



PROPOSAL FOR A FEDERALLY SUPPORTED HEALTHY GREAT LAKES PROGRAM

Submission by Conservation Ontario to the Government of Canada
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Introduction and Rationale

In 2002, Conservation Ontario developed a proposal for a federally supported Healthy Great Lakes Program. Although the Healthy Great Lakes proposal received considerable support from Ontario's Federal Members of Parliament, the events of September 11, 2001 shifted funding priorities to urgent security and border crossing concerns. Almost four years have passed since that time, and while federal environmental programming has continued to evolve many of the elements outlined in our original Healthy Great Lakes Program proposals require attention. The current proposal calls for an investment of \$250 million over five years to improve the health of the world's largest freshwater system.

There are 36 watershed-based Conservation Authorities in Ontario, 35 of which are located in the Great Lakes/St. Lawrence basin – over 90% of Ontario's population (and 35% of Canada's population) is located within a Conservation Authority's jurisdiction. These populated areas are where resource conflicts and environmental degradation are greatest, and where federal investment is needed most. Conservation Authorities have a broad legislative mandate to manage natural resources other than oil, gas, coal, and minerals. Conservation Authorities are created through municipal initiative, receive a

portion of their funding through a municipal levy, and are governed by municipally appointed Boards of Directors. Since 1946 Conservation Authorities have a strong track record of partnering with municipal, provincial, and federal governments, non-government organizations and landowners to deliver community based, practical solutions to a range of natural resource problems.

All Conservation Authority watersheds have environmental impairments associated with rural and urban land uses and activities. These impairments include surface and groundwater quality problems, reduced abundance and quality of habitat, and a diminished aesthetic environment.

Under the Canada-US *Great Lakes Water Quality Agreement*, the Government of Canada has committed to addressing the chemical, biological, and physical integrity of the Great Lakes. To respond to this, the federal government has developed a complex network of legislation, policies, initiatives, and agreements. For example, Environment Canada's Great Lakes Sustainability Fund provides funding to characterize problems and implement remediation/restoration projects in the Areas of Concern (AOC). These AOC activities have been enhanced through provincial participation as described in the Canada-Ontario Agreement, and many projects have in turn been delivered by Conservation Authorities in partnership with the federal and provincial governments, and others. While there is funding to address some priorities in the AOCs, funding programs have not responded as well to the large areas considered by the Lakewide Management Plans. This proposal suggests a framework for a federally supported partnership of investing in environmental restoration and remediation outside AOCs. The program would be complementary to existing federal programs and incrementally contribute to restoring the health of the Great Lakes themselves.

In 2002, Conservation Ontario suggested that the need for a Healthy Great Lakes Program was significant. This is still the case - as noted in the 2004 State of the Lakes Ecosystem Report (SOLEC), scientists have assessed the overall condition of the Great Lakes as 'mixed' or 'mixed deteriorating' for many ecosystem components. This assessment was previously confirmed in the 2001 Report of the Commissioner of the Environment and Sustainable Development. Based on a thorough assessment the Commissioner also concluded that there was a lack of transparency and clarity of the federal government's commitments and priorities within the Great Lakes. While there has been good progress on federal programming since the 2001 report, particularly as it relates to agriculture, there is a great need to evolve the model of environmental programming beyond core federal-provincial activities to a tripartite approach that better focuses activities and brings communities to the table more effectively.

This can be efficiently achieved by engaging locally based Conservation Authorities. Conservation Authorities have a long track record of delivering water quality improvements, at the local level, from the headwater source of tributaries to their outlets into the Great Lakes. Conservation Authorities have developed a complete suite of related programs addressing watersheds, including:

- Surface and groundwater quality monitoring
- Surface and groundwater quantity monitoring
- Surface and groundwater remediation
- Aquatic habitat and species enhancement
- Terrestrial habitat and species enhancement
- Agricultural best management practices
- Urban best management practices
- Recreation and public use facilities
- Air quality monitoring and enhancement
- Sustainability actions

Conservation Ontario is requesting that the federal government contribute \$250 million of new money over five years (\$50 million/year), which can be accessed by Conservation Authorities or other capable service delivery organizations. This funding will be used for the priorities laid out in the balance of this proposal, and is intended to be complementary to existing federal commitments under the Great Lakes Program (notably Environment Canada's Great Lakes Sustainability Fund), the Agricultural Policy Framework, and other relevant initiatives. The proposed activities would also build on key provincial initiatives, particularly Source Water Protection and projects being funded through the current Canada-Ontario Agreement.

A cornerstone of the Conservation Authorities' model is partnerships. The proposed program would further advance the important work that has been done by Conservation Authorities in partnership with Environment Canada, Fisheries and Oceans Canada and other federal agencies. The program would also attract further, matching funding from a variety of public, private, landowner and not-for-profit partners and result in a level of activity that is two to three times the federal contribution. There would be broad recognition of the federal leadership shown through the proposed program.

The transparency and integrity of the program would be assured through the collaborative development of detailed evaluation criteria, performance criteria, accountability measures, and financial reporting protocols.

Projects completed through the program would address seven substantive areas, as outlined below.

Eligible Projects

1) Rural & Agricultural

Agriculture accounts for 35% of the land area of the Great Lakes basin and dominates the southern portion of the basin. The impacts of this land use on surface and groundwater quality, and terrestrial and aquatic habitat values, are significant. Programs recently announced as part of the Agricultural Policy Framework address

many needs for agricultural landowners with a Farm Business Registration Number, although the programs do not address some pressing needs (e.g., septic system upgrades) and are not necessarily accessible to the large and growing number of non-agricultural rural landowners. This limitation also applies to the complementary Nutrient Management programs offered by the Province of Ontario.

The proposed program would advance action to make agriculture environmentally sustainable by extending private land stewardship opportunities to the diversity of rural and agricultural landowners. Priority watersheds or subwatersheds would be targeted, and through collaborative approaches involving local agricultural representatives, grants for beneficial management practices would be planned and implemented. Additional activities would include extension and technology transfer activities, and recognition of landowners and funding partners for projects completed.

2) Urban

The urbanization of our watersheds has severely impacted the quality and quantity of water entering our watercourses, which in turn discharge to the Great Lakes. The science of stormwater management has rapidly evolved over the past several decades, such that for new development, impacts on receiving water quality and quantity can be largely mitigated. However, older areas that developed in advance of modern stormwater management practices continue to have a severe impact on surface water resources in the Great Lakes basin. These impacts include channelized and lined watercourses with associated implications for streambank erosion and water quality, elimination of groundwater recharge and its implications on stream baseflows, and the presence of persistent contaminants from urban non-point sources.

Given the considerable amount of development that occurred in the Great Lakes basin prior to modern stormwater management and spills management practices, there is enormous potential for retrofit projects to improve water quality, quantity, and overall habitat conditions throughout urban areas in the Great Lakes basin. Urban restoration projects would include end-of-pipe stormwater management retrofit facilities (e.g., enhancement of existing (dry) flood control ponds to address water quality and streambank erosion, creation of new stormwater management facilities at storm outfalls that currently discharge uncontrolled stormwater directly to receiving watercourses), conveyance system retrofits (e.g., replacement of traditional storm sewer systems with exfiltration systems where land use, soil conditions and groundwater characteristics are suitable), stream naturalization (e.g., modification of previously channelized watercourses using natural channel design techniques to benefit aquatic and riparian conditions and improve recreational opportunities), and urban non-point source projects (e.g., pesticide reduction initiatives).

3) Fish & Wildlife Habitat

Settlement in the populated parts of the Great Lakes basin has fundamentally altered our landscape. Outright habitat loss associated with clearing for various land uses, and

associated reductions in ecological function in the areas that remain are a legacy of European settlement. While some loss continues, primarily in urbanizing areas, awareness of the importance of private land stewardship is significant and growing. This is in part due to existing programs offered by the federal and provincial governments and non-government organizations. Examples include the Great Lakes Sustainability Fund in Areas of Concern, species at risk activities through the Habitat Stewardship Program, and Canada-Ontario Agreement projects.

A fundamental tenet of resource management is to protect existing natural areas as a priority over restoring lost or degraded ones. Although existing programs like Environment Canada's EcoGifts Program is achieving some successes, the best method of protection is acquisition. Federal funding is required to assist with the acquisition of the Great Lakes' most outstanding natural areas, particularly those that support a diversity or abundance of species at risk, migratory birds, or fish habitats.

In addition to better protecting what we already have, we must also increase the extent and function of lost or altered habitats through restoration and enhancement. Unfortunately, the fact remains that lack of funding is the central resource limitation for habitat restoration most populated areas of the Great Lakes, particularly those not associated with an Area of Concern. Through a careful consideration of existing programs, incremental funding is required to advance several related areas, including forest habitat restoration (e.g., increasing the scale of tree planting activities in southern Ontario in particular, and establishing a robust seed collection and seedling growing infrastructure), wetland habitat restoration (e.g., Great Lakes coastal wetlands enhancements through partnerships with Ducks Unlimited, Wetland Habitat Fund, etc.), and projects that focus on fish and aquatic habitats (e.g., riparian and instream enhancement, and baseflow enhancement projects).

4) Climate Change & Air Quality

Climate change, which leading scientists agree will raise the earth's average temperature between 1.5 and 6 degrees Celsius by 2100, is one of the federal government's highest priorities. The Kyoto Protocol became international law on February 16, 2005, and committed Canada to reduce greenhouse gas emissions to an average of 6% below the 1990 level between 2008 and 2012. On April 13, 2005 the federal government published its plan to meet this commitment: *Moving Forward on Climate Change: A Plan for Honouring our Kyoto Commitment*.

The federal plan is an important step that begins to address sustainability through multiple objectives beyond just climate change including, cleaner air, sustainable environment, green communities, enhancement of biodiversity, and improved health to name a few. The activities of Conservation Authorities working with communities on a watershed scale support achieving these objectives, including mitigation of and adaptation to, climate change.

A number of related areas will be addressed through the proposed program.

Conservation Authorities will use existing and new partnerships with watershed communities to achieve measurable reductions in green house gas (GHG) emissions. This area will focus on engaging watershed residents and businesses in projects and activities that reduce energy use and provide renewable energy sources. A sectoral approach and working with stakeholders to tailor projects to the needs of individual sectors will achieve a greater market penetration of programs and thus more significant reductions in GHG emissions (e.g., carbon sequestration through afforestation, energy management and retrofit programs, renewable energy education and training, etc.).

The impact of both climate change and air quality on watersheds needs to be further explored and adaptive techniques need to be developed at the local level. The human-produced gases that cause climate change are often the pollutants that are also responsible for other air quality concerns e.g., nitrogen oxides. There can be important benefits achieved through the introduction of programs that take advantage of 'co-benefits' by tackling more than one air quality challenge at a time. An example includes tree planting which sequesters carbon while addressing energy efficiency through shading, and aesthetic and quality-of-life benefits to communities throughout the Great Lakes.

The proposed program will also support pilot projects that address both the biophysical impacts of climate change and air quality on our watersheds as well as adaptation of the local community. Potential climate change and air quality impacts to watersheds including cumulative impacts and effects on the status and trends of ecosystems will be investigated, modeled, and monitored.

5) Integrated Watershed Management

Protection of our surface and ground water resources are vital to our continued livelihood and well being. An integrated approach to watershed management has long been recognized as the best method to achieve and maintain water quality and quantity targets. This approach places the focus on individual watersheds, emphasizing the interdependence of water resources relative to human activities within each watershed. It also involves the communities and stakeholders within the watershed ensuring that management plans and strategies are inclusive and have the support required for successful implementation. Most importantly, watershed plans that integrate each watershed's unique biophysical and socioeconomic conditions in the development of guiding actions do so in a cost effective and efficient manner. As watershed management is a resource-centered approach, success can be measured in terms of improving and maintaining environmental quality and protecting public health. These performance measurements provide the resource agencies and stakeholders with the information necessary to adapt programs as required to ensure that water resource targets are achieved.

To ensure that the condition of our water resources is maintained and improved it is essential that integrated watershed management plans be developed throughout the Great Lake basins. These plans could incorporate and compliment current Environment

Canada initiatives such as the development and application of water quality and quantity assessment tools to support water resource and land management decision making, integrated data collection, experimental sampling and the application of advanced methods for statistical interpretation, and development of a performance measurement system.

The plans will examine environmental issues at a variety of scales resulting in improved basin-wide as well as local decision-making. All of the watershed plans produced will be integrated with current initiatives such as Source Water Protection studies to ensure that the interactions between ground and surface waters are assessed and to avoid duplication of effort. Much of the experience gained in Ontario could be applied across the country to other provinces to assist in the development of a national framework. Past successful watershed efforts demonstrate that voluntary collaboration with all interested parties is the best way to provide durable solutions.

6) Science & Monitoring

Science continues to play an important role in our collective understanding of the environmental issues challenging the Great Lakes. Initially, the scientific studies undertaken by researchers at federal, provincial and academic institutions, examined both the Great Lakes and their contributing watersheds. Through these investigations significant progress was achieved in the recovery of the Great Lakes. However over time, the scientific focus of these research institutions changed to the open water issues of the Great Lakes and the issues of the day such as exotic species and persistent toxics. Recognizing a need to improve the scientific understanding of the watersheds draining into the Great Lakes, Conservation Authorities commenced their own scientific studies, in order to better support the preparation and implementation of watershed plans and related programs. Multi-disciplinary scientific studies by Conservation Authority staff continue to enhance the knowledge base for the management of Great Lakes issues such as water quality, fisheries, water budgets, biodiversity, and drinking water source protection.

The proposed funding will be used to advance this science and ensure that the emerging knowledge base is applied appropriately in the management of the Great Lakes.

Critical to scientific studies of the Great Lakes Basin are data gained through monitoring programs. Monitoring various aspects of environmental health is essential in order to establish a baseline of information, identify problems and track progress. A related aspect of monitoring is the development of targets, measures, and/or indicators to guide management activities and monitoring protocols, ensure sound investment and provide critical data to investors. Presently, Conservation Authority programs address some monitoring activities collectively with other agencies and stewardship groups that move us towards established targets for many resource elements (e.g. forest cover, water quality parameters, etc). However, there is a need to expand these programs geographically where none exist, as well as expand the scope of existing programs.

The proposed fund will be used to establish Watershed Monitoring Networks that will provide a comprehensive, integrated, and coordinated approach to environmental monitoring. These Networks will build on the Watershed Reporting Pilot Projects currently underway in five Great Lakes watersheds. The Networks will bring together groups of complementary, cooperative agencies and organizations to collect, store, distribute and report on environmental monitoring data that furthers the interests of all involved parties. The Monitoring Networks will build on the existing local, regional, and project-specific monitoring efforts of its partners, including federal and provincial agencies, Conservation Authorities, and municipalities. Educational institutions and community groups can also become involved in supporting roles. All data collected will be compatible with broader federal and provincial programs, thus extending the value and efficiency of the program.

The Network will draw on the strengths of its individual partners allowing each to focus on its specific areas of expertise. The resultant data would be reported and shared so that it could be used by various federal agencies to demonstrate progress towards their *Great Lakes Water Quality Agreement* and *State of the Lake Ecosystem Conference (SOLEC)* commitments.

7) Community Outreach

It is widely recognized that more effective community engagement is required to enhance the effectiveness of our collective resource management programs. Conservation Authorities are uniquely positioned to advance this effort as watershed based, municipally guided resource management agencies. Community outreach activities undertaken through the proposed program would include items outlined below. Many of these could move forward very quickly.

- Launch a significant educational campaign aimed at encouraging urban and rural residents to recognize that how we manage our land affects the quality of our water, and to accept some personal responsibility for same.
- Provide increased opportunities for resident participation through projects such as community tree plantings and citizen monitoring activities.
- Provide environmental education programming targeted at schools and school aged children.
- Provide specific media relation's opportunities to profile specific projects and recognize successes.
- Provide technical advice for minor improvement/ stewardship projects that can be locally initiated, funded, and implemented. Also, act as a clearinghouse for landowner information.
- Provide a window into a variety of federal initiatives by having Environment Canada and Agriculture and Agri-Food Canada information, brochures etc. available for local distribution.