



Municipal Adaptation and Resiliency Service (MARS)

Webinar 3 Legal/Financial Implications of Climate Change





1. Drivers, facilitators, and barriers to climate change adaptation
2. Drivers and barriers survey
3. Key non-impact drivers
4. Responsibilities and Risk Management in a Changing Climate (Laura Zizzo, Zizzo Allan Professional Corporation)

ADAPTATION DRIVERS



- Extreme weather events and weather-related impacts
- Recent or projected costs of extreme weather on municipal budgets
- Increasing recognition of the credibility of climate science and the advance of climate change
- Advocacy by NGOs
- Participation in climate impacts research
- Peer competition and image – what other communities are doing
- Standards and regulatory requirements
- Liability concerns

- Leadership by an elected or senior adaptation “champion”
- Knowledge and expertise
- Willingness to allocate resources
- Timing
- Interdepartmental cooperation (getting out of silos)
- Compatibility with other policies (sustainability, green development, energy conservation ...)

- Short terms for political leaders
- Limited understanding of climate risks and vulnerabilities
- Uncertainty
- Lack of resources (human and financial)
- Existing (often long-standing) government priorities and policies
- Lack of economic justification
- Difficulty getting stakeholders to the table

2012

>70 municipalities surveyed

>100 staff participated

Small, medium and large sized municipalities

Urban and rural

North, south, east and west Ontario

SCORE OUT OF 10

Local champion	10
Willingness to allocate resources	8
Suitable timing	8
Knowledge & expertise	7
Interdepartmental cooperation	6
Organizational structure	4

SCORE OUT OF 10

Lack of human / financial resources	10
Lack of political interest	9
Lack of economic justification	7
Limited understanding of risks	7
Silos/ different priorities in gov. depts.	5
Difficulty bringing stakeholders together	4

ADAPTATION DRIVERS



SCORE OUT OF 10

Weather events / impacts	10
Standards and regulation	7
Legal concerns	6
Costs	6
Image	4

ADAPTATION DRIVERS



SCORE OUT OF 10

Weather events / impacts 10

Standards and regulation 7

Legal concerns 6

Cost avoidance 6

Image 4

ADAPTATION DRIVERS



SCORE OUT OF 10

Weather events / impacts	10
Standards and regulation	7
Legal concerns	6
Cost avoidance	6
Image	4

- Provincial Government
 - Ontario's Adaptation Strategy and Action Plan (2011-2014)
 - Key goal is to avoid climate related loss and take advantage of new economic opportunities
 - Achieved through building code, infrastructure vulnerability assessment, including adaptation in 10-year infrastructure plan, stormwater management guidelines, establishment of Climate Adaptation Directorate

STANDARDS AND REGULATION MUNICIPALITIES



Reducing Risks Associated with Increased Precipitation

- **Mandatory Downspout Disconnection**
- **Mandatory Backwater valve installation**
- Enhance sewer maintenance and camera inspections
- Consideration of additional Off-Line Storage
- Increase the Use of Flow Restrictors on Catch basins
- Update the Rainfall Intensity Duration Frequency (IDF) Curves
- Seal Manhole Covers
- Undertake Public Education on Sewer Use, Waste Water Treatment
- Targeted Education towards homeowners with suspected cross-connections
- Use Social Media and other communication tools to warn public of the risk of basement flooding
- Enhanced Maintenance & Inspection of road and sidewalks during snow or extreme weather events

Reducing Risks Associated with Increased Precipitation and Temperatures

- **Development of a Green Roof Policy**
- Installation of Rain Gardens as a pilot project
- Develop pilot projects for the use of Porous Pavement
- Improvement and Enhancement of Green Space
- Increase Tree Planting

Reducing Risks Associated with Increased Temperature

- Increase Capital for Shade Structures
- Increased Heat Education at Community Centres/ Pools
- Complete an Urban Heat Island Study

General

- Develop Clear Policies for Weather Response
- Creation of an Extreme Weather Fund Reserve

Short-term actions in City of Windsor's Climate Change Adaptation Plan (2012)

STANDARDS AND REGULATION - MUNICIPALITIES



- Toronto Green Standard – ICI developments
 - Bike parking
 - Shower and change facilities
 - Urban heat island reduction (at/above grade)
 - Stormwater retention/reuse
 - Tree planting/protection
 - Biodiversity requirements
 - Grade porosity
 - Erosion and sediment control

- *Climate Change Adaptation and Canadian Infrastructure*
- Key conclusions
 - Adaptive measures can be taken to limit costs and strengthen infrastructure resilience
 - A lot of research and planning has been done, but supporting policies and regulatory changes have not happened
 - Adaptation responses are thus rare and under-utilized, investment decisions are not being driven by the need to reduce climate impacts

ADAPTATION DRIVERS



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Cost avoidance	6
Image	4

COST AVOIDANCE – IMPACT RELATED



- Energy expenditure
- Impacts on Annual Departmental Budgets for Unexpected Weather Events
- Weather-related Disruptions of Business and Productivity
- Transportation costs

COST AVOIDANCE INSURANCE



- Municipalities can use private insurance to cover public infrastructure losses
- Coverage is incomplete, very difficult to get replacement values, payouts can be small compared to value of lost infrastructure
- Deductibles are increasing
- Premiums are increasing
- Premiums rising even if no events occur, due to losses in other geographical areas

- Not all weather disasters covered by ODRAP, deductibles, land acquisition for facility relocation
- Many costly weather events do not constitute disasters from a provincial perspective, e.g repetitive smaller events with greater cumulative impact than one large event
- Financial assistance is discretionary (based on fiscal capacity of municipality, large municipalities less likely to get help)
- Assistance can take years to come
- Losses of revenue excluded from ODRAP

ADAPTATION DRIVERS



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Image	4

IMAGE - COMMUNITY PERCEPTION



CBC



IMAGE - RATINGS AGENCIES



- Climate is one of many risks that municipalities must manage and control
- Bond rating agencies analyze how risks are managed in municipalities
- Agencies develop ratings as a result of these analyses
- Not acting on climate risks affects ratings
- Bad ratings affect ability finance through municipal bonds
- Bad ratings affect reputation

FitchRatings

MOODY'S

**STANDARD
& POOR'S**



Responsibilities and Risk Management in a Changing Climate

Laura Zizzo

Zizzo Allan Professional Corporation

FISCAL CHALLENGES WHEN ADAPTING



1. Taxation powers are limited and inelastic, property taxes do not grow with the economy , are highly visible and politically charged
2. Municipalities constrained by repeated provincial downloading
3. Cities have strict debt limits which can not be exceeded legally , debt servicing < 25% of revenue (prov and fed governments have no limits)
4. Even if an adaptive measure is cost effective, it may not be doable
5. Bottom line, federal and provincial help is needed

1. What are the drivers behind adaptation in your community?
2. Are there facilitating factors?
3. What are the barriers, and what strategies do you use to overcome them?

NEXT WEBINAR

MODULE 4: MUNICIPAL TRANSPORTATION INFRASTRUCTURE

FEBRUARY 20TH , 2pm