Enabling Climate Change Watershed Adaptation Across Ontario: Access and Discovery Through the Gateway

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Decision Making Data Repositories: Local Adaptation Collaborative (LAC) Multiple Sectors, Multiple Levels Continuum LAC uses knowledge discovery tools in Question 2 Gateway to identify suitable decision making Federal Answer General LAC establishes basic decision making and awareness analysis requirements Academia-LAC uses metadata tools in Gateway to **Targeted** discover data able to support analysis & Engagement Provincial decision making process LAC refines analysis processes based on the Focussed Municipa results of gateway data discovery exercise awareness LAC aquires or links to data via Gateway NGO's In-depth analysis LAC conducts analysis using local tools Broader Public Sector LAC Adaptive Decision Making based on Decision Conservation Authorities analysis results Point Other LAC uploads results to repositories via Monitoring and Gateway (optional) lessons learned

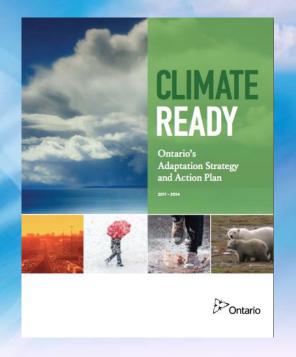


Scientific foundation for climate change and impacts on water resources but can it tell me exactly how I will be impacted in the future?



Mainstream into policy: 25 of the Expert Panel's 59 recommendations dealt with water and water related issues, but how does it affect my job/issue?

High level strategy, but what does it mean for where the rubber hits the road? How should local decision makers best respond?



Preparing for Climate Change or Current Climate?







Effects from changes in climate are already being felt

Past conditions will not apply in the future

What do we know/don't know?

Accept that conditions are changing, but: by how much, where, what are the consequences, and what are my options?

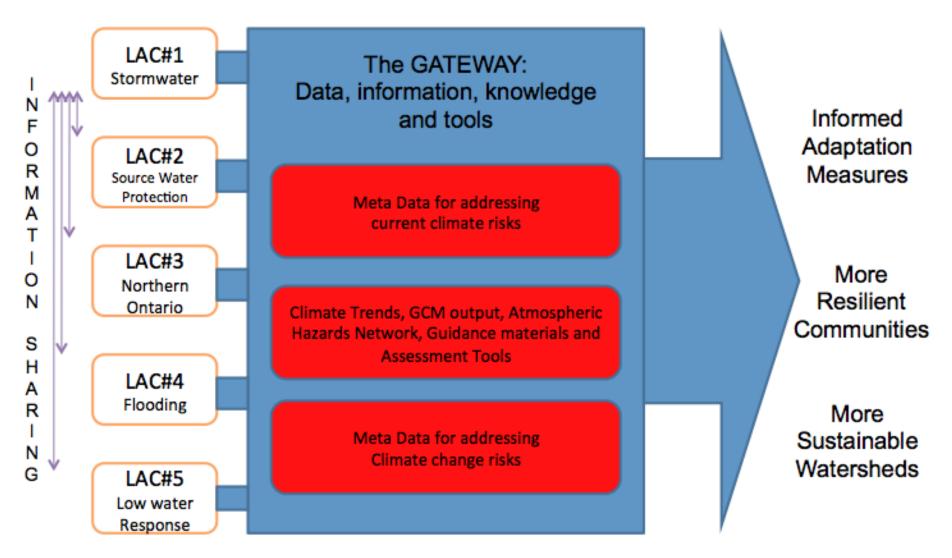








Partners: MNR, ACER, CA's, Communities, other stakeholders



Gaps Analysis, Gateway Input, Testing, and Optimization, and Knowledge Transfer

Listening to LACs: What are our challenges/problems:

- Baseline information: More complete/updated data-sets for climate, IDF curves, stream characterization, stormwater systems, floodplain mapping, vulnerable groups, policy environment, standards and best practices
- Climate Change Information: Climate Change Scenarios, hydrologic effects, IDF curves, current practices and future adaptation (e.g. pipe size, low impact development, water takings, intake areas)
- Guidance and Tools: to assess climate change impacts, effects, risks, vulnerability and effectiveness of adaptation options
- Case studies: learning from others, sharing information, experiences and responsibility so we don't have to reinvent the wheel when making more informed, economically justified and effective adaptation decisions

Performance Measures

- LACs: Information exchange and information sharing today and in the future
- Demonstrate that each LAC is:
 - Able to use the Gateway to discover data and information
 - Using the Gateway to obtain data and information
 - Able to use the data and information to make more informed decisions regarding adaptation to climate change
- Outputs and Outcomes: Using the Gateway, leading to more sustainable and resilient communities and watersheds

Mississippi Valley Conservation Authority....

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Fish, Fisheries, and Water Resources: Adapting to Ontario's Changing Climate

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Figure 4.31. Low flow comparison for the Mississippi River at the Appleton gauge.

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^{*}Corresponding active; extracting in eletations is refer

Climate Change Risks to Water-related Issues and Adaptation Options

| Objective | Water Resource Impact | Potential Response |
|--|--|---|
| Low the augmentation Water supply Hydro generation | More severe and prolonged low flow conditions; Reservoirs will be insufficient to satisfy current low-flow targets; Municipal water supply requirements; Will be fully dependent on reservoir supplies; Hydro generation potential will be reduced in names low flow periods. | Increased reservoir storage by 2000 to 3500 have required to meet current objectives; Continued maintenance and reconstruction of water control influstructure; Minimize water use and consumption. |
| Fish habited | Linear stream flows during typical walkeys approxing particle; Loss of traditional pike opening habital due to lower water levels during spenning period. | Identify and protect significant spewning areas. Develop opportunities for fish passage serund structural barriers. |
| Flood protection | Generally lower risks from spring snowesoft/minfall events; Greater risk of fall-winter food ornelisions coupled with reservoir depedrees. | Discontinual reduce full drawdown regime; Assess implementation of risk-based reservoir management strategy; Assess alternative flood damage reduction measures |
| Tourism/recreation | Generally capable of actioning reconstional water level targets on reservoirs; Lower stream flows will be insufficient to excitate recreational levels within ownest objectives. | Assess efficacy of lower and broader operating targets or recreational lakes, including the provision for flood reserves. |
| Water quality protection | Lower stream flows in surrose will reduce flushing rates and waste assimilation capacity; Higher insensity minfall events will increase subtient leading to the river system; Total phosphorous levels correctly approaching limit of provincial water quality objective for Policy 2 streams; Creater risk for low dissolved oxygen levels. | Quantify nutrient loading; Reduce point and non-point loading; Minimize disruption and alteration to natural stream corridors and shore lands. |