

The role of Conservation Authorities In a Changing Climate

Session W1G - A.D. Latornell Symposium
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TRCA Initiatives



The role of Conservation Authorities In a Changing Climate


- The TRCA like all CA's within the Province is a watershed(s) based natural resources management agency.
- Its organizational mandate includes managing the water and natural heritage resources within its jurisdictional boundaries on behalf of the municipal and provincial levels of governments







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- The goal of the TRCA is to develop programs and policies to manage these resources in a manner which ensures the long term stability of the natural environment to sustain and,
- To enhance their function in providing a healthy and sustainable natural heritage system, while managing the risks to life and property related to natural processes such as erosion and flooding.



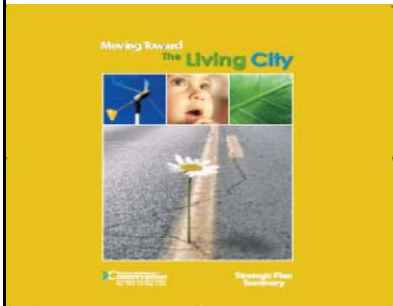
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The TRCA Has:


Developed an overall corporate strategy called the LIVING CITY and a Strategic Plan to move us towards achieving our corporate goals.






OUR VISION

The quality of life on Earth is being determined in rapidly expanding city regions. Our vision is for a new kind of community, The Living City, where human settlement can flourish forever as part of nature's beauty and diversity.



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The Strategic Plan of the TRCA , “ **Moving Toward The Living City**” identifies the integration of **Climate Change** as a critical component In achieving the objectives and goals of a healthy, sustainable urban region extending into the 22nd century.

IT ALL BEGINS WITH CLIMATE CHANGE

At TRCA, we take the threat of climate change seriously. Atmospheric scientists overwhelmingly agree that the world is warming up. Average global annual temperatures have risen 0.6° Celcius or 1.0° Fahrenheit during the last century.



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- **What is Climate Change?**

Climate change is the alteration of the atmosphere, the **hydrologic cycle**, and current weather norms through both anthropogenic and natural increases in air-borne emissions and the reduction of the regenerative capacity of natural systems.




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Climate Related Issues

- **Natural systems are susceptible to changes brought about by land use change. The existing natural systems under TRCA management are undergoing changes related to the increasing pressures of urbanization.**
- **The addition of the stressor of climate change will serve to further influence change within our natural systems and create new or increased challenges to our management objectives.**




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Climate Related Issues

- **While some aspects of the changing climate are relatively well documented, such as the anticipated change in mean annual temperature, some impacts remain uncertain.**
- **The level of uncertainty however can not be looked at as being a reason to hesitate in integrating anticipated changes into our management programs.**





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Climate Related Issues

- Events such as the August 2005 storm serve as a reminder of what we can expect in the future from a weather perspective. (And points out the need for federal and provincial funding models that address the critical issues of CC to a highly urbanized area)


Finch Avenue Collapse, August 19, 2005



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Climate Related Issues




Dog-strangling Vine Seed Pod

The increase in invasive plant species and wildlife into the region is also a precursor of what will continue to occur under a changing climate




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Climate Related Issues

- **In Summary, Within the Watersheds of the TRCA**
 - **We are already dealing with impacts of urbanization on the ecosystem, including heat island effect, smog, urban flooding, erosion, invasive species, and impacted water quality.**
 - **The additional stress on already stressed natural systems due to Climate Change will create significant new challenges.**




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C.A. Leadership in CC

- **However, at TRCA we believe that CA's are in a unique position to be able to deal with Climate Change from both an Adaptive and Mitigation perspective.**
 - We are already in the business of managing systems which Portray inherent adaptive processes (Watershed based ecosystems)
 - we already understand the issues with multiple stressors to be able to understand and effectively manage on a watershed basis
 - To accomplish the above and look at mitigative measures, we plan on a long term and adaptive basis.




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C.A. Leadership in CC

- **Having these basic management principles inherent to our overall goals and objectives allows the TRCA and CA's in general to be strategically placed to provide our Clients with effective direction and input around managing ecosystems under the challenges that a Changing Climate will create.**





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TRCA DRAFT Climate Change Strategy



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- To Integrate CC into the business of the TRCA, and provide direction to our municipal clients, our strategy will include:
 - developing and maintaining a knowledge base of climate change issues,
 - creating a process which fits into our existing business framework, and
 - creating a process to pass along this knowledge to our clients
 - Creation of partnerships with Public and Private sectors to accelerate implementation





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- develop and maintaining a knowledge base of climate change science and issues,
 - Identify Key staff with existing Climate Change knowledge,
 - Create an internal CC working group,
 - Develop Partnerships with external experts and agencies



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- Create a process which fits into our existing business framework
 - Utilize the Watershed and Waterfront Planning Process
 - Climate Change is simply an additional stressor
 - Develops modified existing or new management strategies



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Utilize the Watershed and Waterfront Planning Process

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graph TD
    A[Watershed Plan Category] --> B[Define issues / Understanding]
    B --> C[Develop Management Strategies/Policies/Programs]
    C --> D[Integrate Climate Change]
    D --> E[Define changes to issues and understanding by additional stressor of CC]
    E --> F[Modify Management Strategies/Policies/Programs Short Term and Long Term]
    F --> G[Undertake a CC Peer Review on Modified Strategies/Policies/Programs]
  
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- Create a communication process to pass along this knowledge to our staff and external clients
 - Develop a monitoring network to provide data necessary to integrate CC
 - Create more adaptable management Tools
 - Increase understanding of watershed process's likely be susceptible to changes related to CC





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- Create a communication process to pass along this knowledge to our staff and external clients
 - Undertake research on a watershed or Municipal Basis (Rouge R, Markham).
 - Participate in CC research studies (EC, CCIAP etc)
 - Hold Workshops, Publish





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- Create a communication process to pass along this knowledge to our staff and external clients
 - Work with your Municipal Partners, it is most likely they have or will be starting CC initiatives already, (i.e. Energy efficiency, Water efficiency)




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Current TRCA Climate Change Initiatives

- The recent National Round Table on Environment and Economy (NRTEE) advised that the Long Term Energy and Climate Strategy suggests a domestic solution to reduce greenhouse gasses through energy efficiency and using green technologies in energy production.
- In Terms of **Mitigation**, the TRCA's strategic Climate Change direction will be primarily energy efficiency.

We will focus on leading edge energy efficiency initiatives and application of renewable energy





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Current TRCA Climate Change Initiatives
Mitigation

- **Zero Footprint and PowerStream Partnership Block 39 City of Vaughan** (building 8 homes with ground source heating and cooling)
- **Tri- Generation and Cogeneration** or Combined Heating, Cooling and Power production (through Thermodynamic process) and District Energy (Distribution of Heating and cooling from one or more sources to multiple buildings). The Town of Markham and TRCA are looking into these technologies as emergency power back-up.




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Current TRCA Climate Change Initiatives
Mitigation

- **TRCA's Living City Center** (A comprehensive energy plan for the whole site is being developed including, Kortright's solar application, wind energy strategy and Earth Ranger's sustainable technology demonstration Center)
- **TRCA** is involved in a **partnership** with Provincial Social Housing Servicing Corporation (SHSC) and Toronto District Housing Council (TDHC). To promote the application of energy efficiency technologies in affordable housing projects. TRCA and TWRC plan to apply these in the new West Don Lands project.





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Current TRCA Climate Change Initiatives
Mitigation

- **TRCA** Continues to work with Partners on Carbon Sequestration through providing a land base for terrestrial Planting





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Current TRCA Climate Change Initiatives
Adaptation

- The TRCA has hosted three workshops to date for our partners on Climate change issues (one in 1999, and two in 2005)
- Has initiated discussions with municipal Partners to look at adaptive approaches to IDF curve Development for water related infrastructure
- Has undertaken some preliminary CC modeling on the Rouge River Watershed to investigate potential Impacts.




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Current TRCA Climate Change Initiatives
Adaptation

- Is committed to Integrating Climate Change into all Watershed based strategies/Plans.

e g: Fisheries Plans, Plans dealing with Groundwater/Surface Water, Land Use Planning etc..



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WE NEED TO CONTINUE TO ADAPT TO CLIMATE CHANGE



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QUESTIONS

