



VISION 2016 – 2020

Conservation Ontario will be the leader in engaging Conservation Authorities in matters of common interest and in shaping effective policy related to Conservation Authorities

## Conservation Ontario Council Report

From: Jo-Anne Rzadki, Business Development & Partnerships

Date: April 6, 2018

Subject: Ministry of the Environment and Climate Change's (MOECC) Approach to Climate Change Adaptation (EBR #013-1520).

### Summary

The MOECC's Approach to Climate Change Adaptation was posted on the EBR (#013-1520). Conservation Ontario's (CO's) comments reiterated and focused on the importance of a strong partnership between CO/conservation authorities(CAs), the Province, other stakeholders and a proposed new climate change organization, including CO representation on the Board. The letter highlights conservation authority history in building climate change resilience and current CA adaptation and mitigation initiatives. The letter also emphasized the need to undertake regional and local climate vulnerability assessments, the CA role and funding to implement adaptation actions now.

### Recommendation

***THAT Conservation Ontario Council endorses the CO letter on Ministry of the Environment and Climate Change's (MOECC) Approach to Climate Change Adaptation (EBR #013-1520).***

---

### Background:

Information on Ontario's adaptation approach was posted on the Environmental Registry and the Provincial government website (See Weblinks below). Please see the December 2017 Business Development and Partnerships Report for previous activity on this posting.

The EBR Posting indicated that Ontario is taking further action to help Ontario residents adapt to a changing climate by:

- Creating a new climate change adaptation organization to help build local adaptation capacity, enhance networks and take action

- Working with climate change adaptation experts to undertake a province-wide risk assessment of climate impacts to better understand vulnerabilities and prioritize our actions
- Developing an enhanced all-of-government approach to climate change adaptation
- Sharing information on the effects of climate change to help Ontario residents better understand the current and future effects of a rapidly changing climate

The website associated with the EBR Posting provided information about how the Province has made progress on a number of climate change adaptation actions.

### **Current Status**

Conservation Ontario staff coordinated written and verbal comments received from Toronto Region, Nottawasaga Valley, Mississippi Valley, Rideau Valley, Essex Region, Ausable-Bayfield, Ganaraska, Kawartha Conservation Authorities, Conservation Halton and Credit Valley Conservation for development of the attached letter.

The CO comments are organized according to the four actions noted in the EBR posting and website. A list of all CO recommendations is provided at the end of the letter as an attachment. The letter included acknowledgement of the potential Climate Change regulations enabled with the modernized CA Act. This would involve MOECC working with MNRF to clarify roles of CAs in climate change mitigation and adaptation and incorporation of climate change considerations in updates of technical standards and guidance.

CO's comments reiterated and focused on the importance of a strengthened partnership between CO/CAs, the Province, other stakeholders and the new organization, including CO representation on the Board. The letter highlighted conservation authority history in building climate change resilience and current CA adaptation and mitigation initiatives. The letter also emphasized the need to undertake regional and local climate vulnerability assessments, the CA role and funding to implement "no regrets" adaptation actions now.

### Meetings with MOECC staff

Following submission of the CO letter Jo-Anne Rzadki met with MOECC staff to review the comments and recommendations, reiterating the examples of CAs' long history in building watershed resilience and adapting to climate change. During the discussion it was emphasized that CO and CAs are positioned to be partners in the "new organization" providing data and information and to be resourced to help develop and deliver the services and information to be provided by the organization at local, watershed and regional scales. It was also reemphasized that CO/CAs should be invited to hold leadership positions in the new organization to inform its activities and services. Also, the organization should build on the work of existing organizations delivering climate change services, including CAs and municipalities.

The work that Conservation Ontario staff are undertaking to capture an updated status of CA climate change adaptation and mitigation activities was mentioned and received by MOECC staff with interest. The regulations enabled with the modernized CA Act for MOECC and MNRF to clarify roles of CAs in climate change mitigation and adaptation was also discussed.

The new climate change organization is intended to be independent of government and Conservation Ontario will approach the constituting Board Members for CO/CA engagement when they are announced.

MOECC staff have also been delivering presentations about the Adaptation approach and new organization to various groups including the CA Act Service Delivery Review Working Group and Biodiversity Council.

### **Conclusion**

Conservation Ontario's letter on the Ministry of the Environment and Climate Change's (MOECC) Approach to Climate Change Adaptation (EBR #013-1520) emphasizes the importance of a strengthened partnership between conservation authorities, the Province, municipalities and others in the delivery of programs and services for adapting to climate change. Conservation Ontario staff are monitoring for further announcements about the implementation of Ontario's "Adaptation Approach" and the launch of the proposed new organization for engagement.

### **Additional Resources (for information only, not required for printing)**

[\*EBR 013-1520 Climate Change Adaptation\*](#)

[\*Ontario Website: How We are Adapting to Climate Change\*](#)



January 24, 2018

**By email:** [Susan.Jakobsen@ontario.ca](mailto:Susan.Jakobsen@ontario.ca)

Susan Jakobsen  
Project Manager  
Ministry of the Environment and Climate Change  
Climate Change and Environmental Policy Division  
Strategic Policy Branch  
77 Wellesley Street West, Floor 11  
Ferguson Block, Toronto, Ontario M7A 2T5

**Re: Ministry of the Environment and Climate Change's (MOECC) Approach to Climate Change Adaptation (EBR #013-1520).**

Dear Ms. Jakobsen:

Thank you for the opportunity to comment on the proposed components of the *Ontario's Approach to Climate Change Adaptation* ([EBR #013-1520](#)).

Conservation Ontario (CO) represent Ontario's 36 Conservation Authorities (CAs), which are local watershed management agencies that deliver services and programs to protect and manage water and other natural resources in partnership with government, landowners, and other organizations. CO and CAs promote an integrated watershed management approach balancing human, environmental and economic needs. Climate change adaptation is important to sustainable growth and to building and maintaining watershed resiliency.

Conservation Authorities across Ontario have a number of responsibilities related to natural heritage protection, management and restoration. CAs protect and manage approximately 149,347 hectares of conservation land and assist their municipalities in fulfilling their responsibilities associated with natural heritage, water resources and natural hazard management under the *Planning Act* and *Environmental Assessment Act* processes.

Recent amendments to the *Conservation Authorities Act* reference conservation authorities' role in climate change adaptation following from rationale published in the **Conservation Authorities Act Review Decision Document *Conserving Our Future: A Modernized***

120 Bayview Parkway Newmarket Ontario L3Y 3W3  
Tel: (905) 895-0716 Fax: (905) 895-0751 Email: [info@conservationontario.ca](mailto:info@conservationontario.ca)

**Conservation Authorities Act** that stated *“The science-based, watershed management programs and services that conservation authorities provide will be increasingly required in the face of climate change and the resulting vulnerabilities to biodiversity and natural resources in the province. These programs and services include those mandated by the Province, assigned by municipalities and developed by conservation authorities in response to local needs and priorities.”* ([Conserving Our Future](#) “ - page 13).

Conservation Ontario has long recognized adapting to climate change impacts is a critical natural resource management issue and have provided comments associated with the series of Climate Change plans, strategies and reports itemized in the Adaptation Approach EBR posting (ie *Ontario Climate Change Expert Panel; Climate Ready: Ontario’s Adaptation Strategy and Action Plan- 2011-2014; Ontario Climate Change Strategy, Ontario Climate Change Action Plan*) and ["Naturally Resilient: Ministry of Natural Resources and Forestry- Natural Resource Climate Adaptation Strategy \(2017-21\)"](#). (See [Conservation Ontario Resources](#)).

Many conservation authorities have the expertise to respond across many technical and policy fronts. Through many partnerships and collaborations with provincial, federal and municipal governments, organizations and initiatives, including those identified in the Province’s website ["How we are Adapting to Climate Change"](#) Conservation Ontario and conservation authorities continue to advance our expertise in climate change science, impact assessment, and adaptation and mitigation in order to support local and provincial policies, programs and projects. Conservation Ontario supports additional and enhanced strategic investments and innovative partnerships to advance our collective efforts with these partners and the Province.

We appreciate you providing an overview of Ontario’s Climate Adaptation Approach and the proposed new Climate Change organization at the Conservation Authority General Managers meeting in October, 2017. Conservation Ontario and conservation authority staff also participated in the November webinar series hosted by the Ministry of Environment and Climate Change. A number of CAs also completed the requested *Information and Feedback Survey Ontario’s Climate Change Adaptation Approach*. ([EBR #013-1520](#))

The following comments are submitted for your consideration based upon a review by CAs. They are organized as general comments, and organized according to the categories detailed in ["How we are Adapting to Climate Change"](#) . This includes the four “components” of the proposed approach – A new climate change organization; Provincial climate change risk assessment; A whole-of- government approach; and Raising public awareness; followed by comments on the actions the Province is already undertaking in the Section entitled *“How we are already protecting people in Ontario”*. A list of our recommendations is appended to this letter. These comments are not intended to limit consideration of comments shared individually by CAs.

### **1.0 General Comments**

We commend the Province, led by MOECC for taking action and developing this proposed approach to addressing climate change adaptation in Ontario. Effects of climate change are

already impacting cities and jurisdictions across Ontario and the imperative for deep, system-wide action to prepare for future extremes and climate realities cannot be underestimated.

Conservation Authorities through their watershed management programs and services have historically led climate change adaptation initiatives which are recognized by the province to be of increasing importance. Conservation Authorities are pleased to see the Province take a bold step to ensure more resiliency across Ontario watersheds through the passage of Bill 139 which includes a new *Conservation Authorities Act* (CA Act).

The modernizing of this 1946 legislation provides the foundation for Conservation Authorities to strengthen their watershed management role and also develop a more defined role around climate change adaptation and mitigation.

**Recommendation 1.1 Conservation Ontario encourages the Ministry of Natural Resources and Forestry (MNR) as outlined in “[Conserving our Future](#)” - page 14 and 15) to “use the Lieutenant Governor in Council (LGIC) regulation-making authority to propose regulations to outline the roles and responsibilities of conservation authorities, and provide greater certainty, including “**

- **“Working with the Ministry of Environment and Climate Change to create a regulation for conservation authorities’ programs and services that includes standards and requirements to mitigate climate change and provide for adaptation to a changing climate, including through increasing resiliency; “**
- **“Creating a new regulation outlining the roles and responsibilities of conservation authorities in reviewing planning documents for consistency with the *Provincial Policy Statement* (PPS), including policies related to natural hazard policies and land use and development patterns that promote climate change adaptation and mitigation;”**

Enabling effective and responsible adaptation response at this scale, magnitude and urgency requires not only strong leadership which is appropriately positioned within the Province, in addition to sustained collaboration with agencies and organizations that also have responsibilities to adapt and/or have knowledge on how to accelerate actions towards resilience. No single entity has the capacity or expertise to identify and implement the needed responses to such a complex social, environmental and economic issue. Conservation authorities and partner municipalities are uniquely positioned to enable local networks to enrich the engagement and coordination required for transformative adaptation.

**Recommendation 1.2: Conservation Ontario recommends the Province/MOEC work with CO and CAs to leverage our existing expertise, experience and networks to refine the details of the adaptation approach and move forward with investments to collaborative action.**

The development of comprehensive and robust solutions for most large complex and multi-stakeholder matters, along with the need to consult over a wide range of interests and

priorities is challenging. Climate change is presenting an expectation to rapidly build and sustain momentum. Conservation Ontario suggests it would not be in the best interest of stakeholders to streamline engagement for the sake of efficiencies. A highly transparent and consultative process would foster support, validate direction and enable CAs, municipalities and other stakeholders to contribute, understand and ultimately help champion the implementation of forthcoming guidance or services.

**Recommendation 1.3: Conservation Ontario strongly encourages the Province/MOECC to remain committed to a highly transparent and consultative process as the details of the adaptation approach are finalized.**

There is a general lack of coordination among public agencies, special interest groups, private sector, academia and other stakeholders as it pertains to the development, translation, transfer and application of climate change science and adaptation practice. In the absence of best practice guidance sourced from a recognized and credible oversight body, this trend has persisted. The outcomes are an array of climate change models, assessment, tools plans and strategies that are often inconsistent in methods, processes and even language. It can create challenges for CAs or municipalities in readily transferring knowledge or innovative practice between each other. Coordination needs to improve as more individual agencies and organizations are increasingly mobilizing staff and gaining necessary leadership and resources to address their climate change challenges. Improved coordination would improve successful implementation of the Province's/MOECC's adaptation approach.

**Recommendation 1.4: Conservation Ontario recommends the Province/MOECC ensure that coordination be prominent and central to the implementation of the new adaptation approach across Ontario.**

## **2.0 A New Climate Change Organization**

Conservation Ontario is supportive of mechanisms and investments that will strategically enhance and enable adaptation actions and acknowledges the need for the proposed services of the new organization. Coordination and collaboration can help to strategically prioritize activities for collective impact and reduce duplication of effort.

The new CA Act contemplates an increasing and strong role for CAs in the provincial climate change program in recognition of current services provided by CAs in flood management, restoration, green infrastructure and Low Impact Development (LID), water quality and watershed health programs. Through their monitoring and watershed management programs, CAs see the growing impacts of climate change in Ontario's watersheds on a daily basis. This includes more frequent flooding, stressed biodiversity, and reduced water levels and flow in streams and rivers.

Conservation authorities are very cost-efficient, capable partners. They already have a close working relationship with many provincial ministries which is critical to addressing the economic,

environmental and social impacts of climate change and other issues. CO and CAs locally within their watersheds provide a variety of services including those outlined in the document:

- Training and regional workshops on climate data, risk assessment processes, and adaptation planning
- Connecting users with experts and providing examples of best practice adaptation solutions
- Building capacity and awareness through outreach efforts

For this reason, Conservation Ontario and the CA network must be key partners at the decision making table(s) established to shape and inform the services provided by the proposed new organization.

Some CAs have developed their own climate change strategies and partnered with municipalities and others to develop regional, municipal and watershed based climate change adaptation plans. These plans and strategies incorporate and identify what will be needed in terms of monitoring, data and information, technologies and investments to enhance CA services to adapt to climate impacts.

There is also some interest in learning more about the proposed provincial investment in the new organization, versus local and regional investments where on the ground actions are most often effectively delivered. Conservation Authorities, municipalities and other partners have developed partnerships with each other and with other organizations and stakeholders at regional and local levels that can be leveraged to ensure better coordination and avoiding duplication at various scales. It's important to build and invest in those relationships rather than create new ones, supporting CA capacity to coordinate local/regional research and studies, facilitate learning (eg. corporate, municipal, etc.) and to develop and implement local/regional climate adaptation strategies.

There are a range of models for regional and local collaboration that could be considered where CAs play a key role. For example through the Ontario Climate Consortium (OCC), the Toronto Region Conservation Authority (TRCA) has facilitated access to academia and federal agency members. These connections have created robust research partnerships and effective climate change knowledge mobilization that supports TRCA municipal partners and stakeholders. Conservation Ontario is a member of the governing board of the OCC. CO is currently leading a project with the MOECC that is being undertaken by the OCC to develop guidance for incorporating climate change considerations in Source Water Protection Planning.

In addition to CO, CAs, and the OCC, there are many other organizations including the Ontario Centre for Climate Impacts and Adaptation Resources (OCCIAR), Institute for Catastrophic Loss Reduction (ICLR), Intact Centre for Climate Adaptation (ICCA), Clean Air Partnership/Council (CAC), Partners for Action( P4A) (University of Waterloo)) that have similar mandates and sets of delivered services as the new climate change organization. The Canadian Centre for Climate

Services will also have some similar services. It will be important to ensure collaboration, engagement with these organizations and the regional, watershed and local initiatives already established in this space to build trust, share knowledge, and to ensure efficiencies and effectiveness of the new provincial organization towards advancing climate change adaptation in the Province.

The new climate change organization is described as a “source of leading-edge authoritative climate change information and services” (MOECC webinar slide deck). While CA planners, water resource engineers and ecosystem scientists are developing approaches or practices to consider climate change, they currently lack clear agreed –upon validation on how specifically to incorporate climate change in their daily responsibilities. Conservation Ontario supports a broad and inclusive scope for the “information and services” benefiting from authoritative guidance. If the organization can harness or access the appropriate expertise and knowledge, CO sees this role as positive and enabling.

Finally, during the Question & Answer (Q&A) portion of one of the November webinars, there was reference to potentially modeling the new organization after Ouranos, a significant climate change service provider in Quebec. Ouranos exemplifies the advantage of being a nimble, independent organization, as there are minimal limitations to hiring, the organization is co-led by motivated researchers and policy-makers, and there is a diverse group of stakeholders, including municipalities, that decide collectively where funds are allocated. The funding model has evolved for this group and includes partnerships, large and strategic research grants and fee-for-service. Conservation Ontario is in support of considering an “Ouranos-like’ structure, but tailored specifically to the needs, opportunities and circumstances in Ontario.

**Recommendation 2.1: Conservation Ontario recommends the Province/MOECC include Conservation Ontario on the Constituting Board of the new climate change organization, in addition to the Governing Board to ensure adequate consideration, and understanding of and alignment with watershed/municipal adaptation needs now and the longer term financial investments and partnerships required.**

**Recommendation 2.2: Conservation Ontario recommends the scope of authoritative information be further defined and that broad consultation be conducted to decide how best to acquire or access the appropriate expertise and implementation knowledge for establishing direction on “best” adaptation guidance.**

**Recommendation 2.3: It is recommended that Conservation Ontario and Conservation Authorities be invited to participate on technical advisory committees regarding the services of the organization.**

**Recommendation 2.4: Conservation Ontario recommends the Province/MOECC not only leverage existing expertise, experience and capacity of the CAs, and other climate change service providers like the OCC, OCCIAR, CAC, ICLR etc., but consider how to sustain watershed, regional and local collaborative efforts over the long-term that support**

municipalities, CAs and sector-partners. This increases efficiencies and capacity, optimizing access to expertise and avoids duplication of effort.

**Recommendation 2.5:** Conservation Ontario recommends that the Province/MOECC continue to consider the structural benefits of an “Ouranos-like” model and its potential to provide stable long-term funding for both provincial and regional scale collaboration with strong consideration that allocations of resources be targeted first and foremost to address existing watershed and municipal adaptation capacity gaps.

**Recommendation 2.6** CO recommends that the new climate change organization could be responsible for reviewing the progress on Climate Ready Adaptation Plan and Strategy 2011-16 to help the Province lay out the context for future and long term priorities.

### **3.0 Provincial Climate Change Risk Assessment**

Conservation Ontario acknowledges the value in providing information to decision makers on the extent and magnitude of short and long-term climate change vulnerability and risks. However, the context for which CAs operate within, whether they be highly urbanized or rural watersheds, will have unique and different levels of vulnerabilities and risks to climate drivers manifesting in southern and their jurisdictions in northern Ontario, compared to other parts of the province. Also given that the provincial assessment is proposed to be initiated and completed within 2018 this may not be useful for local/regional climate adaptation strategies.

**Recommendation 3.1** Conservation Ontario would like to engage to understand and to inform what balance the provincial assessment will attempt to achieve between a high-level and broad scale approach and regional, watershed scale assessments that consider spatial detail and interdependencies (eg. flood management system and transportation and telecom sectors).

CAs conduct many vulnerability assessments (eg. flood, source water protection), and have learned that prioritization of actions are easier to draw from more detailed smaller watershed scale studies. There would be benefit to breaking this up into different geographical (eg. watershed) areas that have the same climate risks and or conduct case studies on towns and cities of similar populations.

We encourage the Province to work with CO to further understand what CAs are already doing that can be leveraged and scaled up (eg. erosion hazard mitigation). Some examples of CA work in this area is provided below. Assessments may be more appropriate if developed in partnership with CAs, municipalities, public health and emergency service agencies and stakeholders at these scales, providing an opportunity to integrate any local, watershed or regional climate adaptation, studies (eg. IDF (intensity, duration, frequency curve) studies). This approach could help to prioritize what areas and sectors need the greatest level of study and assessment and where the knowledge could be transferred to areas that need assistance.

### **Examples of current CA and CO initiatives:**

Conservation authorities are actively involved in the identification of potential future hazards to populations, ecosystems and infrastructure. CAs have responsibilities and interests that cross over these themes. CAs are playing critical roles in addressing climate change risk and impacts of rapid growth and urbanization within their areas of jurisdiction which support the Province and municipalities efforts to address pressing environmental issues such as Great Lakes Water quality, flood and erosion hazard management, stormwater, natural heritage systems planning and source water protection. An important component of this work has been collecting climate and other environmental data while undertaking various types of vulnerability and risks assessments,

There are a number of CAs among the network that are advancing this work as a result of resourcing from their municipalities and other partners. Conservation Ontario works with these CAs, the province and other partners to transfer this knowledge to other CAs, their municipal partners and others to advance regional and watershed capacity. The following provides only a few examples.

### ***Flood management and drought initiatives:***

- CO/CAs have been collaborating with MNRF, municipalities and others to advance floodplain mapping technologies, update the mapping and have also been engaged at the federal level.
- Some CAs are conducting hydrologic modeling (2D, LiDAR) for enhanced riverine flood risk assessment and floodplain mapping delineation
- Dual drainage modeling is being undertaken in case study areas to estimate and consider the interactions and extent of urban and riverine flooding
- Stream erosion assessments and prioritization for erosion control works, monitoring and reporting through key performance indicators
- Vulnerability and risk assessment of flood control infrastructure
- Rainfall Intensity-Duration and Frequency curve updates for Climate Change Scenarios
- Low Water Response
- Hamilton climate change Vulnerability Study
- High Volume Recharge area Study
- A comparison of deriving extreme rainfall statistics in the context of Climate Change

With financial support of the Ministry of Natural Resources and Forestry, Ganaraska CA, Otonabee CA in partnership with Conservation Ontario undertook a metadata inventory of floodplain mapping in Ontario in 2014-15 which provided evidence for needed investments in Ontario's floodplain mapping . (See [Conservation Ontario Resources](#)) Conservation Authorities and municipalities from across the province are applying and receiving funding to update mapping under the federal National Disaster Mitigation Program (NDMP) of Public Safety Canada, however not all municipalities and CAs have the matching dollars needed to

access the funding from this program. Conservation Ontario thanks the Province (ie-Ministry of Municipal Affairs (MMA) and MNRF) for it's support in reviewing and administering this program in Ontario. It would be helpful to have some provincial investment available to match the federal dollars from the NDMP towards projects in lower resourced and high risk communities.

On March 6<sup>th</sup> and 7<sup>th</sup> MNRF, the Canadian Water Resources Association, Grand River CA, Conservation Ontario and Natural Resource Canada are organizing a Floodplain Mapping Technical Transfer Workshop and the focus will be on climate change. Information about the purpose, current roster of speakers and topics is available at: "[2018 Ontario Floodplain Mapping Technical Transfer Workshop](#)". This is the third workshop being hosted in recent years on this topic in Ontario and information and presentations from previous workshops are available through Conservation Ontario

**Recommendation 3.2: It is recommended that any decisions regarding Provincial Updates to pluvial and riverine mapping in Ontario consider current efforts underway and suggest that CAs, municipalities, MNRF, MOECC, MTO and other organizations (including Insurance and private sector) have open discussions to inform any decision.**

**Recommendation 3.3: Conservation Ontario encourages the Ministry of Natural Resources and Forestry (MNRF) as outlined in "[Conserving our Future](#)" - page 15) to work with CAs, municipalities, other Ministries and partners to "enhance technical guidance related to the surveying and mapping of flood hazards and the consideration of climate change- including potential options for integrating climate change considerations into floodplain management and mapping in Ontario."**

***Source Water Protection Initiatives:***

- Conservation Ontario is currently working with MOECC and the OCC to develop provincial Guidance to determine and incorporate climate change vulnerability and/or risk to source protection (water quality).
- Local source protection plan policies include policies for climate change adaptation, and can be considered in watershed management planning.
- Mississippi Valley CA is undertaking a study on Future Water Budget projections

**Recommendation 3.4: CO encourages the province to support CAs to utilize Clean Water Act water budget models to assist with local climate change modeling.**

***Natural System climate change research and Vulnerability Assessments:***

- CAs are engaged in Natural System Vulnerability Assessment to Climate Change in Peel Region.
- Go Global Tree Monitoring Plot at Bannockburn Conservation Area (Ausable-Bayfield CA)

- Assisted Tree species Migration Trials (South Nation Conservation (SNC), Cataraqui CA)
- Adapting Forestry Programs for Climate Adaptation in the Lake Simcoe Watershed (LSRCA)

### ***Municipal, Stormwater and Green Infrastructure assessment***

Credit Valley Conservation (CVC) with help and funding from its municipalities has been conducting Vulnerability Assessments that are holistic in nature (including structural, human (elderly and youth demographics/ housing and facilities, Emergency services, etc.)

The CVC recently co-authored a report entitled “National Infrastructure and Buildings Climate Change Adaptation State of Play Report” for NRCan that outlines risks to infrastructure. Many of the examples cited are local to the GTA.

Additionally, the CVC has initiated work on a risk and return on Investment tool to assist municipalities in reducing their risk and liability through use of LIDs as well as with other approaches like land acquisition

Tools to assess and reduce the risk of a changing climate on rural and agricultural infrastructure (SNC)

**Recommendation 3.5 Conservation Ontario recommends that vulnerability assessment and adaptation planning associated with water resources, including flood hazards, drought, source water protection and natural heritage systems be conducted at the watershed scale and include considerations of land use change, impacts on water quality and invasive species.**

**Recommendation 3.6: Conservation Ontario strongly recommends the Province/MOECC should engage with CO and CAs to incorporate our information on vulnerability and risk assessment data, information and results, ongoing and previous initiatives to inform the Province wide climate risk assessments on a provincial/regional/watershed basis.**

**Recommendation 3.7: Conservation Ontario recommends the Province consider conducting the province-wide assessment in multiple levels and/or stages. Value could be added in potentially scaling some systems or sectors down to more local and watershed levels where more specific work is conducted. Case studies at different scales could be used to transfer knowledge and expertise and resources to areas of the Province where this work has not yet been undertaken and with resources CO/CAs could facilitate this.**

While supportive of resources and investments to develop provincial, regional and watershed and local climate change risk assessments and expertise, Conservation Ontario also has concerns that the provincial risk assessment process may distract from enabling the “early wins” that already have sufficient evidence for action. CAs and our municipal and other partners are challenged by underfunding or capacity issues, for example components of the flood management, preparedness and remediation program that include updates to Flood plain mapping, and “natural” green infrastructure and ecosystem restoration.

120 Bayview Parkway Newmarket Ontario L3Y 3W3  
Tel: (905) 895-0716 Fax: (905) 895-0751 Email: [info@conservationontario.ca](mailto:info@conservationontario.ca)

**Recommendation 3.8: CO recommends that where climate vulnerabilities and risks are already well known, funding for adaptation actions should be provided in high priority areas in addition to province wide risk assessment processes occurring in the coming years.**

#### **4.0 A Whole Government Approach**

**Recommendation 4.1 Conservation Ontario is supportive of a whole government approach for climate change adaptation and reiterates the recommendations made in Section 1: General Comments.**

A whole government approach is necessary for Ontario to effectively adapt to the complexity of climate change. Further clarity and details would be appreciated to further understand how this approach will be implemented. A move to consider and incorporate climate change messaging and initiatives into all aspects of the government's work rather than as separate and distinct is supported .

Coordination and partnership building across **all ministries** is extremely important to managing climate change risks and the development of provincial policies, programs, and services that affect a multitude of end-users. In particular, municipalities and conservation authorities need to participate in the development of and respond to updated or new provincial policies that have climate change considerations. CAs and municipalities are front-line agents with responsibilities for managing risks to services, assets, ecosystems and communities.

Conservation Ontario and CAs would appreciate learning more about how the approach will impact existing and future programs and processes anticipating the desire and need to engage with or receive direction from multiple ministries. For example:

- CO and CAs are actively engaged in developing watershed planning guidance with the MOECC and MNRF and could produce implications across ministerial responsibilities in terms of how climate change adaptation is incorporated into watershed planning.
- It is understood that the proposed Provincial Watershed Planning Guidance will support the overall implementation of the provincial land use planning framework and, as a result, will be directed to municipalities and other planning authorities.

**Recommendation 4.2: This Guidance document should explicitly address the integration of climate related impacts at the watershed scale with implementation supported through the Provincial Policy Statement.**

- CO and CAs have been engaged with the Province on water resource management issues such as stormwater management and source protection. CO is engaged in providing input to

the MOECC Stormwater Management Low Impact Development Manual and the development of guidance to consider climate change impacts in source water protection planning.

- Conservation authorities are also commenting agencies under the “*Planning Act*” and “*Environmental Assessment Act*” processes and sees implications of new provincial guidance on climate change for private development as well as public infrastructure.

**Recommendation 4.3: Conservation Ontario recommends that MOECC include a transferability framework for conservation authority and municipal implementation of this approach.**

## **5.0 Raising Public Awareness**

Conservation Ontario agrees with the province that raising public awareness is a priority that could be delivered through the new climate change adaptation organization. One of the strengths of CO and CAs is in their existing public awareness programs. Audiences for these programs include all demographics, including youth and schools, community groups, agriculture and rural landowners in addition to the private sector. Various media tools, written, social media, videos, workshops, watershed report cards and events are employed.

CA communications initiatives are, and have been effective at delivering information and knowledge on a wide variety of local, provincial and even international efforts. The Province/MOECC should collaborate with and align messages with CO, CAs and existing agencies that are already addressing and responded to climate change issues including flood forecasting and warning, low water levels, water quality, source water protection, invasive species, biodiversity, wetlands and restoration, green energy and green infrastructure and “EcoHealth”. The Province could also invest in communications about the important role of CAs and other partners in delivery of climate change adaptation services.

**Recommendation 5.1: Conservation Ontario recommends a dedicated Provincial financial investment and enhanced information resources to enable effective communications efforts on climate change adaptation at the regional, local and watershed level.**

**Recommendation 5.2: Conservation Ontario recommends the provision of broader scale messaging could be the role of the Province in collaboration with CO and CAs could be the channels for local delivery of the same message.**

Current examples of how CO and CAs are incorporating climate change messages:

- Flood Management Forecast and Warning
- Ecohealth – Healthy Hikes

- Watershed Report Cards
- “Shaping Watersheds” Interactive Learning Tool (Central Lake Ontario)
- “Greening Corporate Grounds” (Credit Valley Conservation)
- “Climate Change Game”- Nature Centre Programming (Grand River CA)
- Wastewater Optimization (Grand River CA)
- Drought Workshops
- Climate Data Training Sessions
- “Environmental Leaders of Tomorrow” (Toronto Region CA)
- Promotion and implementation of neighbourhood LIDs to reduce risk and effect behavioral change.
- Agricultural Best Management Practices and Climate Change Report
- Promotion of the sequestration and resilience benefits of tree planting, Invasive species management and wetland restoration
- Scott Municipal Drain Watershed Restoration Project (Maitland Valley CA)

## **6. How Ontario is already protecting people.**

The following provides some highlights of CO/CA comments on how Ontario is already taking action on climate change adaptation and protecting people. Conservation authorities are engaged in implementing many of the programs, policies and initiatives highlighted within this section in: ["How we are Adapting to Climate Change"](#).

**Recommendation 6.1: Conservation Ontario would be pleased to meet with the Province/MOEC staff to discuss our current activities and future role in further detail.**

**Please also see Recommendation 2.6**

### **6.1 Climate change projections**

It is critical that the government continue to invest in the research that will drive the adaptation process. Conservation Ontario applauds the Province for work that has begun on climate projections and more work is required to provide higher resolutions and other refinements as models and data change/improve. This should be part of a long term, ongoing initiative.

Improved access to Regional Climate Model (RCM) projections of temperature and precipitation at finer temporal scales (ie: daily/hourly) would provide a significant benefit to risk assessments. Standardized regional climate change scenarios and climate projections are also needed.

As part of the watershed planning process, a number of CAs have modelled future scenarios, including those incorporating climate change to determine impacts to the natural heritage system, floodplain mapping and flood intensity, invasive species and species at risk, impacts on municipal assets and services, groundwater levels and baseflow, and water quality. These types

of studies should be collated provincially with database to summarize modelled impacts. A great deal of investment has already been made in these studies. Along with collation, some studies should be rerun in certain critical areas where the analyses are outdated. A summary of localized Ontario projections can then be documented for priority action.

While climate change is a very complex science, efforts should be made to translate this information into formats that are easy to understand and apply for decision making. Presented in the right way, climate change projections make a great communications tool. The information should be useful, available and accessible to practitioners, planners, engineers and decision makers, in addition to members of the public.

## **6.2 Public Health**

Conservation Ontario is supportive of efforts to communicate the effects of climate change on human health and in addition to adaptation solutions. CO and CAs are members of [EcoHealth Ontario](#). With financial support from the Ontario Trillium Foundation, EcoHealth Ontario (EHO) is a collaborative of professionals in the fields of public health, medicine, education, planning and the environment. We are working together to increase our understanding of the relationships between environment and health with the aim of finding ways to increase the quality and diversity of the urban and rural spaces in which we live. Ecohealth Ontario plans to develop strategies to promote and implement climate adaptation measures for human health. The Province is encouraged to engage.

## **6.3 Far North and Indigenous Communities**

Conservation Ontario is supportive of the Province's efforts in engaging with the Far North and Indigenous Communities regarding the effects of Climate change. Some CAs have developed existing relationships with these communities that involve information sharing, and engaging in meetings and workshops on a range of subjects including Source Water Protection. For example, the Grand River Conservation Authority has existing relationships with Six Nations of the Grand River, and Quinte Conservation has relationships with Mohawks of the Bay of Quinte. With appropriate resources, there could be an opportunity to take advantage of those relationships to establish open doors of communication with other indigenous communities.

## **6.4 Natural Environment and Agriculture**

Conservation Ontario and CAs are significant partners in many of the initiatives mentioned regarding natural environment and agricultural environmental initiatives. The Province should continue to collaborate with existing agencies delivering on-the-ground results in natural heritage conservation, agricultural BMPs, etc. in their communities. CAs have developed long-standing relationships with local farmers and landowners, and the skills to deliver these projects; but require stable, long-term funding for success. CAs are active in all areas identified in the strategy and can be effective delivery agent in coordinating multiple program priorities.

CO and CAs are the major partner with Forests Ontario in delivery of the Province's *50 Million Tree Program*, with CAs planting close to 2.5 million trees per year. This is one step in mitigating climate change with multiple benefits of habitat creation and soil stabilization to reduce erosion and sediment loading for water quality improvements.

Conservation Ontario is represented on the Province's *Soil Health Working Group* and has coordinated a recent submission to the EBR on the Draft Soil Health Strategy. Many Conservation Authorities have delivered soil health workshops and are delivering programs with farmers and others to improve soil health.

CO and CA programs and services are key to the successful delivery of the *Wetland Conservation Strategy* and the Province is encouraged to clarify the CA role as enabled through the new *CA Act*. (See *Conserving our Future page 15*). CO supports provincial investments data and mapping of natural heritage features to facilitate climate change adaptation planning

With their partners CAs have been delivering these initiatives through various mechanisms (e.g. provincial plans, official plans, restoration programs etc.) and at various levels (regional, watershed and local scales). A key aspect of building resilient and functional communities is ensuring natural systems remain robust and diverse – as well as agricultural systems in an effort to mitigate for impacts of climate change. Further provincial leadership and resources are required to assist municipalities and agencies to effectively implement and maintain these important resources.

Information is needed to target and track the benefits of these initiatives, how they meet many objectives including building climate resilience. Baseline information and monitoring is critical to understanding the trends in change and resilience. Data and mapping of natural heritage features is necessary for adaptation planning. A matrix of location and types of activities should be mapped as a start for Ontario.

Finally as just one example of successful collaboration required the “Cootes to Escarpment EcoPark System” in Hamilton and Burlington is a collaboration between nine partner agencies (including two Conservation authorities (Hamilton and Conservation Halton). It's working to protect, restore and connect more than 3,900 hectares (9,600 acres) of natural lands at the western end of Lake Ontario. This focus on connectivity and natural heritage systems will facilitate species migration and associated adaptation of local ecosystems.

CO can provide more examples to the Province/MOEC as further evidence of the important CA role in natural Environment and Agricultural programs.

## **6.5 Land Use Planning**

References to the initiatives and provincial programs and polices outlined in this section have been made elsewhere in this letter. Conservation Ontario commends the province for taking positive steps to update the *Provincial Policy Statement (PPS)* and four provincial land use plans

120 Bayview Parkway Newmarket Ontario L3Y 3W3  
Tel: (905) 895-0716 Fax: (905) 895-0751 Email: [info@conservationontario.ca](mailto:info@conservationontario.ca)

recently updated, giving CAs and municipalities the policy tools they need to implement climate change programs/policies.

An increased focus on natural heritage systems as opposed to feature-based protection is key to the long-term resilience and biodiversity of our ecosystems. Changes to the 2014 PPS have moved the yardstick in this regard, and the Province is encouraged to continue to support systems-based environmental protection, particularly in areas with a high degree of habitat fragmentation

Also, models being developed for GGH need to be expanded to consider the different contexts outside the GGH, and in areas which do not 'benefit' from overlapping legislation/regulation (e.g. moraine, growth plans, etc.).

Many land use adaptation approaches focus on LIDs. In some case, however, in order to move vulnerable communities out of areas of significant risk, land acquisition should be an option. Municipalities and Conservation Authorities will require Provincial assistance to do so.

An important component of building strong, sustainable and resilient communities is a clean and healthy environment. Additional resources and leadership from the province is required to develop and implement efforts related to water management and hazardous land and natural heritage protection through Ontario's land use planning system. This includes additional financial and program support for developing watershed and local scale natural and agricultural systems, as well as watershed planning and stormwater master planning documents such as watershed plans, subwatershed studies, master drainage plans etc.

***Flood Management:***

Conservation Ontario and CAs are pleased that the flood management and natural hazard program is acknowledged as the most comprehensive and progressive in Canada. Nevertheless, Ontario's flood management program is still insufficiently funded to ensure we can meet the challenges faced by climate change. (See "*Conservation Ontario's Case for Reinvestment in Ontario's Flood Management Programs, Services and Infrastructure*" in: [Conservation Ontario Resources](#)).

In Section 3 (Provincial Risk Assessment) of this letter Conservation Ontario refers to CA floodplain mapping needs and the current work with MNRF and others to advance the needed technologies to keep the mapping updated, in order to support planning and regulations, flood forecasting and management of our flood infrastructure.

As noted in Section 3 the support of the Federal National Disaster Mitigation Program is also welcome in addition to the administrative review and approvals by the MNRF and MMA. The Province is requested to encourage the Federal Government to continue this program beyond 2020. We also encourage provincial investments to match funding for strategic allocation to low resourced communities and in addition to those with high flood risk. Continued resources

are required to ensure mapping updates every 5 years in urban and high risk communities and every 10 to 20 years in rural watersheds .

## **6.6 Infrastructure and Buildings**

Conservation Ontario is supportive of Provincial initiatives identified in this section.

Conservation Ontario suggests that infrastructure and building focus needs to go beyond simply the risk associated with the structure. Consideration needs to incorporate various other layers of vulnerability such as demographics and the capacity of the local EMS in order to effectively save lives. For example, in Kawartha Lakes, when the Burnt River floods it is often seniors and mobility challenged individuals who are most impacted. From both a future climate change perspective and a safety perspective and even a flood plain mapping perspective, demographics should play a key role when looking at the information to ensure resources and plans are in place to support more vulnerable individuals in our communities across the province. Knowledge transfer is requested to support instances where CAs may work with municipalities on their individual, long term accessibility plans, which should extend beyond municipal buildings, and extend to emergency management, etc.

CVC co-authored a report entitled “*National Infrastructure and Buildings Climate Change Adaptation State of Play*” Report for Natural Resources Canada (2017) that outlines risks to infrastructure. The recommendations of this report should be reviewed. Municipalities also need to be aware of increasing levels of litigation re: duty of care associated with maintenance of service infrastructure. The Province may assist with standards /guidance.

### *Conservation Authority Flood Infrastructure:*

Conservation Authorities collectively own and operate a total of \$2.7 billion in flood infrastructure including over 900 dams, dykes, channels and erosion control structures. All of this infrastructure is critical in preventing flooding and protecting people, however, some of it is aging rapidly and requires major maintenance.

Currently, Conservation Authorities strive to address as many of the most critical problems as possible with funding from the Ministry of Natural Resources and Forestry’s Water and Erosion Control Infrastructure (WECI) program. This annual provincial fund of \$5 million requires matching municipal funding, which is tough to get from smaller municipalities and, also, the program is often oversubscribed.

Additional investments are required to support the major maintenance and repair of water and erosion control infrastructure, accelerating the work to make the infrastructure safe and resilient to the effects of climate change.

The Province should also consider the creation of a new \$5 million investment to build new infrastructure where no other viable protection alternative exists. This could be created as a 50/50 or 25/75 provincial/municipal match and would only be utilized where planning and permitting approaches are not viable and new infrastructure is the only option.

Conservation Ontario also requests that the Province provide a new \$2 million annual investment to create a rural and northern water and erosion control infrastructure fund to support smaller municipalities that don't have the financial capacity to fund their municipal share

In conclusion, Conservation Ontario thanks you for the opportunity to comment on the **Ministry of the Environment and Climate Change's (MOECC) Approach to Climate Change Adaptation (EBR #013-1520)**.

This is an important initiative and Conservation Ontario reiterates our strong interest in being engaged as partners in the development and formative stages of the proposed new Climate Change Organization. This includes participating at the Board table and in other advisory capacities to ensure the expertise and increasingly important role of CAs in climate adaptation (and mitigation), as enabled in the new *CA Act*, is appropriately and effectively supported, integrated and aligned with the Organization's services and the Province's "Approach". Conservation Ontario also encourages investments in "no-regrets" and early adaptation actions substantiated by existing evidence now, and while studies and risk assessments are underway.

We look forward to working with the Province, MOECC, MNRF, other Ministries and our many partners towards successful implementation of the "Approach". If you have any questions, require clarification or would like to meet about this submission, please contact me at ext 224; e-mail: [jrzadki@conservationontario.ca](mailto:jrzadki@conservationontario.ca).

Yours truly,



Jo-Anne Rzadki, MSc.  
Business Development and Partnerships

cc: Kim Gavine, General Manager  
Conservation Authorities and Conservation Ontario Council  
Attachment: List of Recommendations

January 23, 2018

**Attachment 1: List of Conservation Ontario Recommendations on the Ministry of the Environment and Climate Change's (MOECC) Approach to Climate Change Adaptation (EBR #013-1520).**

## **1.0 General Comments**

**Recommendation 1.1** Conservation Ontario encourages the Ministry of Natural Resources and Forestry (MNRF) as outlined in "[Conserving our Future](#)" - page 14 and 15) to "use the Lieutenant Governor in Council (LGIC) regulation-making authority to propose regulations to outline the roles and responsibilities of conservation authorities, and provide greater certainty, including "

- "Working with the Ministry of Environment and Climate Change to create a regulation for conservation authorities' programs and services that includes standards and requirements to mitigate climate change and provide for adaptation to a changing climate, including through increasing resiliency; "
- "Creating a new regulation outlining the roles and responsibilities of conservation authorities in reviewing planning documents for consistency with the *Provincial Policy Statement* (PPS), including policies related to natural hazard policies and land use and development patterns that promote climate change adaptation and mitigation;"

**Recommendation 1.2:** Conservation Ontario recommends the Province/MOECC work with CO and CAs to leverage our existing expertise, experience and networks to refine the details of the adaptation approach and move forward with investments to collaborative action.

**Recommendation 1.3:** Conservation Ontario strongly encourages the Province/MOECC to remain committed to a highly transparent and consultative process as the details of the adaptation approach are finalized.

**Recommendation 1.4:** Conservation Ontario recommends the Province/MOECC ensure that coordination be prominent and central to the implementation of the new adaptation approach across Ontario.

## **2.0 A New Climate Change Organization**

**Recommendation 2.1:** Conservation Ontario recommends the Province/MOECC include Conservation Ontario on the Constituting Board of the new climate change organization, in addition to the Governing Board to ensure adequate consideration, and understanding of and alignment with watershed/municipal adaptation needs now and the longer term financial investments and partnerships required.

**Recommendation 2.2:** Conservation Ontario recommends the scope of authoritative information be further defined and that broad consultation be conducted to decide how best to acquire or access the appropriate expertise and implementation knowledge for establishing direction on “best” adaptation guidance.

**Recommendation 2.3:** It is recommended that Conservation Ontario and Conservation Authorities be invited to participate on technical advisory committees regarding the services of the organization.

**Recommendation 2.4:** Conservation Ontario recommends the Province/MOECC not only leverage existing expertise, experience and capacity of the CAs, and other climate change service providers like the OCC, OCCIAR, CAC, ICLR etc., but consider how to sustain watershed, regional and local collaborative efforts over the long-term that support municipalities, CAs and sector-partners. This increases efficiencies and capacity, optimizing access to expertise and avoids duplication of effort.

**Recommendation 2.5:** Conservation Ontario recommends that the Province/MOECC continue to consider the structural benefits of an “Ouranos-like” model and its potential to provide stable long-term funding for both provincial and regional scale collaboration with strong consideration that allocations of resources be targeted first and foremost to address existing watershed and municipal adaptation capacity gaps.

**Recommendation 2.6:** CO recommends that the new climate change organization could be responsible for reviewing the progress on Climate Ready Adaptation Plan and Strategy 2011-16 to help the Province lay out the context for future and long term priorities.

### 3.0 Provincial Climate Change Risk Assessment

**Recommendation 3.1** Conservation Ontario would like to engage to understand and to inform what balance the provincial assessment will attempt to achieve between a high-level and broad scale approach and regional, watershed scale assessments that consider spatial detail and interdependencies (eg. flood management system and transportation and telecom sectors).

**Recommendation 3.2:** It is recommended that any decisions regarding Provincial Updates to pluvial and riverine mapping in Ontario consider current efforts underway and suggest that CAs, municipalities, MNRF, MOECC, MTO and other organizations (including Insurance and private sector) have open discussions to inform any decision.

**Recommendation 3.3:** Conservation Ontario encourages the Ministry of Natural Resources and Forestry (MNRF) as outlined in “[Conserving our Future](#)” - page 15) to work with CAs, municipalities, other Ministries and partners to “enhance technical guidance related to the surveying and mapping of flood hazards and the consideration of climate change- including

potential options for integrating climate change considerations into floodplain management and mapping in Ontario.”

**Recommendation 3.4:** CO encourages the province to support CAs to utilize Clean Water Act water budget models to assist with local climate change modeling.

**Recommendation 3.5:** Conservation Ontario recommends that vulnerability assessment and adaptation planning associated with water resources, including flood hazards, drought, source water protection and natural heritage systems be conducted at the watershed scale and include considerations of land use change, impacts on water quality and invasive species.

**Recommendation 3.6:** Conservation Ontario strongly recommends the Province/MOEC should engage with CO and CAs to incorporate our information on vulnerability and risk assessment data, information and results, ongoing and previous initiatives to inform the Province wide climate risk assessments on a provincial/regional/watershed basis.

**Recommendation 3.7:** Conservation Ontario recommends the Province consider conducting the province-wide assessment in multiple levels and/or stages. Value could be added in potentially scaling some systems or sectors down to more local and watershed levels where more specific work is conducted. Case studies at different scales could be used to transfer knowledge and expertise and resources to areas of the Province where this work has not yet been undertaken and with resources CO/CAs could facilitate this.

**Recommendation 3.8:** CO recommends that where climate vulnerabilities and risks are already well known, funding for adaptation actions should be provided in high priority areas in addition to province wide risk assessment processes occurring in the coming years.

#### 4.0 A Whole Government Approach

**Recommendation 4.1:** Conservation Ontario is supportive of a whole government approach for climate change adaptation and reiterates the recommendations made in Section 1: General Comments

**Recommendation 4.2:** This Guidance document should explicitly address the integration of climate related impacts at the watershed scale with implementation supported through the Provincial Policy Statement.

**Recommendation 4.3:** Conservation Ontario recommends that MOEC include a transferability framework for conservation authority and municipal implementation of this approach.

## 5.0 Raising Public Awareness

**Recommendation 5.1:** Conservation Ontario recommends a dedicated Provincial financial investment and enhanced information resources to enable effective communications efforts on climate change adaptation at the regional, local and watershed level.

**Recommendation 5.2:** Conservation Ontario recommends the provision of broader scale messaging could be the role of the Province in collaboration with CO, and CAs could be the channels for local delivery of the same message.

## 6.0 How Ontario is already protecting People

**Recommendation 6.1:** Conservation Ontario would be pleased to meet with the Province/MOECC staff to discuss our current activities and future role in further detail.