



# Port Environmental Assessment and Best Practices

Lynn A. Corson, Ph.D.  
Clean Manufacturing  
Technology Institute  
Purdue University  
West Lafayette, Indiana

Steven A. Fisher  
Executive Director  
American Great Lakes  
Ports Association





Phase I Objective: to develop an environmental management system “model” for use by small, public Great Lakes port authorities to examine port and tenant operations and their impact on the surrounding environment

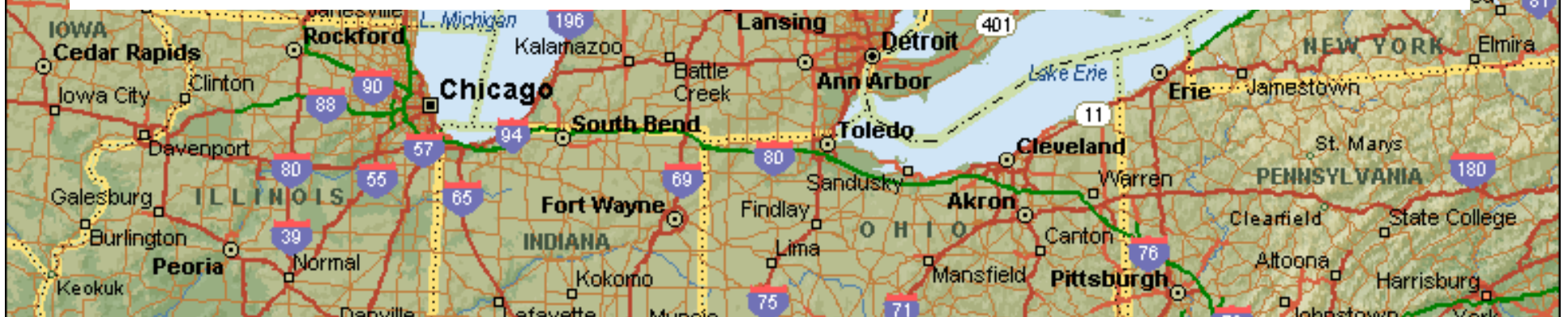






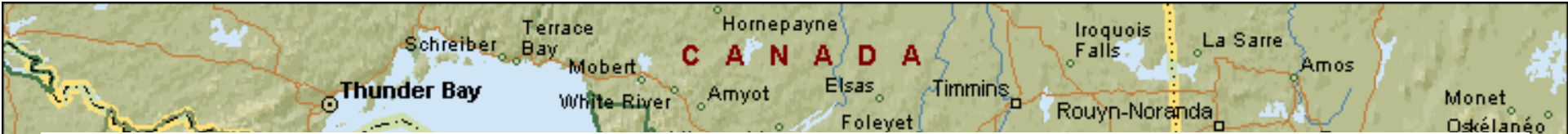
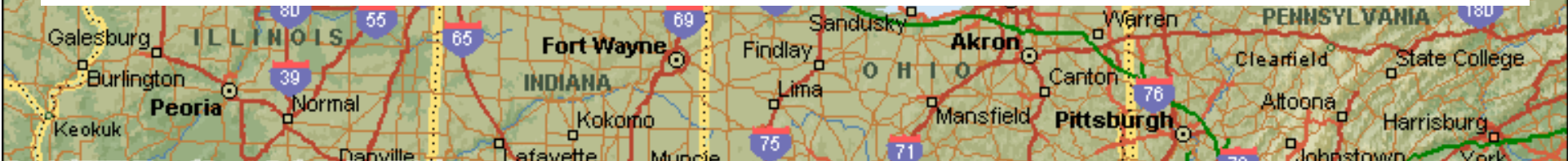


Approach Phase I: (1) conduct two-day evaluations at four U.S. and Canadian Great Lakes Ports; (2) develop a “model” environmental evaluation tool; (3) secure approval of the AGLPA to use the tool for evaluations of other ports.







- 
- relationship between the port authority and tenants, ship owners, rail lines, trucking companies and adjacent property owners regarding environmental protection (e.g., emergency response, spill clean-up, contaminated property remediation);
  - past and recent environmental program accomplishments (e.g., wetlands restoration project) and community outreach on environmental matters;
- 

A background map showing parts of Canada and the United States. The top portion shows Ontario, Canada, with cities like Thunder Bay, Schreiber, Terrace Bay, Hornepayne, Iroquois Falls, La Sarre, Amos, and others. The bottom portion shows the Ohio and Pennsylvania regions of the US, with cities like Fort Wayne, Sandusky, Akron, Warren, Canton, Mansfield, Pittsburgh, Harrisburg, and others. Major highways are marked with their route numbers.

## Selected Information Components of the Model

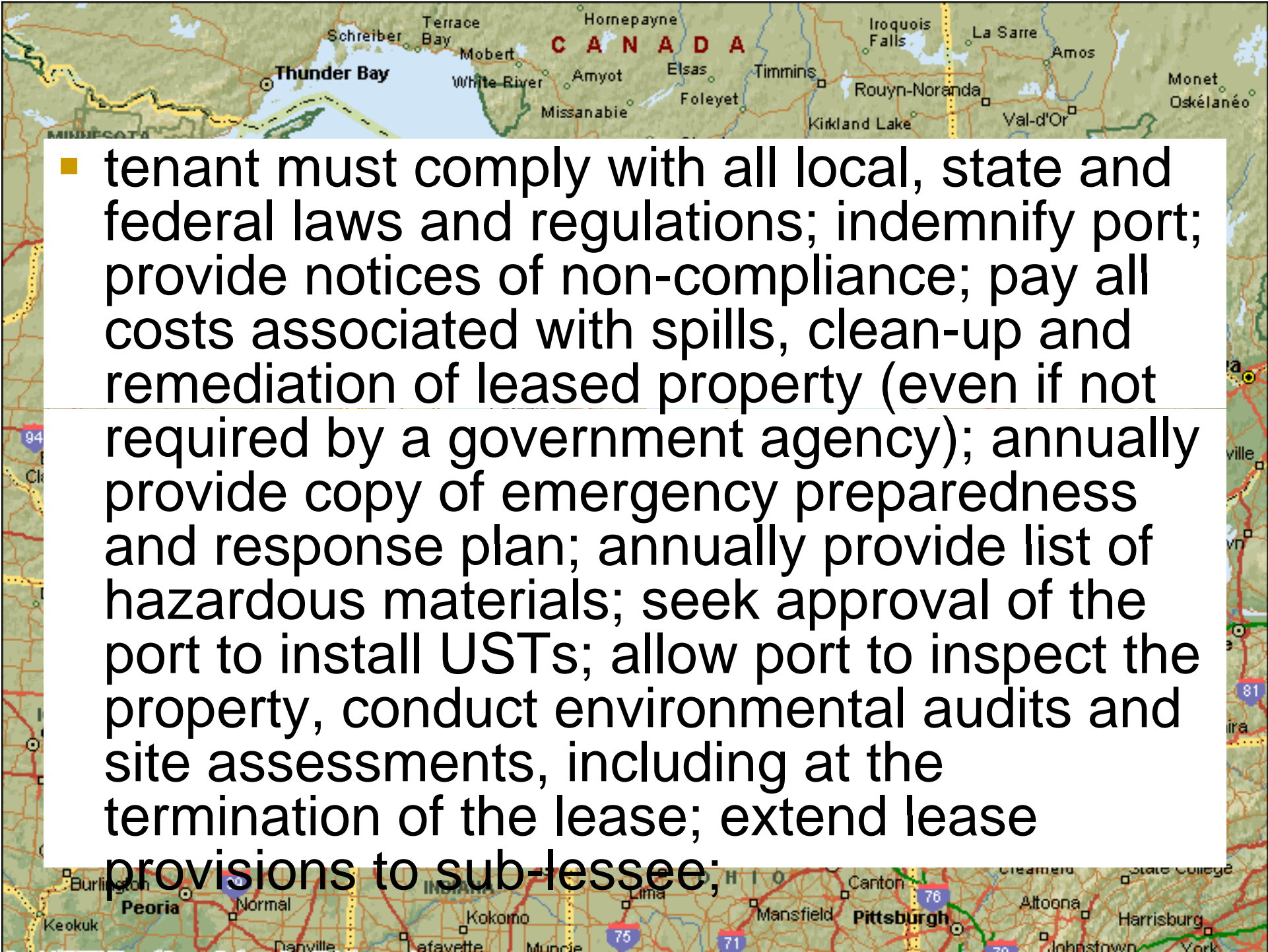
- port description: acreage, tons of cargo, number and type of facilities owned/leased, governance, statutory authority, number of employees, number of environmental staff or consultants;
- environmental policy, existing management system (or procedures), annual expenditures for environmental projects, environmental challenges/opportunities, community outreach programs;

A map of Ontario, Canada, showing various cities and regions. The word "CANADA" is written in large red letters across the top. Cities labeled include Thunder Bay, Schreiber, Terrace Bay, Moberg, White River, Missanabie, Hornepayne, Amyot, Elsas, Foleyet, Timmins, Iroquois Falls, Rouyn-Noranda, La Sarre, Amos, Monet, and Oskélanéo. The map also shows major roads and geographical features.

## Examples of Lease Provisions Pertaining to Tenant Environmental Responsibilities

- tenant must comply with all federal, state and municipal environmental laws, regulations, ordinances; agree to use the site consistent with its intended use; responsible for obtaining environmental permits;
- tenant must comply with all environmental laws and regulations; indemnify port with respect to claims, orders, actions regarding pollutants or toxic substances; responsible for clean-up and solely responsible for damages;

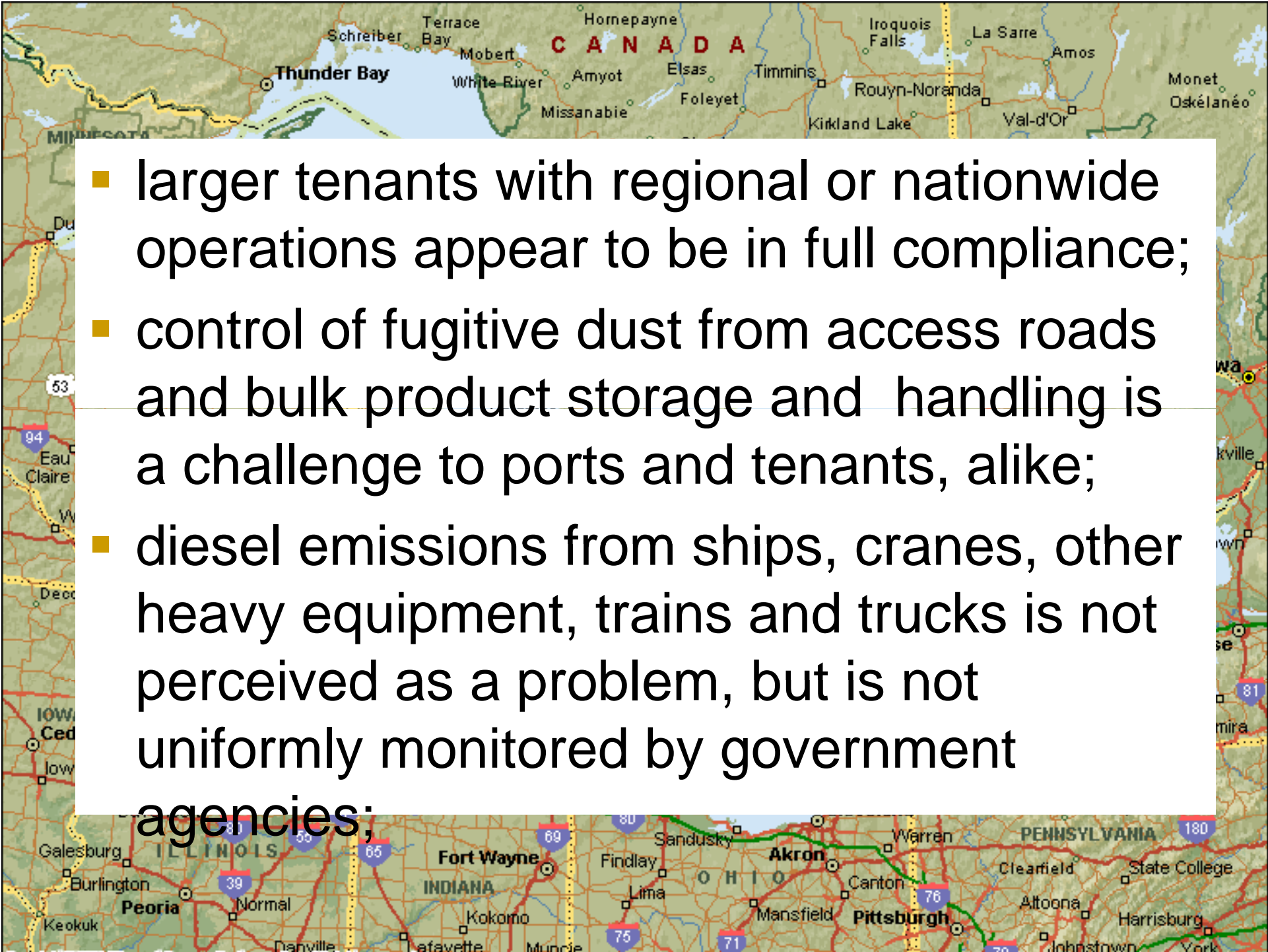


- 
- tenant must comply with all local, state and federal laws and regulations; indemnify port; provide notices of non-compliance; pay all costs associated with spills, clean-up and remediation of leased property (even if not required by a government agency); annually provide copy of emergency preparedness and response plan; annually provide list of hazardous materials; seek approval of the port to install USTs; allow port to inspect the property, conduct environmental audits and site assessments, including at the termination of the lease; extend lease provisions to sub-lessee;

A map of the Great Lakes region, showing the border between Canada and the United States. The word "CANADA" is written in large red letters across the top. Various cities and towns are labeled, including Thunder Bay, Schreiber, Terrace Bay, Moberg, White River, Amyot, Hornepayne, Elsas, Foleyet, Timmins, Iroquois Falls, Rouyn-Noranda, La Sarre, Amos, Monet, and Oskélanéo. The map also shows major roads like I-94, I-75, I-76, and I-81.

# Tenant and Port Regulatory Compliance and Permit Status

- air permits are most prevalent among tenants, followed by hazardous waste (RCRA) and water discharge (NPDES); Confined Disposal Facility permit for dredged material is most common among ports;
- compliance enforcement by government authorities is not uniform and some tenant facilities that are not permitted should be,

- 
- The background of the slide is a map of the Great Lakes region. The top portion shows the Canadian side with cities like Thunder Bay, Schreiber, Terrace Bay, Moberg, White River, Missanabie, Hornepayne, Amyot, Elsas, Foleyet, Timmins, Iroquois Falls, La Sarre, Amos, Rouyn-Noranda, Kirkland Lake, Val-d'Or, Monet, and Oskélanéo. The bottom portion shows the U.S. side with cities like Peoria, Normal, Danville, Galesburg, Burlington, Keokuk, Fort Wayne, Findlay, Sandusky, Akron, Warren, Canton, Mansfield, Pittsburgh, Clearfield, State College, Altoona, Harrisburg, Johnstown, and York. Major highways like I-94, I-53, I-65, I-69, I-75, I-76, I-71, I-81, and I-180 are also visible.
- larger tenants with regional or nationwide operations appear to be in full compliance;
  - control of fugitive dust from access roads and bulk product storage and handling is a challenge to ports and tenants, alike;
  - diesel emissions from ships, cranes, other heavy equipment, trains and trucks is not perceived as a problem, but is not uniformly monitored by government agencies;



A map of a coastal area is visible in the background, showing land in shades of green and brown, and water in blue. The map includes labels for 'Terrace' and 'Hornbayne'. A white rectangular box with a thin black border is overlaid on the map, containing the title and list. The title is underlined and the list items are preceded by yellow square bullet points.

## Preventing/Controlling Stormwater Run-off and Hazardous Materials Spills

- stormwater run-off from bulk storage piles, tank farm secondary containment structures, piers and dredge areas is being addressed by the installation of infrastructure modifications (e.g., detention ponds, stormwater drains, catch basins, low-profile berms at the edge of piers, pier slopes away from the water); not all ports or tenants have stormwater management plans where they are required by state or federal regulations;
- liquid bulk tank farms and handling facilities and fueling facilities have federally-required Spill Prevention Control and Countermeasures (SPCC) Plans; some other facilities that may exceed the



## Relationship Between Ports and Others for Environmental Protection

- ports, generally, have not prepared a “master” environmental response plan addressing releases from the transfer, movement and storage of materials at or by tenant facilities, ship owners, rail lines, truck lines and adjacent property owners;
- individual tenants or transporters may have a plan or procedures that exist independent of others;
- emergency response organizations are either local fire department or contract spill response organizations - - some of the latter are tenants of the port (as a matter of location, not service to the port);
- the Coast Guard is not considered a “first responder” organization for ports or tenants;



The background of the slide is a map of the Great Lakes region, showing parts of Canada (Ontario and Quebec) and the United States (Minnesota, Illinois, Indiana, Ohio, Pennsylvania). Key locations like Thunder Bay, Schreiber, Terrace Bay, White River, Moberg, Hornepayne, Amyot, Elsas, Timmins, Iroquois Falls, La Sarre, Amos, Monet, Oskélanéo, Val-d'Or, Kirkland Lake, Rouyn-Noranda, Foleyet, Nicholson, and Chapleau are labeled in the Canadian section. In the US section, cities like Peoria, Normal, Danville, Galesburg, Burlington, Keokuk, Davenport, Fort Wayne, Findlay, Sandusky, Lima, Mansfield, Akron, Cleveland, Warren, Canton, Pittsburgh, Harrisburg, State College, Clearfield, Altoona, Johnstown, and York are visible. Major highways like I-94, I-55, I-39, I-65, I-69, I-75, I-76, I-80, I-81, and I-180 are also shown.

## Examples of Environmental Program Accomplishments

- wetlands restoration;
- contaminated sediment remediation;
- Confined Disposal Facility construction;
- marine recreation improvements;
- reef construction for improved fish habitat;
- shoreline restoration;





## Community Outreach Programs

- port governing board meetings are publicly noticed;
- organized citizens' advisory committee as partner in environmental projects;
- public represented on governing board;
- citizen's "hotline" established for reporting environmental problems (e.g., dust, noise, lights);
- port participates in local and regional planning efforts.