

<b>TO:</b>	<b>CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON JANUARY 9, 2018</b>
<b>FROM:</b>	<b>KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL &amp; ENGINEERING SERVICES &amp; CITY ENGINEER</b>
<b>SUBJECT:</b>	<b>COMMENTS ON ENVIRONMENTAL BILL OF RIGHTS (EBR) REGISTRY - ONTARIO'S APPROACH TO CLIMATE CHANGE ADAPTATION</b>

<b>RECOMMENDATION</b>
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That, on the recommendation of the Managing Director, Environment & Engineering Services & City Engineer,

- a) the comments and discussion **BE ENDORSED** and submitted to the Ministry of the Environment and Climate Change's Environmental Bill of Rights Registry posting (EBR 013-1520) titled *Ontario's Approach to Climate Change Adaptation*. The due date for comments is January 21, 2018.

<b>PREVIOUS REPORTS PERTINENT TO THIS MATTER</b>
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Relevant recent reports that can be found at [www.london.ca](http://www.london.ca) under City Hall (Meetings) include:

- Report to the December 7, 2017 Civic Works Committee (CWC) Meeting, Flooding Matters Weeping Charge Connection Feasibility Analysis (Agenda Item #7)
- Report to the August 22, 2016 Civic Works Committee (CWC) Meeting, Ontario's Climate Change Action Plan – Initial Impact and Alignment with London's Current Plans, Programs and Projects (Agenda Item #14)
- Report to the June 8, 2016 Civic Works Committee (CWC) Meeting, Community Energy Action Plan – Update and Status (Agenda Item #11)

<b>STRATEGIC PLAN 2015-2019</b>
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Municipal Council has recognized the importance of climate change adaptation, climate change mitigation, sustainable energy use, related environmental issues and the need for a more sustainable city in its 2015-2019 - Strategic Plan for the City of London ([2015 – 2019 Strategic Plan](#)). Specifically, actions undertaken by the provincial government can support London's efforts in both climate change mitigation and adaptation and address all four Areas of Focus, at one level or another, as follows:

**Strengthening Our Community**

- Vibrant, connected and engaged neighbourhoods
- Healthy, safe, and accessible city

**Growing our Economy**

- Urban regeneration
- Local, regional, and global innovation
- Strategic, collaborative partnerships

**Building a Sustainable City**

- Robust infrastructure
- Convenient and connected mobility choices
- Strong and healthy environment
- Responsible growth

**Leading in Public Service**

- Proactive financial management
- Collaborative, engaged leadership
- Excellent service delivery

## BACKGROUND

### **PURPOSE:**

The purpose of this report is to provide Committee and Council with:

- A summary of the Ontario Ministry of Environment and Climate Change (MOECC) proposal titled, “Ontario’s Approach to Climate Change Adaptation”; and
- The City of London’s feedback on the proposed approach for approval and forwarding to the Environmental Bill of Rights (EBR) Registry.

### **CONTEXT:**

The City of London is an active provincial player in both climate change mitigation and adaptation. Climate change mitigation activities date back to the early 1990s and increased every decade since then. Our work with respect to climate change adaptation is more recent, with investigations, research and designs being considered around 2010. Our early work was key input for the Province and other municipalities with respect to the need to build adaptation in planning and designs.

Climate change mitigation (i.e., greenhouse gas emission reduction) efforts in London are well documented and addressed by London’s Community Energy Action Plan (CEAP) approved by Council in July 2014 with ongoing implementation of the plan. The CEAP contains strong linkages between climate change mitigation and adaptation actions, such as the role of renewable energy and district energy in providing resilient energy services (both heat and power) for key civic assets (e.g., hospitals, community centres), businesses, and residents (e.g., multi-unit residential buildings) during and after extreme weather events.

Climate change adaptation (CCA) was recognized early on by City staff as requiring close attention to changes in water management (e.g. the “Flooding Matters” initiative, dyke improvements, stormwater climate change adaptation studies) but also includes other important considerations such as the impacts of increased temperatures on people and infrastructure, an increase in invasive exotic species (e.g., Invasive Plant Management Strategy, Emerald Ash Borer program), and warm-climate diseases (e.g., Lyme Disease, West Nile virus, Malaria). The Middlesex-London Health Unit completed an *Assessment of Vulnerability to the Health Impacts Of Climate Change in Middlesex-London (2014)*, contained in a report co-authored by Health Canada and University of Toronto to assist with regional climate change adaptation.

Adaptation research and application in London have been incorporated and embedded into numerous existing programs and projects including:

- Vulnerability of infrastructure research by Western University in 2011 focused on the Thames River and updating Intensity, Duration and Frequency curves,
- the Urban Forest Strategy approved in 2014, and
- an internal climate change vulnerability assessment completed by a team of City staff in 2015 and led by Risk Management Division. This is initial work formed Phase 1 of London’s CCA. As part of this work, additional actions were built into activities dealing stormwater management ponds, drainage and watershed modeling.

The proposed Phase 2 of the Climate Change Adaptation Strategy will capture and detail the previous work (partial list above) and identify areas of future work. This proposed Strategy is an approach recommended in the London Plan and is a component of Council’s Strategic Plan – Building a Sustainable City, Robust Infrastructure. A workplan is being completed for final activities in 2018 including roles for community engagement, agency and advisory committee input, and incorporation of further updates, direction and funding from the Province.

## DISCUSSION

### **Part A - Overview of the Proposed Approach to Ontario's Climate Change Adaptation**

The proposal posted to the EBR is a brief (4 page) website-based commentary that details the work that the Province has completed to date and introduces four new initiatives as next steps. Further details were also provided in a webinar hosted by MOECC on November 30, 2017 (see Appendix A) in which City staff participated. The next steps were described as:

1. Create a new organization, or Climate Change Adaptation "Directorate" (fulfilling Action #2 from the Provincial "Climate Ready" report in 2011);
2. Complete a Province-wide vulnerability and risk assessment (a consultant to be hired to perform this);
3. Coordinate Government departments regarding climate change adaptation; and
4. Increase public awareness of climate change adaptation.

The proposal focuses primarily on the first two topics; creating a new organization and completing a province-wide vulnerability assessment.

The new organization (possibly named the "Climate Change Adaptation Directorate") is proposed as an independent, not for profit organization led by a Board of Directors and staff that would include an Executive Director. There is also the potential for an Advisory Committee. The new organization will potentially provide services related to:

- climate science and information,
- adaptation planning and solutions, and
- capacity building, engagement and public awareness.

Potential clients include municipalities, conservation authorities, public sector agencies, Indigenous communities, agriculture/resource sector groups and private sector groups. The first phase will occur in 2018 to establish the office (e.g., select board members, hire staff, complete business plans) with the second phase to follow later in 2018 and continue until 2021 (e.g., establish services, explore funding partners, launch case studies and pilot projects).

The provincial vulnerability and risk assessment is proposed to be launched and completed in 2018. It will assess current and potential climate impacts, existing and future vulnerabilities and the magnitude and likelihood of those risks occurring. It is intended to compare and prioritize identified risks to inform the allocation of adaptation resources.

### **Part B – Needs of Municipalities**

Municipalities need information at a regional scale to assist them in delivering services that depend on and are impacted by, climate and weather.

For example, London is located directly central in the "snow belt" area of southwestern Ontario where northwest winds are common during winter. Regional weather information is needed to fill the gaps in order to assist municipalities in delivering their services. The only Environment Canada weather station in London is located at the city's airport located in the northeast quadrant of the city and is routinely "under reporting" precipitation amounts during storm events. This occurs while other portions of the city receive significantly more precipitation. This phenomena is also observed in the summer months during extreme rainfall events that can be intense over a relatively small area. In response, London has established a network of nine rain gauge recording stations to offset this discrepancy.

London is a regional hub (e.g. Regional Water Supply, Regional Recycling Centre), therefore regional weather and climate data, predictions and adaptation measures are critical to our operations.

CCA work has already been accomplished in some other municipalities. The new organization should assemble the existing relevant climate change adaptation strategies and plans already

undertaken by these municipalities (e.g., Durham, Peel, Windsor, Toronto) in order to enable learnings to be shared and updated. This new organization should also ensure that other agencies (e.g., conservation authorities) are being provided clear direction for policy decisions especially regarding flood plain delineation and regulations that have direct impacts on municipalities.

Municipalities need common technical data so not to repeat CCA steps unnecessarily. This data can then be used to illustrate to Council, residents, and businesses the need to adjust how money is spent for CCA purposes. A clearinghouse for evidence-based literature of CCA examples and case studies is needed. The new organization should fulfill this need.

### **Part C - Comments to be Submitted to the EBR Registry (#013-1520)**

City staff recommend that the following comments be submitted to the EBR posting:

1. The Province of Ontario is to be commended for recognizing the regional nature of climate change and the role that municipalities have been playing in planning for and adapting to these changes. The City of London encourages the province to continue to work in partnership (e.g., technically, knowledge transfer, financially) with municipal governments and other organizations such as conservation authorities.
2. The City of London requests that the Province fully consider the advantages and disadvantages of creating a separate non-profit organization to provide guidance and advice on climate change adaptation, versus keeping this role in-house within an existing Ministry structure (e.g., Ministry of the Environment and Climate Change).
3. The City of London suggests that the Province strengthen the regional expertise and address the unique regional needs in allocating funds by appointing key individuals from across Ontario to the "Potential Advisory Committee" and/or Board of Directors being established for the new organization. CCA must focus on the regional needs of Ontarians without becoming a GTA-centric organization (e.g., meetings need to be held in all regions, financial allocations distributed based on regional priorities).
4. The City of London requests that the Province review and incorporate existing climate change adaptation work completed by several groups including universities (e.g., Western, Waterloo) and insurance funded bureaus (e.g., Institute of Catastrophic Loss Prevention).
5. The City of London suggests that the Province continue to address the 37 Actions contained in the previous document released by the Province titled: *Climate Ready; Adaptation Strategy and Action Plan (2011-2014)*.

### **Part D - Update on London's Climate Change Adaptation Strategy**

London's strategy for climate change adaptation is on track for 2018 to deliver as per Council's Strategic Plan - Building a Sustainable City – Item E: *Fund innovative ways to adapt to Climate Change* (as identified in the Semi Annual Progress Report of Council's Strategic Plan). The creation of a Provincial organization, such as the Climate Change Adaptation Directorate in 2018 with services anticipated for delivery in 2019, may provide an opportunity for collaboration (e.g., case studies) with London's update and completion of our climate change adaptation strategy.

It is worth noting that many of the topics covered during the Resilient Cities Conference, held on November 18, 2017 at the Central Library and co-hosted by London Environmental Network (LEN) and the Advisory Committee on the Environment (ACE), are key components for both resiliency and adaptability to climate change. Information derived from Source Water Protection and Thames River Clear Water Revival initiatives combined with the good work of these and other organizations, provides further support for CCA work in our community.

<b>CONCLUSION</b>
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Climate change adaptation has and continues to play an important role in all four focus areas of the City of London Strategic Plan. “Strengthening Our Community, Growing our Economy, Building a Sustainable City and Leading in Public Service” are all directly or indirectly impacted by climate change. Efforts by the Province that increase our ability to succeed in adaptation in these areas should be supported and encouraged.

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<b>REVIEWED AND CONCURRED BY:</b>	<b>RECOMMENDED BY:</b>
<b>JAY STANFORD, M.A., MPA. DIRECTOR, ENVIRONMENT, FLEET &amp; SOLID WASTE</b>	<b>KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL &amp; ENGINEERING SERVICES &amp; CITY ENGINEER</b>

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Appendix A: Slide Deck for webinar titled, “*Ontario’s Climate Change Adaptation Approach*”, held on November 30, 2017.

C: John Fleming, Managing Director,  
George Kotsifas, P.Eng., Managing Director,  
Edward Soldo, Director, Roads & Transportation  
Gregg Barrett (City of London, Long Range Planning)  
Rick Pedlow (City of London, Sewer Operations)  
David Gough (City of London, Stormwater Management)  
John Parsons, City of London, Transportation & Roadside Operations)  
Doug MacRae (City of London, Transportation Planning & Design)  
Jason Wills (City of London, Risk Management)  
David Pavletic (MLHU)  
Chris Harrington (UTRCA).



## Ontario's Climate Change Adaptation Approach

Webinar Dates:

November 16, 2017

November 23, 2017

November 30, 2017

### Agenda/Presentation Overview

- Climate Impacts
- Ontario's Response to Climate Change - A brief overview of Climate Ready:
  - Ontario's Adaptation Approach/Strategy
  - Action Plan
  - Ontario's adaptation work to date and ongoing actions
- Ontario's next steps on climate change adaptation:
  - New climate change organization
  - Provincial vulnerability and risk assessment
  - Governance framework
  - Building public awareness
- Survey, Contact Information and Qs&As

## Impacts Are Already Being Felt in Ontario



### Extreme events

- Freezing rain and ice events
- Storms and frequent floods
- Wildfires

### Infrastructure

- Extreme events
- Historical data no longer adequate

### Forests/agriculture

- Food security
- Forest composition
- Agriculture

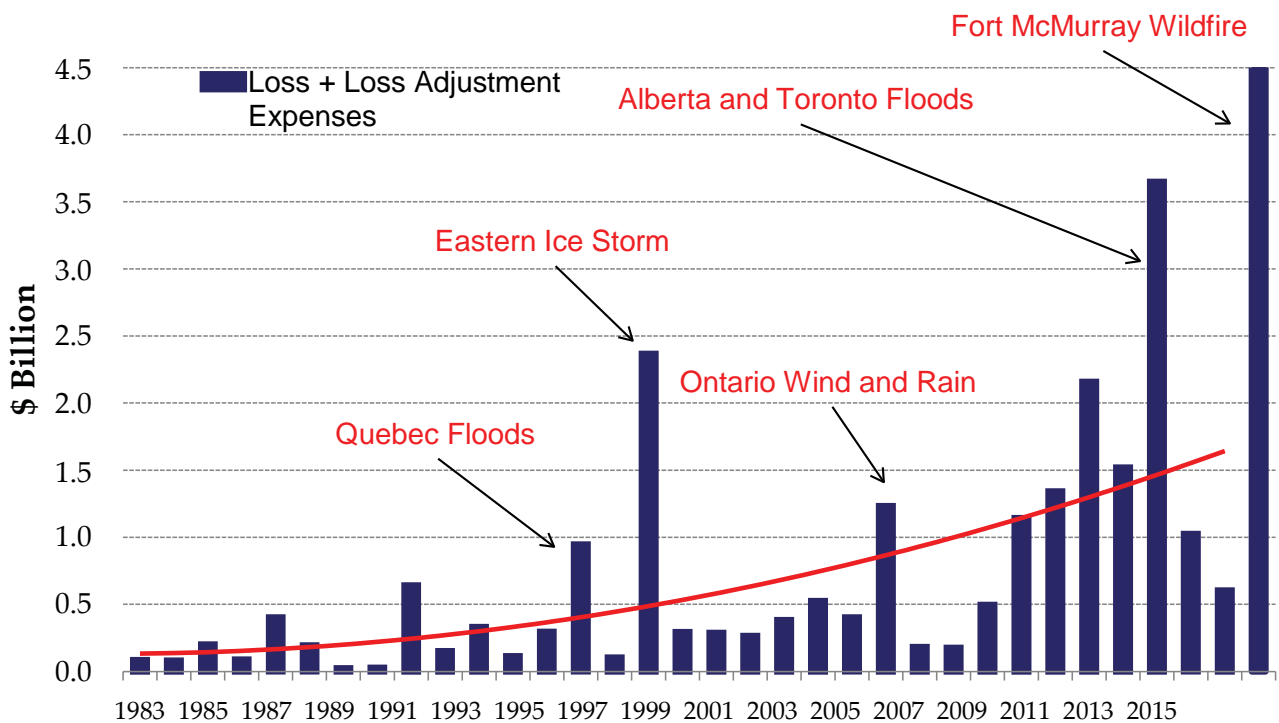
### Human Health

- Lyme disease (Ticks)
- West Nile (Mosquitoes)

### Changing Weather Patterns

- Winter roads
- Animal migration

## Impacts on the Economy



Note: not all extreme weather is climate-change induced

Source: IBC Facts Book, PCS, CatIQ, Swiss Re, Munich Re & Deloitte  
 Values in 2015 \$ CAN

# Ontario's Response to Climate Change

## Climate Ready: Ontario's Adaptation Strategy and Action Plan (2011)

- Climate Ready outlined 37 actions to be taken by 10 ministries from 2011-2014.
- Actions in the plan built on existing activities and investments across government – see slide 6 for a complete list of actions.

## Ontario's Climate Change Strategy (2015) and Climate Change Action Plan (2016)

- The strategy included a commitment to develop a climate change information and services organization.
- The plan identifies policies and programs to achieve near and long term emission reductions and intended level of investment, and to develop a strategy for adaptation by the end of 2017.

## Cap and Trade Program (2016)

- Quantification, Reporting and Verification of Greenhouse Gas (GHG) Emissions Regulation (2017).
- Sector coverage includes about 82% of GHGs in the province; 223 major GHG emitting facilities included.

5

# Ontario's Progress on Climate Change Adaptation

**Climate Ready: Ontario's Adaptation Strategy and Action Plan (2011-2014): Actions underway:**

## Land Use Planning

- Provincial Policy Statement 2014 and the four provincial land use plans (Growth Plan, Greenbelt Plan, Oak Ridges Moraine Conservation Plan, Niagara Escarpment Plan) have been revised to help improve climate resiliency across the province.
- Province is in the process of amending the Planning Act to require climate change policies to be included in official plans.

## Infrastructure and Buildings

- Ontario investing \$190 billion over 13 years starting in 2014-15 to expand and renew our infrastructure.
- Infrastructure for Jobs and Prosperity Act, 2015 – enshrines the principle that infrastructure planning and investment must be resilient to the effects of climate change.
- MNRF - \$200 million federal funding over 5 years starting in 2015-16 to update floodplain maps.
- MOECC - \$237,000 for the Home Adaptation Assessment Program, to reduce basement flooding risk in homes.

## Indigenous Communities

- Province is funding a project for 40 Indigenous communities to help them collect local community traditional ecological knowledge, and lead the assessment of their community vulnerabilities, in order to develop local adaptation plans. This investment will also help create a Northern Ontario climate change impact study.

## Natural Environment and Agriculture

- Grasslands Stewardship Initiative – to plant 50 million trees across the province by 2025, enhance 30,000 ha of grassland by 2036.
- Wetland Conservation Strategy for Ontario 2017-2030 to advance wetland conservation across the province.
- Soil Health Strategy to sustain and support healthy soil into the future.

## Public Health

- Province released the Climate Change and Health Toolkit in 2016, to help raise awareness of health impacts of climate change.

## Climate Change Projections

- Ontario's investment in climate change projections are available, free of charge, on the Ontario Open Data Catalogue.



6



# Our Next Steps on Climate Change Adaptation

We are taking the next steps to continue to build Ontario’s resilience:

## New Climate Change Organization

Creating a new climate change organization to provide climate change projection data and analysis, and delivering adaptation services.

## Provincial Vulnerability and Risk Assessment

Conducting a provincial risk assessment to determine Ontario's most urgent climate change vulnerabilities and how to best address them.

## Governance Framework

Develop a strong governance framework to ensure all-of-government coordination to more effectively identify priorities and implement climate change adaptation actions.

## Public Awareness

Provide information to the public on climate impacts and adaptation in order to raise public awareness of the need to adapt and how to adapt.

# New Climate Change Organization

## The New Organization

### **Specialization:**

- Source for leading-edge, authoritative climate change information and services.

### **Vision:**

- Support the public/private sectors, municipalities, and Indigenous communities in the development of adaptive strategies to build resilience to climate impacts.

### **Mission:**

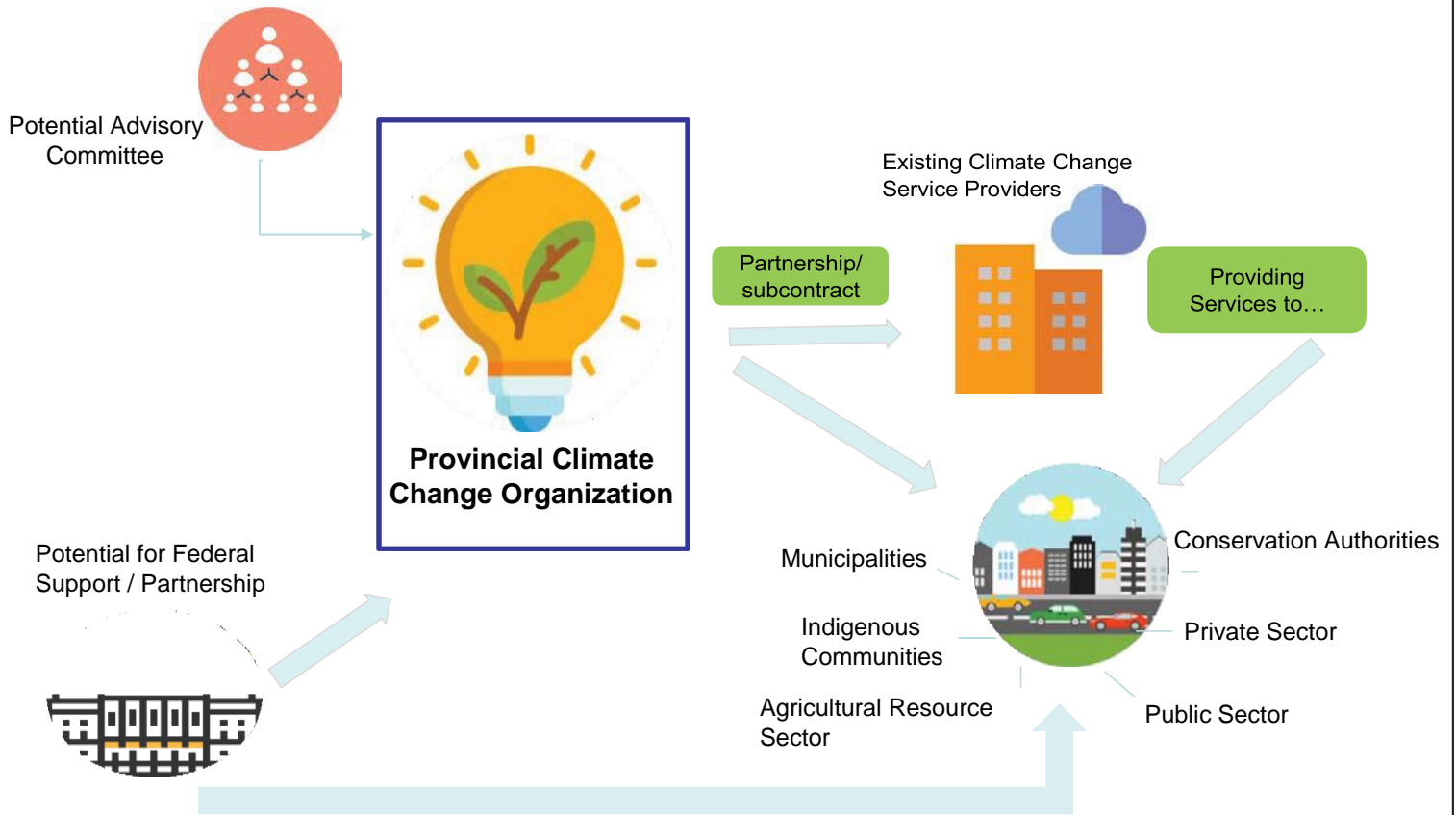
- Offer a range of climate services that enhance understanding and management of climate risks and opportunities, enable effective adaptation action and decision-making, and support a climate services market in Ontario.

## The New Organization – Structure

### **THE NEW ORGANIZATION (2018):**

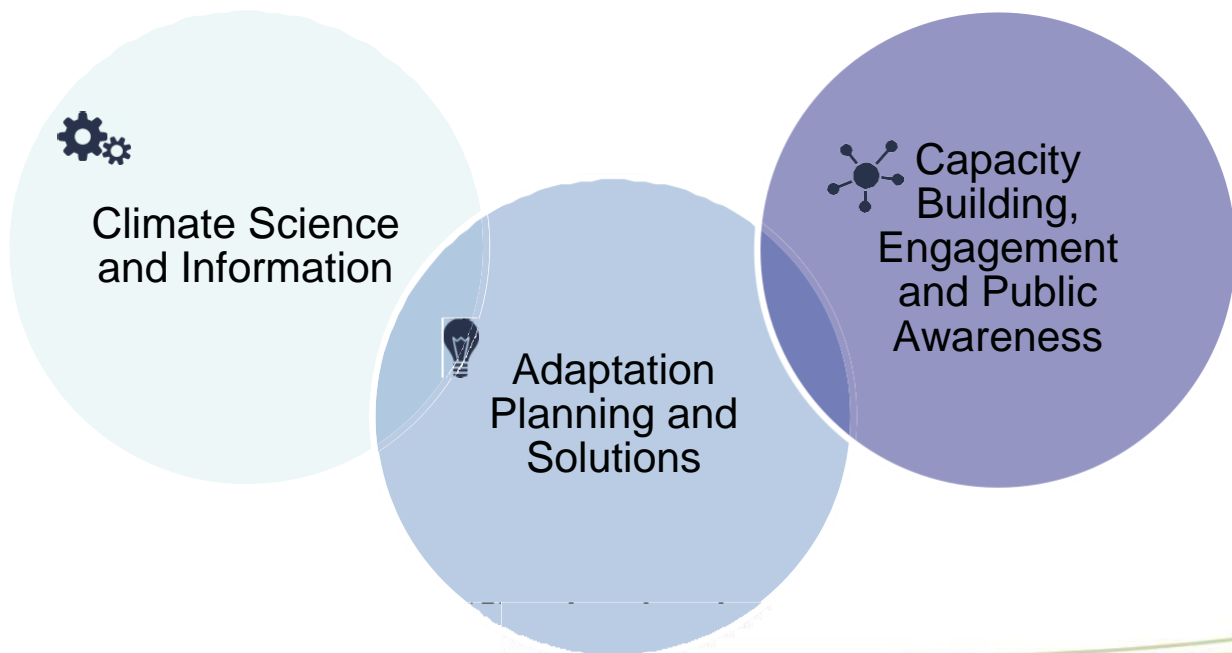
- Independent and not-for-profit organization
- Organizational Structure - Includes Board of Directors, Core Leadership Team (Executive Director), and staff.
- Opportunity to bring together the science of climate impact projections and practical issues around decision-making by aligning policy needs with scientific work/research.
- Collaborate and network with other organizations.
- Partnerships / in-kind contributions and fee for service will be used to partially offset operational costs of the organization.

# Potential Partnership Opportunities

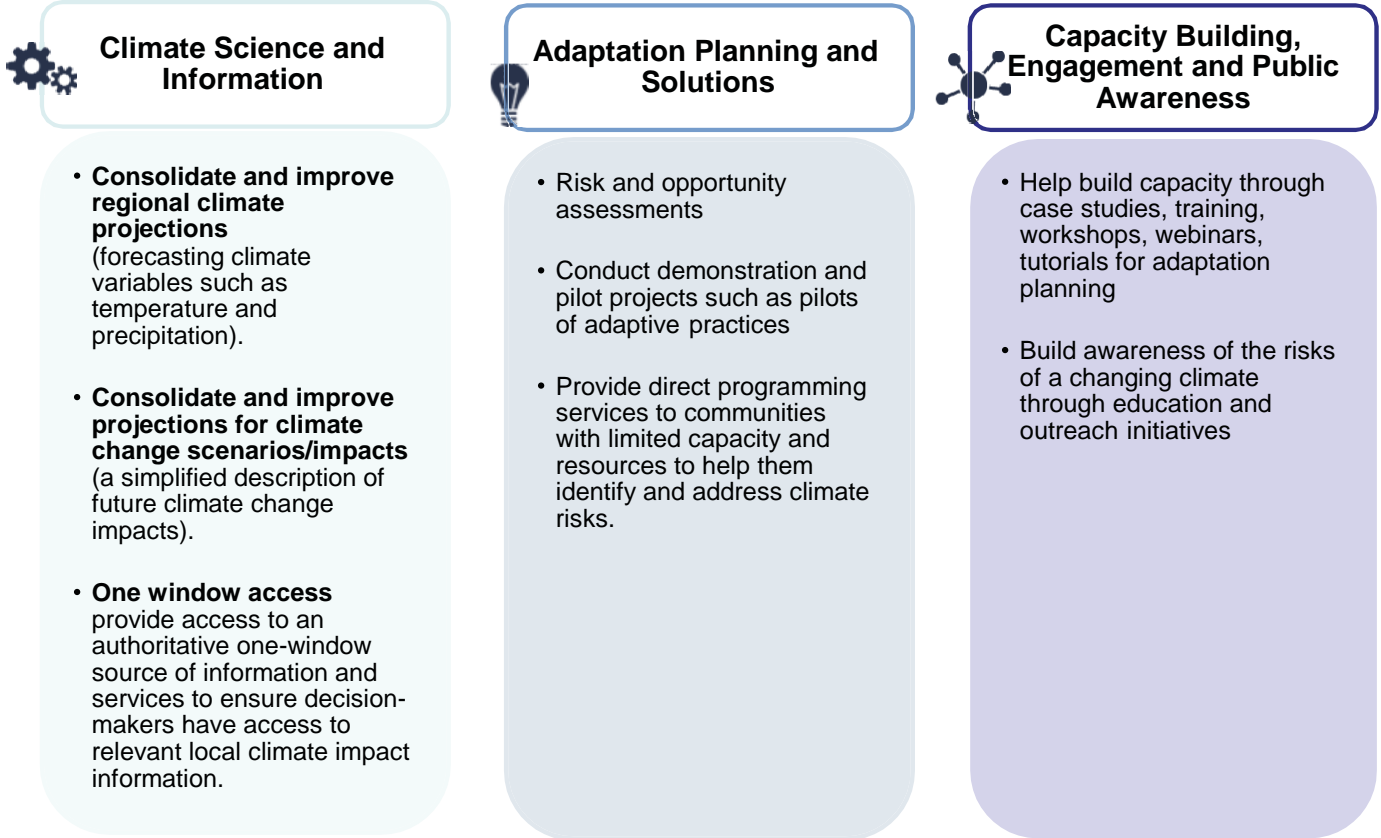


# New Climate Organization Scope of Potential Services

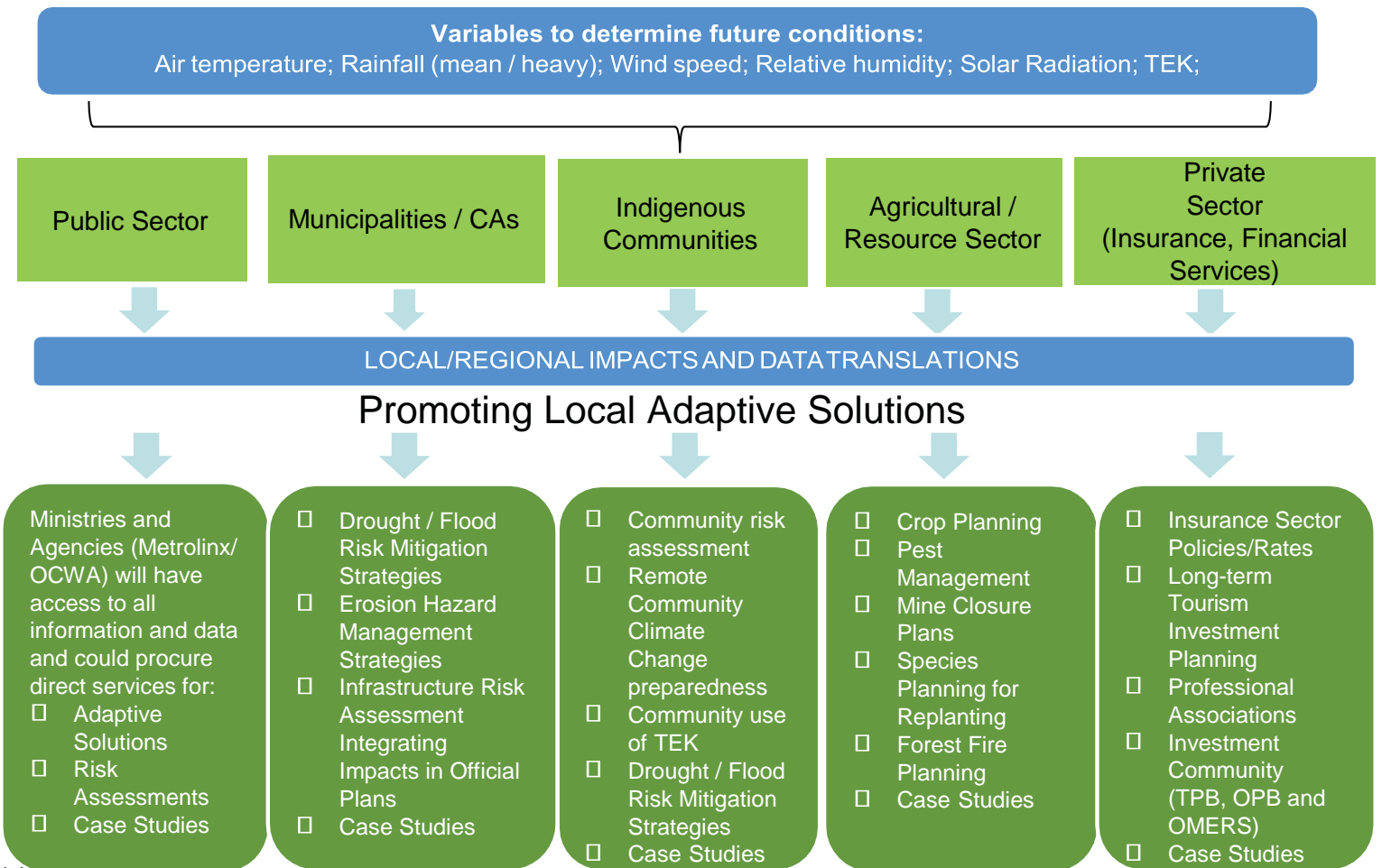
- Three categories of potential services that the new organization may provide:



# Scope of Potential Services



# Potential Clients/Users



## New Organization - Next Steps

- Hire remaining core leadership team
- Develop detailed business plan
- Priority project and service needs analysis informed by feedback from Indigenous community groups, partner agencies as well as stakeholders

### Phase 2: Service Delivery (2018-21)

- User interface goes live
- Expand service delivery
- Scientific gap analysis in order to target future science investment
- Explore funding partners
- Deliver on provincial climate change risk assessment
- Make available science/data and tools
- Launch case studies, pilot projects, workshops

## Provincial Vulnerability and Risk Assessment

# Provincial Risk Assessment

## Climate Change Risk Assessment:

- An assessment of current and potential climate impacts, existing and future vulnerabilities to those impacts, and the magnitude of and the likelihood of the risks that will occur as a result.
- Can be used to compare or prioritize identified risks to inform the allocation of adaptation resources.

## Ontario's province-wide climate change risk assessment will:

- Help Ontario decision-makers know more about the extent and magnitude of short- and long-term climate change vulnerabilities and risks.
- Can help direct adaptation priorities and investments where they will be most needed.
- Will identify long-term vulnerabilities and risks, and will help identify potential future hazards to populations, ecosystems, and infrastructure.

## Components of the risk assessment will include:

- An assessment of current-day vulnerability, risks and opportunities, as well as current levels of adaptation across regions of Ontario, including (but not limited to: the natural environment, with an emphasis on the boreal forest and water resources; public assets and infrastructure; financial and business services; agriculture; and human health and wellbeing.)
- An assessment of future adaptation levels and vulnerability and how climate and socio-economic changes may alter climate-related risks and opportunities.
- A prioritization of risks and opportunities for which additional action is needed in the next five years.
- The ministry is in the process of procuring consulting services with appropriate expertise to undertake the risk assessment for 2017-2018.

# Survey / Contact Information / Qs&As

## Survey:

- MOECC wants to hear from you! We will be emailing a survey following the webinar to get your feedback on your climate change information and service needs. Please take the time to fill out the survey: <https://www.surveymonkey.com/r/AdaptOn>.

## Environmental Registry (ER):

- Participants can also provide comments on the ER:
- EN: <http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTMzNjA3&statusId=MjAzMTcz&language=en>.
- FR: <http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTMzNjA3&statusId=MjAzMTcz>.

## Ontario.ca:

- More information on how we're adapting to climate change can be found here: <https://www.ontario.ca/page/how-were-adapting-climate-change>.

## Contact Information:

- If you have any questions or comments please email the Adaptation Team at [OntarioAdapts@Ontario.ca](mailto:OntarioAdapts@Ontario.ca).
- **Ending the Webinar Session with Questions and Answers.**