



GTA CLIMATE CHANGE INITIATIVES TRCA

RPCO GTA Caucus
June 19, 2009

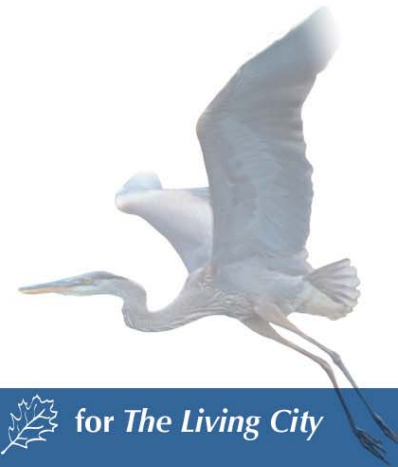
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Focus of Presentation

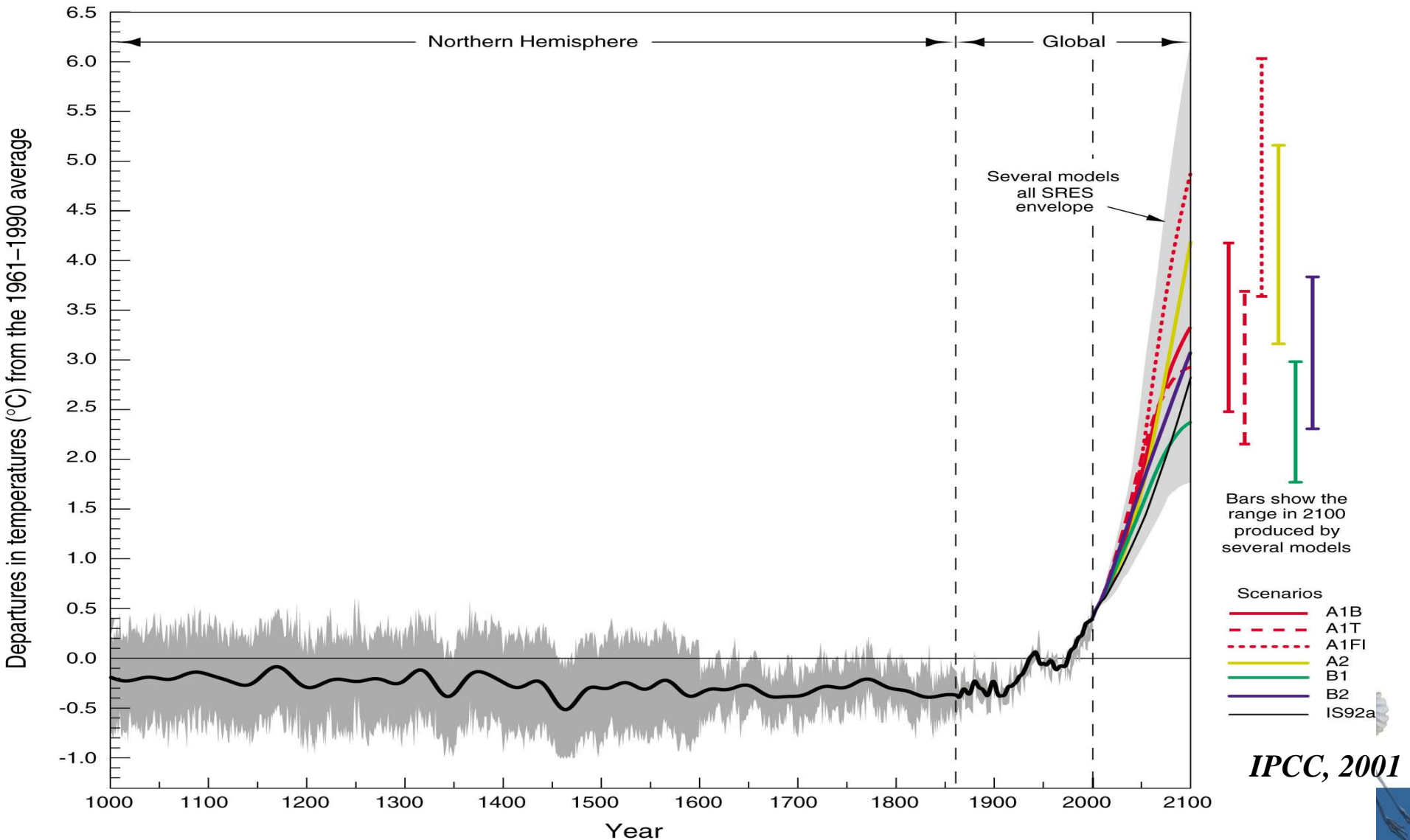
- Regional Climate Change Issue
- TRCA Climate Change Initiatives
- Gaps
- Collaborative Actions





Climate Models Project

Global Climate Warming of 1.4 – 5.8°C by 2100



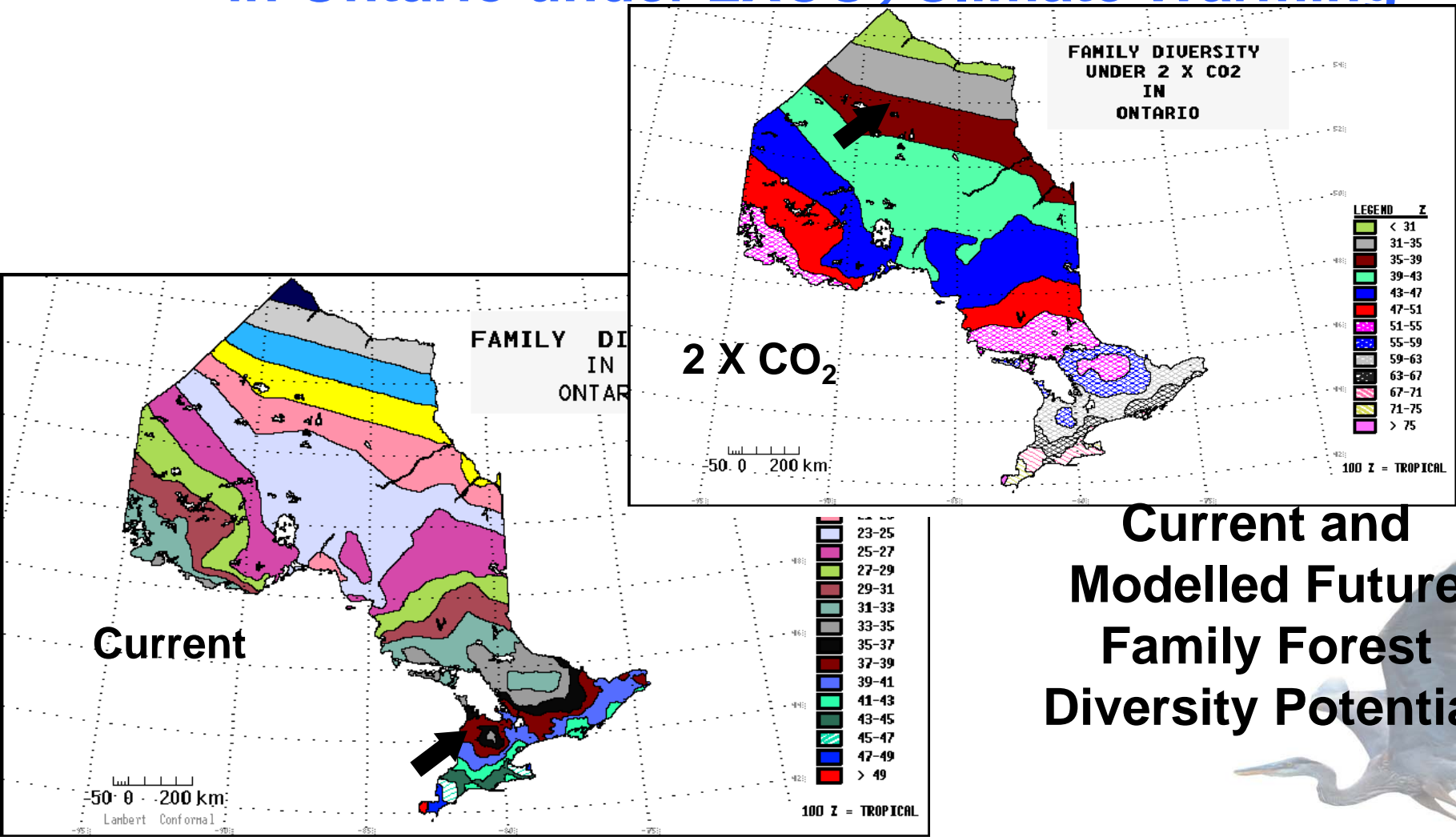
IPCC, 2001

2005 Toronto Flood Damage

- Up to 183 mm rainfall over a few hours: a 100+ year return period event overwhelming urban drainage systems
- Ontario's costliest weather disaster: \$500 million in insured losses
- Impacts included thousands of flooded basements, flooded interchanges, sink holes, erosion impacts to critical infrastructure and a large section of Finch Avenue washed away



Biodiversity: Changes in Family Forest Diversity in Ontario under 2XCO₂ Climate Warming



Current and Modelled Future Family Forest Diversity Potential

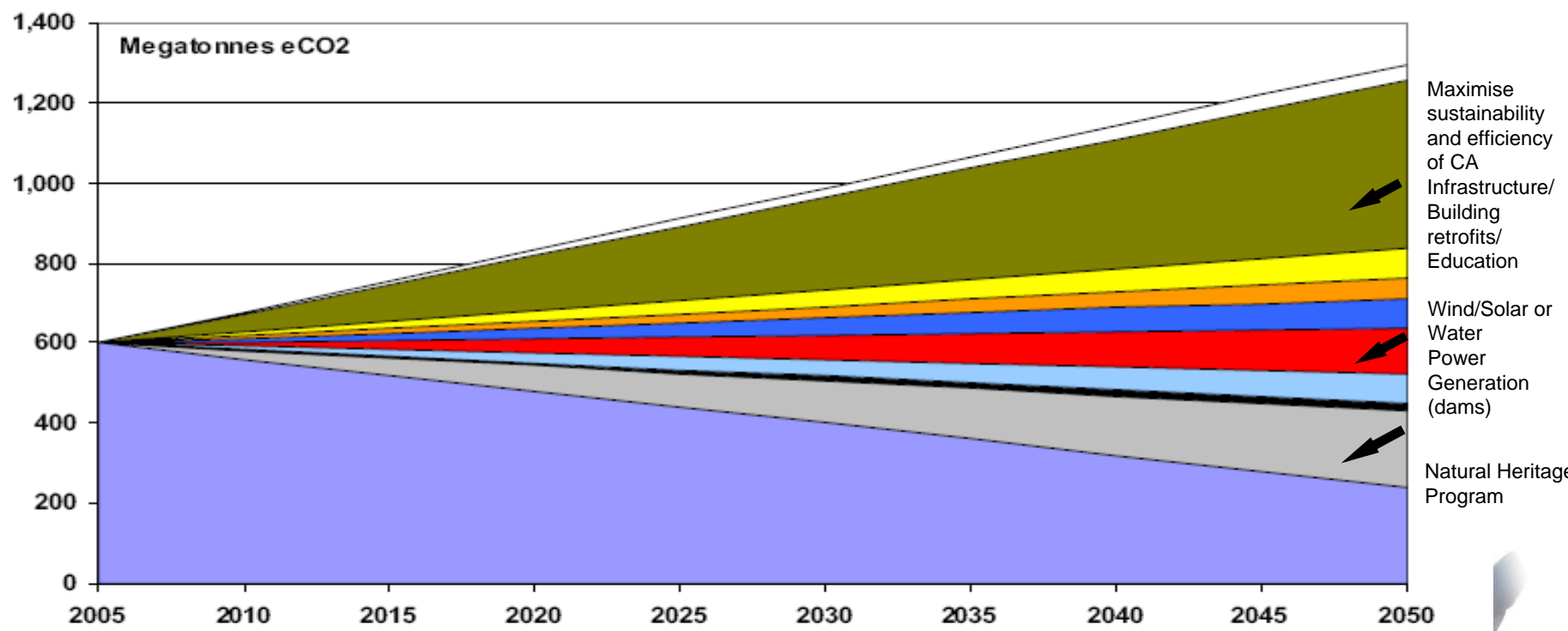




MITIGATION

GHG Reduction for Canada -60% by 2050 (NRTEE)

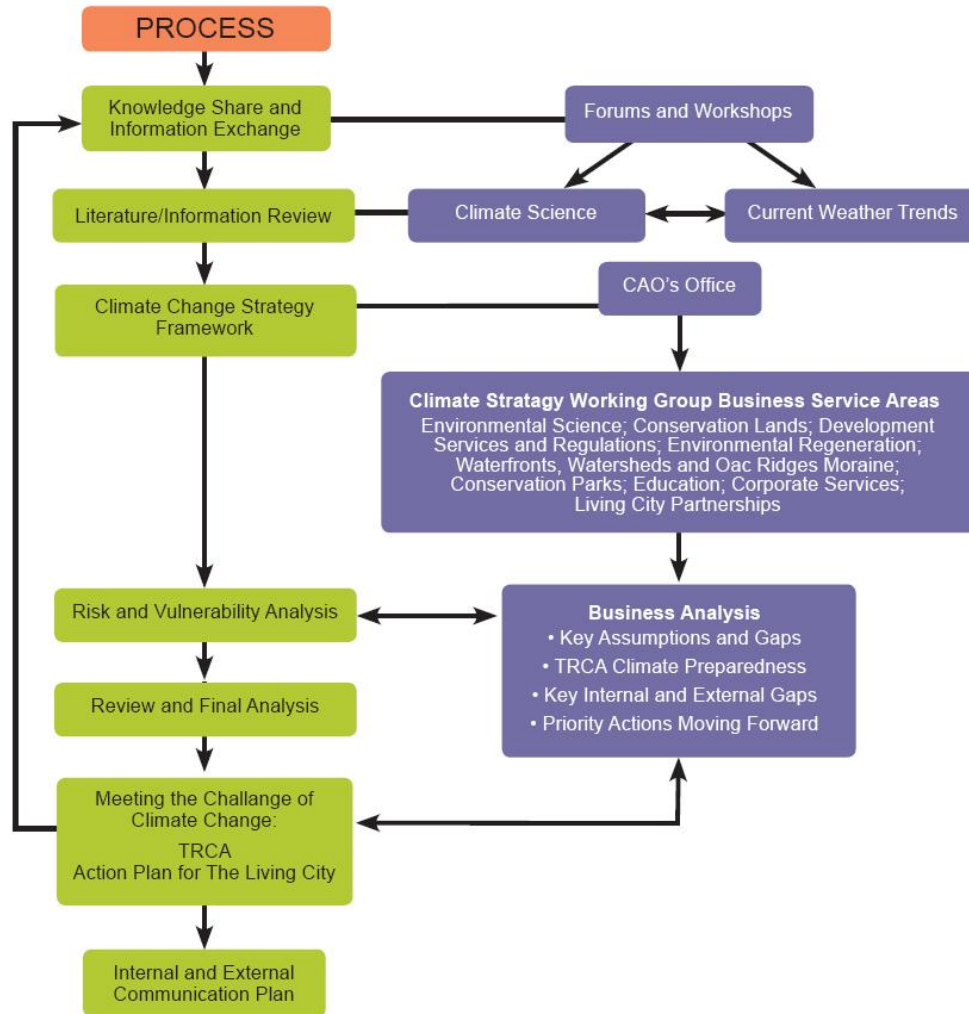
GHG Reduction Diagram for Canada -- Aggregate Wedges



- Target
- Carbon Capture
- Nuclear
- Biofuels and alt fuels
- Renewable Electricity
- Energy Intensity
- Urban Form
- Cogeneration
- Energy Eff and Conservation
- Residual



TRCA Strategy/Approach: Framework

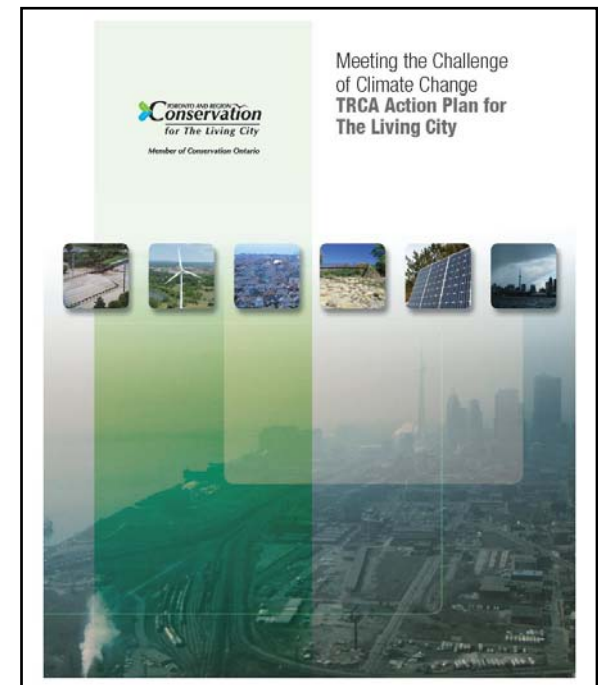




TRCA's Climate Strategy

A proactive strategy that provides a business planning framework for integrating CC over the next 5 to 10 years under the eight existing service themes of our Business Plan

- **Ecology**
- **Watershed/Waterfront management**
- **Conservation Lands**
- **Planning and Design**
- **Cultural Heritage**
- **Sustainable Lifestyles**
- **Living City Campus- Leadership**
- **Corporate Services**





TRCA's Approach to Mitigation and Adaptation

Mitigation

- Focus on conservation, eco-efficiencies and human health benefits.
- TRCA is showing leadership by reducing greenhouse gases (GHG) within its own operations.
- New partnerships to accelerate the knowledge and implementation of new technologies. i.e, Canada Green Building Council & LEED, STEP for LID and renewable energy.
- Increasing awareness through the Living City Campus and Education Programs.
- Reaching out to the community through several community transformation programs.



TRCA's Approach to Creating Adaptive Capacity in Watershed Management

Adaptation

- CA's are inherently in an adaptive management business- Watershed Management.(Long range planning)
- Our adaptation approach is based on reducing harm to individuals and building resilient natural systems and watersheds.
- We have initiated work to identify climate risks to our communities and natural systems.
- Adaptation strategies will be implemented over a long period of time as our understanding of systems improves through watershed planning, monitoring and evaluation.



MITIGATION

GREENING OUR OWN OPERATIONS

**PROMOTING A CULTURE OF CONSERVATION THROUGH
MARKET TRANSFORMATION**

ADAPTATION

KNOWLEDGE AND UNDERSTANDING

REDUCING RISK TO OUR COMMUNITIES

BUILDING A RESILIENT NATURAL SYSTEM

**PARTNERSHIPS/ FINANCIAL CAPACITY AND SELF
SUFFICIENCY**

CONSERVATION CENTRE OF CLIMATE RESPONSE

MEASURING OUR PERFROMANCE

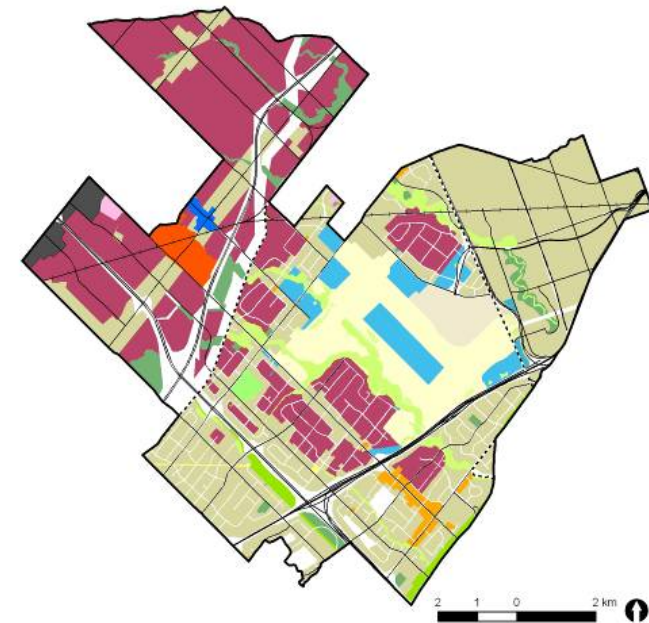
LIVING CITY REPORT CARD





Mitigation:Community Transformation

- Mayor's Megawatt Challenge
- Greening Health Care
- Greening Retail
- Eco-Industrial/Business Zone (Pearson)
- The Living City Carbon Footprint Calculator (individual action through education)



Pearson Eco-Business Zone Opportunities

- Eco-Efficiency
- Renewable Energy
- Green Job Development
- Resource Re-Utilization



Mitigation: Carbon Sequestration (Forest)

- Largest public land owner in the GTA – 16,000 Hectares approx.
- Over 400,000 trees planted on an annual basis across TRCA's jurisdiction.
- Carbon Forest Feasibility currently underway to establish a forestry-based GHG project.





Climate Change Adaptation Initiatives at TRCA

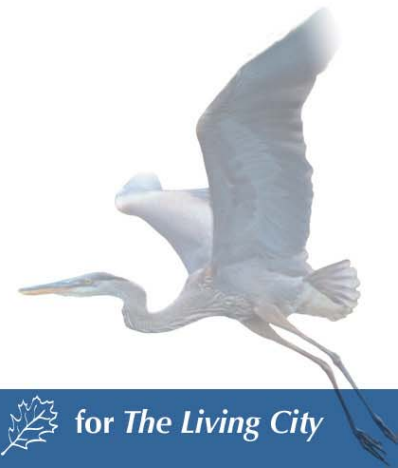
1. Regional IDF pilot study for southern Ontario
2. Climate change modeling scenarios in watershed plans
3. Analysis of historic GTA climate trends
5. Review of current climate change adaptation practices in storm water and floodplain management
6. Terrestrial and Aquatic habitat impact study
Engineers Canada Protocol- Infrastructure Assessment
7. MOE - SWM Guidelines review
8. Ground and Surface Water Monitoring Network Review
– MNR /CO





Gaps in Knowledge and Understanding

- Local level understanding of climate impacts- Great Lakes?
- Data and technical support /modeling and downscaling capabilities and methodologies (standard downscaling procedures)
- Infrastructure related standard and guidelines to support appropriate adaptation measures (buildings, flood control structures, SWM infrastructure)
- Integration of science and policy is lacking
- Agency coordination





Collaborative Actions

Regional Climate Change Collaborative (York/TRCA)-to be located at the Proposed Conservation Centre of Climate Response

- Regional Modeling Unit Modeling Unit
- Mainstreaming Climate Adaptation – Risk Based Approach
Canadian Standard Association/York/TRCA
- Executive/decision makers training (proposed)
- Public-private sector partnerships/ Great Lake universities





Collaborative Actions ..cont...

GTA Climate Change Working Group

- Collaborate on climate change mitigation and adaptation initiatives by sharing information, resources and project outcomes, as well as undertaking cooperative projects when appropriate.
- Provide leadership to local municipalities and other agencies or groups acting at a local level by providing information on climate change science, mitigation strategies, and adaptation planning, that is developed through the activities and contacts of the Steering Group.
- Advocate to other levels of government for their provision of improved scientific information and greater practical support of municipal climate change mitigation and adaptation efforts.

Toronto Urban Climate Change Network-TUCCN

- Forum on infrastructure





Collaborative Actions

Ontario Regional Adaptation Collaborative (RAC)

2009 - March 2012- NRCan announced six Regional Adaptation Collaboratives (RACs) across Canada.

Maximum of \$4 million (minimum of \$2 million) matching funds to each RAC.

Partners:

- Ontario Ministries
 - Ministry of the Environment (IEPD, DWMD-SPPB)
 - Ministry of Natural Resources (NRMD-LWB, SIRD-ARDB)
 - Ministry of Municipal Affairs and Housing
- Non-Governmental Organizations
 - Clean Air Partnership (CAP)
 - Ontario Centre for Climate Impacts and Adaptation Resources (out of Laurentian University)
 - York University
 - Toronto and Region Conservation Authority/ Conservation Ontario
 - Pollution Probe
- Private Sector
 - Institute for Catastrophic Loss Reduction (ICLR)
 - Insurance Bureau of Canada (IBC)
- Municipality
 - Toronto Public Health Unit (TPHU)



Proposed Ontario RAC Initiatives

Urban Component

Build capacity through outreach and training with large urban communities (e.g. municipalities, public health units) across Ontario.

Rural/Northern Component

Build capacity through outreach and training with small, rural, agricultural, resource-based and Northern communities across Ontario.

Outreach &
Capacity
Building

Public Health Tools

Develop heat vulnerability assessment tool to enable public health units to deliver scarce resources during a heat event.

Weather and Water Information Gateway:

Create a web-based integrated Provincial weather and water information discovery and access service to facilitate decision-making the community level.

Municipal Risk Assessment Tools

Expand and update municipal guide to assist municipalities to create risk-based vulnerability assessments.

Ontario
RAC

Water
Resources

Risk
Management

Sewer/Stormwater Assessment

Develop validated vulnerability assessment tool for sewer and stormwater systems in light of climate change.

Source Protection

Ensure assessment reports and source protection plans for vulnerable communities in Ontario include climate change adaptation (e.g. potential water shortages) policies and data.

Building Resilience

Document and make available best practices to retrofit existing homes to improve resilience to climate extremes. Information could be used to update provincial building code, municipal bylaws, current constructions practices, etc.

Source: OCCAR and MQE



Questions?

