

THE CORPORATION OF THE CITY OF WINDSOR
Environment & Transportation Standing Committee - Administrative Report

**MISSION STATEMENT:**

"The City of Windsor, with the involvement of its citizens, will deliver effective and responsive municipal services, and will mobilize innovative community partnerships"

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To: Environment & Transportation Standing Committee
Subject: Update on the Climate Change Adaptation Initiative – Milestone 1

1. RECOMMENDATION: City Wide: Ward(s): _____

That the update on the Climate Change Adaptation Initiative **BE RECEIVED** for information.

EXECUTIVE SUMMARY: N/A

2. BACKGROUND:

In November 2010, City Council approved the participation in the ICLEI Canada Adaptation Initiative.

ICLEI – Local Governments for Sustainability (Management) Inc., referred to as ICLEI Canada (formerly the International Council for Local Environmental Initiatives), is an international association of local governments as well as national and regional local government organizations that have made a commitment to sustainable development. More than 1,050 cities, towns, counties, and their associations worldwide comprise ICLEI's growing memberships.

ICLEI Canada is partnered with the Federation of Canadian Municipalities to deliver the Partners for Climate Protection (PCP) Program in Canada which has over 200 participating local governments developing plans to mitigate greenhouse gas emissions. The new ICLEI Adaptation Initiative is sponsored by National Resources Canada's Climate Change Impacts and Adaptation Division.

Despite greater international attention to the climate change issue, global emissions have grown by 25% since the turn of the century, exceeding the worst case scenario predictions of the International Panel on Climate Change (Field et al., 2007). As a result, governments and communities must now consider how to adapt to the unavoidable effects of climate change.

What is adaptation? (response from National Resources Canada 2009)

“ADAPTATION to climate change can include any activity that reduces the negative impact of climate change and/or takes advantage of new opportunities that may be presented. This includes activities that are taken before impacts are observed (anticipatory) and after impacts have been felt (reactive). Both anticipatory and reactive adaptation can be planned (i.e. the result of deliberate policy decisions), and reactive adaptation can also occur spontaneously. In most circumstances, anticipatory adaptations will incur lower long-term costs and be more effective than reactive adaptations. Successful adaptation does not mean that negative impacts will not occur, only that they will be less severe than would be expected had no adaptation occurred.”

The provincial government created the Expert Panel on Climate Change in 2007 to address climate change adaptation. The panel highlighted the crucial role municipalities must play in climate change adaptation and noted that increasing the “adaptive capacity of communities is indispensable.” (Expert Panel, 2009).

Adaptive capacity is defined as the ability of a system to adjust to climate change (including climate change variability and extremes), in order to moderate potential damages, to take advantage of opportunities or to cope with the consequences.

3. DISCUSSION:

In the fall of 2010, ICLEI Canada launched a new adaptation initiative with the support from National Resources Canada. This initiative was designed to assist local governments in the development and implementation of a local adaptation action plan. This initiative’s goal is to develop a local Climate Change Adaptation Plan while increasing the capacity internally for ongoing implementation and monitoring. The program aims to build expertise and knowledge within Council on the municipality’s roles and strategic needs in relation to reducing vulnerabilities and managing the impacts of climate change.

ICLEI Canada is providing technical support for all participants over the two year initiative. The support is meant to assist with all stages of the initiative, from impact scoping and baseline reports, to risk assessment, establishing indicators, and implementation.

Although climate change adaptation is a complex process, this initiative was developed to provide a straightforward methodology to adaptation planning using a five-milestone approach. The five milestones are as follows; Milestone One – Initiate, Milestone Two – Research, Milestone Three – Plan, Milestone Four – Implement, and Milestone Five – Monitor.

The City of Windsor is part of the first group working through the initiative. The other participants include City of Calgary, Capital Regional District, Municipal Corporation of Delta, Regional Municipality of Durham, City of Iqaluit, Town of New Glasgow, City of North Vancouver, Town of Oakville, City of Red Deer, City of Surrey, City of Vancouver, Metro Vancouver, and City of Victoria. The immediate success of the program is demonstrated by numerous municipalities looking to participate in round two of the initiative.

This report was developed to update city council on the initiative and the completion of Milestone One. This initial milestone included tasks to identify potential stakeholders, building the climate change adaptation team, developing a mandate, selecting a team leader and taking a first look at local climate change impacts predicted.

STAKEHOLDER IDENTIFICATION

The identification of stakeholders establishes a foundation for future communication and input. Provided below is a table of possible stakeholders. It is important to note that this list may not be complete; as the climate change adaptation team works through Milestone Two other possible stakeholders may be identified or their role may be changed (i.e. wider community to direct stakeholder, etc.)

<u>Direct Stakeholders</u>	<u>Indirect Stakeholders</u>	<u>Wider Community</u>
Environmental Coordinator	Windsor Essex County Environment Committee	Heavy Construction
Planning	Windsor-Essex County Health Unit	Bicycling Committee
Engineering	University of Windsor	School Boards
CAO Office	St. Clair College	Student Associations
Mayor/Council	Windsor-Essex Development Commission	Local Food Groups
Pollution Control	Windsor Airport	Local Agriculture
Parks/Forestry	Windsor-Detroit Tunnel Corporation	Media
Finance	Tourism Windsor-Essex Pelee Island	General Public
Building	Railways	First Nations (Walpole Island)
Environmental Services	Developers	Local Community Interest Groups (Scale Down)
Essex Region Conservation Authority	Essex Windsor Solid Waste Authority	First Responders (fire, police, EMS)
Windsor Utilities Commission	I.T. Services	Emergency Preparedness
Enwin Utilities	Local Municipalities	Seniors
Transit Windsor	United Way	Naturalists
Community Housing	Red Cross	
International Joint Commission	Union Gas	
	Hydro One	
	Communication Utilities; Bell Canada, Cogeco,	

CLIMATE CHANGE ADAPTATION TEAM

The adaptation team constitutes the foundation for adaptation planning in the City of Windsor; the team will be responsible for completing the tasks and maintaining momentum throughout each of the milestones. The team represents several city departments and outside agencies which were identified as direct stakeholders in climate change adaptation.

Similar to the stakeholders, the team may wish to add members to the team if the research shows that a department or agency needs to be directly involved with this initiative.

Stakeholder	Individual Contact	Rationale for Inviting/Area of Expertise
Environmental Coordinator	Karina Richters	Initiator (Team Leader)
Office of Continuous Improvement	Trevor Bennet	Unbiased look from a risk management perspective
Planning	Michael Cooke	Policy Planner
Engineering	Paul Mourad	Infrastructure/storm
Pollution Control	Karina Richters (2 nd role)	Wastewater
Finance	Mark Spizzirri	Financial input
ERCA	Jeremy Wychreschuk	Regional Watershed planner
Windsor Utilities Commission	John Stuart	Drinking water

TEAM MANDATE

Windsor's adaptation team mandate is as follows:

The City of Windsor's adaptation team was created to research, draft and implement our community's adaptation plan. The team is led by Karina Richters, the Environmental Coordinator for the City of Windsor.

Our purpose is to collect information on climate change impacts and offer expert advice to Council on the most credible, aggressive and economically viable options for adapting to climate change. Through vulnerability and risk assessments, the team will prioritize actions required in the community's adaptation plan. Whenever possible, actions providing climate change mitigation benefits will be considered.

The team members have committed to monthly meetings for a minimum of 1.5 hours each in addition to project specific tasks to be determined by the group. The adaptation team, on behalf of the community at large, has committed to an ongoing process of monitoring and review for the duration of the project (approximately 2 years).

PREDICTION OF CLIMATE CHANGE IMPACTS FOR SOUTH-WESTERN ONTARIO

Although it is not possible to anticipate future climate with absolute certainty, climate change scenarios help to create plausible representations of future climate. Numerous international, federal and provincial governments have completed detailed reports based on numerous modelling scenarios.

The table below outlines the climatic changes predicted for southern Ontario along with possible impacts that may be experienced.

Climatic Changes	Possible Impacts
<p>Increase in Air Temperature</p> <ul style="list-style-type: none"> Increase in average annual temperatures between 2 °C to 2.6 °C by 2050. ^(a) Number of days exceeding 30 °C are predicted to double by 2050. ^(b) 	<ul style="list-style-type: none"> Increase in heat and smog alerts Increase in irrigation needs due to drought periods Changes in biodiversity Longer recreational season Damage to infrastructure (road/rail) Longer growing season Increase in vector borne diseases (west nile, lyme disease) Loss of wetlands

<p>Changes in precipitation ^(a)</p> <ul style="list-style-type: none"> • Increase in average annual precipitation of 3.51 to 4.27 % by 2050 <ul style="list-style-type: none"> ○ Increase of average winter precipitation of 7.81 % ○ Decrease of average summer precipitation of 1.42 %. However, it is expected that the precipitation will come in heavier short duration (24 hours or less) rain events with longer more intense dry periods. 	<ul style="list-style-type: none"> • More winter precipitation, possible more snow requiring more snow clearing • More irrigation required due to more summer droughts • Heavier short duration rains may impact sewer capacities
<p>Increase in frequency of extreme weather events</p> <ul style="list-style-type: none"> • Projections of changes in average temperature and precipitation imply more frequent and possibly more intense extreme events. ^(a) 	<ul style="list-style-type: none"> • More intense storms and possibly more tornados • Power outages, communication service outages • Damage to trees • Damage to infrastructure • Increased insurance rate premiums
<p>Increase in surface water temperatures ^(b)</p>	<ul style="list-style-type: none"> • Changes in aquatic species • Increase in disease (ecoli, salmonella) • Water quality issues (blue green algae, turbidity) • Less near shore ice cover
<p>Decrease in water levels</p> <ul style="list-style-type: none"> • The impacts of lower water levels will be most pronounced in parts of the system that are already shallow, specifically western Lake Erie, Lake St. Clair, and the St. Clair and Detroit Rivers ^(b) 	<ul style="list-style-type: none"> • Impacts on boating, marinas • Distance of water from existing shoreline • Water quality (blue green algae, ecoli) • Shoreline erosion • Possible increase in property • Reduction to commercial shipping • May need to dredge

References: ^(a) Expert Panel on Climate Change Adaptation. (2009) Adapting to Climate Change

^(b) Chiotti, Q. and Lavender, B. (2008): Chapter 6: Ontario in From Impacts to Adaptation: Canada in a Changing Climate 2007.

ICLEI Canada as part of this initiative has provided a report titled *Milestone Two and the Science of Climate Change* (attached) which documents the data available for this region.

The Climate Change Adaptation Team is now working towards the completion of Milestone Two. The purpose of Milestone Two is to delve deeper into climatic changes and their impacts, how these impacts will affect the service areas, and the vulnerability and level of resulting risk the community faces.

The vulnerability assessment will be one of the more intensive components of Milestone Two.

A vulnerability assessment necessitates an understanding of both biophysical and socioeconomic implications as the focus is more on understanding the processes involved with climate change impacts and the factors that influence sensitivity and adaptive capacity.

The following three questions will be considered while conducting the vulnerability assessment:

- Is the service area/department already able to accommodate existing weather patterns and changes in climate?
- Are there barriers to a service area's ability to accommodate changes in climate?
- Is the service area already stressed in ways that will limit its ability to accommodate changes in climate?

The final step of Milestone Two will be the risk assessment. The risk is the combination of an event's likelihood and its consequences – risk therefore equals the probability of a climate hazard multiplied by the consequence of that event. The risk assessment will allow us to focus the efforts in future milestones on those climatic changes that pose the higher risk to the community.

4. FINANCIAL MATTERS: N/A

5. CONSULTATIONS:


Climate Change Adaptation Team including; Planning; Engineering, Office of Continuous Improvement, Finance, Essex Region Conservation Authority, Windsor Utilities Commission

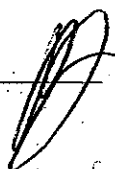
6. CONCLUSION:

The completion of Milestone One has provided the opportunity to research the possible impacts of climatic changes on the community and services provided by the City of Windsor. The Climate Change Adaptation Initiative is now entering Milestone Two, which will provide the opportunity to look deeper at the City of Windsor's vulnerability and risks as they pertain to climate change.



Karina Richters
Environmental Coordinator



Greg St. Louis
Senior Manager of Pollution Control 



Mario Sonogo
City Engineer

/jc:ebr

APPENDICES: Milestone One Output Report
Milestone Two and the Science of Climate Change

DEPARTMENTS/OTHERS CONSULTED:

Name:
Phone #: 519 ext.

NOTIFICATION :

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