plans, the importance of vessel-related spill response exercises, the importance of sharing lessons learned from these exercise and documenting the results of actual spill reponses.

Spill response in the U.S. and Canada is guided by several sets of legislation and associated planning efforts. At the international level, both the U.S. and Canada have ratified the International Convention for the Prevention of Pollution from Ships (MARPOL), which was developed by the International Maritime Organization in the 1970s. MARPOL includes regulations aimed at preventing and reducing oil pollution from ships, including limitations on oil discharges, mandatory oil and oily waste handling practices, and requirements for Shipboard Oil Pollution Emergency Plans (SOPEP). These plans do not necessarily address response strategies for a spill, but they do provide guidance to the vessel's officers regarding onboard emergency procedures. Although provisions of MARPOL allow limited release of petroleum products into some maritime waters, no releases are allowed into the waters of the Great Lakes.

In the U.S., primary guidance for oil spill response is provided by OPA and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). OPA expanded spill-related provisions in the CWA, consolidated existing federal laws related to oil spills, and created additional requirements related to oil spill prevention and response. It also broadened the planning and response system under the NCP. As a result of OPA, the U.S. federal government's role in spill response and cleanup was expanded and strengthened. Authority for implementing the provisions of OPA and the NCP in U.S. waters lies with the U.S. Coast Guard.

In Canada, vessel spill response is guided by the Canada Shipping Act and the Marine Liability Act, which establishes Canada's Marine Oil Spill Preparedness and Response Regime. Three federal agencies play the lead roles in oil spill prevention and response in Canadian waters: Transport Canada, the Canadian Coast Guard and EC. Transport Canada sets and maintains the regulatory framework for preparedness and response to ship-source spills, and also certifies private sector response organizations. The Canadian Coast Guard is the lead federal agency conducting responses

[8] Know Your Ships 2012: Guide to Boats & Boatwatching on the Great Lakes & St. Lawrence Seaway; Marine Publishing Company Inc., 317 South Division Street #8, Ann Arbor MI 48104. 2012.
[9] Fall 2010 Report of the Commissioner of the Environment and Sustainable Development, Chapter 1. Office of the Auditor General of Canada, 2012. ISBN 978-1-100-17244-6.

to spills and also maintains some equipment for use in response, including depots in the Great Lakes-St. Lawrence River basin.

EC coordinates the REETs and provides environmental, ecosystem and weather data, trajectory modeling and other support.

In Québec, if a vessel spill reaches the shores or threatens to reach them, MDDEP's Urgence-Environnement service will lead the response on the land, notably for fresh water sources and the management of wastes (hazardous or not).

Support for vessel contingency planning is available through the International Tanker Owners Pollution Federation (ITOPF). While this organization does not develop conventions or produce regulatory documents, it is a valuable source of information and support for contingency planning, data and investigative services.

Recreational vessels are another potential source of spilled oil. While the volume of fuel carried by the majority of these boats is miniscule compared to the fuel capacity of a large commercial vessel, there are estimated to be over 900,000 of them operating on the Great Lakes and they can and do cause spills of gasoline, oil and diesel fuel. The cumulative effects of these spills may have impacts, particularly in environmentally sensitive areas.

Sunken and abandoned vessels may also pose a threat to the Great Lakes and St. Lawrence River ecosystem. As these vessels corrode and decay oil and/or other hazardous materials may be released. In some cases, oil on board is released in small amounts over long periods, causing episodic environmental incidents. In other cases, cargo holds or fuel tanks may collapse or rupture, causing the release of significant amounts of oil at one time. Sunken vessel recovery programs and policies for retrieving and disposing of abandoned vessels are receiving more attention in the U.S. and at the international level and are also an issue in the Great Lakes.

Thousands of sunken vessels along the shorelines of the United States and Canada have been identified as potential threats to the environment because of hazardous cargoes, presence of munitions, or bunker fuel oils left on board when the vessel was lost. Recent incidents have heightened concerns about the potential environmental hazards they pose. In 2002 for instance, the decaying wreck of the S.S. *Jacob Luckenbach* was indentified as the source of recurring oil pollution that killed thousands of seabirds and other aquatic life along the California coast. Once the *Luckenbach* was identified as the source of the spill, the National Oceanic and Atmospheric Administration (NOAA), the U.S. Coast Guard and other agencies teamed up to remove the approximately 100,000 gallons of oil remaining in the wreck. Other similar incidents and removal efforts have occurred off the coasts of Hawaii and Alaska in recent years.

Because of the large number of potential threats and limited financial resources for response and recovery, NOAA has conducted risk assessments focusing on those sunken vessels that are most likely to contain harmful quantities of oil and hazardous materials. An initial evaluation of shipwrecks located within American waters conducted by NOAA found that approximately 600-1,000 wrecks could pose a potential substantial pollution threat based on the age, type and size of the vessel. Of these, five have been identified as potentially posing threats to the Great Lakes. One barge, the Argo, was classified as medium priority based on the NOAA model. The Argo sank in the western portion of Lake Erie and is believed to hold as much as 4,762 barrels of oil. The wreck has not been located to date but is known to lie very near the U.S.-Canada border.[10] Locating and

[10] Symons, Lisa C. NOAA's Remediation of Underwater Legacy Environmental Threats (RULET) Database & Wreck Oil Removal Program (WORP). Presentation to the Region 5 RRT. June 18, 2012.

properly handling this threat may require the participation of both Coast Guards. Anecdotal accounts of abandoned but not yet sunken vessels on the lakes indicate that they pose a threat as well.

Findings

Cargo vessels are a vital economic force in the Great Lakes region, but carry with them the potential to cause a massive oil spill. While federal legislation in the U.S. and Canada created a number of important regulations to help reduce the risk of large oil spills to the lakes, implementation and enforcement of these regulations requires personnel, equipment and expertise. Monitoring and enforcement agencies in the Great Lakes, including the U.S. Coast Guard, U.S. EPA, Transport Canada, Canadian Coast Guard and EC, need sufficient resources to carry out their assigned tasks. At the same time, vessel operators and others involved in commercial transport on the lakes, such as tugboat operators and harbor personnel, must be aware of current emergency procedures in the event of a spill.

A goal for the region is the continued reduction of the number and volume of oil spills from vessels on the Great Lakes while maintaining an active fleet of commercial vessels and pleasure craft.

The following recommendations are presented to help guide the further development and refinement of programs to help achieve this goal in the Great Lakes-St. Lawrence River region.

Recommendations

(1) Funding for agencies involved in vessel-related spills in the Great Lakes, including the U.S. Coast Guard, U.S. EPA, Transport Canada, Canadian Coast Guard and EC, should be enhanced to ensure that marine transportation in the Great Lakes-St. Lawrence River system is as safe as possible. Specifically, funding is needed for the following priorities:

a. Ensuring an adequate number of personnel are available for vessel inspection and enforcement actions to ensure compliance with relevant state, provincial and federal programs.

b. Conducting risk assessments and updating emergency management plan requirements for vessels.

c. Training and exercising of both agency and company personnel, including binational and multijurisdictional activities that share lessons learned and improve preparedness and response functions aboard vessels.

d. Supporting risk assessments of sunken and abandoned vessels that might pose a threat to public health and/or the environment.

e. Supporting recovery and salvage operations for any sunken or abandoned vessels in the Great Lakes determined to be of medium or high risk to public health or the environment by the governments of the U.S. or Canada.

(2) The U.S. and Canadian Coast Guards should review and evaluate current spill preparedness and response education and training requirements for operators of commercial vessels in the Great Lakes- St. Lawrence River. These programs and requirements should be improved and modified as necessary.

(3)	Vessel spill response exercises involving multiple jurisdictions and shipping companies should be carried out on a regular basis to ensure the broadest possible information sharing and collaboration between the public and private sectors.
(4)	Shipping routes in the Great Lakes should be reviewed with respect to environmental vulnerability. Small changes in some shipping routes should be considered as a way to reduce risk in certain highly sensitive areas.Spill Preparedness and Response at Shore-based Oil Handling Facilities

Spill Preparedness and Response at Shore-based Oil Handling Facilities

Background

There are a variety of facilities along the shores of the Great Lakes, their connecting channels and their major tributaries that handle petroleum products in large quantities. These include refineries, oil storage facilities and ports, as well as powerplants and manufacturing plants. In the event of an oil spill at one of these facilities, the appropriate national reporting system is notified and a local response is initiated. Local responders assessing the spill may at any time request that the response be elevated to the district, regional or federal level as necessary.

Spill response planning in the region takes place at all levels as mandated by OPA and the Canada Environmental Protection Act of 1999 (CEPA). This includes Facility Response Plans (FRPs) for individual facilities, state and provincial plans administered by a designated agency, and contingency plans administered by one of several federal agencies based on each agency's jurisdiction. In the U.S., the Great Lakes basin is part of three U.S. EPA Regions (Region 2 (New York), Region 3 (Pennsylvania) and Region 5 (the remaining Great Lakes States)). The region is covered by the U.S. Coast Guard 9th District. In Canada, the Great Lakes are covered by the Ontario Region of EC, the Ontario Region of Transport Canada, and the Central and Arctic Region of the Canadian Coast Guard. State/provincial and federal interactions are ensured through the RRTs in the U.S. and the REETs in Ontario. At the international level, the U.S. and Canada have cooperated under the Great Lakes Water Quality Agreement to develop the Joint Inland Contingency Plan (JICP) and the Joint Marine Contingency Plan (JMCP). An annex to the JICP, CANUSCENT, covers the land and river boundaries of the central U.S. and Canada. An annex to the JMCP, CANUSLAK, covers the open waters of the Great Lakes.

In the U.S., FRPs are required of oil handling facilities based on the facility's size and type of operations. U.S. EPA regulations call for facilities to have an FRP if the facility has a total oil storage capacity greater than or equal to 42,000 gallons (159,000 liters/159 m^3) and transfers oil over water to or from vessels. An FRP is also required if a facility has a total oil storage capacity greater than or equal to one million gallons (3,785,000 liters/3,785 m^3) and meets any of several conditions: (1) Not having secondary containment that is large enough to contain the full capacity of the largest aboveground oil storage tank plus sufficient freeboard to allow for precipitation; (2) Being located geographically near a body of water such that a discharge from the facility could cause "injury" to fish, wildlife, and sensitive environments; (3) Being located geographically such that a discharge from the facility would shut down a public drinking water intake; and/or (4) Having had an oil spill in an amount greater than or equal to 10,000 gallons within the past five years.

In Canada, facilities transferring oil over water are required to have an Oil Pollution Emergency Plan that meets standards set by Transport Canada. Planning requirements are based on the facility's maximum oil transfer rate, beginning with Level 1 facilities. These can transfer up to 150 m^3/hr (39,625 gallons/hr) and have a spill response plan in place for handling spills of 1 m^3 (264 gallons) or more. Level 2 facilities can transfer up to 750 m^3/hr (198,129 gallons/hr) and have a minimum spill planning size of 5 m^3 (1,320 gallons). Level 3 facilities can transfer up to 2000 m^3/hr (528,344 gallons/hr) and have a minimum spill planning size of 15 m^3 (3,963 gallons). Level 4 facilities can transfer over 2000 m^3/hr (528,344 gallons/hr) and have a minimum spill planning size of 50 m^3 (13,209 gallons). Response plans must be developed for each single product loaded or unloaded to or from a ship.

Once an FRP is approved and in place, regulating agencies stage unannounced exercises approximately every three years to test all aspects of the facility's readiness to respond to a spill, including procedures, equipment and personnel resources. Similar planned but announced exercises are carried out by agencies throughout the region as part of examining the agencies' own plans and capacities. Some exercises deal with a hypothetical spill from a facility, while others may involve a different type of spill source but are designed around a large enough event to engage facility personnel.

In addition to response preparedness requirements, OPA and CEPA establish financial responsibility requirements for facilities. In the U.S., an onshore facility may be liable for up to $350,000,000. In Canada, penalties may include fines up to $1 million per day for each day an offense continues, with no maximum total amount specified.

It is unclear which elements of facility operations have been most affected by these regulations, or which practices have been most heavily influenced, but the number and volume of spills from facilities by year has decreased significantly since OPA and CEPA were passed. Nonetheless, large spills from facilities still occur, including one in the Great Lakes region in 2002, demonstrating that facilities remain potential sources of a major spill.

Findings

Personnel and training resources are a significant issue for spill response in the Great Lakes region. Operators of shore-based refining and manufacturing facilities should be familiar with the requirements of regulatory programs and what is needed to comply with them. They also need to be familiar with the spill response plans established for their facility and trained in the techniques called for in those plans. Relationships between the regulatory agencies and the regulated community are generally good and well-established. Nonetheless, implementation of monitoring and enforcement programs by the responsible agencies requires personnel, equipment and expertise. These agencies must be provided with sufficient resources in all three of these areas in order to carry out their assigned tasks.

In addition to changing regulations, changes to the economy of the Great Lakes region appear to be having an impact on the frequency, severity and type of spills from shore-based facilities. While regulations implemented through OPA and CEPA have helped reduce oil spill pollution, there are also fewer facilities in operation than in the past and thus a smaller number of active potential spill sources. Instead, the region is now a host to both active facilities and a number of closed facilities that are a source of legacy pollution. Legacy pollution has become more of a concern over time, including in formally declared Areas of Concern (AOCs) and at individual brownfield sites throughout the region.

One complicating factor with these legacy sites is the combination of the types of contaminants found there, including both oil products and other, non-oil hazardous materials. Response and cleanup efforts in the U.S. in particular have been hampered at times because of restrictions on the use of two of the largest sources of cleanup funds, the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Oil Spill Liability Trust Fund (OSLTF). There are legislative gaps that may need to be addressed to ensure maximum flexibility for the use of these two funds by regulatory agencies for response and cleanup of spills, especially from legacy sites. CERCLA limitations on cleanup of petroleum products and OSLTF restrictions against the use of funds where hazardous materials other than oil are present[11] means cleanup efforts are hampered

[11] Oil Spill Liability Trust Fund (OSLTF) Funding for Oil Spills. U.S. Coast Guard Publication NPFCPUB 16465.2. January 2006

where oil is mixed with hazardous chemicals and non-petroleum based wastes. These restrictions have made it difficult for response agencies to use these important programs to fund clean ups in incidents where both discharges of oil and discharges of hazardous materials have taken place in the past, even if the oil spill was a separate event.

An additional challenge, not addressed by facility regulations and monitoring, is non-point source pollution discharges. These usually involve smaller volumes of material, but they can be complex and difficult to resolve. Also, if allowed to continue over time, they can result in significant amounts of oil in the environment.

Finally, wastewater treatment plants are not technically oil handling facilities and not considered in the regulations described above. However, when plants located near major tributaries or the lakeshore are overwhelmed by heavy flows that include materials from what would otherwise be an inland spill event, untreated contaminants, including oil, can be released into open water.

A goal for the region is the continued reduction of the number and volume of oil spills from facilities on the Great Lakes, the connecting channels and the St. Lawrence River.

The following recommendations are presented to help guide the further development and refinement of programs to help achieve this goal and improve the understanding of facility-based spill sources in the Great Lakes-St. Lawrence River region.

Recommendations

(1)	Reliable, dedicated and long-term funding at the federal, state and provincial levels must be available to support adequate inspection and enforcement of regulations at all facilities throughout the Great Lakes-St. Lawrence River region. Specific funding priorities include: a. Funding for sufficient inspection and enforcement personnel for spill response and emergency management agencies to ensure compliance with relevant regulations at all facilities. b. Reliable and accessible funding for cleaning up spills in heavily polluted waterways and spills from legacy sites.
(2)	In the U.S., agency and jurisdictional authorities should be reviewed to confirm areas of responsibility and to ensure that shore-based facilities are being properly inspected by the appropriate agency or agencies.
(3)	There is a need to address the gap in programmatic authority for cleanup of spills containing a mixture of oil and non-petroleum chemicals and other wastes. For instance, neither the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) nor the Oil Spill Liability Trust Fund (OSLTF) funding provisions allow for cleanup of spills at certain sites that contain a mixture of oil and other substances.
(4)	A study of the amount of oil and other contaminants reaching the Great Lakes-St. Lawrence River from repeated combined, storm and sanitary sewer overflows should be conducted and recommendations provided on how to reduce these inputs to Great Lakes-St. Lawrence River system.

(5)	There is a need to develop a response strategy for heavily polluted waterways in the Great Lakes-St. Lawrence River basin, due to the unique challenges associated with spill reporting and response in these areas.
(6)	The Great Lakes Commission should compile a comprehensive list of facilities cross-referenced by regulatory jurisdiction, industry type, industry classification, among others, to delineate inspection schedules and response authorities to ensure that there are no gaps in inspections and clear lines of communication and responsibility in the event of a spill.

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Appendix C: Acronyms

Acronym	Definition
ACP	Area Contingency Plan
CANUSCENT	Central Region annex to the Canada-United States Joint Inland Pollution Contingency Plan
CANUSLAK	Great Lakes annex to the Canada-United States Joint Marine Pollution Contingency Plan
CCG	Canadian Coast Guard
CEPA	Canada Environmental Protection Act of 1999
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COA	Canada–Ontario Agreement
CWA	Clean Water Act
DOT	U.S. Department of Transportation
EC	Environment Canada
EPA	Environmental Protection Agency
FOSC	Federal On-Scene Coordinator
FRP	Facility Response Plan
GLNPO	Great Lakes National Program Office
GLRI	Great Lakes Restoration Initiative
ICS	Incident Command System
ITOPF	International Tanker Owners Pollution Federation
JICP	Joint Inland Contingency Plan
JMCP	Joint Marine Contingency Plan
LaMP	Lakewide Management Plan
MARPOL	International Convention for the Prevention of Pollution from Ships
MDDEP	Ministry of Sustainable Development, Environment and Parks
MOU	Memorandum of Understanding
MSP	Ministry of Public Security
NCP	National Oil and Hazardous Materials Contingency Plan

NEB	National Energy Board
NOAA	National Oceanic and Atmospheric Administration
NRC	National Response Center
OPA	Oil Pollution Act of 1990
OPS	Office of Pipeline Safety
OSLTF	Oil Spill Liability Trust Fund
OSRO	Oil Spill Response Organization
PHMSA	Pipeline and Hazardous Materials Safety Administration
RAP	Remedial Action Plan
RCP	Regional Contingency Plan
REET	Regional Environmental Emergencies Team
RMS	Response Management System
RRT	Regional Response Team
SOPEP	Shipboard Oil Pollution Emergency Plans
TC	Transport Canada
TSSA	Technical Standards and Safety Authority
U.S.	United States

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STATUS OF OIL SPILL PREPAREDNESS AND RESPONSE PROGRAMS IN THE GREAT LAKES – ST. LAWRENCE RIVER BASIN

A Report of the
Emergency Preparedness Task Force

To the
Great Lakes Commission

September 2012

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Introduction

The Great Lakes – St. Lawrence River region produces, refines and transports substantial quantities of oil and natural gas, and produces, transports and disposes of many different types of hazardous materials. The production, use, disposal and transport of these substances creates the potential for spills to occur, some possibly having significant consequences.

Several spills that occurred in 2010, both inside and outside the Great Lakes – St. Lawrence River region, have heightened the awareness of the importance of spill preparedness and response with public officials and the general public. The much-publicized spill in the Gulf of Mexico, along with pipeline spills in Marshall, Michigan, and Romeoville, Illinois, refocused attention on the Great Lakes – St. Lawrence River region's level of preparedness and ability to respond to and prevent oil and hazardous material spills.

The Great Lakes and St. Lawrence River are highly vulnerable to spills from ships, pipelines and land-based facilities. The Great Lakes and the St. Lawrence River form relatively closed freshwater system, a series of large lakes with lengthy water retention times. For instance, the water retention time (the overall mean time that water entering a lake tends to remain in that lake) for Lake Superior is 191 years.

The Great Lakes – St. Lawrence River basin is a fragile, highly sensitive ecosystem (especially along the nearshore areas) that includes a thriving sport fishery and some of the most productive freshwater wetlands in the world. The Great Lakes – St. Lawrence River region is home to numerous thriving metropolitan areas that support large population centers. The bi-national region makes up nearly 36 percent of the population of both countries, and if the eight state-two province region stood alone as a country, it would represent the 2nd largest economic unit on the earth, second only to the United States. More than 40 million U.S. and Canadian residents receive their drinking water from the Great Lakes or the St. Lawrence River.

These facts, coupled with the added difficulties of containing spills under ice or spills of water-soluble toxics, accentuate the vulnerability of the Great Lakes – St. Lawrence River system and its precious water resources. A spill of any magnitude has the potential to create significant environmental, human health and economic harm.

At its 2010 Annual Meeting, held October 7-8 in Toronto, Ontario, the Great Lakes Commission convened a panel session on Oil and Hazardous Material Preparedness and Response in the Great Lakes – St. Lawrence River Region. The Great Lakes – St. Lawrence Commissioners were interested in hearing from the panelists about the state of preparedness and response in the region, hearing lessons learned regarding the Enbridge Pipeline Spill near Marshall, Michigan, which occurred in July 2010, and beginning a dialogue about identifying opportunities for improving preparedness and response in the region.

During its business session on October 8, 2010, the Great Lakes Commission voted to establish an Emergency Preparedness Task Force comprised of representatives from the Great Lakes – St. Lawrence states and provinces. This Task Force, formed in mid-2011, was charged with following tasks:

(1) Review the status of emergency preparedness response programs and regulations to document consistency and uniformity of state and provincial programs.

(2) Review the adequacy of federal preparedness and response programs.

(3) Review previous Great Lakes Commission policy in the area of emergency preparedness and response and make recommendations to the Commission for improving and enhancing the region's preparedness and response capabilities in order to better protect the land and water resources of the Great Lakes – St. Lawrence River region.

(4) Develop (if applicable) a policy statement for the Commission to consider for communicating to the two federal governments and the U.S. Congress.

This report addresses the first charge of the Task Force by summarizing the preparedness and response framework in the United States and Canada as well as state/provincial and local responsibilities for preparedness and response.

Preparedness and Response Framework in the Great Lakes – St. Lawrence River Basin

There are numerous federal laws in both the United States and Canada aimed at preventing and responding to oil and hazardous material spills in order to protect the environment and public health and safety. Historically, these laws have been passed following significant spill events that prompted a response from Congress and Parliament to ensure that the United States and Canada are well-protected in the event of a spill or release to the land, air or water resources of the two countries.

In the United States, Congress passed the Federal Water Pollution Control Act of 1972, often referred to as the Clean Water Act (CWA), in response to numerous water quality-related problems that were occurring throughout the country. With regard to spill preparedness and response, the CWA authorizes the federal government to recover the value of lost or damaged natural resources from those parties responsible for a spill or incident. In 1988, in response to the Exxon Valdez oil spill in Prince William Sound, Alaska, Congress enacted the Oil Pollution Act of 1990 (OPA), which amended the CWA and provides additional protection requirements for companies and facilities involved in the production, storage and transportation of oil, including new provisions applicable to onshore oil facilities and operations.

In Canada, federal laws also govern spill preparedness and response, including the Transportation of Dangerous Goods Act, the Canadian Environmental Protection Act, the Fisheries Act, the Canada Water Act, the Canada Shipping Act, the Migratory Birds Convention Act and the Species at Risk Act, among others. These federal acts provide the foundation for numerous important national and regional plans developed to protect Canada's land, water and wildlife resources and to ensure the protection and safety of the public.

There are also state and provincial laws regarding preparation for and response to a spill within that jurisdiction, and regional, national and international plans which describe the relationship between federal, state and provincial programs and between the two federal governments along international boundaries.

Individual summaries of state and provincial programs are provided in detail later in this report. Descriptions of the various national, international and regional contingency plans follow in this section.

Through the various important laws and regulations in the United States and Canada, there is an established formal relationship between preparedness and response programs on the local, state, provincial and federal levels that is enacted through various contingency plans. These plans provide the framework for the preparedness and response programs in the Great Lakes region.

In the United States, federal law has established the National Response System, a framework that provides guidance and procedures for preparing for and responding to discharges of oil and hazardous substances. This guidance comes in the form of contingency plans, which in the Great Lakes – St. Lawrence River basin are multi-tiered from the national level to the regional level and then to the state level. The system also incorporates a joint contingency plan with Canada. The three levels of contingency plans under the U.S. National Response System are the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), Regional Contingency Plans (RCPs), and Area Contingency Plans (ACPs).

National, Regional and Area Contingency Plans

The United States Environmental Protection Agency (U.S. EPA) developed the National Oil and Hazardous Substance Pollution Contingency Plan (NCP) in accordance with the provisions of the CWA. The NCP outlines the development of the RCPs and ACPs, and defines how the U.S. EPA will implement the requirements of the CWA and the OPA. Specifically, Section 300.41 of the NCP states that RCPs shall be prepared for each standard federal region. RCPs are designed to coordinate timely and effective response among the Federal On-Scene Coordinators (OSCs), Remedial Project Mangers (RPMs), various federal agencies, state and local representatives, and other organizations, with the goal of minimizing spill damage. The RCP must be consistent with the NCP. Area plans, state plans, and Local Emergency Planning Commission (LEPC) plans should be consistent with the RCP.

Executive Order 12777 assigns the authority to develop ACPs to U.S. EPA for inland areas and U.S. Coast Guard for the navigable waters of the U.S. Each ACP should be adequate to facilitate the removal of a "worst case discharge" from a facility or vessel operating in or near the Area and to mitigate or prevent a substantial threat of such a discharge in the Area. All ACPs must describe areas of special environmental, economic or cultural significance; outline the responsibilities of federal, state, local and tribal agencies and facility and vessel operators in planning and response; and detail procedures on the coordination of response plans and equipment.

A U.S. EPA Region may also designate sub-areas within the Region to augment planning efforts at the local level. Sub-area plans expand upon the contingency and response requirements set forth in the Region's ACP, augmenting coordination with state and local authorities and integrating existing state, local and private sector plans for the Sub-area. Area and sub-area contingency plans are prepared with the involvement of the local, state and federal governments, as well as with natural resource trustees. Natural resource trustees are federal, state, or tribal officials who act on behalf of the public for resources under their jurisdiction. They are important to contingency planning because they often have special knowledge about areas where oil might be spilled and resources that might be affected.

U.S. Coast Guard Region 9 is responsible for spill planning and response in the U.S. waters of the Great Lakes and St. Lawrence River. Inland portions of the region include parts of three U.S. U.S. EPA Regions; Region 5 (Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin), Region 3 (Pennsylvania) and Region 2 (New York).

Great Lakes Water Quality Agreement

The Great Lakes Water Quality Agreement (GLWQA) is a formal commitment on the part of the United States and Canada to resolve a wide range of water quality problems facing the Great Lakes and St. Lawrence River. First signed in 1972, the GLWQA was formally amended in 1978 and 1987. It is currently under review by the two countries and scheduled to be revised again in 2012. Annexes

4-6 and 8 address discharges of oil and hazardous polluting substances from vessels, discharges of vessel wastes, other pollution from shipping sources, and discharges from onshore and offshore facilities. Annex 9 of the GLWQA calls for the development of a joint contingency plan that provides for a coordinated and integrated response to pollution incidents in the Great Lakes system by responsible federal, provincial, state and local agencies. The plan supplements national, provincial and regional plans of the two governments.

National Marine Spill Response Plan

Canada's National Marine Spill Response Plan was prepared by the Canadian Coast Guard to address marine emergencies for the Great Lakes and their interconnecting channels. The plan addresses spills that impact Canadian waters from vessels in transit and during loading or unloading operations.

Canada – United States Joint Marine Pollution Contingency Plan and Joint Inland Pollution Contingency Plans

The Canada – U.S. Joint Marine Pollution Contingency Plan and Joint Inland Pollution Contingency Plans were developed to provide a coordinated system for responding to discharges or the threat of discharges of pollutants in areas of shared interest between Canada and the United States. Regional annexes have been developed to supplement these national plans by providing more detailed information and strategies for smaller geographic areas. The CANUSLAK Annex (Annex 1) deals with the Great Lakes and St. Lawrence River areas covered by the Joint Marine Contingency Plan and specifically covers the contiguous waters as defined in the Great Lakes Water Quality Agreement: "'Great Lakes system' means all the streams, rivers, lakes and other bodies of water that are within the drainage basin at or upstream from the point at which this river becomes the international boundary between Canada and the United States." The Canada-United States Joint Inland Pollution Contingency Plan, established between Environment Canada and the U.S. EPA, was updated and re-promulgated in 2009. It provides for cooperative measures for dealing with accidental and unauthorized releases of pollutants that cause or may cause damage to the environment or that threaten public health, property or welfare along the shared inland border of the two countries. The annexes to the Joint Inland Contingency Plan include CANUSCENT (Annex 3), which covers the combined inland boundary of Ontario with New York, Minnesota and Michigan, and CANUSQUE (Annex 4), which covers the combined inland boundary of Quebec with New York, Vermont, New Hampshire and Maine. The Annexes are currently undergoing review and update.

The next section of this report will discuss contingency planning at the local level including the role of State Emergency Planning Committees (SERCs), Local Emergency Planning Committees (LEPCs), Port Area Committees (PACs), Regional Environmental Emergency Teams (REETs) and other local and community structures employed for spill preparedness and response.

Local Preparedness Efforts and Responder Participation

In the United States, under the Superfund Amendments and Reauthorization Act of 1986 (SARA) and the Emergency Planning and Community Right-to-Know Act (EPCRA), emergency planning requirements are established to help communities prepare for and respond to emergencies involving hazardous substances. Every community in the United States must have a comprehensive plan.

Under EPCRA, localities are required to develop Local Emergency Planning Committees (LEPCs) in order to increase local spill preparedness. Directed by the SARA Title III program, LEPCs have

been established in all counties in the Great Lakes region. Generally, LEPC plans identify areas of high risk or special sensitivity to emergencies such as oil spills. The LEPCs may also assemble inventories of containment and cleanup materials in the local vicinity.

LEPCs must develop an emergency response plan, review it at least annually, and provide to citizens information about chemicals in the community. Plans are developed with stakeholder participation. The LEPC membership must include (at a minimum):

- Elected state and local officials
- Police, fire, civil defense and public health professionals
- Environment, transportation and hospital officials
- Facility representatives
- Representatives from community groups and the media

The governor of each state also designates a State Emergency Response Commission (SERC) that is responsible for implementing EPCRA provisions within its state. The SERC's duties include:

- Establishing procedures for receiving and processing public requests for information collected under EPCRA
- Reviewing local emergency response plans
- Designating local emergency planning districts
- Appointing a Local Emergency Planning Committee (LEPC) for each county/district
- Supervising the activities and operations of the LEPCs

The most common responders to oil spills in inland areas at the local level on the U.S. side are fire marshals and police. These professionals typically will ascertain whether greater response efforts from state or federal agencies will be necessary and share incident response authority with such responders unless authority is assumed by a state/provincial agency or a federal representative of Environment Canada, the Canadian Coast Guard (ship source spills), U.S. EPA or the U.S. Coast Guard. Local response organizations provide support to state and federal efforts with hazardous materials (HAZMAT) teams, emergency management personnel, health department resources, as well as fire and police department responders.

Similarly in Canada, the most common initial responders to oil spills in inland areas at the local level are the municipal emergency services (fire, police and public works). These services will typically ascertain whether greater response efforts from a contractor or oversight and/or guidance from a provincial or federal agency will be necessary. Local response contractors with HAZMAT capabilities and emergency management personnel are the primary support to first responders and responsible parties.

To address preparedness and response issues at the region's many ports and harbors there are Port Area Committees (PACs). OPA mandates the establishment of PACs in every port area of the United States and charges them with oversight of the preparedness of their ports through preparation of ACPs that specify how spill responses will be carried out. ACPs establish a coordinated community response to an oil or hazardous material discharge and establish the framework for carrying out response efforts at each port. PACs are generally ad hoc voluntary organizations that are chaired by a U.S. Coast Guard Captain of the Port.

A study prepared for the U.S. Coast Guard identified the following fundamental PAC functions[12]:

- Carry out all OPA requirements including vulnerability analysis, risk analysis and risk management
- Conduct preparedness analyses and develop and manage a training plan
- Coordinate exercises through the Preparedness for Response Exercise Program (PREP) and in concert with the training function
- Conduct public outreach to provide local information and education related to port area preparedness
- Review and update the ACP to include port area preparedness evaluation
- Address environmental priorities and develop environmental sensitivity indices

In Canada, response to spills and related emergencies is a shared responsibility that can involve a range of agencies at the federal, provincial and municipal levels. This is especially true for a major spill along the Great Lakes – St. Lawrence River that might require a multi-agency response, including the Canadian Coast Guard, port or seaway authorities, Environment Canada, Ontario and Québec environment ministries, natural resources and public safety agencies as well as local / municipal responders, including Conservation Authorities (Ontario only). Regardless of which agency may have the overall lead, it is normal practice for all responding agencies to work together in a cooperative manner in accordance with relevant emergency response plans and procedures and in accordance with the respective mandates of involved agencies.

In Ontario, the emergency planning and preparedness framework includes emergency management programs at the provincial and municipal level. At the federal level, Environment Canada coordinates an initiative which promotes collaboration and communication in preparation for environmental emergencies. This initiative is called the Regional Environmental Emergency Team (REET). In Ontario, Environment Canada promotes the preparedness initiative at the area level, drawing in representatives from all levels of government and other various stakeholders to ensure a state of readiness within the province.

In addition, there are several contingency plans and corresponding response organizations that may be activated in the event of a major spill or environmental emergency, including those events that could have an impact on the Great Lakes.

During a response to any significant environmental emergency in either province, a REET may be formed from previously identified agencies and stakeholders. A REET is a multi-agency, multidisciplinary group that is assembled to provide consolidated and coordinated direction, environmental advice and other assistance during spills and environmental emergencies. As noted above, REET preparedness meetings, typically conducted annually by Environment Canada, are coordinated to ensure a common understanding of roles and responsibilities during an event and to continuously update area and regional environmental resource priorities. REETs often include representatives from Environment Canada, provincial agencies, Canadian Coast Guard, conservation authorities, local agencies and even U.S. agencies in the case of border communities.

In Québec, spill preparedness and response is also a shared responsibility between federal, provincial and municipal levels, although the latter has the primary role for emergency interventions within its territory. Municipalities are tasked with ensuring the safety and well being of citizens residing in or traveling through their territory.

[12] Jensen, D.S., T.J. Hammell, T.D. Harrison. Rejuvenating the Port Area Committee Process. Paper presented at the International Oil Spills Conference 2005.

The organisation municipale de la sécurité civile (OMSC) (Civil Protection Municipal Organization) is the organization responsible for the coordination of the municipal response to a spill event. Its leadership is provided by the Civil Protection municipal coordinator. The OMSC is staffed by municipal employees, managers or volunteers that are able to identify the community's major risks and hazards, deploy mitigation measures to attenuate those risks, and prepare the Local Emergency Plan. During a disaster, the OMSC is responsible for ensuring the safety of the community.

There is a National Civil Protection Plan (Plan national de sécurité civile, PNSC) which describes the sharing of responsibilities between government departments and agencies according to their respective abilities. It also organizes government resources to support municipalities in the event of a spill or disaster. The Ministry of Public Safety (MSP), through its Directions des opérations (Operations Directorate of the Civil Security), coordinates the actions and resources of provincial departments and agencies to support municipalities when they are no longer able to cope with disasters. In a disaster situation, the Centre for government operations (COG) provides the necessary support to the government coordinator and also supports the regional civil security departments in their operations, and other government agencies if necessary.

In the event of an environmental emergency, if municipal organizations are unable to handle the task or if the situation is beyond their areas of skill or expertise, they can seek assistance from the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP) (Ministry of Sustainable Development, Environment and Parks) through its Urgence-Environnement service. As the department responsible for enforcing environmental laws and regulations within the Province of Quebec and as administrator of the public water sector, the MDDEP is responsible for the planning and implementation of environmental emergency measures. To address this responsibility, it has established a response structure known as Urgence-Envrionnement. This structure has an emergency call center that receives emergency calls and sends them at all times to spill responders in the affected region.

For its part, the Canadian Coast Guard (CCG) is the federal organization responsible for interventions in the case of pollution in Canadian waters from ships, oil handling facilities and unknown maritime sources. Management of interventions consists of several steps, among others, the alert. To manage the alert, the CCG has established a warning and alarm network (RAA) to receive, collect and categorize events and disseminate the received information regarding any maritime incident.

The following sections summarize spill response programs with each individual state and province in the region.

Spill Preparedness and Response in Illinois

1. Introduction/Overview

Illinois' mission for preparedness and response is to protect the health and safety of the citizens of Illinois during emergency incidents involving the release of oil, hazardous materials or other contaminants, while stabilizing, minimizing or eliminating the environmental consequences to the land, air or waters of the state. Illinois pursues this mission by partnering with numerous federal, state and local agencies that have a role to play in the protection of Illinois' air, land and water resources.

2. Legislation, Regulations and Authorities governing State/Provincial Programs

The Illinois Environmental Protection Agency (Illinois EPA) is responsible for the implementation and oversight of many environmental laws, including the Illinois Environmental Protection Act, the Illinois Health and Safety Act, the Illinois Right-to Know Act and the Illinois Industrial Hygienist Licensing Act (the first voluntary licensing law in the United States regulating the industrial hygiene profession). The Illinois Environmental Protection Act (415 ILCS 5) is Illinois' primary statute for establishing a unified, statewide program for restoring, protecting and enhancing the quality of the environment and assuring that adverse effects upon the environment are fully considered and borne by those who cause them. Illinois EPA is also responsible for implementing state programs under the Oil Pollution Act (OPA) of 1990, the Superfund Amendments and Reauthorization Act (SARA) of 1986 and the Resource Conservation and Recovery Act (amended) of 1986.

3. Lead Agency Responsibilities for Preparedness and Response

The Illinois Environmental Protection Agency (EPA) Office of Emergency Response (OER) is the state's lead agency for emergency preparedness and response. The Emergency Operations Unit (EOU) within OER coordinates Illinois EPA's response to environmental emergencies involving oil or hazardous materials and ensures that any environmental contamination is cleaned up. EOU works with other response agencies including the Illinois Emergency Management Agency (IEMA), which is the initial contact for responses to an emergency or disaster in Illinois.

Responsibilities of the OER include the following:

- Oil and hazardous material spills in water or on land
- Releases of harmful quantities of toxic substances into the air
- Emergencies involving wastewater treatment systems and public water supplies
- Emergencies involving solid waste disposal sites
- Fish kills caused by pollutants
- Abandoned hazardous waste incidents posing immediate hazards
- Illegal burning of waste
- Responses related to bio-terrorism and hazardous materials.

4. Additional Agencies involved in Preparedness/Response

Federal/regional agency responsibilities and partnerships

Illinois is a member of the Region 5 Regional Response Team and through this body works with the other Region 5 states along with numerous U.S. federal agencies that have roles and responsibilities in spill preparedness and response. These partners include U.S. EPA, the U.S. Coast Guard, the Federal Emergency Management Agency (FEMA), the U.S. Department of Interior (Fish and Wildlife Service), the U.S. Department of Commerce (National Oceanic and Atmospheric Administration (NOAA)) and the U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA). Illinois also partners with several regional associations with a role in preparedness and response, including the Ohio River Valley Water Sanitation Commission (ORSANCO), the Upper Mississippi River Basin Association (UMRBA) and the Great Lakes Commission (GLC).

Other state agency responsibilities and partnerships

At the state level, IEMA is responsible for coordinating and helping prepare Illinois for natural, manmade or technological disasters, hazards, or acts of terrorism. IEMA coordinates the state's disaster mitigation, preparedness, response and recovery programs and activities, functions as the State Emergency Response Commission, and maintains a 24-hour communication center and State Emergency Operations Center (SEOC). The SEOC acts as lead in crisis/consequence management response and operations to notify, activate, deploy and employ state resources in response to any threat or act of terrorism. IEMA assists local governments with multi-hazard emergency operations plans and maintains the Illinois Emergency Operations Plan. Illinois EPA works with the State Emergency Response Committee (SERC), local Emergency Management Agencies (EMAs) and Local Emergency Planning Committees (LEPCs). Illinois EPA is a voting member of the Illinois Terrorism Task Force (ITTF) and numerous committees and subcommittees that collectively enhance emergency response efforts. The committees include the Transportation Committee, which also has as subcommittees the Inland Waterways and Port Security Committee, the Illinois Public Works Mutual Aid Network and the Railway Committee. Illinois EPA is a member of the Bio-Terrorism Committee of the ITTF.

5. Services (e.g., spill response/spill cleanup/enforcement)

EOU provides many services to other state and local agencies and the public. These services include:

- Technical information about identification, chemical properties, toxicity and potential dangers of a given hazardous material
- Monitoring or testing of air, water, soil or containers
- Containment of hazardous materials
- Restoration of the environment, including cleanup objectives
- Evacuation recommendations in the event of a disaster
- Disposal or treatment of hazardous materials
- Oversight to ensure completeness of cleanup actions taken by responsible parties
- Documentation of violations of the Illinois Environmental Protection Act for possible legal action
- Professional personnel, technical assistance and equipment to assist public safety officials

Emergencies involving radioactive materials are handled by the Illinois Emergency Management Agency (IEMA). Emergencies involving disease-contaminated materials are handled by the Illinois Department of Public Health. Spills at crude oil storage sites are handled by the Division of Mines and Minerals (part of the Illinois Department of Natural Resources) unless the spill enters surface waters, in which case Illinois EPA assumes the lead. Workplace chemical exposure is handled by the Illinois Department of Labor or the Occupational Safety and Health Agency.

6. Resources/Equipment/Personnel

Most of the Illinois EPA EOU personnel are located in Springfield (Illinois EPA headquarters), but there are additional staff in the Collinsville and Des Plaines Regional Offices. Most EOU staff can be reached at the Agency headquarters in Springfield (217/782-3637). There are also full-time response staff in the Des Plaines (800/759-7626) and Collinsville (618/346-5120) regional offices. During evenings, weekends and holidays, a 24-hour Duty Officer may be reached at 217-782-7860. Citizen pollution complaints are typically handled by the Illinois EPA Regional Offices and may be placed on-line at the following web page:

http://www.epa.state.il.us/pollution-complaint

Spill Preparedness and Response in Indiana

1. Introduction/Overview

Indiana's mission for preparedness and response is to protect public health and to mitigate harm during spill events and environmental emergencies. To accomplish this mission, Indiana plans, trains and responds along with local, state and federal agencies to achieve the best results possible.

2. Legislation, Regulations and Authorities governing State/Provincial Programs

The Indiana Department of Environmental Management (IDEM) is responsible for the implementation and oversight of many environmental laws, including those pertaining to air quality, water quality and spill containment. Various rule makings govern agency actions. IDEM has an agency-wide information website designed to provide information regarding agency rule actions. IDEM's Compliance & Technical Assistance Program offers monthly summaries of rules published in the Indiana Register by IDEM. Provided as a reference guide, these summaries highlight topics that directly affect IDEM activities. Two important rules are the Indiana spill rule, which is part of 327 IAC 2 (Indiana Water Quality Standards), and the secondary containment of hazardous materials rule, also included in the Indiana Water Quality Standards.

IDEM is also responsible for implementing state programs under the Oil Pollution Act (OPA) of 1990, the Superfund Amendments and Reauthorization Act (SARA) of 1986 and the Resource Conservation and Recovery Act (amended) of 1986.

3. Lead Agency Responsibilities for Preparedness and Response

The Emergency Response Section of IDEM is the state's primary lead agency for emergency preparedness and response. The Emergency Response Section is available 24/7 to receive spill reports and provide response assistance. The primary role of the section is to facilitate spill response actions from persons experiencing spills to land and water. The Emergency Response Section may also request assistance from the United States Environmental Protection Agency (EPA) during larger scale emergencies.

Responsibilities of IDEM include the following:

- Oil and hazardous material spills in water or on land
- Emergencies involving wastewater treatment systems and public water supplies
- Emergencies involving solid waste disposal sites
- Fish kills caused by pollutants
- Abandoned hazardous waste incidents posing immediate hazards
- Illegal burning of waste
- Responses related to bio-terrorism and hazardous materials.

4. Additional Agencies involved in Preparedness/Response

Indiana is a member of the Region 5 Regional Response Team and through this body works with the other Region 5 states along with numerous U.S. federal agencies that have roles and responsibilities in spill preparedness and response. These partners include U.S. EPA, the U.S. Coast Guard, the Federal Emergency Management Agency (FEMA), the Occupational Safety and Health Administration (OSHA), the U.S. Department of Interior Fish and Wildlife Service, the National

Oceanic and Atmospheric Administration and the U.S. Department of Transportation Pipeline and Hazardous Materials Administration (PHSMA).

The State of Indiana, through IDEM, also works with state emergency response committees (SERCs), the Indiana Emergency Response Commission, port area committees, local emergency planning committees (LEPCs), the State Chemist, the State Department of Health, the State Department of Homeland Security (formerly the State Emergency Management Agency), the State Department of Natural Resources (DNR), and regional associations with a role in preparedness and response, including the Ohio River Valley Water Sanitation Commission (ORSANCO) and the Great Lakes Commission (GLC).

5. Services (e.g., spill response/spill cleanup/enforcement)

The IDEM Emergency Response Section, along with its state agency partners, provides many services to communities, local agencies and the public. These services and assistance include the following:

- Technical information about identification, chemical properties, toxicity and potential dangers of a given hazardous material
- Monitoring or testing of air, water, soil or containers
- Containment of hazardous materials and petroleum
- Containment of objectionable substances that damage waters of the State
- Restoration of the environment, including cleanup objectives
- Evacuation recommendations in the event of a disaster
- Disposal or treatment of hazardous materials, petroleum and objectionable substances
- Oversight to assure completeness of cleanup actions taken by responsible parties
- Documenting violations of Indiana laws for possible legal action
- Professional personnel, technical assistance and equipment to assist public safety officials

IDEM works with the Indiana State Chemist which is charged with administering several agricultural and pollution prevention laws involving chemicals such as fertilizers, animal feeds and pesticides. The goals of these laws are to ensure user safety and protection of the environment.

The Indiana State Department of Health, through the Environmental Public Health Division (which is in the Public Health and Preparedness Commission), also has a role to play in pollution prevention. The Environmental Health Division staff provides oversight to the onsite sewage program which sets minimum state-wide standards for residential onsite sewage disposal systems and also reviews and approves plans and specifications for commercial onsite sewage disposal systems.

When tornadoes, flooding or other disasters strike a community, Environmental Public Health staff provides direct assistance to local health departments upon request. Environmental Public Health engineers cooperate with state and federal emergency management agencies to assess the cost of repairs to any public works that might qualify for federal disaster assistance. IDEM is a key support agency when disasters affect drinking water facilities and wastewater plants.

6. Resources/Equipment/Personnel

IDEM has an On Scene Coordinator (OSC) in each of its regional offices in Evansville, Merrillville and South Bend. IDEM also has seven OSCs in its office headquarters (Indianapolis). Each OSC

has a four-wheel-drive truck, laptop with air card, GIS library, printer, and a variety of response equipment, including booms and pads. IDEM has an equipment trailer, a command trailer and a number of small boats, including three zodiac-style boats and an airboat.

Currently, Operational District 10 of the DNR has five jon boats that are utilized to patrol the rivers and other waterways in Lake, Porter, and LaPorte counties. These jon boats are always ready to respond on a moment's notice to any critical situation that occurs on these waters.

For Lake Michigan, Operational District 10 has four boats that are utilized in patrolling this waterway. These boats are as follows:

1. 27' Boston Whaler with enclosed cabin
2. 24' Boston Whaler with open bow
3. 21' Boston Whaler with open bow
4. 19' Boston Whaler with open bow

The 27' Whaler is equipped with infra-red equipment and has been used to assist U.S. EPA in checking emissions from smoke stacks belonging to the various companies located on Lake Michigan.

7. Waste Management

IDEM's Agriculture and Solid Waste Section and two Industrial Waste Sections and their associated permitting programs manage all forms of solid waste management, including providing support to local communities in times of disaster. This includes designation of temporary debris staging areas, assistance in sorting waste, and assessment of damage to manure storage structures and landfills. IDEM's debris management plan is on file at the Indiana Department of Homeland Security. Standard operating procedures are in place that allows local officials to obtain emergency open burning permits for tree waste generated during disasters.

8. Communications

IDEM maintains a 24-hour emergency spill line at 888-233-7745. After regular business hours the line is answered by the 24-hour watch desk at the Indiana Department of Homeland Security.

Each IDEM OSC is issued a cell phone, laptop with air card and internet access including email, and an 800 MHz radio.

9. Future Development/Priorities

To date, 21 planning projects involving IDEM Emergency Response staff have been identified.

Spill Preparedness and Response in Michigan

1. Introduction/Overview

Michigan's mission for preparedness and response is to protect the health and safety of the citizens of Michigan during emergency incidents involving the release of oil, hazardous materials or other contaminants, while stabilizing, minimizing or eliminating the environmental consequences to the land, air or waters of the state. Michigan pursues this mission by partnering with numerous federal, state and local agencies that have a role to play in the protection of Michigan's air, land and water resources.

2. Legislation, Regulations and Authorities governing State/Provincial Programs

The Michigan Department of Environmental Quality (MDEQ) is responsible for the implementation and oversight of many environmental laws including the Michigan Natural Resources and Environmental Protection Act (NREPA) of 1994. The NREPA is Michigan's primary statute for establishing a unified, statewide program for restoring, protecting and enhancing the quality of the environment, and for assuring that adverse effects upon the environment are fully considered and borne by those who cause them. The NREPA has many parts, including for example Part 31, Water Resources Protection; Part 55, Air Pollution Control; Part 111, Hazardous Waste Management; Part 201, Environmental Remediation; Part 303, Wetlands Protection; Part 315, Dam Safety; and, Part 633, Mineral Mining, among many others. Related state laws include the Michigan Fire Prevention Code of 1941 (Act 207), and the Michigan Occupational Safety and Health Act of 1974. The MDEQ is also responsible for implementing federal requirements pursuant to the Oil Pollution Act of 1990 (OPA), Title III of the Superfund Amendments and Reauthorization Act of 1986 ("SARA Title III"), also known as the Emergency Planning and Community Right-to-Know Act), the Clean Air Act Amendments of 1990, and the Resource Conservation and Recovery Act (as amended) of 1986.

3. Lead Agency Responsibilities for Preparedness and Response

The MDEQ is the state's primary agency for environmental emergency response. The MDEQ staff in district offices coordinate the agency's response to environmental emergencies involving oil or hazardous materials and ensure that any environmental contamination is cleaned up. These are the same district staff whose primary job is to work within their respective division in roles such as permitting, remediation, pollution prevention, etc.

The MDEQ works with other response agencies including the Michigan State Police, Emergency Management and Homeland Security Division (MSP-EMHSD), and the Department of Agriculture and Rural Development. The MSP-EMHSD is responsible for coordinating multi-agency responses to an emergency or disaster in Michigan.

Responsibilities of the MDEQ include providing technical assistance to first responders and responsible parties in response to the following:

- Oil and hazardous material spills in water or on land
- Releases of harmful quantities of toxic or hazardous substances into the air
- Emergencies involving wastewater treatment systems and public water supplies
- Emergencies involving solid waste disposal sites
- Fish kills caused by pollutants

- Abandoned hazardous waste incidents posing immediate hazards
- Illegal burning of waste
- Incidents involving dam safety
- Incidents involving wetlands, floodplains and shorelands
- Incidents involving oil and gas wells
- Incidents involving biosolids

The MDEQ also has first responders who monitor the extent and impact of radiation and radioactive materials from nuclear power plant incidents and incidents involving releases of radioactive materials.

4. Additional Agencies involved in Preparedness/Response

Michigan is a member of the Region 5 Regional Response Team and through this body works with the other Region 5 states along with numerous federal agencies that have roles in hazardous material incident preparedness and response. These partners include the U.S. EPA, the U.S. Coast Guard, the Federal Emergency Management Agency (FEMA), the U.S. Department of Interior (Fish and Wildlife Service), the U.S. Department of Commerce (National Oceanic and Atmospheric Administration (NOAA)), the U.S. Nuclear Regulatory Commission, and the U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHSMA).

At the state level, the MSP-EMHSD is the lead agency responsible for preparing Michigan for natural, manmade or technological disasters, hazards or acts of terrorism. The MSP-EMHSD coordinates the State's disaster mitigation, preparedness, response and recovery programs and activities, and maintains a 24-hour Communication Center and State Emergency Operations Center (SEOC). The SEOC acts as lead in crisis/consequence management response and operations to notify, activate, deploy and employ state resources in response to any threat or act of terrorism. The MSP-EMHSD assists local agencies with multi-hazard emergency operations plans and maintains the Michigan Emergency Management Plan pursuant to the Emergency Management Act, Act 390 of 1976, as amended.

The MDEQ also works with other organizations and jurisdictions with roles in preparedness and response including the Michigan Citizen-Community Emergency Response Coordinating Council (which serves as the State Emergency Response Commission), port area committees, local emergency planning committees (LEPCs), local fire departments, and the Great Lakes Commission (GLC).

5. Services (e.g., spill response/spill cleanup/enforcement)

The district staff and all divisions of the MDEQ provide many services to other state and local agencies and the public. These services and assistance include providing:

- Technical information about identification, chemical properties, toxicity and potential dangers of a given hazardous material
- Full laboratory analytical capabilities
- Limited monitoring of air, water, soil or containers
- Technical assistance regarding containment of hazardous materials
- Technical assistance regarding restoration of the environment, including cleanup objectives
- Technical assistance regarding disposal or treatment of hazardous materials

- Technical assistance and oversight to assure completeness of cleanup actions taken by responsible parties
- Documentation of violations of the Michigan NREPA for possible legal action, criminal and civil

Emergencies involving nuclear power plants or radioactive materials are also handled by the MDEQ. Emergencies involving disease-contaminated materials are handled by the Michigan Department of Community Health. Workplace chemical exposure is handled by the Michigan Occupational Safety and Health Administration.

6. Resources/Equipment/Personnel

The MDEQ personnel are located in Lansing (headquarters), as well as in eight full-service districts (Warren, Jackson, Kalamazoo, Grand Rapids, Bay City, Cadillac, Lansing and Gwinn), with additional staff in Detroit, Gaylord, Newberry, Crystal Falls, and Calumet.

7. Communications

The MDEQ Pollution Emergency Alerting System (PEAS) serves as the primary node for the collection and dissemination of incident information. It includes a hotline operated 24/7 to receive reports of environmental incidents, with staffing to communicate urgent information to all appropriate parties, internal and external, as appropriate. During office hours, the DEQ district office covering the area of the incident might be contacted instead.

During emergency response activities the MDEQ uses a number of modes of communication including cell phone, 800-MHz radios, e-mail and E-Team. E-mail is often the only form of communication used for incidents that involve MDEQ but no other state agencies. E-Team is employed for larger incidents involving multiple jurisdictions at multiple levels of government. E-Team is a web-based software used to facilitate information sharing among all the jurisdictions and agencies typically involved in larger incidents.

When the SEOC is activated for the largest incidents, the MDEQ and Department of Natural Resources will activate their shared Emergency Communications Center (ECC). The ECC can accommodate staff representing the involved divisions, management, public information officer, emergency management coordinator and others, offering the capability to make quick decisions regarding plans, resources, etc. as needed by the field staff.

Spill Preparedness and Response in Minnesota

1. Introduction/Overview

Minnesota supports Coast Guard response and preparedness lead for Lake Superior and marine facility incidents and facilities. For land-based incidents and facilities, the State of Minnesota typically takes the lead response role and requests the U.S. EPA or the U.S. Coast Guard support only when needed.

2. Legislation, Regulations and Authorities governing State/Provincial Programs

Minnesota Statute Section 115.061 establishes state spill reporting and response requirements. Chapter 115B is a state version of Superfund; Chapter 115C covers petroleum tank leak and spill response; and Chapter 115E parallels OPA spill prevention and preparedness requirements.

3. Lead Agency Responsibilities for Preparedness and Response

The Minnesota Pollution Control Agency (PCA) is the lead state agency for oil and hazardous materials incidents and prevention/preparedness oversight of facilities. The exception is an event where agricultural chemicals are involved when the state Department of Agriculture takes the lead. The Department of Natural Resources (DNR) assesses habitat damage, and the Department of Public Safety (DPS) leads in coordinating public safety responses and preparedness and implements the Title III program under the 1986 U.S. federal Superfund Amendments and Reauthorization Act (SARA).

4. Additional Agencies involved in Preparedness/Response

Port Area Committees

A very active Duluth Port Area Committee facilitates coordinated preparedness in the Duluth/Superior and Lake Superior areas.

Local/State/Provincial Emergency Planning Committees (SERCs)

The Homeland Security and Emergency Management (HSEM) Division of the Department of Public Safety manages the state Title III program. HSEM organizes "Regional Review Committees" across the state to accomplish the LEPC and SERC functions. Each Minnesota county has a county director of emergency management.

Other

The Wakota Community Awareness and Emergency Response (CAER) organization, chaired by the PCA, is an industry/governmental group that facilitates coordinated preparedness on the Mississippi River in the Minneapolis/St. Paul area.

5. Services (e.g., spill response/spill cleanup/enforcement)

The PCA typically oversees oil and chemical spill cleanups done by responsible parties (RPs), or contracts for cleanup using "State Superfund" (Chapter 115B) or "State Petrofund" (Chapter 115C) authorities. Enforcement response for poor RP reporting or RP cleanup is typically done by Minnesota PCA. Enforcement follow-up for poor RP spill preparedness or prevention can be done

under Chapter 115E by the PCA for environmental issues and the DPS for public safety issues. First response for spills posing safety threats is typically done by local fire department responders. They may call HSEM for assistance of State-contracted Chemical Assessment Teams, which are typically large fire departments which may be dispatched for incidents beyond local capabilities.

6. Resources/Equipment

Minnesota facilities subject to the federal Oil Pollution Act of 1990 (OPA) typically comply with onsite and contracted response resources as required by OPA. There are two major spill response contractors in Minnesota, and several smaller contractors. Each of the major contractors has a branch office in Duluth with some response equipment. Duluth Fire Department and the Duluth Port Safety Detachment of the U.S. Coast Guard have some response equipment.

7. Communications

Minnesota governmental response agencies have access to inter-jurisdictional communications using a trunked 800 megahertz radio system. Selected private and federal responders have access to the system. This fairly new system is being refined and exercised to reach full potential.

8. Future Development/Priorities

Priorities include training and protocols and equipment for winter and under-ice spill response and continued shoreline and response strategy mapping in the Duluth/Superior Harbor and Lake Superior.

Spill Preparedness and Response in New York

1. Introduction/Overview

The State of New York responds to reports of petroleum and other hazardous material releases through the Spill Response Program maintained by the New York Department of Environmental Conservation (DEC). Spill response staff throughout the state investigate spill reports and take action based on the type of material spilled, the potential environmental damage, and safety risks to the public.

Both immediate response and continued cleanup vary depending on the type of material spilled and the damage caused. Federal and state law require the spiller, or responsible party, to notify government agencies and to contain, clean up and dispose of any spilled/contaminated material in order to correct any environmental damage. If the responsible party is unknown, unwilling or unable to perform the cleanup, the DEC will perform the work using the New York State Spill Fund and the state will seek reimbursement from the responsible party.

2. Legislation, Regulations and Authorities governing State/Provincial Programs

The DEC is responsible for the implementation and oversight of many environmental laws, including those pertaining to air quality, water quality, and spill reporting, containment and cleanup. State laws also contain mandates to protect the public health and safety. The DEC implements and enforces these legislative mandates, which are a fundamental source of DEC's powers.

The Environmental Conservation Law (ECL) established DEC and authorizes its programs, however, the law has broad provisions that need to be defined and made explicit. DEC implements this law by drafting, promulgating and enforcing its environmental regulations. DEC presents proposed regulations for public comment, a process that often includes public hearings. DEC's regulations are available via its website and are listed by chapter.

DEC is also responsible for implementing state programs under the Oil Pollution Act (OPA) of 1990, the Superfund Amendments and Reauthorization Act (SARA) of 1986 and the Resource Conservation and Recovery Act (amended) of 1986.

3. Lead Agency Responsibilities for Preparedness and Response

The Spill Response Program of DEC is one of the state's primary lead agencies for emergency preparedness and response. The Spill Response Program is available 24 hours per day to receive spill reports and provide response assistance. The primary role of the program is to investigate spill reports and facilitate spill response actions to minimize environmental impact and protect public health.

Both immediate response and continued cleanup vary depending on the type of material spilled and the damage caused. Federal and State law require the spiller, or responsible party, to notify government agencies and to contain, clean up, and dispose of any spilled/contaminated material in order to correct any environmental damage. Continued cleanup is the responsibility of the spiller and is required if contamination and environmental damage remain after the initial containment and recovery. Continued cleanup may include determining the extent of contamination, selecting a cleanup technology and completing corrective actions. The DEC will oversee the process to ensure the actions are protective of public safety, health and the environment. Again, if the responsible

party is unknown, unwilling or unable to perform the clean up, the DEC will perform the work using the NYS Spill Fund.

DEC can also provide additional resources to local agencies during emergencies and will remain involved if continued cleanup of the environment is required.

Specific responsibilities of the DEC Spill Response Program include the following:

- Oil and hazardous material spills in water or on land
- Emergencies involving wastewater treatment systems and public water supplies
- Emergencies involving solid waste disposal sites
- Fish kills caused by pollutants
- Abandoned hazardous waste incidents posing immediate hazards
- Responses related to bio-terrorism and hazardous materials

4. Additional Agencies involved in Preparedness/Response

New York is a member of the Region 2 Regional Response Team and through this body works with the other Region 2 states (New Jersey, Puerto Rico and U.S. Virgin Islands) along with numerous U.S. federal agencies that have a role and responsibilities in spill preparedness and response. These partners include U.S. EPA, the U.S. Coast Guard, the Federal Emergency Management Agency, the Occupational Safety and Health Administration, the U.S. Department of Interior (Fish and Wildlife Service), the U.S. Department of Commerce (National Oceanic and Atmospheric Administration) and the U.S. Department of Transportation Pipeline and Hazardous Materials Administration.

The State of New York through DEC also works with state emergency response committees (SERCs), port area committees, local emergency planning committees (LEPCs) and the State Emergency Management Office (part of the Division of Homeland Security and Emergency Services) which is responsible for protecting New Yorkers and their property from natural and manmade disasters and emergencies.

New York also works closely with regional associations with a role in preparedness and response including the Ohio River Valley Water Sanitation Commission and the Great Lakes Commission.

5. Services (e.g., spill response/spill cleanup/enforcement)

The DEC Spill Response Program along with its state agency partners provides many services to communities, local agencies and the public. These services and assistance includes the following:

- Technical information about identification, chemical properties, toxicity and potential dangers of a given hazardous material
- Monitoring or testing of air, water, soil or containers
- Containment of hazardous materials
- Restoration of the environment, including cleanup objectives
- Evacuation recommendations in the event of a disaster
- Disposal or treatment of hazardous materials
- Oversight to assure completeness of cleanup actions taken by responsible parties
- Documenting violations of New York laws for possible legal action
- Professional personnel, technical assistance and equipment to assist public safety officials

6. Resources/Equipment/Personnel

New York has an Environmental Protection and Spill Compensation Fund, also called the Oil Spill Fund, which is available for cleaning up oil spills in order to protect New York's air, soil, and drinking, surface and ground water. State law requires that any person who discovers a spill must report it within two hours by calling the 24-hour Spill Hotline at 1-800-457-7362. Individuals who sustain financial losses because of a petroleum spill may file a damage claim with the Oil Spill Fund.

The Oil Spill Fund has two major sources of revenue: 1) a license fee charged on each barrel of petroleum sold in New York State, currently $.08 per 42-gallon barrel, and 2) reimbursement of costs, interest and penalties from petroleum spillers. By requiring those responsible for spills to pay for cleanup costs and charging a license fee, the Oil Spill Fund is able to maintain a revolving fund to ensure resources are available to protect the lands and waters of the state.

The DEC maintains a fleet of approximately 100 Spill Response vehicles located in nine regions throughout the state. Spill Responders in the regions are on call 24/7 to respond to emergencies. New York also has a program for public notification of spills and unauthorized releases to the environment. The public can notify DEC of releases to the environment by calling the NYS Spill Hotline. Federal agencies can be notified by calling the National Response Center.

- NYS Spill Hotline: 1-800-457-7362
- National Response Center: 1-800-424-8802

7. Communications

The DEC has a dispatch center which operates 24/7. The center maintains a statewide radio system to keep in contact with environmental conservation police, forest rangers, and spill responders. The Center also answers the Spill Hotline and other environmental complaint calls and e-mails.

Spill Preparedness and Response in Ohio

1. Introduction/Overview

The Ohio Environmental Protection Agency (Ohio EPA) is the state authority for spill response. As such, it provides assistance and technical support to local response agencies. Ohio EPA's Emergency Response Program (ER Program) was established in 1973, and it is organized within the Division of Environmental Response and Revitalization (DERR). Ohio's mission for preparedness and response is to minimize the impact of spills and releases to the environment and make sure they are properly cleaned up. To accomplish this mission, State On-Scene Coordinators (SOSCs) from the ER Program respond to hazardous materials incidents, environmental emergencies and other pollution incidents 24/7. They investigate the source/cause of releases; take action to abate, mitigate, minimize and eliminate releases, providing technical assistance to local responders to protect the public health and safety and the environment; and direct clean up and restoration activities, whenever possible through funding by responsible party.

2. Legislation, Regulations and Authorities governing State/Provincial Programs

Ohio EPA is responsible for the implementation and oversight of many environmental laws including those pertaining to air quality, water quality, waste management and disposal, and spill response, containment and cleanup.

Ohio EPA implements the Emergency Planning and Community Right-to-Know Act (EPCRA) and Superfund Amendments and Reauthorization Act (SARA) Title III through Ohio Revised Code (ORC) Chapter 3750, Emergency Planning. ORC Chapter 3750, and Rules promulgated thereunder, provides reporting requirements, plan development, and the conduct of exercises to maintain and improve preparedness. ORC Chapter 3750 also specifies the ER Program's Emergency Spill Hotline (800-282-9378) as the state designated spill response notification number for Ohio, requiring facilities, transportation sources, including vessels, to report RQ releases to the Ohio EPA within 30 minutes.

ORC Section 3745.12 created the Ohio EPA's Immediate Removal Special Account which authorizes the Ohio EPA to recover its costs for expenditures incurred as the result of a spill response. ORC Section 3745.13 authorizes local officials to file claims against a spiller for extraordinary costs associated to a spill response.

Ohio's Good Samaritan Statute includes ORC Section 2305.39, "Non-responsible persons responding to oil spill not liable," which grants responders immunity when acting consistent with the National Contingency Plan (NCP), and a "General Duty Clause" which protects state employees acting within the scope of their duties and expertise.

3. Lead Agency Responsibilities for Preparedness and Response

The State Emergency Response Commission (SERC) is the administrative body for the implementation of emergency planning and preparedness requirements. Ohio EPA and Ohio Emergency Management Agency (Ohio EMA) co-chair the SERC. Ohio EPA's Right-to-Know Unit, organized within the Division of Air Pollution Control (DAPC), collects chemical inventories from regulated facilities and provides grants to Local Emergency Planning Committees (LEPCs) to develop and exercise emergency response plans. Ohio EMA is the lead agency for emergency planning and preparedness, and it oversees the statewide exercise and grants programs to maintain readiness at county LEPCs and local response agencies. Ohio EMA also operates the State

Emergency Operations Center (SEOC) and acts as the overall coordinating agency for state response and assistance to local response agencies, as well as for coordination of federal assistance.

The ER Program of Ohio EPA's DERR is the state's primary lead agency for response to hazardous materials and petroleum releases. The ER Program is available 27/7/365 to receive spill reports and provide response assistance. Ohio EPA's SOSCs are available to help first responders address environmental emergencies and pollution incidents, including chemical and petroleum spills.

The State of Ohio Emergency Operations Plan, Emergency Support Function 10 (ESF-10), designates Ohio EPA is the primary response agency for hazardous materials. However, the Ohio Department of Health (ODH) or the State Fire Marshal (SFM) may act as the lead agency for releases of or where the radiological or explosive threat is the greater hazard. Other support agencies are listed below.

4. Additional Agencies involved in Preparedness/Response

The Ohio EPA ER Program represents the state as a member of the Region 5 Regional Response Team and through this body works with the other Region 5 states along with numerous U.S. federal agencies that have roles and responsibilities in spill preparedness and response. These partners include U.S. EPA, the U.S. Coast Guard, the Federal Emergency Management Agency, the Occupational Safety and Health Administration, the U.S. Department of Interior (Fish and Wildlife Service), the U.S. Department of Commerce National Oceanic and Atmospheric Administration and the U.S. Department of Transportation Pipeline and Hazardous Materials Administration. Ohio EPA also works with the State Emergency Response Commission, port area committees and LEPCs. Ohio also works with regional associations with a role in preparedness and response including the Ohio River Valley Water Sanitation Commission and the Great Lakes Commission.

5. Services (e.g., spill response/spill cleanup/enforcement)

Ohio EPA is the state agency charged with investigating and documenting releases of oil and hazardous substances from both fixed and mobile facilities. It receives about 10,000 calls annually on its 24-Hour Emergency Spill Hotline (800-282-9378); approximately 5,000 of these calls are recorded as actual release reports each year. Ohio EPA responds to the scene of approximately 1,200 spills each year and provides technical assistance to local response partners on another 350 or more by phone. The ER Program has 15 SOSCs to investigate releases of oil and hazardous substances; they are based throughout the state, at the Ohio EPA's five district offices.

The ER Duty Office, located in Columbus, Ohio, operates the Emergency Spill Hotline. Duty Officers receive reports of environmental releases, discharges and spills, 24/7/365. They record incidents in the electronic Release Reporting System (RRS) database and notify or dispatch SOSCs from one of five regional district offices, located in Columbus, Bowling Green, Dayton, Logan and Twinsburg. The Duty Officers and SOSCs coordinate with Federal On-Scene Coordinators (FOSCs) on spills reported to the National Response Center (NRC) when appropriate. After regular business hours and on weekends, the Ohio State Highway Patrol (OSHP) Communications Center assists the Duty Officer, receiving the initial report and forwarding contact information to the Duty Officer to contact the reporting party and complete the spill report.

Upon notification by the Duty Officer, the SOSC evaluates reports, contacts appropriate parties (reporting parties, other response partners, and/or the responsible party/owner/operator) to obtain additional information, coordinate resources and duties, and determine the appropriate course of action. Releases are evaluated based on many factors, including volume, toxicity, location, and media

affected. SOSCs may respond immediately, delay the response until daylight or regular business hours, provide immediate assistance via phone, or refer the matter to one of Ohio EPA's regulatory programs for technical assistance, compliance review and/or enforcement. After responding from their District Office and arriving on-scene, SOSCs investigate and take measures to abate, contain, and mitigate releases if possible; identify the responsible party(s); provide technical assistance to local responders; participate in incident or unified command; and oversee cleanup as needed. Upon completion of response activities, SOSCs must complete and submit investigation/response reports in the RRS and file electronic copies of all supporting documents.

If a responsible party cannot be identified or is recalcitrant, the ERU can activate a level-of-effort (LOE) contractor to initiate actions to contain or clean up the spill. However, the ER Program has limited funding/spending authority for LOE contracts pursuant to the State Budget. Orphan drums and containers are retrieved and/or disposed of under a joint LOE contract. The SOSC may request assistance from other Ohio EPA divisions on matters of public water supply or waste management/disposal.

The ER Program has maintained all records in electronic format since January 1, 2009, and older records are being entered as resources allow from latest to earliest (from 2008, working back in time). The ER Records Officer receives between 75-125 public records request each month, and they are fulfilled electronically when possible. An electronic document management system is under development to include all Ohio EPA records.

The ER Program does not pursue enforcement independently, other than documenting violations with a notice of violation (NOV); typically, SOSCs refer significant or chronic violations to one of Ohio EPA's regulatory or permitting divisions, or to the Office of Special Investigations (OSI) when potential criminal violations are encountered.

6. Resources/Equipment/Personnel

S0SCs from Ohio EPA's ER Program respond to hazardous materials incidents, environmental emergencies, and other pollution incidents 24/7. They investigate the source/cause of releases; take action to abate, mitigate, minimize and eliminate releases; and provide technical assistance to local responders to protect the public health and safety and the environment. OSCs direct clean up and restoration activities using funding from the responsible party whenever possible. Each SOSC is provided a variety of communication and response gear, including a heavy duty 4x4 response truck, laptop computer with broadband cellular data card (including inventories of chemical data), cellular phone, 800 MHz MARCS radio, 4-gas meter, water chemistry test kits, and a variety of other detection and assessment tools. Each SOSC has personal protective equipment (PPE) to Level B, spill containment equipment including booms, pads, and other sorbents, and a variety of equipment and supplies for sample collection, storage, and preservation.

When a spiller cannot be located or is recalcitrant, the Ohio EPA may activate one of its Levels of Effort (LOE) contractors. Although funding is very limited under the state's budget and spending authority, LOE contracts give the ER Program the ability to immediately mobilize a cleanup contractor while questions of responsibility or liability are still unresolved; this often reduces the impact to the environment as well as the overall cost for cleanup. The ER Program may also request assistance from U.S. EPA in these situations, especially when cleanup costs are likely to exhaust the LOE funding or exceed the agency's spending authority.

7. Waste Management

All wastes must be disposed of in accordance with applicable rules and statutes. SOSCs may request assistance from Ohio EPA staff in the Division of Materials and Waste Management when needed, especially during declared disasters when large amounts of waste require special management and disposal consideration.

8. Communications

The ER Program utilizes several redundant communications tools including pagers, cell phones, broadband cellular data cards for laptop computers (email), and 800 MHz digital trunked (MARCS) radios with NPSPAC frequencies.

9. Future Development/Priorities

The ER Program is working on improvements in data, records and resource management and in interoperable communications. Areas of emphasis include:

- Evaluating how to better integrate its systems for receiving, documenting, and maintaining data on incidents
- Communicating information with SOSCs, FOSCs, contractors, and local response partners
- Establishing situational awareness, developing a common operating picture, and coordinating response activities with geospatial tools
- Making historical records available to the public by geographic area
- Managing resources in real-time.

The agency is considering transitioning from the current legacy database application to a Computer Aided Dispatch (CAD)-based system that more closely resembles what Ohio law enforcement and fire service response partners all use. The ER Program takes a large proportion of its incident reports from 911/police/fire or joint dispatch centers where dispatchers read information off their computer screen as the Ohio EPA Duty Officer types it into its system. There is an obvious opportunity to modernize through interoperable communications if data could be transmitted or shared. Options are also being considered for bringing together GIS data from multiple sources within the state and from other state and federal sources. This would allow better alignment of and access to data on regulated facilities and sensitive areas.

Spill Preparedness and Response in Ontario

1. Introduction/Overview

In accordance with "An Inter-Jurisdictional Compliance Protocol for Fish Habitat and Associated Water Quality, 2007," the Ontario Ministry of the Environment (MOE) is the primary agency for most spills that occur within the Province of Ontario. Exceptions to this include ship-source spills to waterways, where the Canadian Coast Guard assumes the lead; spills on federal properties and where Environment Canada assumes the primary agency role; and inter-provincial or international pipeline spills, where the National Energy Board could assume the lead. Municipal authorities such as police, fire or local health officials normally provide the lead role for local emergencies that involve a threat to human health, safety, life and property. In these situations the Ministry focuses its response on environmental concerns while supporting those agencies that have primary responsibility for health and safety.

In Ontario, response to spills and related emergencies is frequently a shared responsibility that can involve a range of agencies at the federal, provincial and municipal levels. This would be especially true for a major spill to the Great Lakes that could require a response by numerous agencies including the Canadian Coast Guard, Port or Seaway Authorities, Environment Canada, MOE, Emergency Management Ontario, the Ministry of Natural Resources and Conservation Authorities as well as local / municipal responders. Regardless of which agency may have the overall lead it is normal practice for all responding agencies to work together in a cooperative manner in accordance with relevant emergency response plans and procedures and the respective mandates of involved agencies.

2. Legislation, Regulations and Authorities governing State/Provincial Programs

MOE's regulatory mandate for spills arises largely out of Part X of the Environmental Protection Act (EP Act), which requires spills to be reported to the Ministry immediately. Part X also requires the owner of the spilled material and the person who had control of a material when it was spilled to promptly clean up and restore the environment. This is an absolute responsibility placed on the owner/controller of a spill regardless of who may have caused the spill. The ministry ensures that the cleanup and disposal of spilled materials is done in an environmentally acceptable manner.

When those under statutory duty do not respond adequately, the Minister has the authority under Part X of the EP Act to order those responsible for the spill to clean up and restore the environment. Should they fail to comply with such orders, the ministry can undertake the cleanup. This can be accomplished by hiring contractors and then recovering costs from the owner/controller. It should be noted, however, that for the vast majority of spills in Ontario, cleanup is carried out promptly by the owner or controller of the spilled pollutant or by local government agencies.

Part X of the EP Act does the following:

(1) Establishes prompt and broad notification requirements for the person who caused the spill, for the person who had control of the pollutant immediately prior to the spill, and for police officers and employees of all public authorities under specified circumstances (Section 92 of the Act).

(2) Establishes a duty on the person who had control of the pollutant immediately prior to the spill, as well as on the owner, to clean up the spill; more specifically to "prevent, eliminate and ameliorate the adverse effects, and to restore the natural environment" (Section 93 of the Act).

(3) Establishes the responsibility for proper disposal and re-use of materials from spill sites while permitting the MOE Director to expedite matters through directions or approvals when warranted. (Section 96 of the Act).

(4) Provides municipalities with the right to respond to spills, and establishes the right and a mechanism to recover their costs from the owner and the person who had control of the pollutant immediately prior to the spill (Section 100).

(5) Provides for the authority of the Minister to direct MOE employees or agents to respond to spills under certain conditions and to issue orders to those liable at law and others who may be able to assist (EPA, Section 94 and 97).

(6) Establishes the responsibility for those identified by regulation to develop and implement plans to prevent or reduce the risk of spills, and to develop and implement spill response plans (EPA, Section 91.1).

Note: In 2007 the Ministry introduced mandatory spill prevention and contingency plans for large industrial facilities in Ontario. The primary objective of these plans is to help prevent or reduce the risk of spills of pollutants and prevent, eliminate or ameliorate any adverse effects that result or may result.

3. Lead Agency Responsibilities for Preparedness and Response

Ontario's emergency planning and preparedness framework includes a number of committees or teams that help to ensure a state of readiness within the province. Furthermore, Environment Canada's Regional Environment Emergency Team (REET) initiative further strengthens Ontario's preparedness framework with its annual REET preparedness meetings. These include a number of Regional Environmental Emergency Teams that are located across the Province. In addition, there are several contingency plans and corresponding response organizations that may be activated in the event of a major spill or environmental emergency, including those events that could have an impact on the Great Lakes.

Regional Environmental Emergency Teams

A REET is a multi-agency, multi-disciplinary group that can be assembled to provide consolidated and coordinated direction, environmental advice and assistance during spills and emergencies that have significant environmental concerns. Environment Canada REETs typically conduct annual planning preparedness meetings to ensure a common understanding of roles and responsibilities during an event and to continuously update area and regional environmental resource priorities. A REET may include representatives from Environment Canada, MOE, Canadian Coast Guard and local agencies. In addition to annual yearly planning preparedness meetings, REETs can be assembled on short notice to provide environmental expertise and support during an emergency. A REET is formed whenever a spill or environmental emergency occurs that requires the coordination of direction, advice and/or assistance from more than one agency. In response to a major spill or environmental emergency, Environment Canada will chair or co-chair alongside the provincial MOE a more rigorous and formal REET structure to ensure consolidated environmental support is provided to the Responsible Party and/or the lead or oversight agency. Such a REET would likely occur in response to a significant spill or environmental emergency impacting the Great Lakes, particularly if annexes under the Canada-US Joint Marine or Inland Pollution Contingency Plans were invoked.

MOE Emergency Response Plan

The primary purpose of this plan is to establish a framework for a systematic and effective response to spill and drinking water emergencies that escalate to the level where MOE is asked or is required to respond. MOE's primary role in response to spill and drinking water emergencies is to ensure regulatory oversight of the duties and responsibilities of those regulated parties and to lead or support response activities in conjunction with other authorities. This Plan could be activated by the Ministry in response to a major spill in the Great Lakes.

A key component of the MOE Emergency Response Plan involves the activation of the Ministry Action Group (MAG) as a senior-level decision-making body for coordinating and directing the Ministry's response to an emergency. Once activated for an emergency, the MAG becomes the focal point for MOE's corporate-level decisions.

The response structure established by this Plan supports MOE's participation in a broader response by government agencies under a range of plans and response structures including the Provincial Emergency Response Plan, the National Marine Emergency Response Plan and the Canada-United States Joint Marine Contingency Plan.

Province of Ontario Emergency Response Plan

This plan is also referred to as the Provincial Emergency Response Plan or PERP. It was developed by Emergency Management Ontario (EMO) pursuant to the Emergency Management and Civil Protection Act and associated Order in Council. The aim of the PERP is to establish a framework for a systematic, coordinated and effective response by the Province of Ontario to safeguard the health, safety, welfare and property of its citizens, as well as to protect the environment and economy of the area affected by an emergency. When the PERP is activated, EMO can also activate the Provincial Emergency Operations Centre (PEOC) to ensure a coordinated response among all responding agencies. The PERP and/or the PEOC can be activated if there is a need to coordinate a multi-agency response to a major spill to the Great Lakes System.

National Marine Emergency Response Plan

This plan was prepared by the Canadian Coast Guard to address marine emergencies for the Great Lakes and their interconnecting Channels. The plan addresses spills that impact Canadian waters from vessels in transit and during loading or unloading operations. MOE is expected to deal with associated environmental issues within its mandate, and MOE's Spills Action Centre (SAC) serves as the primary communications conduit between the Canadian Coast Guard and MOE and other provincial entities, as necessary. MOE may activate its Emergency Response Plan to facilitate the Ministry's participation under the National Marine Emergency Response Plan.

Canada - United States Joint Marine Pollution Contingency Plan

Developed under the Great Lakes Water Quality Agreement, this is a formal agreement administered jointly by the Coast Guards of both countries. The plan includes early notification, surveillance and monitoring, as well as response provisions for events, normally but not necessarily as a result of maritime activities. This plan was prepared for events that impact the other country, threaten to impact the other country, or may be of such a nature or magnitude to make it advisable to notify or to involve the other country. Under this Plan, the MOE is expected to deal with associated environmental issues within the Ministry's mandate on the Ontario side of the Canada–

U.S. border. In Ontario, the Spills Action Centre serves as the notification focal point and communications link between the Canadian Coast Guard/Environment Canada and MOE. MOE may activate its Emergency Response Plan to facilitate the Ministry's participation under the Canada-U.S. Joint Marine Pollution Contingency Plan.

Canada - United States Joint Inland Pollution Contingency Plan 2009

Developed to complement the Joint Marine Pollution Contingency Plan, this is a formal agreement administered jointly by Environment Canada and U.S. EPA. The Plan includes response provisions, notification agreements and clarification of responsibilities for events normally but not necessarily affecting the inland boundary. This plan was prepared for events that impact the other country, threaten to impact the other country, or may be of such a nature or magnitude in a province or state that requires the assistance of the other. Under this Plan, the MOE is expected to deal with associated environmental issues within the Ministry's mandate on the Ontario side of the Canada–U.S. border. In Ontario, the Spills Action Centre serves as the notification focal point and initial communications link between the Canadian Coast Guard/Environment Canada and MOE. MOE may activate its Emergency Response Plan to facilitate the Ministry's participation under the Canada-U.S. Joint Inland Pollution Contingency Plan.

4. Additional Agencies Involved in Spill Preparedness and Response

In all likelihood, a major spill to the Great Lakes System could involve numerous agencies responding in accordance with a range of plans and response structures that exist within the Province of Ontario. The following is a summary of key provincial and federal agencies that have a role to play in spill preparedness and response in Ontario and could be involved in responding to a major spill to the Great Lakes.

Ministry of the Environment (lead agency for most spills)

As previously stated, MOE is the lead regulatory agency for most spills that occur in Ontario. The Ministry is committed to providing timely services for receiving, assessing and coordinating responses to spills and other environmental occurrences that are reported to the Ministry. These service commitments are facilitated by the 24/7 operations of the SAC and supported by the province-wide Ministry field response capacity of MOE's Operations Division. These services are further supported by a network of resources available in other MOE divisions, including drinking water support, laboratory testing capabilities, hazardous substance expertise, sophisticated air and water modeling/monitoring capabilities, and communications support.

Emergency Management Ontario (provincial coordination)

Emergency Management Ontario (EMO) is the organization responsible for monitoring, coordinating and assisting with the promotion, development, implementation and maintenance of emergency management programs in Ontario. EMO is also responsible for maintaining the Provincial Emergency Response Plan (PERP) and the Provincial Emergency Operations Centre (PEOC) which can be used to coordinate a multi-agency response to an emergency on a 24/7 basis if needed. The PERP and PEOC could be activated to deal with a major spill to the Great Lakes. In such a case, MOE would still be considered the lead provincial agency but would benefit from EMO's provincial emergency response coordination structure.

Canadian Coast Guard (lead agency for ship source spills)

The Canadian Coast Guard (CCG) is the lead response agency for all ship-source spills and spills of unknown origin into waters under Canadian jurisdiction, and for supporting other countries under international agreement. The objectives of CCG's Environmental Response Program are to minimize the environmental, economic and public safety impacts of marine pollution incidents. The CCG monitors and investigates all reports of marine pollution in Canada and works with both its own resources and equipment and with commercial partners to respond to all reported incidents.

If a ship-source spill occurs in a port under the authority of a Port Authority (e.g. Toronto, Hamilton or Thunder Bay) or in waters controlled by the St. Lawrence Seaway Authority (e.g., St. Lawrence River or Welland Canal) the lead agency would be the relevant Port/Seaway Authority and the CCG would serve as a resource agency.

Canadian law places the onus for responding to pollution incidents on the polluter. If the polluter is responding then the Coast Guard monitors the polluter's efforts as the Federal Monitoring Officer. If a polluter is unknown, unwilling or unable to respond to an incident, Coast Guard will assume the role as the On-Scene Commander and manage the response. Through legislation, the CCG can seek compensation for reasonable costs incurred when managing or monitoring the response to an incident.

The CCG, port authorities or St. Lawrence Seaway Authority can contract the cleanup response to the ECRC. See section 6 for more information on ECRC.

Environment Canada (federal/international interests)

Environment Canada is responsible for supporting Canadian and international interests along the Canada-U.S. border during environmental emergencies and provides support for spills that impact the Great Lakes. Environment Canada maintains the following resources:

- technical expertise in the fate and behavior of oil, chemicals and other noxious substances;
- technical expertise in oil and chemical spill countermeasures;
- hazard identification, risk management and emergency response planning;
- weather forecasting, marine spill trajectory and atmospheric deposition modeling;
- monitoring migratory bird protection and management;
- natural resource damage assessment; and
- hydrologic and water quality monitoring and research.

Environment Canada has lead regulatory responsibility for spills at federal facilities or spills in First Nation Communities or if the source of the environmental emergency was international, and could be involved in chairing (or co-chairing with MOE) a Regional Environmental Emergency Team if one is activated in support of a major spill or environmental emergency impacting the Great Lakes region.

National Energy Board (international/inter-provincial pipelines)

The National Energy Board (NEB) regulates the approval, construction and operation of pipelines that cross provincial or international borders. When a spill occurs from a pipeline regulated by the NEB, the Board will oversee and monitor the pipeline company's response. Pipeline companies are

held fully accountable for cleanup and restoration of the environment. The Board can issue orders if a pipeline company is not responding in an appropriate manner.

NEB can also activate its Emergency Operations centre and form a unified command structure along with the company for serious events based on factors such as threats to people, degree of containment, or control and environmental impacts. NEB also works closely with other agencies, including provincial and federal environmental agencies.

5. Services (e.g., spill response/spill cleanup/enforcement)

Ministry of the Environment

The Ministry provides a range of services for dealing with spills and related environmental emergencies. These include the following:

Spills Action Centre – SAC receives reports of spills and other environmental matters on a 24/7 basis and coordinates responses. The center is staffed by Environmental Officers and can be reached with a province-wide, toll-free telephone number. SAC has access to extensive chemical database systems and lists of cleanup contractors. SAC Environmental Officers often provide cleanup advice over the phone. In the event of a major spill that impacts the Great Lakes or interconnecting channels, SAC has procedures for activating MOE's response in accordance with relevant plans. Depending on the nature and impact of an incident, SAC can activate various levels of ministry response:

District-level Response – The ministry's first level of field response is provided by environmental officers working out of the ministry's district or area offices. District response staff assess the situation and determine what actions need to be taken and what additional resources may be needed. Outside of regular working hours, each district office has an on-call environmental response person who is sent out by SAC if certain criteria are met.

Regional-level Response – A Regional-level ministry response is triggered to supplement the District-level response with technical support and other resources through the ministry's five regional offices. For example, Region-level ministry support may be required for a significant chemical fire. Regional assistance or expertise may include:

- Staff, equipment and technical expertise for complex incidents;
- Air or water monitoring or modeling and interpretation;
- Support, guidance and approval to initiate directions, approvals or orders

Drinking Water Management Division – Staff can be called upon to assist when spills or spill emergencies threaten drinking water supplies.

Environmental Monitoring and Reporting Branch (EMRB) – May provide on-site specialized air monitoring at prolonged industrial or chemical emergency sites using one of two mobile trace atmospheric gas analyzers. EMRB may also be called upon to provide meteorology information, as well as air and water modeling support.

Laboratory Services Branch – Can conduct rapid analysis of samples, which may be important for making decisions regarding response actions and cleanup procedures.

Standards Development Branch – Can provide information on chemical and physical properties of contaminants and pesticides, and can provide expertise on toxicology and air and water standards.

Emergency Operations Centre – Equipped with full backup power, heating and air conditioning. The EOC is co-located with the Spills Action Centre and can be activated along with MOE's Emergency Response Plan to direct the Ministry's response at a major spill or environmental emergency.

Investigation and Enforcement Branch – Provides environmental investigation, intelligence and enforcement services for the ministry through a network of field officers and head office staff. IEB also works closely with other agencies on investigation and enforcement matters.

6. Resources/Equipment

Generally speaking, government agencies in Ontario do not maintain equipment to perform actual spill cleanup operations. To varying degrees, local/municipal level agencies tend to have equipment to address the cleanup of minor spills to local infrastructure such as roads and drainage systems, including creeks and rivers. Some larger municipalities have excellent spill response capabilities and are available 24/7 while others have limited capabilities.

Ontario's spill legislation places the onus of responsibility on the owner and controller of spilled pollutants to clean up and restore the environment. For larger spills, cleanup is often accomplished by having the spiller hire a spill cleanup contractor to do the work. There are numerous such contractors located across the province and the Spills Action Centre has contact information for many of the contractors which can be passed onto the responsible parties. Many companies and some agencies have contractual arrangements in place with one or more contractors to ensure availability when needed.

Perhaps the largest spill cleanup response organization in Ontario is the ECRC. The ECRC is a private management company, owned by several of the major Canadian oil companies, whose role is to provide marine oil spill response services, when requested, to the "responsible party," the Canadian Coast Guard or to any other lead agency. The ECRC can provide a wide range of spill cleanup equipment (focused on petroleum-based contaminants), resources and operational expertise in response to requests from the Canadian Coast Guard, the St. Lawrence Seaway Authority and port authorities. In the event of a major oil spill to the Great Lakes, it is very likely that ECRC services would be deployed at the request of the "responsible party" or lead responding agency.

7. Waste Management Considerations

If a spill results in the generation of hazardous or liquid industrial wastes that need to be transported and disposed of, then Ontario's normal waste management rules would apply. This means:

- The wastes must have a generator number to facilitate transportation and disposal. If the discharger does not already have an applicable registration number for the type of wastes generated by the spill, then an emergency generator number can be provided by SAC on a 24/7 basis.
- The wastes must be transported for disposal by a carrier who has a Ministry Certificate of Approval for the waste classes involved.
- An Ontario Waste Manifest must be used to track the movement of the waste from the spill site to the treatment or disposal site.
- The wastes, when scheduled for disposal, must be taken to a waste treatment or disposal site operating under a Ministry Certificate of Approval for the waste classes involved.

While these waste management requirements were developed to ensure that wastes are managed properly, the Environmental Protection Act was not intended to hamper prompt and responsible

action which may be required during spills and related emergencies. Therefore, the Act provides some flexibility for dealing with spill situations, especially when it is not possible or practicable to use licensed carriers and receivers.

8. Communications

As previously mentioned, major spills and related environmental emergencies can involve a range of agencies at the federal, provincial/state and local levels. This would be especially true for a major spill to the Great lakes that could involve a range of provincial/state, federal and local authorities including the environmental agencies and coast guards on both sides of the Canada-U.S. border. Effective communications among the responding agencies, in accordance with relevant plans and procedures, is critical.

During the early stages of a major spill in Ontario the SAC can serve as a one-window contact with other responding agencies as well as the discharger. SAC has procedures cards to guide the Ministry's initial response and for ensuring that other agencies are contacted in a timely manner. As an incident progresses and responding agencies activate their response organization, including their EOCs, then the expectation is that these centers will communicate with each other in accordance with relevant plans. If the source of the spill was a shore-based facility then MOE would serve as the lead agency for communicating with the public and the media. The Ministry's Emergency Response Plan has an annex that specifies how this should be done. If the Provincial Emergency Response Plan was activated to help coordinate a range of provincial agencies it would be important to identify a provincial spokesperson that would likely be from the MOE. For ship source/marine spills the Canadian and/or U.S. Coast Guard would likely be responsible for communicating with the public and the media.

9. Future Developments / Priorities

The Ontario and Canadian governments continue to work together to protect Great Lakes water quality through the 2007 Canada-Ontario Agreement Respecting the Great Lakes Basin Ecosystem. In March of 2011, the two governments agreed to a second extension of COA from April 1, 2011 to June 24, 2012. A new spill prevention and response commitment was added to this latest extension. It reads as follows:

> *Spills Prevention and Response:* Canada and Ontario will strengthen their combined effectiveness for spill prevention, preparedness, response and recovery, including reviewing capabilities, roles and responsibilities. This will include assessing opportunities for enhancements to capabilities for responding to significant incidents or spills to air, land or water that could potentially impact the Great Lakes Basin Ecosystem.

This is a new commitment that intends to strengthen and clarify roles/responsibilities between Ontario and Canada and to help address binational efforts under the Great Lakes Water Quality Agreement. It is anticipated that the review will be completed by June 2012.

Spill Preparedness and Response in Pennsylvania

1. Introduction/Overview

The Pennsylvania Department of Environmental Protection (DEP) is the Commonwealth's primary lead agency for emergency preparedness and response. Pennsylvania's emergency response program was officially begun in the spring of 1987 with the hiring of a statewide Emergency Response Director and Emergency Response Coordinators (now Regional Emergency Response Managers) in each of the six regions of the Commonwealth. Region 6, the Meadville Region, (which includes the 12-county area of Northwest Pennsylvania) currently has an eight-member Emergency Response Team, comprised of specially trained field personnel from various programs within the Department, a regional emergency response coordinator, and a regional emergency response manager. All team members carry cell phones and Commonwealth Star-net radios for communications.

2. Legislation, Regulations and Authorities governing State/Provincial Programs

The DEP is responsible for many the implementation and oversight of many environmental laws including the Coastal Zone Management Act, the Pennsylvania Oil and Gas Act, the Clean Streams Law, the Storage Tank Management and Spill Prevention Act, and the Safe Drinking Water Act. The DEP has responsibility for the waters of the Commonwealth, routinely inspecting and monitoring facilities with a potential to pollute, as well as assessing, sampling and testing waters of the Commonwealth.

3. Lead Agency/Agency Responsibilities for Preparedness and Response

The DEP's Emergency Response Program consists of six Emergency Response Teams (ERTs), one in each of the six DEP regional offices. Each ERT is under the command of a Regional Emergency Response Manager (RERM) who has the full authority of the Regional Director for responding to emergencies. In addition to the RERM, each region has a Regional Emergency Response Coordinator (RERC) and 8-12 specialists trained to the OSHA 1910.120 hazardous waste site worker and hazardous waste emergency responder technician standards. The DEP employs the National Incident Management System/Incident Command System (NIMS/ICS) to manage incidents or fills positions in the ICS structure of the Authority Having Jurisdiction (AHJ) as requested. DEP ERT responders remain on scene until the emergency phase is terminated and they are able to hand-off the incident to the appropriate DEP Program personnel for follow-up.

4. Additional Agencies involved in Preparedness/Response

As a Commonwealth, the individual municipalities, and to a lesser extent, the counties play a major role in preparedness and response to spills and emergencies. Local first responders and county Hazardous Materials Response Teams are the first line of defense.

The Pennsylvania Emergency Management Agency (PEMA) is the Commonwealth's lead agency for overall emergency preparedness and management. The PEMA State Emergency Operations Center (SEOC) acts as the Commonwealth's Multi-Agency Coordination Center (MACC) during major emergencies, disasters, Spills of National Significance (SONS), and National Special Security Events (NSSE). Under PEMA's coordination there are 9 Regional Tasks Forces across the Commonwealth that can be called upon to assist during an emergency.

In addition to PEMA there are many cooperating and assisting agencies which work together during emergencies to bring personnel and equipment to the scene of any disaster. The Pennsylvania Fish & Boat Commission is the law enforcement contingent on the water within the Commonwealth.

5. Services (e.g., spill response/spill cleanup/enforcement)

The DEP's emergency response commitment centers on 24-hour response capabilities to emergencies which immediately threaten public health, safety, or the environment. When there is a spill, release or discharge of any pollutant, DEP's Emergency Response personnel are on scene as quickly as possible to help control and contain the spill, and to take whatever actions are necessary to mitigate the damage from the spill and get the cleanup started as soon as possible.

At emergency incidents, DEP emergency responders:

- Serve as regulatory enforcement to responsible parties and as technical consultants to responding local, state and federal responders to:
  - Provide real-time monitoring to delineate areas of impact
  - Provide protective actions for first responders and the public
  - Collect and analyze samples to provide chemical/petroleum identification and extent of contamination
  - Identify the levels of concern and determine the need for control zone
  - Identify potential pathways of dispersion
  - Provide technical advice and assistance in the early assessment of health and environmental hazards
  - Provide guidance on acceptable methods of containment and clean-up while ensuring the work proceeds in an environmentally acceptable manner
  - Conduct long-term environmental monitoring and compile information on hazardous material contamination of air, water, soil, and environmentally sensitive areas
- Provide technical advice and assistance associated with decontamination of persons, equipment, and the environment exposed to hazardous substances, radioactive materials, infectious waste, and other toxic or harmful substances.
- Provide laboratory services for the analysis of known or unknown hazardous materials and determine environmentally safe concentrations for water quality and establish safe limits for drinking water supplies.
- Supervise clean-up, repacking and removal of hazardous materials from incidents/accidents, etc.
- For incidents involving radioactive materials, investigate radiation levels and supervise the cleanup and repackaging of these materials.
- Provide a list of contractors for cleanup and disposal of all types of hazardous substances.
- Direct clean-up operations at an incident to assure proper disposal of waste material or spill residue.
- Establish appropriate reentry criteria into areas possibly contaminated by hazardous substances.

6. Resources/Equipment

Emergency Response Team members have safety equipment and limited containment gear, as well as portable monitoring and sampling equipment. Team members can enforce DEP regulations on

the scene, and the RERM is authorized to enter into emergency contracts for whatever action is needed for health, safety or environmental protection.

Presently the Meadville Region has three vehicles designated for emergency response, one full-size van equipped for use as a portable emergency operations center, and two large 4X4 SUVs. Significant equipment used by the Emergency Response team includes mobile and portable 800MHz radios as well as legacy radios with capability for marine band, SCBA's, APRs, Multigas detectors (PID, O2, LEL, CO and H2S), Ludlum 2241-3 radiation meters, SAM 935 radiation detectors, Photoionization detectors, Flame ionization detector, Jerome x-431 Mercury vapor detector, Chlorine gas meters, TravelIRs (FTIR spectrometers), Ahura First Defender chemical detector, Deltatox Water Quality Analyzer, personal protection equipment for level B and C response, and a trailer of boom and absorbent material stored at PISP.

Similar equipment is retained by the other regions in the Commonwealth and is available should the need arise. Additionally, the Commonwealth has four mobile laboratories equipped for mass spectrophotometry of both gasses and liquids.

7. Waste Management

The DEP's Bureau of Waste Management organizes, directs, evaluates, coordinates and manages the hazardous, municipal and residual waste programs statewide, while overseeing implementation of hazardous sites cleanups, municipal and residual waste management, Superfund sites and RCRA corrective actions.

Pennsylvania's Hazardous Sites Cleanup Act (HSCA) provides the DEP with the funding and the authority to conduct cleanup actions at sites where hazardous substances have been released. HSCA also provides the DEP with enforcement authorities to force the persons who are responsible for releases of hazardous substances to conduct cleanup actions or to repay public funds spent on a DEP-funded cleanup action.

8. Communications

The DEP's Emergency Response Team members communicate using a variety of options. Each ERT member is issued a cell phone, a mobile 800 MHz radio (installed in their dedicated emergency response truck) and a portable 800MHz radio. The 800 MHz radios operate under the Commonwealth's Star-Net Radio System, a trunked UHF system providing Commonwealth-wide access to state agencies and many of the counties. They also possess legacy radios with capability for marine band communications. In addition, the Regional Emergency Response Manager has a dedicated satellite phone.

9. Future Development/Priorities

The emergency response program is presently developing stronger lines of communication with outside agencies (both state and federal) to maximize efficiency. The ability to respond to spills in the Great Lakes is currently lacking until DEP can secure suitable ships for that purpose. Further development of the team's expertise in spill response and integration into Great Lakes planning is anticipated to overcome these problems.

Spill Preparedness and Response in Québec

1. Introduction/Overview

In the province of Québec, municipalities bear the primary responsibility for emergency interventions within their territory. They are tasked with ensuring the safety and well-being of citizens residing in or traveling through their territory. In the event of an environmental emergency, if municipal organizations are unable to handle the task or if the situation is beyond their areas of skill or expertise, they can seek assistance from the Ministry of Sustainable development, Environment and Parks (MDDEP) through its Urgence-Environnement service. If the municipal resources are insufficient to respond to the emergency, or if the situation requires the involvement of various government agencies other than MDDEP, the Ministry of Public Security (MSP) becomes responsible for the coordination of the government actions, either regionally through its Civil Protection Regional Organisation (ORSC) or, at the provincial level, through the Québec Civil Protection Organisation (OSCQ).

2. Legislation, Regulations and Authorities governing Provincial Programs

MDDEP's mission is to protect the environment and natural ecosystems for the benefit of current and future generations. Its leading role is to promote sustainable development and, in keeping with that responsibility, it aims to keep the environment healthy within the confines of economic development and social progress. To fulfill its mission, MDDEP refers, notably, to the Environment Quality Act: Whoever is responsible for the accidental presence in the environment of a contaminant contemplated in section 20 must advise the Minister without delay. (R.Q., c. Q-2, s. 21)

As under certain regulations enforced by MDDEP, the Regulation respecting hazardous materials allows companies responsible for spills or leaks to meet their obligations:

Every person who accidentally releases a hazardous material into the environment shall immediately:

- Stop the spill;
- Inform the Minister of Sustainable Development, Environment and Parks; and
- Recover the hazardous material and remove all contaminated material that is not cleaned or treated on site. (R.Q. c. Q-2, r.32, s. 9)

<u>Costs</u>

The mandate of Urgence-Environnement does not involve collecting spilled contaminants, a task carried out by specialized companies whose fees are paid by the party responsible for the spill. In certain exceptional cases, MDDEP supervises the work required to protect the environment. This could be the case, for example, if the party responsible for a spill has yet to be identified or refuses to act and the situation does not fall under another jurisdiction or if the spill was caused by a natural disaster and occurred on public land managed by MDDEP. In these cases MDDEP always takes every measure to claim back the sums spent from the party responsible (LRQ, c. Q-2 s. 115.1). If the party responsible has not been identified, the regional director must consider the option of carrying out an investigation to identify the party.

Civil Protection Act (R.S.Q., chapter S-2.3), Ministry of Public security

The purpose of this Act is to protect persons and property against disasters through mitigation measures, emergency response planning, response operations in actual or imminent disaster situations, and recovery operations.

The Act imposes general obligations of prudence and foresight on all citizens, and it requires persons whose activities or property pose a disaster risk to report the risk and implement safety measures. Authorities at the municipal level will be asked to identify disaster risks and available resources, assess the vulnerability of communities and determine safety objectives and the actions required for their achievement. Local municipalities will be given the power to declare, in the event of a disaster and on certain conditions, a local state of emergency, in which case special powers mainly aimed at protecting the life, health and physical integrity of the inhabitants of the municipality will be exercised by the local municipality, the mayor or any other person authorized for that purpose.

The responsibilities of government departments and government bodies having a role to play in civil protection matters are also defined. The Act empowers the Government to declare a national state of emergency in all or part of the territory of Québec to protect human life, health or physical integrity.

3. Lead Agency Responsibilities for Preparedness and Response

Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP) (lead agency for most spills)

In accordance with its mission and its powers under Section 2, Paragraph C of the Environment Quality Act, MDDEP has adopted a ministerial emergency plan. This document describes the preparation and intervention structures and mechanisms put in place to mitigate the impacts of environmental disasters on the community and its residents.

The emergency plan defines an environmental emergency as follows:

"Any situation that threatens, affects, or is on the verge of adversely affecting the quality of water, air, soil, wildlife, natural habitats, or the environment that supports human life and that requires immediate action."

Environmental emergencies usually follow a sudden event, an accident, an equipment breakdown, or a natural catastrophe.

Urgence-Environnement Québec

Urgence-Environnement Québec is the organization working on the activities outlined in the emergency plan. It includes an alert system, regional teams and two support teams able to respond to environmental emergencies at any time. The general responsibilities of Urgence-Environnement Québec are in line with MDDEP's mission and can be summarized as follows:

- Minimize the impacts of any environmental emergency that may threaten human life, health, safety, well-being or comfort; cause damage; or otherwise adversely affect the quality of soil, vegetation, wildlife, or property.

- Prepare the ministry's response to environmental emergencies. Ministry specialists can also be called upon as required to deal with specific situations. This service also allows companies responsible for spills or leaks to meet requirements of the EQA and its regulations.

4. Additional Agencies Involved in Preparedness and Response

MSP

When the scope of an environmental emergency requires the intervention of several Québec government departments and agencies, the MSP is called upon to provide leadership and coordinate government resources through the Regional Civil Protection Plan or, if needed, the National Civil Protection Plan. In the event of a disaster, the following structures can be put in place:

- Civil Protection Municipal Organization (OMSC) is the organization responsible for the coordination of the municipal response to the event. Its leadership is assured by the Civil Protection municipal coordinator. The OMSC is staffed by municipal employees, managers or volunteers able to identify the major risks and hazards for the community, deploy mitigation measures to attenuate those risks and prepare the Local Emergency Plan. During a disaster, the OMSC has the responsibility of ensuring the safety of the community.
- Civil Protection Regional Organization (ORSC) brings together representatives of Québec government departments and agencies by region. The MSP civil security regional director coordinates the involvement of their resources to support municipalities whose capabilities are insufficient to deal with the situation.
- Civil Protection Organization of Québec (OSCQ) brings together ministry civil security coordinators from every government department and agency involved. OSCQ plans civil security measures across Québec and, in the event of a major disaster, coordinates operations carried out by the leaders of each mission according to the Plan national de sécurité civile (NCPP) National Civil Protection Plan (PNSC).
- Emergency Operations Center (COG) allows the government to maintain its situational awareness through constant monitoring of the territory, and will alert and inform concerned parties in case of an emergency. During any event, the COG will support the OSCQ, the Civil Protection regional offices as well as any other government partner in need of support.

The National Civil Protection Plan (PNSC) describes:

- The sharing of responsibilities between government departments and agencies according to their respective abilities
- The organization of government resources in response to various types of disasters and how they will be used to support municipalities
- Simplified decision making processes

The Québec government's civil security actions are based on responses to 15 needs likely to arise during a disaster, which are identified in the plan in terms of "missions." Each mission falls under the responsibility of a specific government department or agency whose regular activities most closely fit the mission or with the expertise to take charge of the situation. Under the PNSC, MDDEP is responsible for the mission dealing with water and hazardous and waste materials. MSP, represented by the Civil Protection's Associate Deputy Minister, is responsible for the overall coordination of the provincial government' response.

5. Services (e.g., spill response/clean up/enforcement)

Alert

When an environmental emergency arises, it is important that all those affected can communicate quickly with Urgence-Environnement at all times. An alert system has been put in place to ensure MDDEP's Urgence-Environnement system is accessible to everyone.

There are two ways of contacting the alert system: through the call center or through the regional MDDEP office in the area where the event occurs. Emergency plan agents and partners can also be reached through the alert system.

The call center can be reached toll-free at all times at (866) 694-5454. This number can be used across Québec and in surrounding jurisdictions in regions with codes adjacent to Québec. Persons calling from outside these areas or from directly within the Québec City area can call (418) 643-4595.

Calls to regional offices

During regular business hours, Urgence-Environnement can be reached by calling local MDDEP offices directly. Local office numbers can be found in the Government of Québec section of the blue pages of the telephone directory under Environment - Urgence-Environnement or on the MDDEP website at:

http://www.mddep.gouv.qc.ca/ministere/rejoindr/adr_reg.htm

Maritime intervention

The Canadian Coast Guard (CCG) is the lead agency for ensuring the cleanup of all ship-source and spills of unknown origin into waters under Canadian jurisdiction, and for supporting other countries under international agreement.

In April 2011, CCG, MDDEP, and MSP jointly released a document entitled "Guidelines - Provincial operating procedures for alerts in the event of maritime incidences in the Quebec region." This document was developed to ensure a more effective response to maritime incidences. It helps ensure a rapid, coordinated and appropriate response to any maritime incident that could threaten the safety or health of Québec residents or that could adversely affect the environment.

6. Resources/Equipment

Expert groups, support teams, and equipment

MDDEP has teamed up with various partners to create expert groups, such as the Expert Table on Maritime Accidents (ETMA) to respond to environmental emergencies. The role of this type of group generally involves providing scientific advice to managers. Depending on the issue at hand, members of these groups may come from a wide variety of ministry units. The Field Studies section of the Quebec Center of Expertise in Environmental Analysis (CEAEQ), an MDDEP agency, provides Urgence-Environnement with a support team and a chemist on call 24/7. This support team provides scientific and analytical expertise during environmental emergencies in the form of telephone consultations and interventions in the field with mobile labs like TAGA (Trace Atmospheric Gas Analyzer), which is used to analyze traces of atmospheric gases.

In addition, the Quebec Center of Expertise on Water (QCEW), an MDDEP administrative unit, provides support to municipalities in identifying flood plains. The center also advises MSP regarding emergency situations that threaten Québec's waterways. To increase the efficiency of its on-site response, MDDEP has a mobile command post (PCM) as well as all the specialized equipment required to respond to almost any emergency situation. In addition, every regional office has the most newly-required equipment at its disposal, such as flammable gas detectors and PHD Ultra multigas detectors.

7. Waste Management Considerations

Environmental emergency involving marine spills

MDDEP will mobilize its available resources to find the source of the spill and the nature of the oil products involved. Depending on the location of the spill, experts from within or outside the ministry will evaluate and measure the scope of the contamination. Samples can be taken for further analysis. MDDEP will perform or supervise decontamination efforts to clean wet soils and shores, and ensure the safeguard of their biodiversity. MDDEP also makes sure that all products spilled are recuperated using the best methods to do so. Following that, MDDEP mandates that all recuperated products be recycled if possible, or if not, disposed of in an environmentally friendly way and according to existing legislations. All reasonable efforts will be made so that affected populations and areas can return to their pre-existing situations.

8. Communication

In response to growing public concern regarding environmental issues, and in the interest of greater transparency, MDDEP has introduced measures aimed at quickly informing the public when Urgence-Environnement is called upon to intervene on-site. This transparency starts in the field, where Urgence-Environnement representatives are urged to talk to the media in order to quickly provide information to the public.

Since May 6, 2008 a register of Urgence-Environnement on-site interventions since April 1, 2008 has been available on the MDDEP website at:

http://www.mddep.gouv.qc.ca/ministere/urgence_environnement/index.asp

The website lists Urgence-Environnement interventions requiring an on-site presence, with the exception of road accidents in which only vehicle fuels are involved. This register is the first of its kind in Canada.

In the event of interventions on environmental emergencies classified as Category 2 or 3 (based on criteria like impact on the environment and local populations, difficulty of controlling the incident, etc.), a press release is quickly issued to reassure the public and provide information on the incident and the response.

9. Future Development/Priorities

A partnership is also in the early stages of developing a framework to ensure collaboration between the CCG and the government of Québec in the event of a discharge of ship-borne pollutants.

The government of Québec makes sure that all its emergency plans are up to date and that all government agencies and ministries are ready to perform their roles and functions in case of an emergency. Periodic meetings are held and exercises are conducted to maintain the awareness and

vigilance of all participating parties. MSP and MDDEP participate in the activities organized at the provincial level, as well as those organized by private organizations, municipalities or the federal government.

Spill Preparedness and Response in Wisconsin

1. Introduction/Overview

Wisconsin is a "Home Rule" state and local first responders provide the initial response to hazardous substance releases (spills). "Home Rule" and the constant interaction with state and federal agencies during spills of significance and other types of disasters necessitate adherence to the Incident Command System. The requirements of the federal Oil Pollution Act of 1990 (OPA) and Title III of the Superfund Amendments and Reauthorization Act (SARA), state regulations and Home Rule have generated a productive working environment between local, state and federal agencies.

A greater public/private partnership would enhance response capacity, which is the desire of the Wisconsin Homeland Security Council. Limited private and government resources at all levels necessitate engaging all affected parties to create a more effective spill response program that will protect the safety of the population and the Great Lakes ecosystem. The responsibility for this task is shared by the private sector and local, state and federal government.

2. Legislation, Regulations and Authorities governing State/Provincial Programs

Wisconsin Statutes 323 (administered by Wisconsin Emergency Management (WEM)) and 292.11 (administered by Wisconsin Department of Natural Resources (WDNR)) set the requirements for reporting and responding to hazardous substance releases (see Wisconsin Statutes Sections 292.11 and 323.71). These regulations are the equivalent of the requirements of OPA and SARA title III. First responders have a level of liability coverage when responding to hazardous materials spills.

3. Lead Agency Responsibilities for Preparedness and Response

WEM is involved in coordinating state and local response plans for all hazards. WDNR is the lead agency for the state's Emergency Support Function 10 (ESF-10) role in the Wisconsin Emergency Response Plan. State agencies operate through the Incident Command System/Unified Command (ICS/UC).

4. Additional Agencies involved in Preparedness/Response

Port Area Committees

Lake Superior and Lake Michigan areas: Duluth, Green Bay and Milwaukee Port Area Committees

Local/State/Provincial Emergency Planning Committees (SERCs)

WDNR and WEM, along with local responding agencies and other state agencies, respond to oil and hazardous materials spills. The municipal and state agencies include fire, law enforcement, HAZMAT Teams, Department of Health Services, Radiation Protection, State Patrol, Military Affairs, Civil Support Team and Department of Agriculture, Trade and Consumer Protection.

Other

WEM and WDNR are constantly evaluating response capabilities and participate with the Upper Mississippi River Basin Association and the Minnesota/Wisconsin Boundary Waters Commission.

Wisconsin is a member of the Region 5 Regional Response Team and through this body works with the other Region 5 states and numerous U.S. federal agencies that have roles and responsibilities in spill preparedness and response. These partners include U.S. EPA, U.S. Coast Guard, the Federal Emergency Management Agency, the Occupational Safety and Health Administration, U.S. Department of Interior Fish and Wildlife Service, U.S. Department of Commerce National Oceanic and Atmospheric Administration and U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Administration.

5. Services (spill response/spill cleanup/enforcement), Resources and Equipment

- Oil spill containment boom was placed in eight designated port cities along the shores of Lake Michigan, Lake Superior and in two locations along the Mississippi River. The oil spill containment equipment will be used in first response initiatives and will be used in conjunction with Coast Guard and local response agency deployment.
- Training is being conducted for first responders at the technician levels.
- Eight Regional Hazardous Materials Response Teams were created to provide a high level of hazardous materials response capabilities to local communities throughout the state. The teams may be activated for an incident involving a hazardous materials spill, leak, explosion, injury or the potential of immediate threat to life, the environment, or property. These teams, along with the State Civil Support Team, can respond to oil spills and other spills that include all chemical, biological, or radiological emergencies.
- Local (County) Hazardous Materials Response Teams respond to chemical incidents that require a lower level of protective gear but still exceed the capabilities of standard fire departments. Currently, there are 40 counties that have a Local (County) Hazardous Materials Response Team.
- WDNR has zone contracts with private companies to respond and mitigate all types of hazardous materials spills.
- Wisconsin and Minnesota have an agreement to share resources during a response to a hazardous materials spill.
- WDNR has obtained 2 FLIR Units (infrared detection) and trained state personnel from other agencies (Wisconsin State Patrol and Division of Criminal Investigation) in its use. These thermal imaging devices can be used for security surveillance, enforcement activities and spill response operations. The Units are mounted on WDNR planes and relay pictures to monitors on the ground.
- Michigan and Wisconsin are working with a contractor (enfoTech) on the Environmental Response Resource Registry (ER3) project. This pilot project is intended to provide a data exchange for response resource inventory to responders of chemical and oil spills within the Great Lakes region.
- The state is aggressively participating in Incident Command System training (ICS) at all levels utilizing FEMA, Coast Guard and U.S. EPA training courses. WDNR has nine Type-3 Incident Management Teams (IMTs) and proposing the creation of two Type-2 Teams with additional participation from several other state agencies.

6. Resources and Equipment

(See Section 5 above)

7. Waste Management

Waste generated from a spill will be managed in conformance WDNR Administrative Rule Series NR: 600-679. WDNR provides a publication to determine whether wastes, which include wastes generated from a response, are hazardous or non-hazardous:

http://dnr.wi.gov/org/aw/wm/publications/anewpub/WA1152.pdf

All wastes designated for disposal or treatment are subject to transportation regulations and certifications. Management of wastes such as fuel-contaminated sorbents has options:

- Segregate the fuel-contaminated sorbent and send it off-site to be reclaimed or burned for energy recovery. Cleanup residues from spills of commercial chemical products are considered to be off-specification commercial chemical products for the purposes of the hazardous waste regulations (NR 661.33(4), Wis. Adm. Code). Off-specification commercial chemical products that are reclaimed to recover a usable product (e.g., sorbent or petroleum products) are not regulated as hazardous waste (NR 661.02(3)(c)). Off-specification commercial chemical products that are themselves fuels (e.g., gasoline, diesel fuel), and that are burned for energy recovery, are not regulated as hazardous waste (NR 661.02(3)(b)2.).
- Determine if the fuel contaminated sorbent is hazardous or non-hazardous and manage it as follows:
  - Hazardous Waste Sorbent: Waste sorbent that exhibits a hazardous waste characteristic must be placed in a closed, labeled container, and disposed through a licensed hazardous waste disposal contractor.
  - Non-Hazardous Waste Sorbent: Non-hazardous granular sorbent should be segregated and recycled at an asphalt plant, or treated in a bio-pile prior to disposal in a landfill. Only small amounts of non-saturated, non-hazardous sorbent may be disposed in the regular trash.

8. Communications

Wisconsin has a Statewide System Management Group that has a functioning program for the interoperability of communications that can be utilized by first response agencies using a trunked radio system. This system is new and some state and local agencies have not yet joined.

9. Future Development/Priorities

The state has reviewed the existing Regional Team concept and is considering the development of Chemical Assessment Teams that would be deployed on a regional basis that would be trained at the same level as the Regional Teams but would be utilized primarily for the immediate assessment of a potential hazardous materials situation. Wisconsin will also be participating in spill response exercises involving pipelines and releases on or under ice.