



# City of Toronto Climate Change Adaptation Strategy Development January 22, 2008

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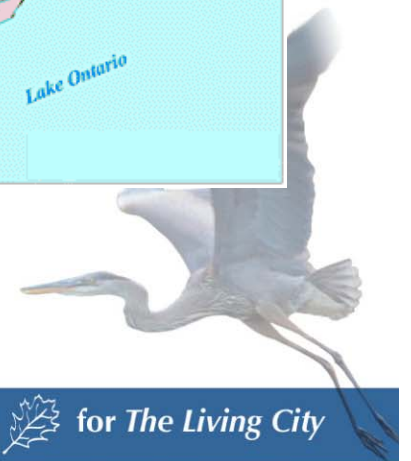
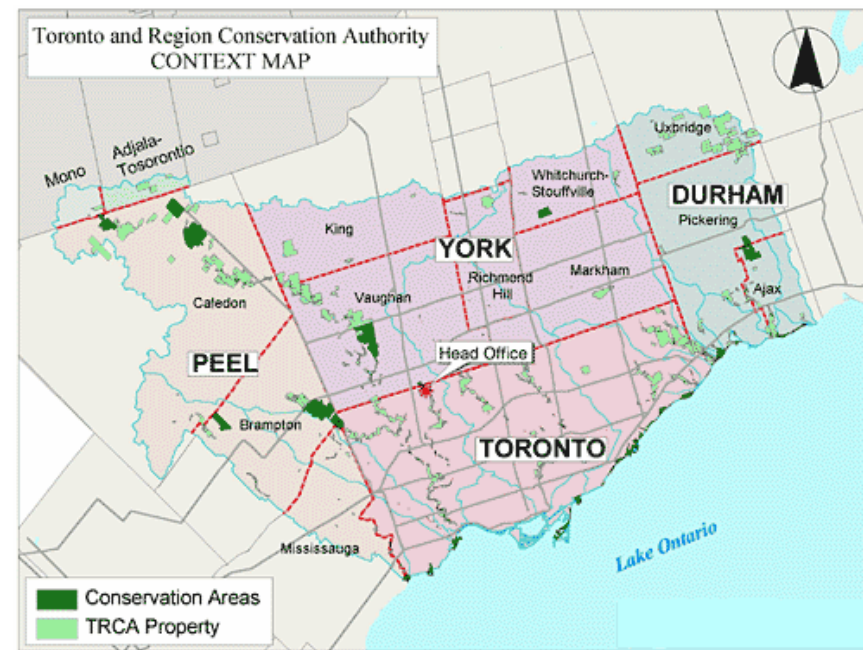


## TRCA and Climate Change

# The TRCA is a Watershed Based Natural Resource Management Agency

Work with the City of Toronto on:

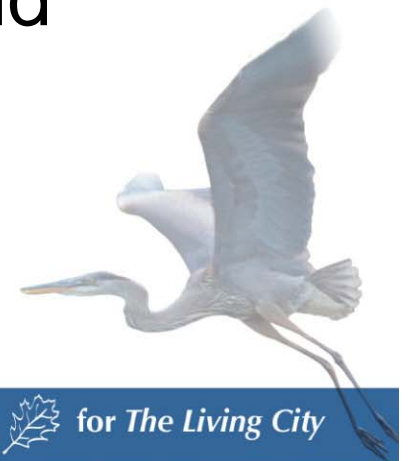
- Flood/Erosion Control
- Recreation
- Education
- Natural Heritage  
(Terrestrial and Aquatic)





## TRCA and Climate Change

- Programs around these and others areas are integrated into and implemented through Watershed based management strategies
- Management programs related to natural systems and processes are dependant upon external stressors such as weather and land use.





## TRCA and Climate Change

Current climate research indicates that while some uncertainty still exists in climate modeling, a trend towards more severe weather is anticipated:

**The 2007 Fourth Assessment Report of the Intergovernmental Panel on Climate Change has indicated that the severity and frequency of extreme events such as floods and droughts is expected to increase in the 21st century under global warming**

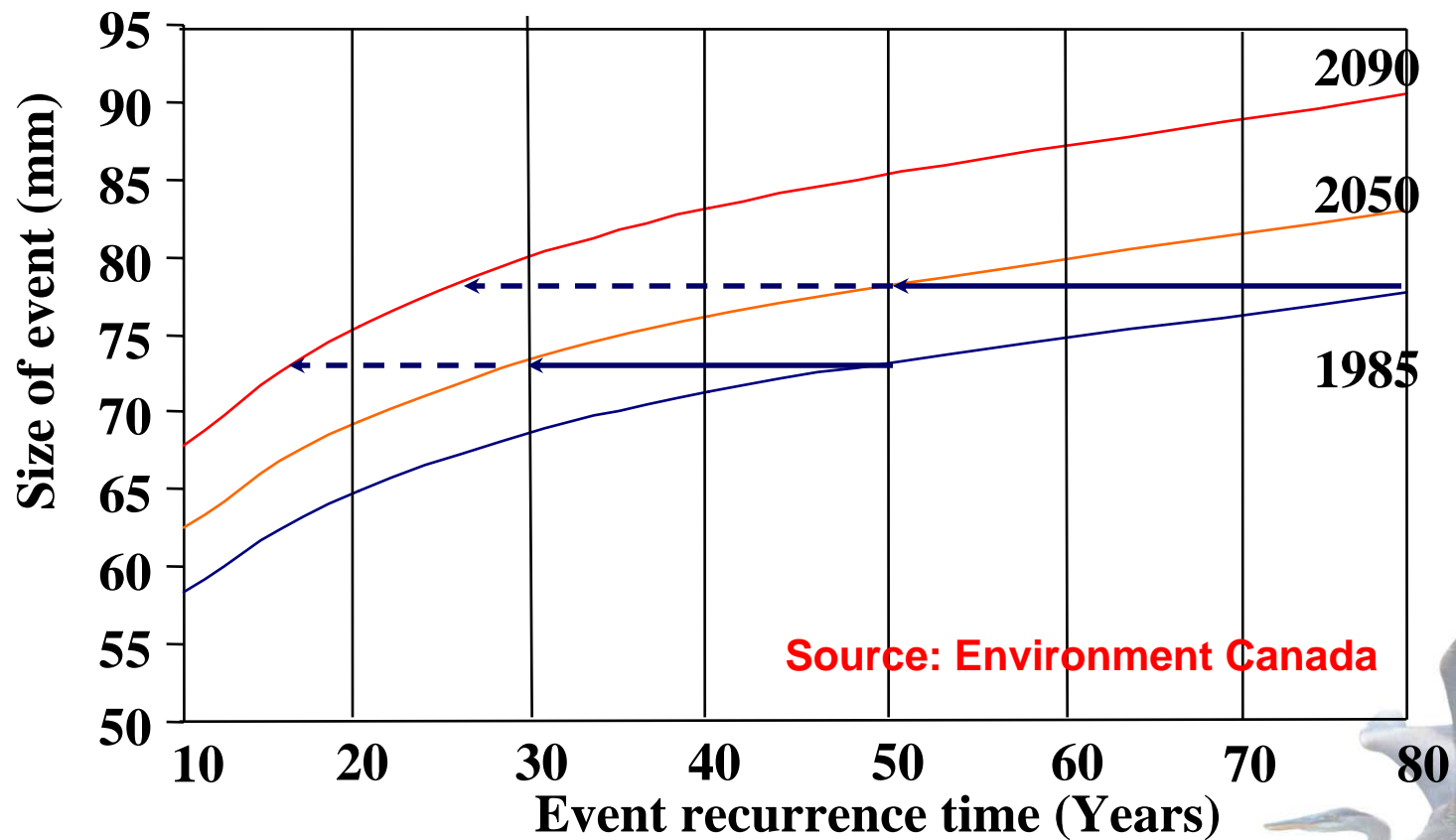






## Projections of Extreme Precipitation Events (mm) in Canada

“Probability of precipitation events considered extreme in the year 2000 is expected to increase by at least a factor of 2 by the end of the 21st century.”





## TRCA and Climate Change

- increased stream erosion and flood damages on our urban streams.



Toronto August  
19, 2005, 105 mm  
in 1 hour







## TRCA and Climate Change

- **Increases in urban runoff and CSO overflows will decrease watercourse flow quality and impact the near shore waters of Lake Ontario.**





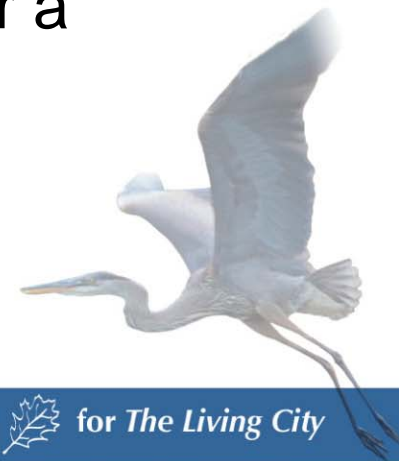
## TRCA and Climate Change

- Impacts to our Natural Heritage Systems



**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







## TRCA and Climate Change

- The TRCA looks at Climate Change as an additional stressor acting on virtually all our existing business areas.

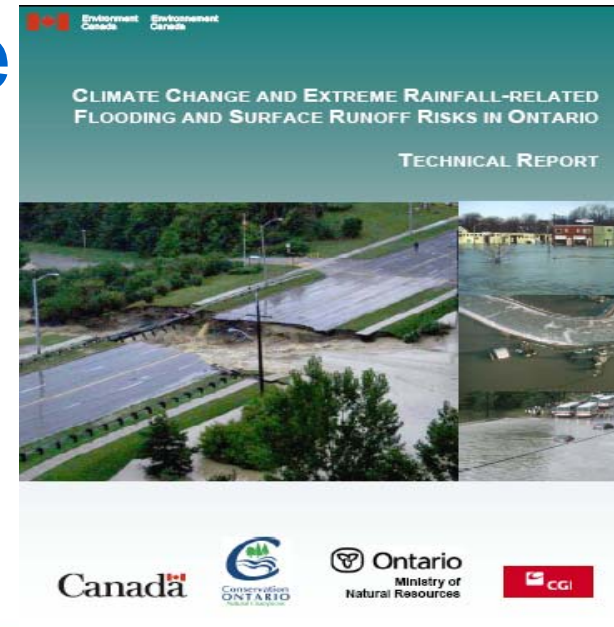
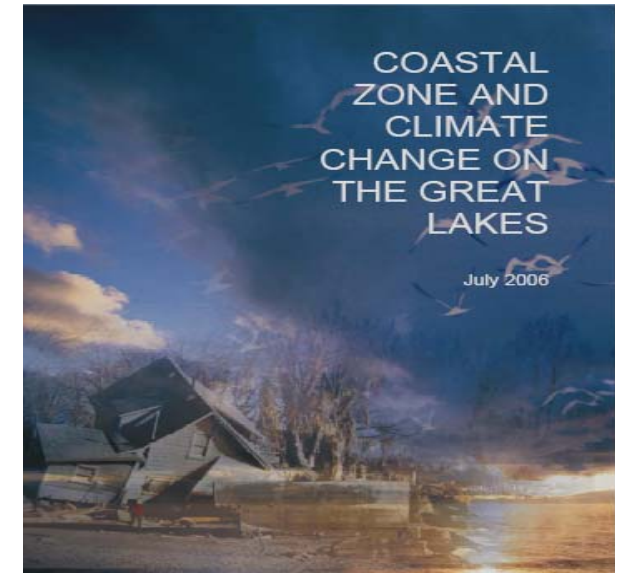
As such, we are developing our Climate Change response planning based on our business areas, with the intent to incorporate climate change into our everyday operations as well as long term planning.





## TRCA and Climate Change

How is the TRCA  
Involved IN Continuing  
To Understand the  
Changing Climate  
And developing Adaptive  
products to Assist the  
City in Meeting its needs





## TRCA and Climate Change

### Adaptation Initiatives

**Some areas of TRCA adaptive works include;**

- **Working with Environment Canada on Climate Research initiatives.**
- **Updating and modifying existing programs to be more adaptive.**
- **Working with Provincial and Municipal agencies on enhancing our knowledge and planning around Urban Flooding.**







## TRCA and Climate Change

### Research initiatives with EC include;

- **Regional IDF Curve Pilot Project, ( Ongoing)**
- **The Tap Runs Dry, Drought Hazard in Southern Ontario - A Historical drought indicator analysis ( Draft)**
- **Climate Change and Extreme Rainfall-related Flooding and Surface Runoff Risks in Ontario ( Complete)**
- **Coastal Zone and Climate Change on The Great Lakes ( Complete)**





## TRCA and Climate Change

### **Adapting existing Programs**

The TRCA is nearing completion of its comprehensive “ **Water Management Guideline**” and has begun updating its “ **Valley and Stream Corridor Management Plan** ”

**The Water Management Guideline which is being produced with input from the City will promote more responsible and adaptive Water Management which in turn should reduce the degree that Climate Change will exacerbate urban hydrologic issues.**





## TRCA and Climate Change

**The Water Management Guideline will achieve its adaptation goals through Reinforcing the key themes of;**

- **Ensure that an Integrated approach is undertaken involving planners, ecologists, landscape architects and engineers, and that,**
- **Ensuring that the Comprehensive studies are done upfront in the Planning Process.**
- **We keep an open mind to new approaches ( field is evolving )**



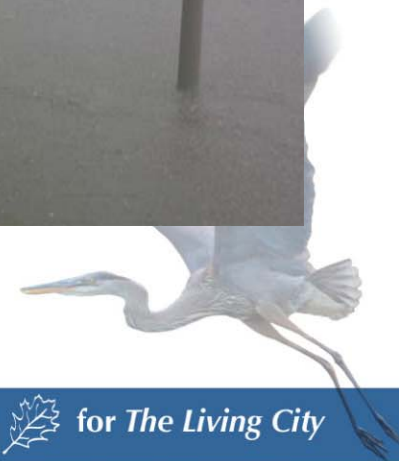




TRCA and Climate Change

## Urban Flooding;

**Urban Flooding** has become a major concern in terms of flooding in Ontario. With **Climate Change**, it is anticipated that the risk of urban flooding will increase and create additional stress to the City in terms of emergency response, and infrastructure design and life.





## TRCA and Climate Change

### **Urban Flooding;**

**The Province has recognized that Urban Flooding is and will become an ever increasing issue in Ontario and needs to be reviewed in terms of how the Province and Municipalities deal with it in the future.**

**To initiate this review, a committee made up of representatives from Provincial Ministries, Conservation Authorities ( TRCA), and Municipal representatives ( including the City of Toronto) has been recently created to review this issue and define future needs and direction.**





TRCA and Climate Change

# Questions?

