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Protecting the Great Lakes Basin Ecosystem

**A survey of local initiatives by conservation authorities and
municipalities in Ontario**

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Protecting the Great Lakes Basin Ecosystem : A
survey of local initiatives by conservation authorities

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EXECUTIVE SUMMARY

The Great Lakes Basin ecosystem is confronted with various environmental stresses that impact negatively on the quality of air and water, and fish and wildlife habitat. These stresses include contamination from urban municipal stormwater sewers, agricultural runoff containing nutrients and pesticides, and habitat loss and deterioration which impacts on fish and wildlife populations.

Over the past five years, the provincial and federal governments have reduced their participation in habitat restoration and pollution prevention programs in the Great Lakes Basin. As a result, local jurisdictions, namely conservation authorities (CAs) and municipalities have played an increasingly important role in addressing these issues of concern in the Great Lakes.

From February to April 2000, the Canadian Institute for Environmental Law and Policy (CIELAP) conducted a survey of conservation authorities and municipalities in Ontario, to identify local initiatives to protect and restore the Great Lakes and to evaluate these initiatives in regards to the level of protection they provide. As this inventory provides a "snapshot" of initiatives from April 1999 to April 2000, it is not possible to assess the progress of local jurisdictions in protecting the Great Lakes through local initiatives over time.

A total of 21 conservation authorities and 13 municipalities participated in the inventory, and 88.2% had undertaken initiatives to protect and restore the Great Lakes in 1999/2000. Initiatives varied from small-scale remedial projects to comprehensive water quality and habitat restoration strategies. The ability of CAs and municipalities to undertake such initiatives depended highly on funding from the provincial and federal government, which is vital for the hiring of staff resources and project implementation.

Specific federal and provincial initiatives identified by CAs and municipalities that provided funding in 1999/2000 included:

- The Federal Department of Fisheries and Oceans (DFO), Section 35 of the Fisheries Act Agreements
- Human Resources Development Canada (HRDC) and the DFO Drain Classification Project
- Environment Canada Great Lakes 2000 Clean-up Fund
- Environment Canada Eco Action 2000
- Agriculture Canada and the Federal Millennium Project
- Province of Ontario Water Protection and Enhancement Fund
- Province of Ontario Great Lakes Renewal Program
- OMAFRA's "Healthy Futures in Agriculture" Program
- Province of Ontario Tax Incentive Program
- MNR and MOE programs

Conservation authorities and municipalities were developing and implementing initiatives to improve Great Lakes air quality, water quality, and to protect and restore fish and wildlife habitat and populations. Initiatives included pollution prevention programs, habitat restoration and remediation projects, water quality studies and monitoring programs, municipal by-laws and Official Plans, and clean air plans. Three conservation authorities had developed comprehensive habitat restoration and protection strategies, and two municipalities had developed progressive and ambitious environmental plans to address Great Lakes environmental issues in a holistic manner.

The effectiveness of the initiatives highlighted in this report in affording greater protection to the Great Lakes Basin ecosystem depends on the ability of conservation authorities and municipalities to implement the various individual projects and the actions specified within their comprehensive environmental plans. In order to do so, long-term funding commitments from the federal and provincial levels of government are of extreme importance. Currently, funding provided by the federal and provincial government is short-term and has decreased in comparison to previous funding programs, raising uncertainty about the implementation of local initiatives to protect the Great Lakes. The ability of the three levels of government to work together to establish cost-share agreements and to identify the role of each level of government in the specific program or strategy is vital, in order to protect and restore the Great Lakes Basin ecosystem.

SECTION I: INTRODUCTION

Throughout the mid to late 1990's, there has been a significant shift in responsibilities for water resource and fish and wildlife habitat protection activities related to the Great Lakes Basin ecosystem, from the Ontario provincial government to local jurisdictions, namely conservation authorities (CAs) and municipalities. These transfers in responsibility have included the downloading of provincially operated sewer and water facilities to municipalities, and the reduction in the participation of provincial ministries in the funding and implementation of Great Lakes programs such as Remedial Action Plans amongst others.

In light of this shift in responsibility to local jurisdictions, conservation authorities and municipalities are playing an increasingly significant role in environmental initiatives to protect the Great Lakes Basin ecosystem. Thus, it is important to identify current initiatives being implemented by CAs and municipalities, and to evaluate these initiatives in regards to the protection and restoration of watersheds in the Great Lakes Basin ecosystem.

In February 2000, Environment Canada commissioned a report from the Canadian Institute for Environmental Law and Policy (CIELAP) to review local initiatives by Ontario conservation authorities and municipalities to protect the Great Lakes Basin ecosystem. This review is timely as the Canada Ontario Agreement (COA) is due to be renewed in the year 2000. This report highlights environmental initiatives by conservation authorities and municipalities in the Great Lakes Basin ecosystem, and evaluates the impact of these initiatives on the protection and restoration of the Great Lakes and its watersheds. It is important to note that this inventory provides a "snapshot" of initiatives undertaken between April 1999 and April 2000. It is beyond the scope of this report to examine historical initiatives to protect the Great Lakes. A follow-up study would be useful in providing an evaluation of local initiatives over time, to assess whether local jurisdictions are doing more or less to protect and restore the Great Lakes Basin ecosystem than they were five or ten years ago.

Purpose of the report

The purpose of this report is to provide an inventory of recent environmental initiatives by Ontario's conservation authorities and municipalities in the Great Lakes Basin for the period April 1999 to April 2000. Initiatives include new and amended by-laws, programs and partnerships in the following areas:

- Sewer use (residential and ICI);
- Urban and agricultural runoff;
- Air quality; and
- Fish and wildlife habitat protection.

Objectives of the report

The objectives of this report are as follows:

- Outline new environmental initiatives by CAs and municipalities in the aforementioned areas in the 1999-2000 time period;
- Highlight ongoing environmental initiatives by CAs and municipalities that have been enhanced or expanded upon in the 1999-2000 time period;
- Present an analysis of the impact of these initiatives in providing additional protection and restoration to the Great Lakes Basin (e.g. wildlife and fish habitat, air quality and pollution prevention);
- Comment on the impact of recent federal and provincial initiatives on these local initiatives by CAs and municipalities;
- Comment on other factors (e.g. staff, funding, etc.) that impact upon the implementation of local environmental initiatives by CAs and municipalities.

Methodology

The following methodology was utilized in the preparation of this report:

- 1) In mid-February, CAs and municipalities in the Great Lakes Basin were contacted by telephone to identify a contact person to whom a letter of request would be addressed;
- 2) On February 15, a letter of request was mailed out to Ontario's 36 conservation authorities and to 23 municipalities in the Great Lakes Basin (these letters of request are provided in appendix A, and a list of municipalities to whom letters were addressed is provided in appendix B);
- 3) A follow-up call was made to each CA and municipal contact one week following the mail-out, and additional follow-up calls were made within a five week period;
- 4) Further calls were made to specific CAs and municipalities for clarification on submissions.

Response by Conservation Authorities and Municipalities

A total of 34 submissions were received as of April 12, 2000. Of these 34 submissions, 21 were from conservation authorities, and 13 were from municipalities. The response rate for conservation authorities and municipalities was just over 50%, with a slightly better response rate from conservation authorities. Of the CAs and municipalities who had not made a submission, the majority had intended to do so, however limited staff resources was a major factor in their inability to submit a response. In some cases, partial submissions were made addressing only some of the issues outlined in the letter of request. The City of Toronto, for example, was unable to provide a full submission due to a labour strike with its inside workers during the month of April 2000. The

following table (Table 1) highlights the status of data collection from the CAs and municipalities as of April 12, 2000.

	Number contacted	Submission Received	Submission Not Received/ Declined Participation	No Response
Conservation Authorities	36	21 (58.3%)	14 (38.9%)	1 (2.8%)
Municipalities	23	13 (56.5%)	8 (34.8%)	2 (8.7%)
TOTAL	59	34 (57.6%)	22 (37.3%)	3 (5.1%)

Table 1: Status of Survey Response

SECTION II: RESULTS OF THE SURVEY

Environmental initiatives of conservation authorities and municipalities

From April 1999 to April 2000, conservation authorities and municipalities in Ontario have initiated numerous programs, policies and partnerships that directly and indirectly impact upon the Great Lakes Basin ecosystem. These new initiatives are at different stages of implementation, with many initiatives in the planning and development stage, while others having proceeded to the implementation stage with specific habitat protection and restoration projects having been carried out. In an attempt to be comprehensive, this report also outlines ongoing initiatives from previous years, in which significant activities to restore watersheds and habitat have been or were in the process of being completed.

Of the 21 conservation authorities and 13 municipalities included in this report, 30 of the respondents (88.2%) had implemented new or ongoing initiatives related to the protection of the Great Lakes Basin ecosystem. Only four respondents (two CAs and two municipalities) stated that they did not have new initiatives related to the areas of investigation over the April 1999 to 2000 time period. These CAs and municipalities were located in northern and eastern Ontario. Overall, jurisdictions in southern and south-west Ontario had a greater number of initiatives in process from 1999 to 2000.

The table in appendix C highlights the environmental initiatives of conservation authorities over the past year. The table in appendix D highlights the environmental initiatives of municipalities over the past year. An analysis of the impact of these initiatives in affording greater protection and restoration of watersheds in the Great Lakes Basin ecosystem is presented in section 3 of this report.

Federal and provincial initiatives

In addition to information concerning environmental initiatives, conservation authorities and municipalities provided comment on federal or provincial initiatives, including programs, policies and monetary grants that had impacted upon the implementation of initiatives at the local level. The impact of the following federal and provincial initiatives upon the ability of CAs and municipalities to implement local initiatives is discussed in section 3 of this report. The CAs and municipalities identified the following provincial and federal initiatives as key partnerships and funding sources for the 1999/2000 time period.

Federal initiatives

- *Federal Department of Fisheries and Oceans (DFO), Section 35 of the Fisheries Act agreements*
 - Partnerships/agreements with conservation authorities to review project proposals under section 35 of the Fisheries Act, in order to assess the impact of the proposal on fish habitat and populations in the local jurisdiction and for possible referral to the DFO;
 - There is no funding provided to conservation authorities under these agreements, however the DFO has provided resources in the form of training to CA staff on conducting screening activities; in addition, some CAs charge project applicants for proposal reviews; and
 - Four CA's had a level 1 agreement (screening of proposals), eleven CAs had a level 2 agreement (screening and input on mitigation for proposals), and one CA had a level 3 agreement (screening, and input on mitigation and compensation plans for proposals); one CA was in negotiations with the DFO in order to sign the agreement.

- *Human Resources Development Canada (HRDC) and the Federal Department of Fisheries and Oceans (DFO) Drain Classification project*
 - This partnership with conservation authorities and municipalities provides funding for an inventory of all municipal drains within local jurisdictions in order to better plan drainage projects, thereby protecting sensitive fish habitat and populations;
 - Four conservation authorities made mention of this program as providing funding in 1999/2000 for stream assessments and mapping of municipal drains;
 - HRDC provided additional funding to three conservation authorities for initiatives involving land acquisition to expand greenway corridors, for the development of watershed partnerships including restoration and rehabilitation projects, and for the implementation of habitat inventories;

- The DFO provided additional funding to one conservation authority for a sediment awareness study that involved measures to reduce sediments entering urban watercourses.
- *Environment Canada Great Lakes 2000 Clean-up Fund*
 - Seven conservation authorities received funding under this program in 1999/2000 for approved projects to control soil erosion, upgrade faulty septic systems, and for restoration projects to improve water quality and wildlife habitat in local rivers and tributaries;
 - Habitat restoration and enhancement projects funded under this program included the enhancement of locally significant wetlands, uplands and riparian areas in various watersheds, and projects to reduce the loading of nutrients into watercourses from farm operations;
 - In urban areas, this fund provided support for various habitat improvement projects, including seven projects in the Toronto and Region CA jurisdiction which involved the creation of fishways to assist in fish migration through urban rivers and tributaries;
 - Environment Canada also provided funds to conservation authorities, outside of this fund, specifically, the Essex Region CA received funding from Environment Canada for habitat enhancement initiatives along the Detroit River, which included planting and bio-engineering projects to enhance habitat along the Canard Marsh Dyke.
- *Environment Canada Eco Action 2000*
 - Two conservation authorities received funding under this federal program for rehabilitation and riparian plantings along streambanks in their watersheds.
- *Agriculture Canada "Agricultural Adaptation Council"*
 - Two conservation authorities received funding for agricultural runoff related assessments and for the implementation of nutrient runoff (rural clean water) projects in 1999/2000.
- *Federal Millenium Project*
 - One conservation authority received funds under this project for a river restoration initiative.

Provincial initiatives

- *Province of Ontario Water Protection and Enhancement Fund*
 - Three conservation authorities became eligible for funding or participated in programs that were funded by this provincial initiative;
 - Projects funded by the Protection Fund included assessments of groundwater resources and fish habitat restoration projects (e.g. creation of a fishway in the Humber River to enhance fish migration).

- *Province of Ontario Great Lakes Renewal Program*
 - One CA mentioned this program as a source of funding for a river restoration project.

- *Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) "Healthy Futures in Agriculture" program*
 - Seven conservation authorities highlighted this program as a possible source of funding projects to improve water quality and quantity in the year 2000, specifically through projects to ensure proper manure handling, the implementation of landowner stewardship programs, and the dissemination of information concerning best management practices.

- *Province of Ontario Tax Incentive Program*
 - Two conservation authorities highlighted this program as an impetus to develop managed forest plans, which provide for the protection of significant natural areas and the sustainable harvesting of natural resources.

- *Ministry of Natural Resources (MNR) Community Fisheries Involvement Program*
 - Two projects were funded under this program in 1999/2000 which involved improvements in fish migration in rivers and the planting of wetlands and aquatic and terrestrial vegetation.

- *Ministry of the Environment (MOE)*
 - Two conservation authorities received funding from the MOE for 1) groundwater monitoring programs, which involved gathering baseline groundwater data to serve in policy and planning development for local municipalities, and 2) a rural clean water program to reduce non-point contaminants entering rural watercourses.

Other sources of funding

In addition to funding from federal and provincial programs, many conservation authorities and municipalities had formed funding and program partnerships with each other, and one CA and one municipality had ongoing partnerships with Remedial Action Plans within their jurisdictions. Cost-sharing programs addressed both pollution prevention and habitat protection, such as stormwater retrofit studies, watershed planning studies, and various restoration projects for watersheds.

Staff levels

Conservation authorities also provided commentary on staff levels for the 1999/2000 time period. Table 2 highlights changes in staff levels at conservation authorities. Of the 21 conservation authorities who provided a submission, four had hired full-time staff on a contract basis, three CAs had upgraded contract and part-time positions to full-time permanent positions, and 13 conservation authorities indicated that they had no change in staff levels over the past year. One conservation authority had lost staff over the past year due to a loss in municipal levy funding. Increases in staff levels were attributed to new funding from fee-for-service programs, and funding through federal, provincial and municipal grants on a project specific basis.

Changes in staff levels	Number of Conservation Authorities	Percentage of Conservation Authorities
Staff levels increased	4	19.0%
Staff levels upgraded (e.g. part-time to full-time)	3	14.3%
Staff levels decreased	1	4.8%
Staff levels stable	13	61.9%
TOTAL	21	100%

TABLE 2: Changes in Staff Levels at Conservation Authorities 1999/2000

On the positive side, this slight increase in CA staff levels highlights that conservation authorities have been innovative and successful in finding alternative funding sources compared to the traditional sources of provincial grants and municipal levies. However, despite this slight increase in staff over the past year, CAs continue to function with approximately 50 to 75% of 1995 staff levels, which has had an impact in implementing new initiatives to protect the Great Lakes Basin ecosystem. In addition, the majority of new staff has been hired on a project specific basis and this staff will not be retained when these projects have concluded. The impact of staff levels in delivering local initiatives is discussed further in Section 3 of this report.

SECTION III: Protecting the Great Lakes Basin ecosystem through local initiatives

The protection of the watersheds and fish and wildlife habitat in the Great Lakes Basin requires the implementation of a range of initiatives that address various stresses that pose a threat to the Great Lakes Basin ecosystem. Specific problems in urban and rural areas within the Basin require comprehensive and collaborative initiatives to provide greater protection to watersheds and habitat.

Sources of stress on watersheds and habitat vary throughout the Great Lakes Basin ecosystem. Stresses in urban centres include contaminant loadings to Great Lakes watersheds through point sources (i.e. sewers and stormwater outfalls), and loss of forest cover and greenways due to rapid population growth and unrestrained urban sprawl (resulting from unsustainable planning policies). Increasingly, suburban areas are experiencing habitat loss and the fragmentation of wildlife habitat posing a threat to wildlife populations, particularly in southern Ontario. Unchecked urban sprawl poses an ever-constant threat to the last remaining green corridor in southern Ontario, the Oak Ridges Moraine, which contains the headwaters of rivers in the Greater Toronto Area. Fish populations and habitat have also been impacted historically and in the present through altered natural drainage systems, engineered barriers that impact on migration and spawning, and contaminant loading to rivers and the Great Lakes from industry and antiquated municipal sewer and stormwater systems. Point source contaminants have also impacted upon the enjoyment of the Great Lakes for recreational purposes, as many urban beaches are closed throughout the summer months due to high bacterial levels resulting from stormwater sewage entering the Great Lakes and its tributaries. Lastly, air quality has become a major concern in urban centres, specifically in the southern Ontario portion of the Great Lakes Basin, with poor air quality days having become a common occurrence in the summer months.

Rural areas in the Great Lakes Basin have their own set of stresses that impact negatively upon the watersheds and wildlife in the Basin. Unsustainable water allocation practices have depleted groundwater aquifers throughout the watershed. Increasing population growth in the urban periphery exacerbates the demand for groundwater resources. Non-point nutrient contamination is a major stress on the watercourses and fish populations in Great Lakes watersheds. Farming practices, which rely heavily on chemical fertilizers and pesticides, result in nutrients and pesticides entering the Great Lakes through non-point sources (i.e. agricultural runoff). Nutrient loadings to tributaries end up in the Great Lakes resulting in high bacteria levels, algae blooms and eutrophication, which impact negatively on fish populations. These problems are especially acute in southwestern Ontario and the shorelines of Lake Huron and Georgian Bay.

In order to address the aforementioned stresses, local initiatives by conservation authorities and municipalities have focused on affording greater protection to the Great Lakes Basin ecosystem in the following key areas:

- 1) Improvements in water quality in Great Lakes watersheds
- 2) Improvements in air quality in the Great Lakes Basin
- 3) Protection and restoration of fish and wildlife habitat and populations

Improvements in water quality in Great Lakes watersheds

The issue of improving water quality in Great Lakes watersheds has been a long-term issue of concern for conservation authorities and municipalities in Ontario. More recently, the issue of protecting the Great Lakes in regards to the quantity of water in the lakes and its watersheds has come to the forefront. Increased demands for water consumption from sprawling development throughout southern Ontario and discussions of bulk water exports have made maintaining the integrity of the Great Lakes and the groundwater in its watersheds, a major concern for local jurisdictions.

Pollution prevention initiatives are a key component of local initiatives to protect and restore water quality in the Great Lakes. These initiatives, which range from planning studies to capital works projects, have afforded and will afford greater protection the Great Lakes Basin ecosystem by reducing urban and agricultural runoff (containing contaminants from surface roads and agricultural pesticides and nutrients) entering local tributaries. The following initiatives are representative of pollution prevention programs, partnerships and by-laws that were planned and/or implemented by conservation authorities and municipalities over the past year.

Pollution prevention programs

Pollution prevention programs to improve water quality in the Great Lakes Basin ecosystem have been initiated by various conservation authorities and have focused on controlling contaminants from non-point sources, specifically agricultural nutrient and pesticide runoff.

Several CAs had ongoing programs with local farmers and local municipalities to reduce the runoff of nutrients from agricultural operations into watercourses. These landowner stewardship programs focused on nutrient management education, and the provision of technical and financial assistance in implementing best management practices to reduce agricultural runoff into local watercourses. The success of these programs depends heavily on the willingness of landowners to participate and alter traditional practices concerning fertilizer and pesticide use. While it is difficult to quantify the reduction in non-point loadings to the Great Lakes Basin as a result of these programs, the increasing involvement of farm owners and projects to reduce non-point loadings is encouraging.

Municipalities also focused their efforts in developing pollution prevention programs to address the issue of urban point source contamination of the Great Lakes. For example, the City of Kingston was in the process of developing a P2 program which would reduce the amount of chemicals used by the city's operating units by assessing the city's chemical handling and disposal practices.

When fully implemented this program will provide greater protection to the city's harbour by reducing contaminant loadings from city operations. However, this program does not apply to the private sector, therefore industrial point sources, which are significant in urban areas, would not be reduced.

Remediation projects

Over the past year, conservation authority initiatives have also focused on remediation projects to reduce non-point sources of pollution entering the Great Lakes Basin.

Many CAs had ongoing planting projects to provide buffer zones for watercourses, thereby keeping runoff pollutants from entering municipal and rural drains. Rehabilitation of vegetation buffer zones is essential in reducing non-point source contamination as these zones slow the movement of water and allow pollutants to settle on the land and soak into the ground. Plants and microorganisms are then able to bind and destroy pollutants before they enter the watercourse. Buffer zone planting projects took place in the St. Clair River CA, Essex Region CA and Hamilton Region CA jurisdictions amongst others, and involved the planting of tree and tall grass prairie along rural and municipal drains. In most cases, these remedial projects were small scale in nature and focused on specific watercourses, however when combined with the preventative programs from landowner stewardship programs, these initiatives will provide for the reduction of contaminants entering watercourses in the Great Lakes Basin.

Other remediation projects involved the construction of wetlands and sediment control structures, stormwater pond retrofits and upgrades to reduce contaminant and sediment loadings and to filter stormwater from rural and urban runoff. For example, the Severn Sound RAP (which includes the Town of Midland) was constructing a wetland in 1999 to receive stormwater diverted from the sewer system, which currently discharges into Penetang Bay. When constructed, this wetland will result in the removal of 17.5 kg per year of phosphorus entering the Bay, which the RAP considers a significant contribution to phosphorus control. Similarly, the Lake Simcoe Region CA retrofitted a stormwater management pond to reduce the loading of phosphorus entering Lake Simcoe, which is estimated to have reduced phosphorous loading to Lake Simcoe by 29 kg per year.

The Essex Region CA and the City of Kingston implemented similar projects to control runoff and improve water quality. In 1999, the Essex Region CA implemented a non-point source remediation program, which is expected to reduce sediment loadings and improve water quality in the Detroit River and the Muddy Creek watersheds. The City of Kingston continued with ongoing works throughout 1999 to improve environmental conditions at its local beaches. The improvements to the City's combined sewer outflows (CSOs) included the installation of water disinfection and combined-sewage overflow storage facilities,

resulting in an improvement in the condition of area beaches and reduced bacterial loadings into the Great Lakes.

Water quality studies and monitoring programs

Throughout 1999 and 2000, numerous CAs and municipalities had implemented studies and monitoring programs to assess the quality of groundwater and surface water in their watersheds, as a component of developing projects and plans to protect the water quality of their watersheds.

In 1999 and 2000, conservation authorities had implemented water needs assessment studies that examined the impacts of agricultural runoff on surface and groundwater quality, in order to provide a greater understanding of the sources of contamination to Great Lakes tributaries and to suggest future actions. CAs, such as the Toronto and Region CA had initiated stormwater retrofit studies that identified existing facilities where retrofits can be implemented to improve water quality and erosion control, and locations for new stormwater facilities. Other studies have included a sediment awareness study to address concerns about sediment entering watercourses from construction sites, specifically in the Greater Toronto Area. One particular study by the Toronto and Region CA, will provide the framework for improvements to the existing provincial standards for Erosion and Sediment Control on Urban Construction Sites. Thus local jurisdictions are taking the initiative to improve upon provincial standards to improve water quality.

In addition to water quality studies, some CAs and municipalities were implementing long-term monitoring programs to provide baseline data on groundwater and to assess changes in the future. The Hamilton Region CA in partnership with the MOE was implementing such a program in 1999. When implemented, the program will serve the agricultural community in its water management needs, provide ongoing information to the public to protect the public water supply, and provide baseline data for the development of provincial groundwater management programs and the development of scientifically-based policies.

Comprehensive water quality improvement plans

While many CAs and municipalities were implementing individual projects and programs to protect water quality in the Great Lakes Basin, some local jurisdictions were developing or implementing comprehensive water quality improvement plans that integrated pollution prevention, remediation and monitoring projects into a cohesive document. These comprehensive water quality plans provide for a more progressive and coordinated approach to protecting water quality in the Great Lakes Basin versus small-scale individual projects.

The Nottawasaga Valley CA had developed its Water Quality and Quantity Improvement Strategy (WQQIS) in 1999/2000. This strategy identifies constraints, develops targets, programs and actions to achieve water quality targets. When implemented, programs will include rural and urban pollution programs to address pollution from septic systems, agricultural nutrients, and stormwater, and to address the issue of soil erosion. Under a proposal to OMAFRA's Healthy Futures program, this same CA has proposed another plan to address water quality issues in its watersheds. This coordinated approach to remediation projects may provide for greater protection of water quality in the Great Lakes Basin. However the scope and timeframe for these strategies pose problems in regards to finding long-term funding partners required to implement the projects as envisioned in the plans.

Municipalities were also developing comprehensive water strategies to address water quality in urban areas. Examples of these strategies include the Severn Sound Urban Stormwater Strategy (Town of Midland), which will involve the adoption of a drainage policy for infrastructure improvement projects as a municipal by-law, to reduce urban runoff into Severn Sound.

One of the most comprehensive and ambitious plans being developed over the past year is the Hamilton Harbour Water Quality Strategic Plan. The purpose of this plan will be to reduce the pollutant loading from the Region's wastewater collection and treatment systems to Hamilton Harbour, thereby improving water quality. The plan calls for long-term capital projects for upgrades and expansion of water treatment plants and CSO facilities, as well as a public education program, financing strategies and research into emerging technologies for water quality control. If successfully implemented, this plan will be a model for the protection and enhancement of water quality in an urban jurisdiction within the Great Lakes Basin.

Municipal By-laws and Official Plans

In addition to specific programs and actions, municipalities were in the process of implementing new sewer use by-laws with the purpose of reducing point sources of contamination entering the Great Lakes Basin. Two municipalities, the City of London and the City of Toronto had developed draft sewer use by-laws in 1999 to reduce contaminants entering the Great Lakes from the municipal sewer and stormwater system. When adopted and implemented, the strict criteria and requirements outlined in these by-laws will provide for greater protection of the Great Lakes Basin ecosystem through the reduction of point source contaminant emissions.

The City of Toronto draft sewer use by-law is designed to reduce pollutants entering the Great Lakes through the sewer and stormwater sewer system. The new by-law was developed to harmonize the by-laws of the former local municipalities, and places stringent limits on metals and organic compounds discharged into the system. The by-law also requires industrial dischargers to

develop 5-year pollution prevention plans and maintains prohibition of hazardous waste discharges into the system. These requirements make the City of Toronto by-law a progressive initiative that will result in the reduction of allowable concentrations of toxic metals and organics entering the Great Lakes ecosystem.

Similar to the draft by-law in the City of Toronto, the City of London developed a draft sewer use by-law in 1999 that contains stringent stormwater quality criteria for toxics including arsenic, cadmium, lead, phosphorous, etc. These criteria are equally stringent to the proposed criteria in the City of Toronto by-law. Lastly, the Region of Ottawa-Carlton has included policy provisions in its new Official Plan to control urban and agricultural runoff.

Improvements in air quality in the Great Lakes Basin

Local initiatives to improve air quality in the Great Lakes Basin have been a focus for municipalities rather than conservation authorities. The following initiatives were planned or implemented throughout 1999/2000.

Clean air plans

Six municipalities were working on, or had ongoing Clean Air Plans over the past year. The City of Waterloo adopted a Clean Air Plan in 1999 and has implemented policies to reduce the city's air contaminant emissions from various sources. The success of this plan in improving air quality in the City of Waterloo cannot be assessed at this time as it has only recently been implemented. Similarly, the Region of Hamilton-Wentworth established the *Hamilton-Wentworth Air Quality Initiative (HAQI)* in 1997. The purpose of HAQI is to improve air quality, which has been an issue of concern in the heavily industrialized Hamilton-Wentworth region. Information on initiatives under HAQI for 1999/2000 is forthcoming. However, proposed initiatives will address recommendations of the HAQI report, some of which include:

- Establishment of standards for vehicle emissions and testing;
- Establishment of an anti-idling by-law;
- Reduction in the number of single-occupancy automobile trips;
- Reduction in transboundary pollution; and
- Development of energy conservation measures.

Other municipalities including the County of Essex, the Region of Ottawa-Carlton, the City of Ottawa, the City of Toronto and the City of Windsor were developing Clean Air Plans or were implementing air quality initiatives within other programs. Specific initiatives include:

- Changes in municipal operations to reduce air contaminant emissions;
- Tree planting projects and energy conservation initiatives;

- Enhancement of alternative transportation modes, e.g.) construction of cycling path networks; and
- Research into alternative fuels and city vehicle fleets that use alternative fuels.

Pollution Prevention (P2) programs

The City of Kingston is currently developing its P2 programs, which will include an inventory of chemicals that are released into the air from city operations. The purpose of P2 programs is to reduce the emission of contaminants from city operations, thereby improving air quality.

In February 2000, the City of Toronto released its *Environmental Plan, A Plan for Environmentally Sustainable Toronto*. This plan outlines recommendations on achieving improvements in air quality in Toronto. This plan will achieve improvements in local air quality through initiatives currently being developed to reduce emissions from city owned diesel sources, for example. The report recognizes that air quality initiatives on a local level are one component of improving air quality since transboundary pollution has an impact on local air quality for jurisdictions throughout the Great Lakes region.

The success of these plans and projects in improving air quality is difficult to determine in isolation from federal, provincial and bilateral initiatives. While these plans may achieve reductions in emissions of air contaminants from municipal sources, they do not address emissions from industrial sources. In addition, these plans do not deal with transboundary pollution from U.S., which accounts for approximately 50% of air contamination in southern Ontario. Therefore, local initiatives concerning air quality are limited in their ability to improve air quality in the Great Lakes Basin, and thus initiatives on the provincial, federal and U.S. state level are essential.

Protection and restoration of fish and wildlife habitats and populations

Key initiatives of conservation authorities, and municipalities to a lesser extent have targeted the protection and restoration of fish and wildlife habitats and populations in the Great Lakes Basin ecosystem. The implementation of these initiatives in 1999/2000 varied amongst these local jurisdictions, with some CAs and municipalities in the process of developing initiatives, while others having implemented new initiatives or expanded and enhanced ongoing programs.

Watershed management and planning studies

In order to address the increasing demands of development on watershed resources, twelve conservation authorities had developed or were in the process of developing watershed management studies and watershed planning studies in 1999/2000. In some cases, the purpose of these watershed management and

planning studies is to provide data on sensitive fish and wildlife species and key habitat areas, which is crucial in protecting Great Lakes watersheds and in developing rehabilitation projects. In other cases, the purpose of these studies is to allow for development while minimizing the risk to fish and wildlife habitats. In most of these management studies, there were recommendations for some portion (e.g. 30%) of the watershed to be conserved as a natural area, while permitting various uses in the remaining portion of the watershed. These initiatives do not afford greater protection to fish and wildlife habitat, but instead seek to minimize the impact on fish and wildlife in the face of development proposals in Great Lakes Basin watersheds:

Typically, watershed management and planning studies involved the following: 1) identification of watershed management areas; 2) the provision of stormwater management targets to protect sensitive organisms and environmental features, while allowing development to proceed; 3) the provision of baseline data to assess changes in watershed characteristics; and 4) the provision of data for future rehabilitation projects for to encourage biodiversity and improve the ecological integrity of watersheds. One representative study by the Essex Region CA involved the development of Natural Areas Management Plans, with the goal of protecting Carolinian forests and remnant tract of prairie, wetlands and rare and endangered species in their jurisdiction.

Other projects and agreements aimed at protecting fish populations included the classification of municipal and agricultural drains project, of which several CAs took part. The purpose of this project is to expedite proposals for municipal drainage works, while protecting fish population by identifying and classifying drains according to their significance in regards to sensitive fish populations and other characteristics. In addition, the agreement between the conservation authorities and the Department of Fisheries and Oceans (DFO) minimized risks to fish populations as CAs screened development proposals and in some cases provided mitigation input to reduce the risk of a harmful alteration, disruption or destruction (HADD) of fish habitat. It was stated that this agreement has allowed for the streamlining of the development approvals process, while allowing for greater policing and enforcement of riverine systems in Great Lakes Basin watersheds.

Contaminant remediation and monitoring

Remedial and monitoring initiatives by CAs in 1999/2000 were aimed at reducing the impact of contaminant loadings into watersheds from various urban and rural sources. As contaminants degrade fish and wildlife habitat and impact negatively upon these populations (e.g. ability to reproduce), these programs and projects sought to provide greater protection of fish and wildlife habitat and populations throughout the Great Lakes Basin. One example was from the Severn Sound RAP, in which a lead shot remediation project had been initiated to treat areas with lead contamination, thereby reducing the impact of lead contamination on

the Trumpeter Swan in the Wye Marsh. Ongoing monitoring programs throughout the Great Lakes Basin provided data on contaminant levels in surface and groundwater, in order to evaluate the success of remedial projects aimed at improving fish habitat by reducing contaminant loadings into streams and rivers.

Habitat remediation, restoration and conservation projects

The most common initiatives cited by conservation authorities in the survey involved projects for habitat remediation, restoration and conservation. In most cases these projects focused on a specific watershed, watercourse or land area within the CA jurisdiction. The scope of these projects varied from small-scale projects focused on a small portion of a watershed, to larger scale projects aimed at restoring large parcels of degraded land and entire watercourses. The difference in the number of projects, project size and scope was in part due to financial and staff resources of the individual CAs. Larger CAs (e.g. Toronto and Region CA, Essex Region CA) had more remediation projects than other CAs throughout the Great Lakes Basin. The goal of these projects was to rehabilitate degraded watercourses and land areas to enhance biodiversity and allowing for the recovery of fish and wildlife populations that have diminished due to negative habitat alterations. The following projects are representative of remediation, restoration and conservation initiatives to protect fish and wildlife habitat, undertaken by CAs in 1999/2000:

- Hamilton Region CA Land Stewardship program – this program involved fish and wildlife habitat restoration projects to enhance disturbed watersheds (e.g. contaminated soils, barriers to fish spawning, stream bank erosion, etc.)
- Long Point Region CA enhanced fish habitat by removing access barriers and providing shelter and food sources for young trout;
- Toronto and Region CA Humber River Aquatic Rehabilitation Projects – nine rehabilitation projects were in progress in 1999/2000 in the Humber River watershed that focused on the construction of fishways, deepening of ponds, the planting of aquatic and terrestrial habitat, shoreline restoration, and wetland creation;
- Toronto and Region CA Don River Aquatic Rehabilitation Projects – two projects were in progress in 1999/2000 in the Don River watershed that involved the construction of ramps to allow passage of migratory trout and salmon through barriers in the East Don River;
- Detroit River habitat enhancement program – initiatives to improve fish habitat in the Detroit River were ongoing throughout 1999 with planting and bio-engineering projects along the Canard Marsh dyke;
- Essex Region CA wildlife habitat restoration – the ERCA conducted a prescribed burn on Pelee Island to restore the rare alvar and savannah habitats;
- Reforestation programs – in 1999, 122,000 seedlings and 5,100 large stock trees were planted by the Essex Region CA, which included tree planting events along the Grand Marais Drain in Windsor, Turkey Creek and Little

River to enhance habitat and contribute to the greening of the region; ongoing tree planting programs by the Long Pont Region CA and the Lake Simcoe CA resulted in the planting of 51,000 trees and 70,000 seedlings respectively; significant reforestation projects took place in conservation areas that will enhance the habitat for local wildlife species; riparian habitat restoration and tall grass prairie planting projects by the St. Clair River CA in 1999 linked wildlife features together and encouraged bird life.

Comprehensive habitat restoration strategies

In addition to individual restoration and rehabilitation projects, several CAs had developed comprehensive habitat restoration strategies for their entire jurisdiction or for individual watersheds. These strategies provide the greatest protection for fish and wildlife habitat in the Great Lakes Basin, as these strategies go beyond individual small-scale remedial projects, and include data gathering studies, pollution prevention initiatives, educational activities for local communities, and partnerships with various local landowners, municipalities and other partners. Three of these programs are highlighted here:

- Maitland Watershed Partnerships (MWP) – the Maitland Watershed Partnerships involves 27 organizations working together to improve the long-term environmental health (and natural resource use) of the Maitland watershed; in 1999, the MWP was developing a comprehensive action plan for improving the health of the watershed, specifically concerning soil and agricultural issues, natural areas, and water quality and quantity; throughout 2000, the implementation of the MWP action plan will involve 1) the collection of information to fill in information gaps (e.g. loss of natural areas, evaluation of management types, groundwater quality, etc.), and 2) the implementation of proposed demonstration projects aimed at a) protecting and restoring natural areas through the creation of a community nursery and the restoration of forest bordering Lake Huron, and b) assisting local communities to improve surface water quality and conditions for aquatic life in the Middle Maitland River through the restoration and enhancement of natural wetlands areas and the bioengineering of surface drains to provide shading and erosion stabilization;
- Rivercare 2000 (Rideau Valley and Cataraqui Region CA) – this program involves municipal infrastructure programs, private land incentives, community based initiatives and longer term research and monitoring and includes projects to include projects to deal with urban and agricultural runoff and fish and wildlife habitat improvements in the Rideau Cataraqui system;
- Nottawasaga Valley CA Water Quality and Quantity Improvement Strategy (WQQIS) – this strategy identifies constraints, develops targets, programs and actions to achieve its targets; key areas related to fish and wildlife habitat include: 1) tree restoration program aimed at 30% forest cover target in all municipal OPs, and improvements in stream corridor habitat with the target of 100% of stream length with naturalized banks and enhanced vegetated

buffer zones (at least 30 metres); and 2) improved habitat in municipal drains with year-round flow through the implementation of natural channel options.

Municipal initiatives

Municipal initiatives have also included the development of policies and plans that are designed to provide greater protection to fish and wildlife habitat in the urban landscape. The following policies and plans, when implemented will enhance wildlife habitat by providing wildlife corridors, regeneration of brownfield sites, and renaturalization of disturbed aquatic ecosystems.

- City of Toronto Environmental Plan - under this plan, the City of Toronto plans to expand green space through 1) naturalization projects for road corridors and 2) the development of a plan to renaturalize the Port Industrial District; the plan to renaturalize the Port Industrial district involves replacement of the Don River Keating Channel with a natural river mouth that will provide habitat for fish and other aquatic organisms, the creation of new waterfront parks and the clean-up of contaminated soils to restore the ecological viability of the area;
- City of Kingston - in 1999, the Kingston Environmental Advisory Forum was developing a plan for the Kingston Inner Harbour area that will highlight environmental conditions, prioritize environmental concerns, and develop remediation possibilities and management strategies with the goals of improving the environmental condition of the harbour;
- Region of Ottawa-Carlton new Official Plan – approved in 1999, the new OP for the Region protects the natural environment by designating natural areas as Natural Environment Areas and Significant Wetlands, supporting work at the local municipal level to protect natural features, and providing for environmentally sensitive development to conserve and enhance woodlands, watercourses and ecological linkages; specific objectives of the new OP include:
 - 30% target for woodlands coverage (currently 28%) in region;
 - maintenance of watercourses in their natural state;
 - promotion of the protection and establishment of natural corridors linking natural areas; and
 - maintenance and improvement of water quality by managing discharges to surface and groundwater.

General policies highlighted in the new Ottawa-Carlton OP aimed at protecting fish and wildlife habitat include:

- Preparation and adoption of a tree conservation and enhancement strategy;
- Requirements for new subdivisions to submit tree planting and land conservation plan;
- Stewardship support for reforestation and stream improvement projects;
- Development of watershed strategies;

- Policies for natural environment areas that ensure development does not threaten these identified sensitive areas.
- The City of Kingston planted select vegetation to provide shade and stabilize streambank erosion in the Little Cataraqui Creek in 1999;
- The Region of Hamilton-Wentworth commissioned (for 2000) the detailed design for a fisheries habitat improvement plan for the lower Spencer and Ancaster Creeks which are spawning and nursery areas for Lake Ontario fish;
- Essex County acquired land for conservation, specifically the protection of LaSalle Woodlot and the expansion of the Chrysler Canada Greenway, both of which are significant natural areas.

It is evident from the survey of conservation authorities and municipalities that many local jurisdictions are implementing initiatives that provide for the protection of the Great Lakes Basin ecosystem through remedial and preventative actions. While individual small-scale remedial projects provide for protection of water quality and fish and wildlife habitat, it is the comprehensive watershed strategies that provide the most integrated and cohesive approaches to protection of the Great Lakes Basin.

The survey also identified significant differences in the number and scope of programs, projects and partnerships that were implemented by conservation authorities. As stated previously, CAs and municipalities in northern Ontario had undertaken fewer initiatives than jurisdictions in southern and southwestern Ontario. This may be in part due to the focus of provincial funding on rural nutrient control programs, which are implemented primarily in the farming areas of southern and southwestern Ontario. Funding and staff resources played a key role in the ability of CAs to deliver and initiate new programs to protect the Great Lakes Basin. In some cases, ongoing programs had been scaled back from previous years due to financial pressures. For example, while most conservation authorities provided tree-planting services in 1999/2000, many stated that the number of trees planted had been reduced from previous years, in one case by 66% over a two-year period.

On the municipal side, there are concerns about the implementation of large-scale urban projects, such as the regeneration plan of the Toronto Harbourfront. There is a level of uncertainty as to whether these projects will be fully implemented and thus achieve their ambitious goals of habitat restoration and improvements in water quality. In the past, these plans have not been implemented or have been scaled back, due to funding barriers and the lack of political will by various levels of government. It is essential that the federal, provincial and municipal governments determine the extent of their respective roles in regards to providing resources in order to successfully implement municipal environmental plans, and thereby afford greater protection to the Great Lakes Basin ecosystem.

The role of federal and provincial initiatives in implementing local initiatives

Initiatives by the federal and provincial levels of government play a key role in the ability of conservation authorities and municipalities to implement local initiatives to protect the Great Lakes Basin ecosystem. Specifically, federal and provincial program funding for local initiatives provide CAs and municipalities with the resources to hire staff and develop and implement new initiatives. Without these resources, many local remediation and pollution prevention works would not occur as federal and provincial grants are key for project staffing, conducting watershed and habitat studies, and implementing physical works.

The importance of the conservation authority agreements with the DFO was stated by many of the CAs contacted. While there is no funding provided to CAs under this agreement, the partnership was deemed to be positive in terms of protecting local habitat and providing local input into planning matters. As one conservation authority representative stated, "the partnership allows for a one window approach to resources management and the interaction of resources". Most CAs shared this positive opinion of the agreement and felt it increased the efficiency of project reviews while protecting fish habitat. The CAs also expressed their appreciation for resources provided by the partnership in terms of the training of CA staff by DFO staff on how to conduct the proposal evaluations. Concerns with this agreement involved the inability of CAs to recover costs for providing this service, even though some CAs charged proponents to review proposals. It was suggested by one CA, that the federal government should provide funding to CAs that were experiencing significant costs for providing the service.

Other federal departments and agencies including Environment Canada, Agriculture Canada and HRDC provided key funds in 1999 to conservation authorities that allowed for fish and wildlife habitat protection. Initiatives funded by these federal departments included the following: stream assessments, map compilation of fish species, mapping of municipal drainage systems, water quality and habitat improvements (e.g. Wheatley Harbour, Detroit River, City of Ottawa), and the assessment of surface runoff sources.

Provincial programs such as Great Lakes Protection Fund also were welcome sources of funding for local initiatives. The OMAFRA "Healthy Futures in Agriculture" program is a possible future source of funding for local initiatives. This \$90 million program will provide funding for projects to improve water quality on a local level. Without funding from the OMAFRA program, proposed pollution prevention initiatives planned by CAs aimed at reducing nutrients entering waterways by working with local farmers and stewardship programs would be in jeopardy.

One concern with this program expressed by conservation authorities was the 50% cost-sharing arrangement between the province and local municipalities. The cost-sharing arrangement may limit the involvement of municipalities who do not have the financial resources to participate, and thus limit local initiatives under this program. Another concern was that the OMAFRA program would be too "reactive" and provide funds for remediation projects, rather than preventative measures (e.g. education, alternative farming practices, etc.).

Other issues raised by conservation authorities and municipalities concerned the continued effects of provincial downloading and budgetary cuts¹ from the mid-1990s. While most conservation authorities have found new sources of income, specifically from fee-for-service programs, some CAs stated that the reduction in provincial grants had an ongoing impact on their ability to provide sound programs in fish and wildlife habitat protection. In order to supplement the loss of funding from traditional sources, conservation authorities have had to focus more resources to fee-for-service programs and finding alternative sources of funding. This takes away from the development and implementation of conservation initiatives. This was highlighted by the reduction of ongoing services (e.g. tree planting), the lack of new initiatives in certain CAs, and the focus on small-scale remedial projects as opposed to more ambitious large-scale strategies that are more comprehensive in nature.

One interesting observation from the survey, is the lack of partnerships between local jurisdictions and Remedial Action Plans. Only the Town of Midland (Severn Sound RAP) and the Lower Thames Valley CA (Wheatley Harbour RAP) identified specific partnerships with RAPs in implementing local initiatives. As the province has eliminated funding for the Remedial Action Plans throughout the Great Lakes, it is more difficult for RAP programs to partner with local jurisdictions to implement environmental initiatives.

The 1999/2000 survey represents a "snapshot" of local initiatives for a particular time period. While it appears that there are many small-scale projects and some comprehensive strategies to address environmental issues in the Great Lakes, a more accurate picture would require the examination of initiatives over time. It is difficult to assess the value of current initiatives without the historical context of previous initiatives. By comparing the present day initiatives to those of the early and mid-1990's, one can assess whether local jurisdictions are doing as much now for the Great Lakes Basin as they were five or ten years ago.

In addition to examining historical initiatives in the Great Lakes Basin, it is necessary to evaluate funding sources for 1999/2000 and beyond. As stated previously, the implementation of small-scale initiatives and the more ambitious strategic plans involves the securing of funding for future works. Many of the federal and provincial funding programs have been scaled back from previous

¹ Provincial funding for Severn Sound RAP has gone from \$432,400 in 1997 to \$139,200 in 1998 for project funding partnerships

funding programs. For example, the province's Water Protection Fund provides \$200 million on a one-time basis. This fund replaced the previous provincial program that provided \$140 million dollars on an annual basis. In addition funding under federal programs such as Great Lakes 2000 will not be available beyond the year 2000. Lastly, the proposals under the OMAFRA "Healthy Futures in Agriculture" program have yet to be approved for funding, and the cost-sharing formula with municipalities for this program may mean that none of these proposals are ever implemented.

As a result, the implementation of remedial, rehabilitative and preventative projects is at best uncertain without long-term guarantees for funding by the federal and provincial governments. Therefore, any long-term commitment by the federal and provincial governments for local initiatives is vital to the restoration of the Great Lakes Basin ecosystem. Local jurisdictions encourage a stronger federal and provincial role in policy development and research related to initiatives to protect the Great Lakes Basin ecosystem.

Working together on local initiatives

In addition to a stronger role for the federal and provincial governments in initiatives to protect the Great Lakes Basin ecosystem, it is essential that the three levels of government work together on developing programs to achieve the protection of water, air and fish and wildlife habitat in the Great Lakes. Many of the large-scale urban renewal and water quality strategies (e.g. River Care 2000, City of Toronto Harbourfront Regeneration) cannot be accomplished without cost sharing between the three levels of government. Municipalities in particular, expressed their interest in federal and provincial financial support for initiatives involving the clean-up of municipal harbours and port lands, the redevelopment and revitalization of municipal waterfronts, and habitat restoration and enhancement projects for municipal rivers and streams. Due to the enormous scale of these municipal projects, the ability of municipal governments to proceed with these initiatives is limited without the involvement of other levels of government.

The current lack of cooperation amongst the federal and provincial governments in local initiatives to protect the Great Lakes Basin is not conducive to achieving the goals of habitat protection and improvements in water and air quality. It was suggested that the two levels of government examine the U.S. approach to dealing with watershed planning and conservation initiatives, in which federal, state and local governments pool resources over the long-term to provide for a more coordinated and effective approach to dealing with water quality and habitat protection problems.

SECTION IV: CONCLUSION

In conclusion, local initiatives to protect the Great Lakes Basin ecosystem vary greatly amongst municipalities and conservation authorities in Ontario. On the whole, many CAs and municipalities are planning or have implemented initiatives in 1999/2000 to address issues pertaining to water quality, air quality, and fish and wildlife habitat protection. In other cases, existing programs have been scaled back and new programs have not been implemented. The amount of resources available to these local jurisdictions is the key factor in their ability to implement local initiatives that will afford greater protection to the Great Lakes Basin ecosystem. Greater cooperation and long-term involvement of the federal and provincial governments in local initiatives would be a positive development for protecting air quality, water quality and fish and wildlife habitat in the Great Lakes Basin ecosystem.

APPENDICES

APPENDIX A: Letters of request to conservation authorities and municipalities

APPENDIX B: List of municipalities

APPENDIX C: Conservation authorities environmental initiatives
(April 1999-2000)

APPENDIX D: Municipal environmental initiatives (April 1999-2000)

APPENDIX A

Letters of request to conservation authorities and municipalities

CANADIAN INSTITUTE FOR ENVIRONMENTAL LAW AND POLICY

L'INSTITUT CANADIEN DU DROIT ET DE LA POLITIQUE DE L'ENVIRONNEMENT

Est. 1970

February 14, 2000

Wayne Wilson
Nottawasaga Valley Conservation Authority
R.R. #1, Angus, Ontario L0M 1B0

Dear Mr. Wilson,

The Canadian Institute for Environmental Law and Policy (CIELAP) is undertaking a study of local initiatives to protect and restore the Great Lakes Basin ecosystem. As a component of this study, CIELAP is developing an inventory of environmental initiatives by conservation authorities in Ontario. The purpose of this inventory is two-fold: 1) to identify recent environmental initiatives that have been or are in the process of being implemented; and 2) to assess the impact of recent federal or provincial initiatives on these activities.

We kindly request your assistance in providing us with the following information for the Nottawasaga Valley Conservation Authority:

1) Please provide a description of major environmental initiatives from April 1999 to April 2000; specifically new or amended by-laws, and programs or partnerships in the following areas:

- urban or agricultural runoff
- fish or wildlife habitat protection

2) Please comment on the impact of any recent federal or provincial initiatives (i.e. policies, programs, etc.) on the aforementioned activities.

In responding to this request, please feel free to provide any relevant documents that would provide background or greater detail of the city's environmental initiatives.

Please mail or fax your response to:

Canadian Institute for Environmental Law & Policy
517 College Street, Suite 400
Toronto, Ontario, M6G 4A2
Fax # (416) 923-5949

If you have any questions concerning this request, please contact me at (416) 923-3529, ext.21 or at james@cielap.org. We thank you for your time and effort in responding to this request and look forward to your response.

Yours sincerely,



James Yacoumidis
Research Officer



CANADIAN INSTITUTE FOR ENVIRONMENTAL LAW AND POLICY

L'INSTITUT CANADIEN DU DROIT ET DE LA POLITIQUE DE L'ENVIRONNEMENT

Est. 1970

February 14, 2000

John Warren
City of Toronto, Environmental Services Section
55 John St., 16th Floor, Station 1170
Toronto, ON, M5V 3C6

Dear Mr. Warren,

The Canadian Institute for Environmental Law and Policy (CIELAP) is undertaking a study of local government initiatives to protect and restore the Great Lakes Basin ecosystem. As a component of this study, CIELAP is developing an inventory of environmental initiatives by municipalities and conservation authorities in Ontario. The purpose of this inventory is two-fold: 1) to identify recent environmental initiatives that have been or are in the process of being implemented; and 2) to assess the impact of recent federal or provincial initiatives on these activities.

As the City of Toronto is within the Great Lakes Basin, we kindly request your assistance in providing us with the following information for the City of Toronto:

1) Please provide a description of major environmental initiatives from April 1999 to April 2000, specifically new or amended by-laws, and programs or partnerships in the following areas:

- industrial, commercial, institutional or residential sewer use, particularly the disposal of industrial or hazardous wastes
- urban or agricultural runoff
- air quality
- fish or wildlife habitat protection

2) Please comment on the impact of any recent federal or provincial initiatives (i.e. policies, programs, etc.) on the aforementioned activities.

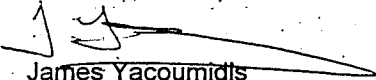
In responding to this request, please feel free to provide any relevant documents that would provide background or greater detail of the city's environmental initiatives.

Please mail or fax your response to:

Canadian Institute for Environmental Law & Policy
517 College Street, Suite 400
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If you have any questions concerning this request, please contact me at (416) 923-3529, ext.21 or at james@cielap.org. We thank you for your time and effort in responding to this request and look forward to your response.

Yours sincerely,


James Yacoumidis
Research Officer



APPENDIX B

List of municipalities

City of Belleville
Town of Collingwood
City of Cornwall
Country of Essex
City of Hamilton and the Region of Hamilton-Wentworth (joint submission)
County of Hastings
City of Kingston
City of Kitchener
County of Lambton
City of London
Town of Midland
City of Ottawa
Region of Ottawa-Carlton
County of Peterborough
City of Peterborough
City of Sarnia
County of Simcoe
Region of Sudbury
District of Thunder Bay
City of Toronto
City of Windsor
City of Waterloo
Region of Waterloo

APPENDIX C

Conservation authorities environmental initiatives (April 1999-2000)

Conservation Authorities Environmental Initiatives (April 1999 to April 2000)

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Essex Region CA	<ul style="list-style-type: none"> • Rural Non-point source pollution remediation program – projects in 1999 included tree planting, construction of sediment control structures and a monitoring program to track improvements over time in the Detroit River and Muddy Creek watersheds • Township of Pelee private sewage disposal – assistance was provided to the Township of Pelee to ensure environmentally sound practices in the permitting and upgrading of private sewage disposal systems 	<ul style="list-style-type: none"> • Land acquisition – in 1999, property acquisitions were made to protect the LaSalle Woodlot and the Chrysler Canada Greenway, which are two of the most significant and vulnerable natural areas in Essex Region • Natural Areas Management Plans – in partnership with the MNR and other partners, the ERCA initiated a collaborative planning process for Pelee Island Management Plans, which will document the environmental value and habitat enhancement opportunities; management plans were also undertaken for Tremblay Beach and Rusom Shores in 1999 • Biodiversity Conservation Strategy – this strategy was begun in the Detroit River watersheds in 1999 and restoration projects are being implemented throughout 1999/2000 • Forestry Program – in 1999, 122,000 seedlings and 5,100 large stock trees were planted; tree planting events took place along the Grand Marais Drain in Windsor, Turkey Creek and Little River to enhance habitat and contribute to the greening of the region • Detroit River habitat enhancement program – initiatives to improve fish habitat in the Detroit River were ongoing throughout 1999 with planting and bio-engineering projects along the Canard Marsh dyke • Wildlife habitat restoration – the ERCA with the FON and MNR conducted a prescribed burn on Pelee Island to restore the rare alvar and savannah habitats

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Essex Region CA (continued)		<ul style="list-style-type: none"> • Level 3 Agreement with the Federal Department of Fisheries (DFO), under section 35 of the Fisheries Act – signed in 1998 and renewed in 1999, under this agreement, the Essex Region CA screens development proposals to assess the potential harmful impact on fish habitat, and provides input on mitigation and compensation plans, which are sent to the Federal Department of Fisheries for ministerial approval • Drain Classification for Fish Habitat Management project – this project was developed in 1999 and will be expanded in 2000; the system will minimize the impact of drain maintenance activities on fish and fish habitat • Detroit River draft management strategy – this strategy is currently in development which will describe how the future of the Detroit River will be conserved, interpreted and enhanced; the management strategy will be submitted as part of the process to have the river designated a Canadian Heritage River
Grey Sauble CA	<ul style="list-style-type: none"> • No new initiatives in 1999/2000 	<ul style="list-style-type: none"> • Level 2 agreement with the Federal Department of Fisheries (DFO), under section 35 of the Fisheries Act - under this agreement, the Grey Sauble CA screens development proposals to assess the potential harmful impact on fish habitat, and provides input on mitigation measures; projects deemed to have an environmental impact are referred to the DFO

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Hamilton Region CA	<ul style="list-style-type: none"> • Erosion and sediment control on construction sites - in partnership with Conservation Halton, the Hamilton Region CA developed a document entitled "Keeping Soils on Construction Sites" which provides information to contractors regarding the control of erosion and sediment • Land Stewardship Project – projects in 1999 included working with landowners to reduce nutrient flows from manure piles into local creeks, the creation of wetlands to cure runoff thereby reducing nutrient loadings into local creeks, and the reconstruction of barns to redirect eavestrough water away from manure piles • Watershed groundwater monitoring program – this long-term project, implemented in partnership with the MOE will provide baseline data about ambient groundwater conditions in the area; this data will serve the efforts of the province in its groundwater management programs and policies, and provide municipalities with information on which to base future planning directions 	<ul style="list-style-type: none"> • Land Stewardship Project – this ongoing project was initiated in 1994, and is delivered in partnership with Conservation Halton and the Bay Area Restoration Council, with some funding from the Great Lakes Cleanup Fund; this outreach project shares information with urban and rural landowners about the protection and enhancement of locally significant wetlands, uplands and riparian areas of the watershed; hundreds of landowners are contacted yearly and projects in 1999 included the restoration and improvement of creeks on private land in the Spencer Creek system • Managed Forest Plans – in an effort to enhance biodiversity in monoculture plantations and to take advantage of the province's new tax incentive program, in 1999, these plans were completed for an area of 2,200 acres • Fisheries habitat enhancement projects – work in 1999 included fisheries inventories, and for 2000, the Hamilton Region CA has commissioned the detailed design for fisheries habitat improvement for the lower Spencer and Ancaster Creeks • Level 2 agreement with the Federal Department of Fisheries (DFO), under section 35 of the Fisheries Act - under this agreement, the Hamilton Region CA screens development proposals to assess the potential harmful impact on fish habitat, and provides input on mitigation measures; projects deemed to have an environmental impact are referred to the DFO

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Kawartha Region CA	<ul style="list-style-type: none"> • Classification of agricultural drains - in 1999/2000, the KRCA has undertaken a project to classify agricultural drains 	<ul style="list-style-type: none"> • Level 2 agreement with the Federal Department of Fisheries (DFO), under section 35 of the Fisheries Act - under this agreement, the KRCA reviews development proposals to assess the potential harmful impact of the proposal to fish habitats, and provides input on mitigation measures; projects deemed to have an environmental impact are referred to the DFO • Amphibian and reptile monitoring program – this program, which is currently under development, will provide resource information on amphibian and reptile populations within the KRCA's watersheds • Watershed planning strategies – planning strategies have been undertaken in the southern part of the KRCA's watershed in partnership with neighbouring conservation authorities • GIS implementation – throughout 1999, fish and wildlife data has been entered on a GIS database
Kettle Creek CA	<ul style="list-style-type: none"> • Kettle Creek/Lake Erie Water Quality Task Force – this locally driven initiative aims to reduce bacterial loading into Kettle Creek and Port Stanley Harbour and focuses mainly on public education programs; partners in the task force include the KCCA and the local MOE and municipalities 	<ul style="list-style-type: none"> • Level 2 agreement with the DFO, under section 35 of the Fisheries Act – under this agreement, signed in 1999, the KCCA screens projects and provides input on mitigation measures for projects within the Kettle Creek watershed; projects deemed to have an environmental impact are referred to the DFO • Private land reforestation – ongoing subsidized tree planting programs are provided by the KCCA to increase the forest base within Middlesex and Elgin Counties; in 1999, 35,000 trees were planted

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Lakehead Region CA	<ul style="list-style-type: none"> No new initiatives in 1999/2000 	<ul style="list-style-type: none"> Level 1 agreement with the DFO under section 35 of the Fisheries Act – this agreement was signed in 1998 and renewed in 1999; the LRCA is local referral agency for projects that may require authorizations under the Federal Fisheries Act; the LRCA screens out projects that do not need an authorization and assists in referring information about projects that do; CA staff determine whether proposals may result in a "harmful alteration, disruption or destruction " (HADD) of fish habitat Watershed planning exercises - conducted in 1999 for Wild Goose Creek and Blind Creek to establish baseline data for future watershed plans and planning decisions; studies included water quality testing and benthic sampling of aquatic life and collection of information on land use, zoning, erosion sites, and stream crossing to use on computerized watershed maps; these baseline data can be compared to future data to detect any changes in watershed characteristics

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Lake Simcoe Region CA	<ul style="list-style-type: none"> • Digital Elevation Model of the Lake Simcoe watershed – this model provides three-dimensional maps, generates drainage patterns and runs an agricultural non-point source pollution model • Maskinonge River Remedial Strategy – in 1999, the stormwater management pond was retrofitted to reduce the amount of phosphorus entering Lake Simcoe via the Maskinonge River 	<ul style="list-style-type: none"> • Level 1 agreement with the DFO, under section 35 of the Fisheries Act - LSRCA screens proposed projects to determine the potential impact on the fish habitat; projects that are deemed to have an environmental impact are referred to the DFO • East Holland River sub-watershed study – as part of its watershed planning process, the LSRCA conducts watershed studies on fish and wildlife habitat; in 1999, the LSRCA conducted a study on the East Holland River in funding partnership with York Region and local municipalities • Tree planting – in 1999, 70,000 seedlings, 1700 shrubs and 850 trees were planted in this ongoing program • Landowner environmental assistance program (LEAP) - through partnerships with York Region and local municipalities, this ongoing program provides technical and financial support to individual landowners to reduce soil erosion, improve water quality and enhance wildlife habitat through stormwater management upgrades/installations and reforestation efforts

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Long Point Region CA	<ul style="list-style-type: none"> • Water needs assessment of Big Creek tributaries – this assessment examined the impacts of agricultural runoff on surface and groundwater quality, in addition to other factors 	<ul style="list-style-type: none"> • Lower Big Otter (Creek) remedial project – work in 1999 on this remedial project (which was initiated in 1993) focused on enhancing fish and wildlife habitat, including the removal of access barriers and the installation of habitat structures to provide shelter and food sources for young trout • Project CARE - the LPRCA is the lead implementing agency for the Carolinian Action, Restoration and Education program (Project CARE), which focuses on growing native plants for planting programs; in 1999, four schools participated in the program resulting in 1900 plants being grown for planting projects • Fish habitat assessment of Big Creek tributaries – this new initiative (2000/1) will focus on the fish habitat requirements of fisheries resources to ensure they continue to be met in the overall water budget for the watersheds • Groundwater resources assessment for the Big Creek Basin – this new program (2000/1) will assess the role of groundwater in recharging Big Creek and its tributaries with base flow, and therefore has implications for fisheries habitat • Forest management plan – approved in May 1999, this plan designates 20% of forest lands in a protected “natural heritage woodland” status • Tree planting programs– 51,550 trees were planted throughout the watershed in 1999, with a significant tree planting project at Sidney Back Conservation Area, where 15 acres of former agricultural land was planted with tree seedlings

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Lower Thames Valley CA	<ul style="list-style-type: none"> • Review of drainage projects - the LTVCA provides input on mitigation of runoff to drainage under this ongoing program to review works proposed under the Drainage Act and under Section 28 regulations 	<ul style="list-style-type: none"> • Extension of Wheatley Harbour RAP to LTVCA jurisdiction - in 1999, the Two Creeks watershed became eligible for grant funding from Environment Canada's Great Lakes 2000 Cleanup Fund; under this program, grants will become available in 2000 for approved projects that control soil erosion, upgrade faulty septic systems or improve wildlife habitat • Level 1 agreement with the DFO, under section 35 of the Fisheries Act - LTVCA screens proposed projects to determine the potential impact on the fish habitat; projects that are deemed to have an environmental impact are referred to the DFO • Drain classification project - initiated in 1999 in conjunction with the DFO and HRDC, this project involves an inventory of all municipal drains in the LTVCA's jurisdiction; the project is continuing through 2000 with stream assessments, fish finding and map compilation; mapping will be provided to municipal drainage superintendents in order for them to better plan drainage projects

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Lower Trent Region CA	<ul style="list-style-type: none"> No new initiatives in 1999/2000 	<ul style="list-style-type: none"> Natural Heritage Strategy – in partnership with the Quinte CA and with funding from the Great Lakes Cleanup Fund, this strategy will identify core natural areas, corridors and woodlots, and map the natural heritage system, which will provide information when developing and implementing policies to protect natural features; in 1999, work on this strategy involved the collection of natural heritage information using satellite imagery from the MNR, and the collection of data on provincially significant wetlands Level 2 agreement with the DFO, under section 35 of the Fisheries Act – under this agreement, signed in 1998 and renewed in 1999, the LTRCA screens projects and provides input on mitigation measures for projects within its jurisdiction; projects deemed to have an environmental impact are referred to the DFO Watershed planning/mapping projects – in 1999, the LTRCA undertook studies to identify and map environmentally sensitive areas for the development of Official Plans in the local municipalities of Campbellford Seymour, Town of Percy and the Village of Hastings

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Maitland Valley CA	<ul style="list-style-type: none"> • Rural Water Quality Program – ongoing program that provides technical and financial assistance to landowners to undertake best management practices that improve water quality; projects to control nutrient runoff include manure storage, clean water diversion, livestock access restrictions, etc. • Maitland Watershed Partnerships (MWP) Demonstration Project: “A Total Approach to Improving Resource Management” – this project to be implemented in 2000 will provide farmers with information on best management practices related to nutrient management 	<ul style="list-style-type: none"> • Maitland Watershed Partnerships (MWP) - funded by HRDC, the Maitland Watershed Partnerships involves 27 organizations working together to improve the long-term environmental of the Maitland watershed; in 1999, the MWP was developing a comprehensive action plan for improving the health of the watershed, specifically concerning soil and agricultural issues, natural areas, and water quality and quantity; throughout 2000, the implementation of the MWP action plan will involve 1) the collection of information to fill in information gaps (e.g. loss of natural areas, evaluation of management types, groundwater quality, etc.), and 2) the implementation of proposed demonstration projects aimed at a) protecting and restoring natural areas through the creation of a community nursery and the restoration of forest bordering Lake Huron, and b) assisting local communities to improve surface water quality and conditions for aquatic life in the Middle Maitland River through the restoration and enhancement of natural wetlands areas and the bioengineering of surface drains to provide shading and erosion stabilization • Watershed Planning projects – the Maitland CA provides ongoing support to municipalities and landowners in developing plans and projects to improve soil and watercourse health; in 1999/2000, projects included the Middle Maitland Watershed Project and the Lower Maitland River Stewardship Initiative • Reforestation Services – in 1999, 50,000 trees and shrubs were provided to private landowners

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Mattagami Region CA	<ul style="list-style-type: none"> No new initiatives in 1999/2000 	<ul style="list-style-type: none"> Level 1 agreement with the DFO, under section 35 of the Fisheries Act - MRCA screens proposed projects to determine the potential impact on the fish habitat; projects that are deemed to have an environmental impact are referred to the DFO
Nickel District CA	<ul style="list-style-type: none"> No new initiatives in 1999/2000 	<ul style="list-style-type: none"> No new initiatives in 1999/2000
North Bay-Mattawa CA	<ul style="list-style-type: none"> No new initiatives in 1999/2000 	<ul style="list-style-type: none"> Municipal Plan Reviews – the North Bay-Mattawa CA entered into an agreement with local municipalities to undertake municipal plan reviews; the CA comments on development applications and their impact on wetlands, fisheries, flood plains, septic systems, etc. LaVase Portages Mattawa River System Management Strategy – a management strategy was developed to integrate previous watershed studies and oversee the management of areas Level 2 agreement with the DFO, under section 35 of the Fisheries Act – under this agreement, the Authority is responsible for reviewing projects related to fisheries habitat, and if necessary suggesting mitigation measures to reduce the risk of a harmful alteration, disruption, or destruction (HADD) of fish habitat; projects deemed to be a HADD are referred to the DFO

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Nottawasaga Valley CA	<ul style="list-style-type: none"> • Water quality and quantity improvement strategy (WQQIS) – in response to Watershed Health Monitoring report, the NVCA established a Water Quality Task Force in 1999, to develop a strategy to address water quality concerns from the 1998 monitoring report; the strategy's goal is to “protect and enhance water quality and quantity in the NVCA watershed through the implementation of an enhanced water quality protection and improvement program”; the major program initiatives to be implemented throughout 2000 include the following: 1) priority tree planting program; 2) clean water incentive program to address rural pollution; and 3) implementation of “Best Management Practices” to address rural and urban water quality issues • Best Management Practices implementation – five projects were initiated in 1999/2000 through the Land and Water Conservation Program, in partnership with local interest groups • Clean Water for the Nottawasaga River (proposal for “Healthy Futures” program) – in January 1999, the NVCA prepared a pre-proposal for funding under OMAFRA's “Healthy Futures” program; initiatives in the proposal include: water quality education, enhancement of Best Management Practices (BMPs) to improve rural water quality, and watershed wide implementation of BMPs 	<ul style="list-style-type: none"> • Reforestation program – ongoing program that provides approx. 100,000 trees to watershed residents on a cost recovery basis • Priority Tree Planting Agreement with the Town of New Tecumseth – this new agreement will restore forest cover to 30% in the long-term in the local jurisdiction, and will provide for priority planting along watercourses, many of which lack appropriate shoreline cover; the NVCA will provide trees, shrubs, and planting services, while municipalities and local landowners will provide the funding; the agreement will be implemented in 2000 with the anticipated planting of 10,000 trees • Municipal drain classification project – this partnership with the DFO involves the classification of municipal drains from a fisheries perspective; the project provides information on fish habitat and stream quality and highlights requirements for municipal drainage projects to protect sensitive fish species and habitat • Level 2 agreement with the DFO, under section 35 of the Fisheries Act – under this agreement, the NVCA screens projects and provides input on mitigation measures for projects within its jurisdiction; projects deemed to have an environmental impact are referred to the DFO

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Raisin Region CA	<ul style="list-style-type: none"> • Septic system inspection – in partnership with the South Nation CA, the RRCA undertook a new responsibility (formerly undertaken by the municipalities) for the inspection of septic systems; the RRCA provides this service on a user fee basis and in partnership with the South Nation CA • Nutrient runoff control program - in this ongoing program, the RRCA works in partnership with area farmers to control nutrient runoff into watercourses 	<ul style="list-style-type: none"> • Level 2 agreement with the DFO, under section 35 of the Fisheries Act – signed in 1998 and renewed in 1999, the RRCA screens proposed projects to determine the potential impact on the fish habitat and provides input on mitigation measures; projects that are deemed to have an environmental impact are referred to the DFO • Tributaries restoration initiative – ongoing initiative from previous years funded through the Great Lakes Cleanup Fund
Rideau Valley CA	<ul style="list-style-type: none"> • Rural clean water program – this program was in development with the Mississippi and South Nation CAs in 1999; the program will provide landowners with information and incentives to reduce nutrient loadings into watercourses, e.g) proper manure handling procedures, keeping cattle away from waterways, etc. • Rivercare 2000 – currently in development, this program will include projects to reduce urban and agricultural runoff entering the Rideau Cataraqui system 	<ul style="list-style-type: none"> • Rivercare 2000 – throughout 1999/2000, the Rideau Valley CA was working with its partners (Parks Canada, regional and local municipalities and other CAs) in developing a long-term program to clean up the Rideau Cataraqui system; the program will include projects to improve fish and wildlife habitat • Reforestation programs – ongoing program resulted in the planting of approx. 80,000 trees in 1999 • Land conservation – in 1999, one property of approximately 300 acres was donated to the CA, which will be used as a conservation area • Watershed planning studies – in 1999/2000, the Rideau River CA completed a watershed planning study for the Chalk River, and initiated a new study on the Tay River; these studies provide a blueprint on rehabilitation projects to maintain biodiversity and improve the ecological integrity of the watersheds

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Saugeen Valley CA	<ul style="list-style-type: none"> • Wellington Rural Water Quality Program – the SVCA provides information and is a referral agency for this program which aims to reduce agricultural runoff into local watercourses through projects with local landowners 	<ul style="list-style-type: none"> • Level 2 agreement with the DFO, under section 35 of the Fisheries Act – under this agreement, the Authority is responsible for reviewing projects related to fisheries habitat, and if necessary suggesting mitigation measures to reduce the risk of a harmful alteration, disruption, or destruction (HADD) of fish habitat; projects deemed to be a HADD are referred to the DFO • Groundwater Resource Management Study – the SVCA provided input into this study which was funded by THE MOE's Water Protection Fund and addresses groundwater issues in the headwaters of various watersheds within the SVCA jurisdiction • Wildlife habitat restoration projects – the SVCA was coordinating one project in 1999/2000 with funding from the federal Eco Action 2000 program; the project involves the rehabilitation of a degraded area into an environmental park
Sault Ste. Marie Region CA	<ul style="list-style-type: none"> • No new initiatives in 1999/2000 	<ul style="list-style-type: none"> • No new initiatives in 1999/2000

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
South Nation CA	<ul style="list-style-type: none"> • Clean Water Program – ongoing program that provides grants for rural best management practices to control non-point source pollution; grants in 1999/2000 included projects to reduce nutrient runoff such as proper manure storage, fencing to keep livestock away from watercourses, buffer strips along watercourses and proper manure house waste handling, etc.; new funding was secured in 1999 and funders include OMAFRA, Agriculture Canada and the MOE • Tree planting program – ongoing program in which 100,000 trees are planted annually along stream corridors and on non-productive land, to provide stream buffers against nutrient loading 	<ul style="list-style-type: none"> • Fisheries Program – this program receives funding from federal and provincial sources along with other groups and includes habitat inventories and the improvement of spawning grounds • Level 2 agreement with the DFO, under section 35 of the Fisheries Act – under this agreement, the Authority is responsible for reviewing projects related to fisheries habitat, and if necessary suggesting mitigation measures to reduce the risk of a harmful alteration, disruption, or destruction (HADD) of fish habitat; projects deemed to be a HADD are referred to the DFO • Protection of provincially significant wetlands – in 1999/2000, the CA had a 50 acre donation and was negotiating to protect another 400 acres

Conservation Authority	Urban and Agricultural Runoff	Fish and Wildlife Habitat Protection
Toronto and Region CA	<ul style="list-style-type: none"> • Stormwater Retrofit Studies – initiated in 1998, and ongoing through 1999/2000, the TRCA, with funding from the TRCA and the Toronto RAP conducted stormwater retrofit studies for Markham, Caledon, Richmond Hill, Vaughan and Brampton; the studies to date have identified 52 existing facilities where retrofits can be implemented to improve water quality and erosion control, and 55 storm sewer outfalls where new stormwater facilities could be constructed • Sediment Awareness Study – in 1999, the TRCA initiated this study, with funding from the Toronto and Region RAP and the DFO, due to concerns about sediment from construction sites entering the headwater streams of the Great Lakes Basin; the project addresses issues pertaining to improved erosion and sediment control methods, enforcement of sediment control guidelines, and improved awareness for the development industry; the project includes a monitoring protocol with three demonstration sites having been chosen 	<ul style="list-style-type: none"> • Humber River Aquatic Rehabilitation Projects – nine rehabilitation projects were in progress in 1999/2000 in the Humber River watershed; funding sources include Environment Canada and the province of Ontario; projects focus on the construction of fishways, deepening of ponds, the planting of aquatic and terrestrial habitat, shoreline restoration, and wetland creation • Don River Aquatic Rehabilitation Projects – two projects were in progress in 1999/2000 in the Don River watershed; funding sources include Environment Canada and the projects involve the construction of ramps to allow passage of migratory trout and salmon through barriers in the East Don River

APPENDIX D

Municipal environmental initiatives (April 1999-2000)

Municipal Environmental Initiatives (April 1999 to April 2000)

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
City of Belleville	<ul style="list-style-type: none"> No new initiatives in 1999/2000 	<ul style="list-style-type: none"> No new initiatives in 1999/2000 	<ul style="list-style-type: none"> No new initiatives in 1999/2000
County of Essex	<ul style="list-style-type: none"> No information provided 	<ul style="list-style-type: none"> Smog Action Plan – the county of Essex was developing a Smog Action Plan in 1999/2000 to reduce air contaminant emissions from county departments in response to smog alert days County of Essex Solid Waste Authority (SWA) Smog Action Plan – in January 2000, the SWA adopted a formal smog action plan which includes policies such as non-idling vehicles and limitations on road work (e.g. paving roads) on smog alert days SWA Landfill Methane Gas Collection System – the SWC is in negotiations with the private sector to establish methane collection systems at three county owned solid waste landfills; the collection system will significantly reduce the amount of methane gas entering the atmosphere from these three landfill sites 	<ul style="list-style-type: none"> No information provided

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
Region of Hamilton-Wentworth (includes the City of Hamilton)	<ul style="list-style-type: none"> • Industrial and Commercial Malls inspection – the Region is inspecting industrial and commercial malls regarding their liquid waste handling, sewer discharges and spill potential; this includes sampling of sewer discharges from these sources to verify compliance with the Region's Sewer Use Bylaw • Policies for handling hauled wastewater – a consultant has been hired to review and update the Region's policies for handling hauled wastewater, e.g., holding tank wastes at the Region's wastewater treatment plants • Wastewater collection system initiatives – these initiatives include: 1) ongoing flushing of the wastewater collection system to reduce sewage surcharge events and the associated environmental impacts; 2) program being developed to remediate existing manholes to reduce the infiltration of groundwater into the wastewater collection system; and 3) initiation of inspections to identify areas of the sewer system which require rehabilitation • Hamilton Harbour Water Quality Strategic Plan – being developed throughout 1999/2000, the purpose of this plan will be to reduce the pollutant loading from the Region's wastewater collection and treatment systems to Hamilton Harbour, thereby improving water quality; this plan includes long-term capital projects to upgrade and expand the Region's wastewater treatment plants and CSO control facilities; the development of this plan includes a public information program, an implementation plan and a priority rating system for capital projects, an investigation of emerging technologies for CSO control and the implementation of pilot test projects and monitoring 	<ul style="list-style-type: none"> • Hamilton-Wentworth Air Quality Initiative - ongoing implementation of recommendations in the report to improve air quality in the Region; projects and partnerships for 1999/2000 included the following: 1) conference on improving air quality; 2) establishment of a Clean Air Network; 3) partnerships with Green Venture and the Evergreen Foundation to provide subsidized native trees to homeowners in the Region; 4) development of a corporate air quality response plan for poor air quality days which involves a set of operational responses and actions; 5) endorsement by the Region for local corporations to purchase environmentally friendly vehicle fleets; 6) emissions inventory of Greenhouse gases and 7) studies in partnership with McMaster University concerning chemical sampling and a truck emissions study 	<ul style="list-style-type: none"> • Regional Tree cutting by-law – a new by-law was prepared in 1999/2000 to prevent the abusive cutting in larger woodlots and to promote sustainable forestry practices • Environmentally Sensitive Areas (ESA) review – this review identified 18 new sites that will be recommended as ESAs to Regional Council, thereby affording greater protection to these areas from development and other pressures • Report on protecting ESAs – report was prepared in 1999/2000 which recommended additional measures to improve ESA protection

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
City of Kingston	<ul style="list-style-type: none"> • Pollution control planning (PCP) study – this study was commissioned in 1999, and builds upon a 1989 study to provide an analysis of the following: 1) whether upgrades to the sewage collection system and pumping stations have contributed to water quality improvements; 2) how pollution control works compare to the MOE's new Directive F-5-5 for CSO Control Policy; and 3) how the city should proceed in the next five years to optimize pollution control • Water pollution control measures – ongoing since 1989, the City of Kingston continues to implement recommended actions from its 1989 PCP study, including upgrades to the sewage collection system and pumping stations, installation of combined-sewage overflow storage facilities, and storm water disinfection at selected outfalls • Cataraqi River forcemain replacement project – options are currently being considered for the replacement of the existing forcemain that runs beneath the Cataraqi River; these options take into consideration the environmental challenges of replacing the forcemain without disturbing contaminated sediment in the Cataraqi River 	<ul style="list-style-type: none"> • Pollution Prevention (P2) program – the City of Kingston is in the process of developing a P2 program to assist operational units in reducing their impact on the environment; the program involves an inventory of chemicals used by the city's operational units, an assessment of chemical handling and disposal practices, and employee training in the principles of P2 and the fate of spilled or improperly handled chemicals 	<ul style="list-style-type: none"> • Storm water management master planning study – commissioned in mid-1999, this study will assess existing hydrological and environmental information to create discrete management watersheds within municipal boundaries; storm water quality and quantity targets will be developed based on environmental sensitivities identified for each watershed • Kingston Environmental Forum - the city created this forum and provides funding for its operation; throughout 1999, the forum was developing management strategies for the Kingston Inner Harbour area • Kingston Wetlands Working Group - the city is a participant in this group that focused in 1999 on improving aquatic habitats through vegetation planting

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
Town of Midland (Severn Sound RAP) **	<ul style="list-style-type: none"> • Severn Sound Stormwater Management Strategy – project support is being provided in 1999/2000 to implement this strategy which involves the development of specific Best Management Practice (BMP) retrofit projects that will address runoff issues • Penetang Bay Constructed Wetland – this wetland was under construction in 1999 and will receive stormwater diverted from the sewer system which currently discharges into Penetang Bay; the stormwater will be treated thereby reducing phosphorus loading into Penetang Bay • Rural Non-Point Source Nutrient Management Project - this project is ongoing since 1996 and involves the evaluation of farms to develop specific plans (e.g. management of manure and yard runoff) for reducing pollutant loadings to watercourses; 16 projects were approved in 1999 under this project • Severn Sound Urban Stormwater Strategy – this strategy provides for the retrofit of stormwater catchments; the Town of Midland was involved in developing the strategy for urban areas; municipal implementation of the strategy will involve adoption of a drainage policy and infrastructure improvement projects as by-laws to reduce urban runoff into Severn Sound 	<ul style="list-style-type: none"> • No new initiatives in 1999/2000 	<ul style="list-style-type: none"> • Wetland Rehabilitation Project – five projects were underway in 1999 and three agreements were signed to protect 52 hectares of wetland; these projects will restore degraded areas thereby improving wildlife and fish habitat • Tributary Rehabilitation Project – this project involves the rehabilitation of rivers and tributaries in the Severn Sound RAP resulting in restoration of habitat corridors linking larger habitat nodes; 23 projects were done in 1999, which included river fencing, and tree and shrub planting • Natural Shorelines in Severn Sound Project – this project works with shoreline owners to protect and restore shoreline habitats; in 1999, eleven owners have expressed interest in having a restoration plan developed for their shoreline properties

** The submission for the Town of Midland was made by the Severn Sound Remedial Action Plan; the Town of Midland is an active partner in the Severn Sound Remedial Action Plan process and is a member of the Severn Sound Environmental Association; the initiatives listed refer to the Severn Sound RAP area as a whole, in which the town of Midland is located

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
Town of Midland (Severn Sound RAP) continued	<ul style="list-style-type: none"> • Rural Drainage Ditch Maintenance Evaluation – rural drainage ditches are a source of phosphorus discharge into streams; this project will outline and evaluate methods of minimizing the degree of vegetation removal during drainage cleanout, thereby reducing the loadings of solids and phosphorus from this source; a workshop and monitoring of ditches were conducted in 1999 • Long-term monitoring – ongoing monitoring of the Severn Sound environment; monitoring in 1999 included testing levels of metals and organic chemicals in waterfowl eggs, metals in sewage plant sludge and mercury in sport fish • On-going monitoring programs – monitoring programs in 1999 included the following: 1) monitoring of open water quality to measure levels of nutrients and algae to measure the success of the RAP in dealing with eutrophication; 2) tributary flow monitoring which estimates suspended solids, phosphorus and other chemical loadings from watersheds; 3) tributary monitoring to monitor the effects of remedial actions to control pollutants and restore habitat; and 4) fish biomass and community assessments 		<ul style="list-style-type: none"> • Lead Shot Remediation Project – this ongoing project has developed remediation technology to treat areas in the Wye Marsh in which sediment has been contaminated with lead from lead shot; in 1999, there was an expansion of the area treated with this technology • Nearshore Fish Habitat Management Plan – being developed by the DFO in cooperation with the Town of Midland and other local coastal municipalities • Long-term monitoring – ongoing monitoring of the Severn Sound environment; monitoring in 1999 included the classification of nearshore fish habitat, and ecosystem studies of fish, waterfowl and benthic communities
City of London	<ul style="list-style-type: none"> • Draft changes to sewer use by-law – draft changes to the city's sewer use by-law were introduced in 1999 and are currently out for public response; the changes to the by-law involve the adoption of stricter criteria for stormwater discharge quality parameters 	<ul style="list-style-type: none"> • No new initiatives in 1999/2000 	<ul style="list-style-type: none"> • No new initiatives in 1999/2000

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
City of Ottawa	<ul style="list-style-type: none"> • Stormwater tunnel and collection basin project – in 1999, the City of Ottawa was developing a project to construct a central storage tunnel and stormwater collection basin to augment the existing water sanitary and storm sewer system; by collecting and treating the stormwater, this project will reduce contaminants entering the city's rivers and canals from combined sewer overflows 	<ul style="list-style-type: none"> • Corporate Plan for Greenhouse Gas Emissions – ongoing implementation of programs, policies and projects to reduce the city's greenhouse gas emissions; initiatives include building retrofit projects, a street lighting conversion program, and the "greening" of city fleets, to reduce energy use • Vehicle Fleet Optimization Policy – the purpose of this policy is to accelerate the use of alternative fuels in city owned vehicles, thereby reducing carbon dioxide and the precursors to smog; in 1999, implementation of this policy included the evaluation of the effectiveness of various alternative fuels and the addition of some alternative fuel vehicles in city operations 	<ul style="list-style-type: none"> • Natural and Open Spaces Study (NOSS) - this study and its recommendations were approved in 1998 and the implementation strategy was approved in 1999; the study outlines the identification of 57 land areas and 37 watercourse reaches to be protected; implementation of the study in 1999/2000 has involved the examination of properties to determine their classification in regards to protection; the process has identified 30-32 areas that will be designated and zoned as environmentally sensitive and thus will be protected; zoning by-law amendments and OP policy changes will result from the NOSS process • Municipal Environmental Evaluation Process (MEEP) – the MEEP requires that development applications and action reports to Council requiring policy decisions, be evaluated for their potential environmental impact; in 1999, the MEEP was being updated to incorporate NOSS results (targets, standards and management guidelines)

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
City of Ottawa (continued)		<ul style="list-style-type: none"> • Transportation initiatives (Cycling) – the city of Ottawa has allocated \$150,000 in annual capital funding for the implementation of a Comprehensive Cycling Plan; projects under this plan encourage cycling thereby reducing reliance on automobile transportation resulting in improved air quality; projects for 1999 included new contra-flow bicycle lanes, enhanced bicycle parking at municipal facilities and the linking of pathways with roadways to create an integrated cycling network 	<ul style="list-style-type: none"> • Greenway System Management Plan – this plan aims to preserve the integrity of Ottawa's green space system and is based on connecting corridors comprising a city-wide Greenway System; the NOSS will provide baseline data about the condition of open spaces, flora and fauna in order to identify environmentally sensitive areas, develop land use strategies and review development applications under MEEP

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
Region of Ottawa-Carlton	<ul style="list-style-type: none"> • New Regional Official Plan – policies for new development will incorporate stormwater control measures that require all Plan of Subdivisions to prepare a Stormwater Site Management Plan in accordance with guidance set out in watershed plans; these plans will ensure that development does not impact negatively on water quality, does not alter watercourse flows that result in downstream impacts, and will maintain natural habitat linkages • Guidelines for Watershed and Subwatershed and Stormwater Site Management Planning – released in October 1999, these guidelines outline the key elements of watershed and stormwater site management plans that are required for planning and development in the Region's watersheds; these plans will ensure new development does not impact on water quality in watershed through runoff; in 1999, two sub-watershed studies were completed for the Upper Poole Creek, and Shirley's Brook and Watts Creek • Rural Clean Water Program – the goal of this program is to improve surface water quality by reducing non-point source pollution; the program assists rural landowners to implement projects to reduce nutrient loadings into watercourses through financial incentives, technical assistance and education (e.g. offers grants of 50-75% to cover capital costs of projects) • Permeable City Pilot Project – this project is to be launched in Spring 2000 and will reduce the quantity of stormwater entering the Region's creeks and rivers and thus reduce urban runoff contamination; a pilot community was chosen in 2000 and initiatives will include the dissemination of information, tree planting services and disconnection of roof downspouts, etc. 	<ul style="list-style-type: none"> • Partners for Climate Protection Program – this program is an ongoing partnership with the City of Ottawa aimed at reducing greenhouse gas emissions in the Region through corporate and community initiatives 	<ul style="list-style-type: none"> • New Official Plan – approved in April 1999, the new Regional OP for Ottawa-Carlton includes new policies to protect wetlands, environmental heritage features, and contains general policies regarding creek setbacks, and the protection of watercourses and trees; implementation in 1999/2000 has focused on policies to protect trees during subdivision development, and EIA guidelines for environmental features and wetland adjacent areas; the new development strategy has focused on compact development to reduce the pressures of urban sprawl on greenspace

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
County of Peterborough	<ul style="list-style-type: none"> No new initiatives in 1999/2000 	<ul style="list-style-type: none"> No new initiatives in 1999/200 	<ul style="list-style-type: none"> No new initiatives in 1999/2000
City of Toronto	<ul style="list-style-type: none"> New sewer use by-law - draft changes to the city's sewer use by-law include: new stringent limits on discharges of metals and organic compounds, pollution prevention planning requirements for industries discharging into the city's sewage system, and maintenance of the prohibition on discharges of all forms of hazardous waste into the system City of Toronto Environmental Plan - released in February 2000, this report identifies the city's intention to appropriate funding strategies for combined sewer overflow and stormwater management initiatives; the report also highlights the development of a water conservation and efficiency plan 	<ul style="list-style-type: none"> City of Toronto Environmental Plan - this report was released in February 2000 and identifies the following initiatives: recommendations on actions to reduce the release of household hazardous wastes were adopted in April 1999; pilot project on battery recycling initiated in June 1999; a report on achieving reductions in emissions from city owned mobile and stationary diesel sources was in progress 	<ul style="list-style-type: none"> City of Toronto Environmental Plan - this report was released in February 2000 and identifies the following initiatives: development of options to expand green space naturalization projects for road corridors; ongoing completion of a plan to naturalize the Port Industrial District; in February 2000, the city held a stewardship forum to provide information on naturalization, wildlife and habitat projects

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
City of Waterloo	<ul style="list-style-type: none"> No information provided 	<ul style="list-style-type: none"> City of Waterloo Clean Air Plan – in September of 1999, Waterloo city council adopted the Clean Air Plan and immediately began implementing policies outlined in the plan, e.g.) rescheduling work activities that emit smog producing emissions on poor air days; ongoing initiatives outlined in the CAP include the implementation of a "Green Fleet" of motorized city vehicles, emissions testing of city owned vehicles, prohibition of vehicle idling, energy conservation initiatives, tree planting, alternative transportation networks, and a city smog alert plan 	<ul style="list-style-type: none"> No information provided

Municipality	Residential and ICI Sewer Use/ Urban and Agricultural Runoff	Air Quality	Fish and Wildlife Habitat Protection
City of Windsor	<ul style="list-style-type: none"> • Detroit River Water Quality Monitoring Program – this ongoing program involves the strategic placing of fresh-water clams at five sites in the Detroit River; these clams are analyzed for chemicals and thus provide biomonitoring of contaminant levels in the river • Aquatic Biomonitoring Facility at the Little River Pollution Control Plant – this facility opened in 1998 and provides data on the quality of the plant's treated sewage water effluent which is flushed into the Detroit River; the facility involves the introduction of rainbow and large-mouth bass into sewage water effluent storage tanks; the fish are analyzed for contaminants after one year of living in the treated effluent • Pollution Prevention Seminar – held in 1999 to discuss pollution prevention programs related to the control of toxic substances entering municipal sewers 	<ul style="list-style-type: none"> • Windsor Essex Air Quality Committee – re-established in 1999, this committee is developing an Action Plan to improve air quality and is currently in the process of determining specific actions to improve air quality • Voluntary measures – the City of Windsor has informally adopted voluntary measures to reduce the impact of city operations on air quality, e.g.) on smog alert days, the city does not cut grass, avoids refueling, pesticide spraying and road paving works 	<ul style="list-style-type: none"> • No new initiatives in 1999/2000