

To: *Conservation Ontario Council - Committee of the Whole*

From: *Charley Worte*

Subject: *Conservation Ontario Response to Expert Panel Report on Climate Change Adaptation*

Date: *April 13, 2010*

Current Status

At the March meeting Council approved the draft Conservation Ontario discussion paper that responds to *Adapting to Climate Change in Ontario*, the final report of the Expert Panel on Climate Change Adaptation. The working group has now finalized the CO paper, a copy of which is attached.

Conservation Ontario proposes to use this discussion paper to promote Conservation Authorities as important partners with the province in adapting to climate change. CO staff has shared the discussion paper informally with MOE and MNR staff and have met with MOE to discuss CA reaction to the expert panel report. The initial discussion seemed positive.

The discussion paper will be posted on the CO website and will be forwarded to all Conservation Authorities for their use as appropriate.

Related Information

Conservation Ontario participated in a workshop on Climate Change and Conservation Authorities in Northern Ontario Workshop in Sudbury on February 16 and 17, 2010. This workshop was hosted by Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR) attended by the five northern Conservation. The workshop focused on adaptation and included presentations on Source Water Protection, Ecosystems, Tourism and Recreation, Industry, Human Health, Perspectives from other CA's and Urban Flooding. Presentations are available on OCCIAR's website <http://www.climateontario.ca/workshops.html> .

Conclusion

The expert panel report presents Conservation Authorities with the opportunity to advance integrated watershed management as an adaptation approach to climate change. Conservation Ontario recommends approval of the attached CO discussion paper and that it be forwarded to the province as the Conservation Authority response to the Expert Panel Report.

Recommendation

THAT the attached report on a Conservation Authority Response to the Ontario Government's 2009 Expert Panel Report on Climate Change Adaptation be approved and forwarded to the Minister of the Environment and Minister of Natural Resources.



Adapting to Climate Change in Ontario
A Conservation Authority Response to the Ontario Government's
2009 Expert Panel Report on Climate Change Adaptation
April 2010

As a follow up to the Ontario's Climate Change Action Plan, Premier McGuinty established an Expert Panel on Climate Change Adaptation. The panel's mandate was to provide advice on measures to help the Ontario government understand how to prepare and plan for climate change impacts.

*The final report, **Adapting to Climate Change in Ontario**, was released in November 2009 and contains 59 recommendations which are intended to "help Ontario understand climate change impacts, reduce risks and take advantage of beneficial opportunities resulting from climate change".*

Ontario's Conservation Authorities agree that the best way to help Ontario to adapt to the unpredictability of climate change is to ensure that our environment is as resilient as possible. This discussion paper outlines ways in which current Conservation Authority programs and services can be leveraged to help meet the challenges that the Ontario government has before it.

Introduction

Conservation Ontario is the network of 36 Conservation Authorities, local watershed management agencies that deliver services and programs that protect and manage water and other natural resources in partnership with government, landowners and other organizations. Conservation Authorities promote an integrated watershed approach balancing human, environmental and economic needs. Conservation Authorities are organized on a watershed basis.

Conservation Authorities are mandated to ensure the conservation, restoration and responsible management of Ontario's water, land and natural habitats through programs that balance human, environmental and economic needs. Conservation Authority objectives include:

- ensure that Ontario's rivers, lakes and streams are properly safeguarded, managed and restored;
- protect, manage and restore Ontario's woodlands, wetlands and natural habitat;
- develop and maintain programs that will protect life and property from natural hazards such as flooding and erosion;
- provide opportunities for the public to enjoy learn from and respect Ontario's natural environment.

As leaders in environmental protection in Ontario, Conservation Authorities applaud the recently released report *Adapting to Climate Change in Ontario*, by the Expert Panel on Climate Change Adaptation. Conservation Authorities have long recognized the importance of climate change adaptation and are already working to address the increasing impacts of climate change on Ontario's water and land resources. Some of the impacts of climate change that Conservation Authorities have already identified and are responding to include: threats to water quality and supply, increased flooding and erosion due to more frequent extreme weather events, increased drought, and degraded biodiversity.

One of the major issues that have emerged from the Expert Panel report is the diverse range of potential impacts of climate change on Ontario's water resources. Our water resources are at particular risk from climate change. Rising temperatures and changing precipitation patterns in Ontario have already lowered river flows, warmed surface waters and dried out wetlands. These impacts will likely continue, and other threats to environmental and public health are expected to materialize, including increased flooding and reduced quantity and quality of drinking water.

Assessing and managing impacts on water, water infrastructure and water related natural features are prominent in the Expert Panel report's recommendations. Conservation Authorities have a long history of working in partnership with the Province and many other diverse stakeholders to manage Ontario's water resources. This includes initiatives such as our long standing roles in watershed management, protecting the public from flood hazards and mitigating the impacts of drought. More recently Conservation Authorities have been the province's key partners in the implementation of the Clean Water Act to protect Ontario's sources of drinking water.

By virtue of their existing responsibilities and capacity, Conservation Authorities are in a position to support the implementation of the report's water related recommendations, and are ready to work with the Province to address these challenges. This report provides our assessment of the specific contributions Conservation Authorities can make in implementing the recommendations of the Expert Panel report to ensure that the impacts of climate change on water resources are identified and managed.

The Expert Panel Report makes a number of recommendations related to water resources. There are many inter-relationships between these recommendations and rather than addressing these recommendations individually there is an opportunity to develop a coordinated / comprehensive response that would treat these as an integrated set.

A Watershed Management Response to Climate Change Adaptation

Ontario has significant experience in watershed management. As Ontario's watershed management agencies Conservation Authorities have been leading the development and implementation of watershed plans for many years. Recently Conservation Ontario in partnership with the Ministry of Natural Resources and the Department of Fisheries and Oceans completed an investigation into the status and potential of Integrated Watershed Management (IWM) as a coordinated approach to the management of water and related resources (*Integrated Watershed Management: Navigating Ontario's Future*). IWM is the process of managing human activities and natural resources in an area defined by watershed boundaries. It is an evolving and continuous process through which decisions are made for the sustainable use, development, restoration and protection of ecosystem features, functions and linkages. IWM allows us to address multiple issues and objectives; and enables us to plan within a very complex and uncertain environment.

It is clear from the Expert Panel report and other research that climate change will affect all aspects of Ontario's water resources. Traditionally water and environmental policies and programs have been developed for specific features or activities. The complexity and scope of the water and environmental management response required to adapt to climate change needs a different approach. IWM is an ideal way of implementing climate change adaptation.

In recent years Ontario has developed significant experience in applying IWM to water management issues. The Clean Water Act, which is specific to protecting drinking water sources, is based on a multi-stakeholder watershed approach. Although still in progress it is proving to be very successful. More recently the Lake Simcoe Watershed Plan is also an excellent example of an IWM approach to water management.

Conservation Authority Watershed Expertise

Strategic Goal 4 of the Expert Panel Report calls for development and dissemination of knowledge and tools to manage risk.

Conservation Authorities are Ontario's experts in water and watershed management and can support a number of recommendations under strategic goal 4. Understanding of Ontario's watersheds is fundamental to successfully addressing the various specific issues impacted by climate change. Through decades of watershed studies and data collection, enabled through a variety of provincial and municipal partnerships, Conservation Authorities have the scientific information and knowledge on which to base future adaptation initiatives. Conservation Authorities are key partners with MOE and MNR in the ongoing collection of the water monitoring data that will be critical to detecting and adapting to climate change. Conservation Ontario is currently partnering with MOE in a research project to assess the adequacy of this monitoring network.

Conservation Authorities have demonstrated their expertise through their leadership and support of the province's Drinking Water Source Protection Program which is significantly enhancing the watershed knowledge base and is an excellent foundation for adaptation initiatives.

A number of Conservation Authorities are already studying the effects of climate change on their watersheds and are beginning to incorporate adaptation into their programs. For example, a number of Conservation Authorities, including the Upper Thames Conservation Authority, Toronto and Region Conservation Authority and Grand River Conservation Authority, have partnered with Environment Canada and with Ontario Universities to assess the potential effects of climate change on flooding. The Mississippi Valley Conservation Authority has already undertaken studies to assess how climate change might change the way they need to operate their reservoirs and water control structures. The Grand River Conservation Authority has studied the implications of climate change to flooding and drought in their watershed, and Toronto and Region Conservation Authority has investigated the combined potential impacts of climate change and urban development in their watershed plans.

Conservation Authority Implementation Capacity

Strategic Goal 2 speaks to the need for integration of climate change adaptation into policy and programs to reduce risks and take advantage of beneficial opportunities.

Conservation Authorities are operational agencies that deliver a wide variety of water resource and environmental programs across the province in Ontario. They deliver programs and services totaling more than \$279 million annually through over 3,000 full time, seasonal and part time specialized staff. They have significant local implementation capacity and a range of tools. The most important contribution Conservation Authorities can make is to mainstream climate change adaptation into the programs that Conservation Authorities deliver. Conservation Authority programs span a wide range of issues including water quantity and quality, natural heritage, and land management. These programs are supported by strong science foundation based on monitoring programs and watershed studies. Many of the recommendations in the expert panel report under Goal 2 touch directly or indirectly on Conservation Authority programs, therefore, CAs can make a significant contribution to the implementation of the recommendations related to water hazards, water conservation, water budgets, low water response, and the Great Lakes.

Conservation Authorities are already acting to adapt their programs to a changing climate. For example, Maitland Valley Conservation Authority has incorporated adaptation into their soil and water stewardship programs which supports private landowners in building watershed resiliency and Toronto and Region Conservation Authority is working in partnership with its municipalities

to increase the sustainability of existing urban communities and increase their resilience to climate change.

Conservation Authority Community Partnerships

Strategic Goal 3 focuses on community support and contains recommendations that focus on improving access to information and tools to increase climate change resilience.

One of the unique characteristics of Conservation Authorities is the partnerships they develop to deliver their programs to utilize the best science and to deliver meaningful on-the-ground results. Most Conservation Authority projects involve partnerships with provincial ministries, municipalities, federal departments, academic institutions, local community groups or private landowners. As a result Conservation Authorities have established local relationships and a network of community contacts that puts them in a good position to support community capacity building for adaptation.

The relationship between Conservation Authorities and municipalities is of particular importance. Many of the adaptation initiatives will need to be undertaken locally by municipalities. Conservation Authorities routinely support municipal programs with watershed based knowledge and analysis and provide input to the municipal official planning process in a variety of ways including through the development of supporting watershed and resource management plans and strategies.. This relationship can also support municipal adaptation initiatives. One example of Conservation Authority capacity to coordinate a local community response is the Greater Sudbury Climate Change Consortium which is a community partnership that is being coordinated by the Nickel District Conservation Authority. Another example is the Greater Toronto Area Working Group for Collaboration of Climate Change, which was initiated jointly by the City of Toronto and the Toronto and Region Conservation Authority to promote collaboration on climate change response by the GTA municipalities.

Recommended Actions

Climate change adaptation will be a significant challenge for the province due to the scope and complexity of the issues to be addressed. Taking an integrated watershed approach to dealing with the water and related resource management issues can be a much more efficient and effective response than coming to terms with individual issues. Conservation Authorities are in a position to support adaptation through their information and knowledge, their existing programs and tools, and their local partnerships with municipalities and local communities.

In order to move forward Conservation Authorities recommend the province initiate the following three actions:

Protect Ontario from Water Hazards

Ontario's programs to manage floods and floodplains have proven extremely effective and, indeed, the province has been a leading jurisdiction in flood planning and management with Conservation Authorities as a key implementation partner. While much has been accomplished, the incidence of significant flood events in Ontario is escalating. Climate change, together with growing populations, increasing property values and aging urban infrastructure have diminished the capacity of watersheds to cope with storm runoff, exposing growing populations to increased flood risk. In a report released in 2009, *Protecting People and Property: A Business Case for Investing in Flood Prevention and Control*, Conservation Ontario shows that Ontario's flood management programs need to significantly improve in order to continue to protect life and property and to ensure that flood emergencies can be managed effectively now and in the future.

Climate change ensures that the trend in escalating storm intensity will continue for decades. The province needs to act to ensure that Ontario's flood management system has the capacity to cope with the resulting changes in flood patterns. Specifically recommendation 15 which deals with assessing flood risk and updating floodplain mapping needs to be implemented. In addition recommendation 10 with respect to conservation authority and municipal flood control and stormwater management infrastructure needs to be addressed to ensure that these facilities have the capacity to protect people and property in the future. Ontario's flood forecasting and emergency response system should also be upgraded. Conservation Authorities are already working on some of these initiatives and seek an early opportunity to discuss these issues with the province.

Create a Provincial Watershed Management Working Group

The province should create a forum of interested organizations to develop approaches to implementing the expert panel recommendations related to water. The working group should also consider the recommendations of the report *Integrated Watershed Management: Navigating Ontario's Future*. MOE, MNR, and CAs would be key players but this should also include other provincial ministries, municipalities and potentially other organizations. The existing Provincial Water Directors Committee may be a good foundation for establishing this working group.

Define Conservation Authority Role in Climate Change Adaptation

A high priority for implementing an integrated response to climate change adaptation is to act on recommendation 38 which speaks to defining the Conservation Authority role and developing the necessary capacity. The Ministry of Environment and the Ministry of Natural Resources have the primary provincial responsibilities for the management of natural resources, the environment and water. Conservation Authorities are the watershed based agencies that are in the best position to coordinate an IWM approach to climate change adaptation. The specific roles that Conservation Authorities can play and how the capacity to play these roles can be developed need to be determined.

Summary

Adapting to a changing climate is going to present many challenges and opportunities for Ontario. The Expert Panel report has presented a comprehensive set of actions for the province to consider. Within these recommendations there are a number that deal with managing issues related to Ontario's water resources. Conservation Authorities urge the province to take an integrated approach to responding to these recommendations and offer their expertise and support. The three actions we are recommending above will implement an integrated response.

In addition Conservation Authorities are involved in a wide range of local natural heritage, built infrastructure and environmental management initiatives and could potentially play a supportive role in the implementation of a number of the reports other recommendations. The attached appendix provides a listing of Expert Panel recommendations that are related to Conservation Authority business. Conservation Authorities are prepared to support provincial initiatives in these areas and encourage the province to include Conservation Ontario in discussions about these recommendations.

Appendix – Summary of Expert Panel Report Recommendations Related to Conservation Authority Business

The following is a summary of the recommendations in *Adapting to Climate Change in Ontario* that affect Conservation Authority business and where Conservation Authorities (CAs) can play a supporting role.

GOAL	RECOMMENDATION	CA SUPPORTING ROLE
2: Integrate Adaptation	10. Physical Infrastructure	CAs own the majority of the dams, channels and other water control infrastructure in the Ontario that protect people and property from flooding. It is important that this infrastructure be maintained and improved to ensure that it can continue to provide this function in a changing climate.
	11&13 Sustainable Building Design	CAs are dedicated to developing their new buildings to standards such as LEED, and have developed pilot projects to showcase new green building technologies.
	14. Stormwater Management	CAs play a major in developing and reviewing stormwater management strategies for urban development and have the expertise to support the review, updating and implementation SWM standards.
	15. Flood Hazards	CAs are the lead agency in the delivery of flood hazard management programs in Ontario. Research to assess the effects of climate change on design standards is underway and CAs are ready to partner with MNR to review and update flood hazard mapping.
	19&20 Great Lakes Resiliency	CAs are actively involved in water quality, quantity and aquatic ecosystem protection and management for water flowing into the Great Lakes near-shore environment. CAs administer regulations related to flooding, erosion and unstable slopes along Great Lake shorelines.
	21 to 25 Ecosystem adaptation and Natural Heritage	CAs are actively involved with ecosystem management initiatives, species at risk and biodiversity programs and are significant owners of natural heritage lands.
	27. Forests	CAs own and manage 100,000 hectares of forest in Ontario and plant 2 million trees yearly. Climate change will have implications to these programs and CAs can play a supporting role in the assessment of forest vulnerability to climate change.
	29. Water Quality and Quantity Legislation	Regulations under section 28 of the Conservation Authorities Act play a significant role in water quality and quantity management and should be included in the proposed legislation review.
	30. Water Conservation	Conservation Authorities lead and collaborate with municipalities and others in the delivery of programs for landowners and residents to implement water conservation measures

GOAL	RECOMMENDATION	CA SUPPORTING ROLE
2: Integrate Adaptation	31. Water Budgets and Permits to Take Water	CAs are the lead agencies for developing water budgets as part of their responsibilities under the Clean Water Act and are commenting agencies for permit to take water applications.
	32. Low Water Response Program	CAs are the lead agencies in partnership with MNR in the implementation of the Low Water Response Program and can participate with MNR in the proposed program review.
	34. Lake Simcoe Protection Plan	The Lake Simcoe Region Conservation Authority is already working with the MOE on the development of a climate change adaptation strategy. CAs support the need to plan for climate change on a watershed basis and are interested in discussing with the province how this concept can be incorporated into other watershed plans.
3: Supporting Communities	35&36 Community Outreach and Access to Tools and Information	CAs currently undertake landowner stewardship and public education programs and can readily incorporate climate change adaptation tools and information into these outreach programs
	38. Conservation Authority Role and Capacity	CAs have a history of shared partnerships with both MOE and MNR, with the most recent example being their integral role in drinking water source protection. They are well prepared to build on their expertise in watershed management to support climate change adaptation.
	39. Provincial Policy Statement	The Minister of Natural Resources has delegated to CAs the responsibility to represent the province's interests regarding natural hazards encompassed by Section 3.1 of the Provincial Policy Statement. CAs also support municipalities in the implementation of natural heritage policies.
	44. Environmental Assessment Act	CAs are subjected to the provisions of the EA Act and undertake projects under Conservation Ontario's Class Environmental Assessment for Remedial Flood and Erosion Control Projects. CAs are also review agencies for environmental assessment from other agencies.
4: Knowledge and Tools to Manage Risk	51. Information Access and Monitoring Programs	CAs partner with the province in a number of water monitoring programs such as the Provincial Water Quality Monitoring Network, the Provincial Groundwater Monitoring Program, and the Hydrometric Network. CAs also make information accessible to the public through watershed report cards, and web portals and are well place to provide information to local agencies and the public.
Strategic Goal 5: Collaborate with Other Governments	55. Great Lakes Agreements	CAs are active participants in the negotiation and implementation of Great Lake agreements including the Canada Ontario Agreement, Great Lakes Water Quality Agreement and Lakewide Management Plans

