

Introduction



Photo: U.S. EPA Great Lakes National Program Office

One of the most significant environmental agreements in the history of the Great Lakes took place with the signing of the Great Lakes Water Quality Agreement of 1978 (GLWQA) between the United States and Canada. This historic agreement committed the U.S. and Canada (the Parties) to address the water quality issues of the Great Lakes in a coordinated, joint fashion. The purpose of the GLWQA is to “restore and maintain the chemical, physical, and biological integrity of the waters of the Great Lakes Basin Ecosystem.” Paramount to this goal was the protection of human health.

In the revised GLWQA of 1978, as amended by Protocol signed November 18, 1987, the Parties agreed to develop and implement, in consultation with State and Provincial Governments, Lakewide Management Plans (LaMPs) for lake waters and Remedial Action Plans (RAPs) for Areas of Concern (AOCs). The LaMPs are intended to identify critical pollutants that impair beneficial uses in the lake proper and to develop strategies, recommendations and policy options to restore these beneficial uses. Moreover, the Specific Objectives Supplement to Annex 1 of the GLWQA requires the development of ecosystem objectives for the lakes as the state of knowledge permits. Annex 2 further indicates that the RAPs and LaMPs “shall embody a systematic and comprehensive ecosystem approach to restoring and protecting beneficial uses...they are to serve as an important step toward virtual elimination of persistent toxic substances....”

The Great Lakes Water Quality Agreement specifies that the LaMPs be completed in four stages. These stages are: 1) when problem definition has been completed; 2) when the schedule of load reductions has been determined; 3) when remedial measures are selected; and 4) when monitoring indicates that the contribution of the critical pollutants to impairment of beneficial uses has been eliminated. These stage descriptions suggest that the LaMPs are to focus solely on the impact of critical pollutants to the lakes. However, the group of government agencies designing the LaMPs felt it was also an opportunity to address other equally important issues in the lake basins. Therefore, the LaMPs go beyond the requirement of a LaMP for critical pollutants and use an ecosystem approach, integrating environmental protection and natural resource management.

The LaMP process has proven to be a resource intensive effort and has taken much longer than expected. In the interest of advancing the rehabilitation of the Great Lakes, and getting more information out to the public in a timely manner, the Binational Executive Committee (BEC) passed a resolution in 1999 to accelerate the LaMP effort (BEC 1999). By accelerate, it

was meant that there should be an emphasis on taking action and adopting a streamlined LaMP review and approval process. The LaMPs should treat problem identification, selection of remedial and regulatory measures, and implementation as a concurrent, integrated process rather than a sequential one.

The BEC endorsed application of the concept of adaptive management to the LaMP process. The LaMPs employ a dynamic process with iterative elements, such as periodic reporting. Adaptive management allows the process to change and build upon lessons learned, successes, new information, changes in the lake and public input. The LaMP will adjust over time to address the most pertinent issues facing the lake ecosystems.

Working under the adaptive management concept, the BEC recommended that a LaMP be produced for each lake by April 2000, with updates every two years thereafter. The LaMPs were to be based on the current body of knowledge and state what remedial actions can be implemented now. Consistent with the BEC resolution, the Lake Erie LaMP 2000 was presented in a loose-leaf format with general tabbed sections that could be inserted into a three-ring binder. This format allowed the LaMP to be viewed as a working draft of the dynamic LaMP process and adding new material and removing outdated information could easily update the document. However, in 2002, rather than updating the LaMP 2000 binder, a separate stand-alone progress report was produced.

For 2004, aspects of the LaMP 2000 and LaMP 2002 are combined to better reflect the BEC concept of one working draft.

The document is slightly reformatted to better accommodate updates on LaMP progress as well as maintain documentation of the main history that formed the baseline and direction of the LaMP. It will truly become “The Lake Erie LaMP,” an ever-changing accounting of the goals and progress of the Lake Erie LaMP process.

The GLWQA directs that the LaMPs take an ecosystem approach to assessing problem definition and implementing remedial actions. This concept is evident throughout the Lake Erie LaMP. The environmental integrity of Lake Erie is dependent not only on various characteristics and stressors within the lake itself, but also on actions implemented throughout the Lake Erie watershed and beyond. Urban sprawl, shoreline development, climate change, the introduction of non-native invasive species, the use and destruction of natural lands and resources, the dominant agricultural and industrial practices within the lake basin, and long-range transport of contaminants from outside the basin all impact the health of Lake Erie.

The watershed approach has been widely accepted as a necessary practice to achieve environmental restoration and protection. Many of the RAPs take a watershed approach to restoring the beneficial uses impaired in their AOCs. The TMDL program in the U.S. uses a watershed approach to return all impaired streams to their designated use. Many other communities around Lake Erie have instituted watershed-planning efforts focused on improving their local waterways. The challenge of the LaMP is to extend those watershed-planning efforts to include a lake effect component as well. Some watersheds, such as the Maumee (OH) and the Grand (ON), have a more direct impact on Lake Erie than others, but in the big picture all tributaries ultimately contribute to lake conditions in some way. Conversely, some conditions in the lake (i.e. non-native invasive species, contaminants, water levels, etc.) may also be impacting the tributaries.

The LaMP provides a binational structure for addressing these environmental and natural resource issues, coordinating research, pooling resources, and making joint commitments to improve the environmental quality of the Lake Erie. The Lake Erie LaMP is a program in which ongoing efforts, some of which may be conducted independently of the LaMP, can be strategically synthesized. Some of these actions include: the State of the Lakes Ecosystem



Conference (SOLEC) efforts to develop Great Lakes indicators; the Lake Erie Millennium Network initiative to identify, prioritize and pursue research needs; the efforts of Canadian and U.S. conservation agencies in controlling non-point sources and agricultural land use management; the land acquisition and preservation efforts of environmental groups such as The Nature Conservancy and the Nature Conservancy of Canada; the pollution prevention based activities of the Great Lakes Binational Toxics Strategy; implementation of the Remedial Action Plans in the 12 Lake Erie areas of concern; the fishery management plan of the Great Lakes Fishery Commission's Lake Erie Committee; implementation of wildlife management plans; and the efforts of the Lake Erie Binational Public Forum and others encouraging stakeholders across the basin to become involved in the decision-making process to determine the future status of Lake Erie. The LaMP remains mindful of emerging issues that may need to be adapted into the LaMP management scheme.

The Lake Erie LaMP focuses on measuring ecosystem health, teasing out the stressors responsible for impairments, and evaluating the effectiveness of existing programs in resolving the stress by continuing to monitor the ecosystem response. The role of the LaMP, as a management plan, is to define the management intervention needed to bring Lake Erie back to chemical, physical and biological integrity, and to further define agency commitments to those actions. Although Environment Canada (EC) and the U.S. Environmental Protection Agency (U.S. EPA) are the lead agencies for the LaMP, it takes an array of federal, local,

state and provincial agencies and stakeholders to successfully design and implement the Lake Erie LaMP.



