

NIARIO

Conservation Ontario's Business Case for Strategic Reinvestment into Ontario's Flood Management Programs and Services September 2013

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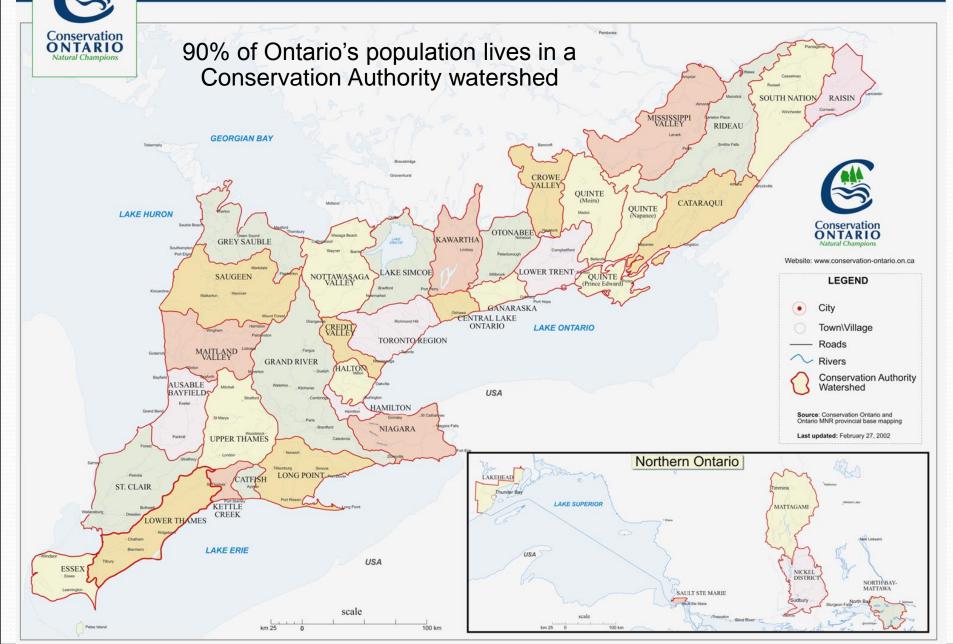
Storm

Dodging the 'Perfect Storm'

- Flooding is the leading cause of public emergency in Ontario
- Climate Change impacts are creating more frequent and serious flood events. Expected to increase
- Conservation Authorities and Ministry of Natural Resources responsible for programs that are now being integrated into a new, provincial emergency management framework
- Work closely with municipalities across the province



CONSERVATION AUTHORITIES OF ONTARIO



Protecting People & Property

- Protect 46,000 homes and prevent an average of over \$100 million/yr in damages
- Ontario programs which manage floods & regulate flood plains have proven to be very effective – significant loss of life has not occurred since the establishment of flood management programs

Ongoing lagging investment is jeopardizing our ability to protect people & property



Examples of Flood Management Tools

Floodplain mapping

Regulate development in flood plains in cooperation with municipalities

Provide planning support & advice to municipalities to minimize flood impacts / Issue warnings

Acquire important floodplain lands and flood vulnerable structures



Conservation Authority Responsibilities

- Operate over 900 dams, dykes, channels and erosion control structures along rivers and shorelines
- Monitor stream flow, rainfall and snow packs
- Model and forecast floods



Conservation Authority Responsibilities

- Protect significant natural heritage features such as wetlands and forests which help to mitigate the impact of flooding and erosion
- Inform and educate the public on flooding
- Contribute to municipal emergency planning and preparedness activities



Impacts of Climate Change Increasing

- Experiencing more extreme precipitation events (more heavy rain and snow creates more flooding)
- 'Flood season' is year round
- Storm runoff is made worse because rain is more intense.



Increased urban development compounds the damaging effect

The Perfect Storm

Aging CA Infrastructure Underfunded CA Flood Programs

Increased Flooding & Runoff Growing Population Increasing Property Values



How Can We Respond?

- Ensure up to date, accurate flood plain mapping
- Increase rainfall and stream flow monitoring
- Update computer models to forecast stream flows
- >Address aging infrastructure (dams, dykes, etc)
- Support Green Infrastructure (Low Impact Development), Stormwater Management, Watershed Stewardship / Conservation



Practices

Accurate Mapping Is Essential

- Accurate digital maps are the foundation of effective flood management, helping to save lives, prevent property damage and reduce emergency response and recovery costs
- >80% of existing maps need to be updated (cover 44% of the people living in flood plains; 72% of the buildings and 76% of the bridges located on mapped flood plains)
- Need to incorporate the newest mapping technology.



Smaller municipalities at greater risk

Maintain Operations

- Operation & inspection of flood control structures
- Monitoring of stream flow, weather conditions & snow accumulation
- Maintaining, updating & applying flood forecasting & warning systems
- Undertaking watershed, infrastructure and other planning studies

Administering the flood fill regulations



Address Aging Infrastructure

- Dams, dykes, channels & erosion control structures along rivers and shorelines help to control flooding
- Can directly threaten the safety of people and property
- Current program cost shared with municipalities
- Require ongoing maintenance, repair and replacement



Current asset value: \$2.7 billion

Support Other Activities That Prevent or Reduce Flood Event Impacts

Continue to invest in:

- Green Infrastructure (including Low Impact Development, wetland protection and restoration)
- Natural heritage systems
- Watershed stewardship / conservation best management practices
- Often funded & implemented across various ministries (e.g. MOE, OMAFRA, etc.)

CAs partner with municipalities, landowners, agencies and government to deliver Reinvestments Are Cost Effective

Based on actual experiences, damage estimates from severe storms in Ontario from 2000 – 2005: \$60 million

Insurance claims for flooding & sewer backup in four of Ontario's largest cities : \$100 million

Easy to assume that average flood damages are more than \$100M/yr



Commitment Required

- Immediate: Floodplain mapping & streamflow monitoring systems, computer models (\$24.8M)
- Ongoing: flood management programs (\$50.7M /annually)
- Ongoing: Infrastructure maintenance, repair & replacement (\$27M /annually)
- Ongoing: policy and program support for complementary activities to manage runoff, water quality, etc. as result of floods



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