

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"

LiveLink REPORT #: 15588 MH/11217	Report Date: November 2, 2011 (#3198/jc-11/07/11:ebr)
Author's Name: Karina Richters	Date to Standing Committee: November 23, 2011
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To: Environment & Transportation Standing Committee

Subject: Continued Partnership with Health Canada for the Heat Alert Response System (HARS) Pilot Program

1. RECOMMENDATION:

City Wide: Ward(s): _____

- 1) That the Chief Administrative Officer and City Clerk **BE AUTHORIZED** to sign the Memorandum of Agreement (MOA) with Health Canada, satisfactory in form to the City Solicitor, in financial content to the City Treasurer and in technical content to the City Engineer, to continue the partnership with Health Canada to enhance and expand the Pilot Heat Alert and Response System with an additional funding grant from Health Canada of up to \$60,000 over two (2) years.
- 2) That the report "Assessment of Vulnerability to the Health Impacts of Extreme Heat in the City of Windsor" produced in partnership with Health Canada and the City of Windsor, **BE RECEIVED** for information.
- 3) That, subject to Windsor City Council approval of the above recommendations, the City Clerk **FORWARD** a copy of this report and associated Council Resolution(s) to Essex County Council for information.

EXECUTIVE SUMMARY: N/A

2. BACKGROUND:

On March 2, 2009, City Council approved LiveLink Report #13929, "Health Canada Partnership to develop a Pilot Heat Alert and Response System", through CR63/2009. A \$150,000 grant from Health Canada was received to initiate this project.

In 2010 and 2011, additional funds (\$15,000) were made available by Health Canada to continue this work (CR116/2010 and CR97/2011).

On May 25, 2011, an update report on the Pilot Heat Alert and Response Plan was presented to the Environment and Transportation Standing Committee (Livelink #15240). The report outlined the actions completed since the formation of the partnership with Health Canada in 2009.

Heat alert and response systems are designed to prevent mortality and morbidity during extreme heat events. The HARS plan was presented to the Regional Community Planning Committee on April 6, 2011, followed with the recommendation that each municipality adapt the plan and include it as an annex in their existing emergency plans. Through the funding and support provided by Health Canada and the commitment of the advisory committee, the Stay Cool Windsor-Essex Heat Alert and Response Plan was launched to the public in June 2011.

3. DISCUSSION:

The summer of 2011 saw the implementation of the Stay Cool Windsor-Essex Campaign and it provided a great opportunity to test the campaign. Below is a breakdown of heat events over the summer of 2011.

MONTH	DAYS OVER 30 °C (PER ENVIRONMENT CANADA)	HEAT ALERT LEVEL 1 EVENTS	HEAT ALERT LEVEL 2 EVENTS
June	3 (June 4, 7, and 8)	2 (June 7 and 8) *June 7 predated the official Stay Cool-Windsor-Essex messaging	
July	21 (July 1, 2, 5, 6, 9, 10, 16 – 25, 28-31)	2 (July 2, 17 and 18) – 3 days total	4 (2 for Humidex > 45 – July 11 & 19 and 2 for extended heat July 20 – 24 and July 28 – Aug 2)
August	4 (August 1, 6, 7, and 24)	2 (August 7 and 25)	Heat Alert Level 2 called in July covers Aug 1 and 2
September	3 (Sept 1, 2, 3)	1 (Sept 1, 2, 3)	
Total	31	6 (covering 9 days)	4 (covering 13 days)

(Note: The heat alerts are issued by the Medical Officer of Health, Dr. Allen Heimann.)

In September, the HARS Advisory Committee met to evaluate the 2011 campaign. The consensus amongst the group was that campaign was successful in communicating the heat health messaging and therefore helping to reduce the risk in the community. Some of the comments noted at this meeting include;

- Liked the email blasts announcing when a heat alert was issued.
- Not aware of any deaths directly related to heat.
- Level of awareness regarding heat health illnesses is increasing within the community.
- The campaign received a lot of interest from the media.

Several suggestions were also made at this meeting on actions to improve the campaign for 2012.

Health Canada, in part with the lessons learned through the pilot communities, have developed several resources aimed to build more resilient Canadians and communities. The information resources include:

- 1) Guidelines for Assessing Health Vulnerability and Adaptation to Extreme Heat Events
- 2) Communicating the Health Risks of Extreme Heat Events: Toolkit for Public Health and Emergency Management Officials
- 3) Audience Specific Public Heat-Health Fact Sheets
- 4) Best Practices for Developing Heat Alert and Response Systems to Protect Canadians
- 5) Guidelines for Health Care Workers Regarding Extreme Heat Events
- 6) Fact Sheets for Health Care Workers

Health Canada has also produced Vulnerability Assessment Reports for each pilot community. The Summary and Recommendations section of the report "*Assessment of Vulnerability to the Health Impacts of Extreme Heat in the City of Windsor*" is included as Appendix A. The full report is available upon request. The report aims to assess the health vulnerability of Windsor-Essex residents from both individual and community level exposures to extreme heat.

Health Canada provided five recommendations in the report that will assist in developing a more heat resilient community. They are as follows:

1. **Develop an Effect Heat Alert and Response System**

Efforts should be taken to build on the current progress made toward development of a HARS in the City of Windsor and continue it after the pilot is completed.

2. **Target Vulnerable Populations**

Public health authorities should give consideration to focussing some of the HARS educational outreach, preparedness and response activities on vulnerable populations and to creating a heat health information hub.

3. **Remove Barriers to Adaptation**

Barriers to adaptation that may exist for vulnerable populations should be investigated and addressed to the extent possible.

4. **Education and Outreach**

Educating public health officials, representatives from community service organizations and the public about the dangers associated with extreme heat and the need to take adaptive actions is necessary.

5. **Adopt a Preventative Approach**

Public health and emergency management officials should take a preventative approach to adaptation to the health impacts of extreme heat events by taking measure to further understand the urban heat island effect in the City of Windsor and options available to mitigate it.

It is important to note, that several actions have been undertaken already in response to the recommendations during draft stages of the report.

Recently, the Climate Change and Health Office of Health Canada has received confirmation that federal funding for the heat resiliency projects will continue through 2013. Some of this funding has been set aside to continue the work with the pilot communities. The objective of the continued support from Health Canada is to support the expansion and enhancement of the Windsor-Essex Heat Alert and Response Plan.

In addition, Windsor will, through the provision of advice and guidance, support the development of HARS in other communities within Southern Ontario. To date, interest in the Stay Cool Windsor-Essex Campaign has been received from the Chatham-Kent Health Unit and the City of Hamilton.

The funds provided through this MOA will be used towards addressing the recommendations of the vulnerability report. To accomplish this, it is anticipated that one summer co-op student will be hired in 2012 to look at developing a report on the local Urban Heat Island effect in Windsor.

This study will look at policies being adopted in other regions and what actions may be feasible in this area. This student will work with the Environmental Coordinator and the Planning Department. This is one of the key actions required to address recommendation number five above and will also be useful for the overall Climate Change Adaptation Initiative also underway.

In addition, \$10,000 will be earmarked to develop a heat vulnerabilities map through the City of Windsor's Geomatics division. This map will include heat imaging as well as statistical information on vulnerable communities in Windsor-Essex. This mapping will assist with prioritizing responses or messaging that may be required if a prolonged extreme heat event occurs.

Currently, the development of such mapping is being discussed regionally as a useful tool for the regional emergency planners. Time permitting, this student will also be able to support this regional initiative as it too will benefit the heat alert and response plan. The development of these mapping tools will assist with recommendation numbers two and three.

4. FINANCIAL MATTERS:

This MOA provides additional financial support totalling \$60,000 through 2012. The payment of funds will occur with the following deliverables:

- | | |
|-----------------------------------|----------|
| 1. 2011 End of season report | \$20,000 |
| 2. 2012 Train-the-Trainers report | \$20,000 |
| 3. 2012 End of season report | \$10,000 |
| 4. Study on the Urban Heat Island | \$10,000 |

These funds are provided by Health Canada to assist the City of Windsor with expenses associated with this project, which may include advertising, development of resources and supplemental staff. The funds will be managed by the Environmental Coordinator and added to the existing capital budget ID (7093001) in order to accurately track all expenditures related to this funded initiative.

As of the end of October 2011, there was approximately \$82,000 remaining from the previous MOAs (\$165,000) with Health Canada.

The HARS Advisory Committee has agreed to allocate approximately \$10,000 towards the hiring of a co-op student for the summer of 2012 to assist with the development of the study on the urban heat island effect, with another \$10,000 towards developing the heat vulnerabilities mapping through the City of Windsor's Geomatics division.

The remaining funds will be used towards the ongoing promotion of the Stay Cool Windsor-Essex Campaign and other expenses required to enhance the Stay Cool Windsor-Essex Campaign.

All costs for this initiative have been funded from the grant money provided. No matching funds are required for this grant. All staff time to date has been in-kind support.

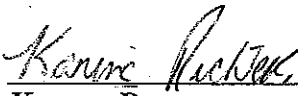
5. CONSULTATIONS:

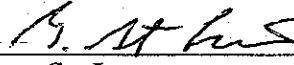
- Dr. Allen Heimann -- Medical Officer of Health, Windsor-Essex County Health Unit
- HARS Advisory Committee (Canadian Red Cross, Community Care Access Centre, County of Essex Emergency Planner, Essex-Windsor EMS, Windsor Police, Windsor Fire and Rescue Services)
- Geomatics Division

6. CONCLUSION:

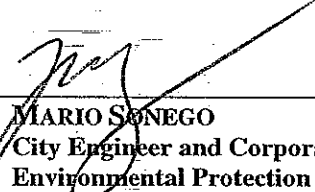
Long-term sustainability of the Stay Cool Windsor-Essex Campaign was considered paramount throughout its development. The HARS advisory committee understands the pressure on financial resources within municipalities and health units. Thus, the plan was designed around existing resources such as 211 and existing hours of operation of public facilities.

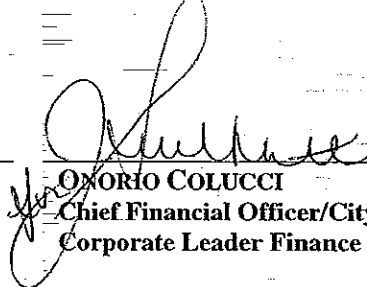
The new Memorandum of Agreement (MOA), with the additional financial support of Health Canada, will allow us to complete a couple of key projects in support of the Stay Cool Windsor-Essex Campaign and provide the HARS Advisory Committee with additional financial support to develop materials that will aid in the long-term sustainability of the campaign.


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MARIO SONOGO
 City Engineer and Corporate Leader
 Environmental Protection and Transportation


ONORIO COLUCCI
 Chief Financial Officer/City Treasurer
 Corporate Leader Finance and Technology

KR/jc:ebr

APPENDICES:
 Appendix A: "Assessment of Vulnerability to the Health Impacts of Extreme Heat in the City of Windsor"

DEPARTMENTS/OTHERS CONSULTED:
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Assessment of Vulnerability to the Health Impacts of Extreme Heat in the City of Windsor

Summary and Recommendations

Overview

Well documented research has identified risks to the health of Canadians from extreme heat. Recent events such as the 2003 extreme heat event in Europe and the event that occurred in Russia in 2010 have demonstrated the potentially catastrophic impact that extreme heat events can have on individuals and communities that are not prepared for them. Climate change is increasing temperatures in countries around the globe and is expected to increase the intensity and frequency of extreme heat events in Canada, leading to an increased burden of adverse heat-related health outcomes. Public health officials in the City of Windsor have identified climate change and extreme heat as a potentially significant hazard to residents and are seeking information which can be used to guide efforts to address the growing risks to health. This study reports on the results of an assessment of vulnerability of people living in Windsor to the health impacts of extreme heat events.

Assessing Health Vulnerability to Extreme Heat Events

Vulnerability assessments provide policy-makers and the public with knowledge of existing vulnerabilities to climate-related hazards along with a range of responses needed to reduce adverse health impacts. This report on the vulnerability of people living in Windsor to the health impacts of extreme heat events employed new assessment methods developed by Health Canada (2011) in the document "Adapting to Extreme Heat Events: Guidelines for Assessing Health Vulnerability". The assessment process took a participatory approach involving meetings with community leaders, public health and emergency management officials and members of the public. The results are also based on a literature review of community health and meteorological data as well as projections of future climate conditions that may put people living in Windsor at increased risk from extreme heat events.

Report Conclusions

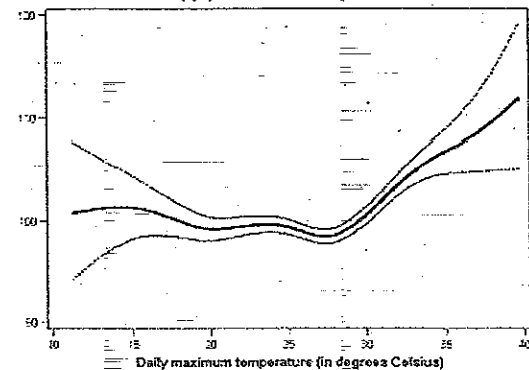
People living in Windsor are vulnerable to the health impacts of extreme heat events and actions are needed to prepare for increased risks to health. Windsor has a humid continental climate that can impact the health of people exposed to extremes in temperature and/or humidity. Summer-time temperatures, among the highest in Canada, are often above 30°C/86°F with humidex values much higher. In addition, a strong association exists between temperature and excess mortality in the City; at approximately 29°C/84°F excess mortality begins to increase as ambient temperatures increase (see the following figure). Climate change is expected to bring more frequent and severe extreme heat events to Windsor.

It is projected that the number of days over 30°C/86°F in

Windsor could almost triple by 2071–2100. The number of warm nights (over 22°C/72°F) in Windsor, that can endanger health are expected to go up even more dramatically—a tenfold increase by 2071–2100.

Association between non-traumatic daily deaths and maximum daily temperatures in Windsor, 1986–2005

Windsor: Relative mortality (%) from 1986-2005



Source: Yagouti, 2010.

Factors which increase the vulnerability of Windsor residents to extreme heat events are presented below.

Individual and Community-Level Exposure to Extreme Heat Events

- Urban heat islands have been documented along the Toronto–Windsor corridor and in the Detroit–Windsor region. Continued urbanization of this region will result in an amplification of community exposure to the extreme heat events that are projected to significantly increase under climate change.
- Windsor has a long history of poor air quality. Warmer temperatures in Windsor may amplify impacts on health, either by increasing the formation of air pollution or by synergistic impacts from the combined exposure to air pollution and extreme heat.
- Although the proportion of Windsor's seniors population is similar to the national average, the number of seniors in the city is expected to grow rapidly in the coming decades. This will significantly increase the number of individuals who are more vulnerable to extreme heat events.

- Relative to Canadian and Ontario populations, people living in Windsor suffer more from a range of chronic diseases (high blood pressure, asthma, diabetes, obesity/overweight, circulatory disease, cancer) that increase vulnerability to the health impacts of extreme heat events.
- The growing number of seniors and people with chronic illnesses in Windsor will require targeted education and outreach services and could impose higher stresses on health and social services during the heat season.
- One third of people working in Windsor (33%) work in occupations that may predispose individuals to exposure to extreme heat (e.g., construction, manufacturing and high heat environments such as smelters). Risks to the health of workers could grow significantly as the climate continues to change.
- Community events in Windsor during the summer season, which often attract large numbers of tourists from across the US border, mean the potential exposure of very large numbers of people to extreme heat events, possibly during periods of high physical exertion.

Capacity of individuals and the community to reduce heat health risks

- Of a total of 95,049 private households in Windsor, 27,520 are one-person households—a rate higher than the average for the rest of Ontario. Living alone is an important risk factor for heat illness and death.
- In Windsor, 18.2% of the population is considered low income before taxes; this is higher than the proportion in many other cities.
- Of the 4,728 community housing units that the City and County manage, the vast majority of these do not have air conditioning increasing the vulnerability of residents to heat-related illnesses and deaths.
- The transit service is reduced during the summer; this may present difficulties for individuals seeking transport to and from cooling options (e.g., pools, parks etc) to relieve heat stress.
- Disruptions in energy supply (e.g., blackout, brownouts) are a threat to Ontario communities, including Windsor, and increase vulnerability during periods of extreme heat.
- Current awareness and knowledge of risks to health from extreme heat events and protective measures among the public and social service agencies are low.
- The City of Windsor only recently developed a HARS; therefore coordination of HARS-related activities is limited among officials in the City of Windsor and

Essex County, local county municipalities, and community service organizations (e.g., Canadian Red Cross) that operate within the City and in surrounding areas.

Recommendations

Develop an Effective Heat Alert and Response System (HARS) – Efforts should be taken to build on the current progress made toward development of a HARS in the City of Windsor and continue it after the pilot is completed.

Target Vulnerable Populations – Public health authorities should give consideration to focussing some of the HARS educational outreach, preparedness and response activities on vulnerable populations groups (e.g., transient migrant workers in Essex County) and to creating a heat health information hub.

Remove Barriers to Adaptation – Barriers to adaptation that may exist for vulnerable populations should be investigated and addressed to the extent possible. For example, if resources permit, a transit assistance program and/or free swim days could be offered during extreme heat events.

Education and Outreach – Educating public health officials, representatives from community service organizations and the public about the dangers associated with extreme heat and the need to take adaptive actions is necessary. To this end the results of the report should be disseminated to public health and emergency management officials in the City of Windsor and the Windsor-Essex Health Unit and those with a role to play in reducing health risks from extreme heat events.

Adopt a Preventative Approach – Public health and emergency management officials should take a preventative approach to adaptation to the health impacts of extreme heat events by taking measures to further understand the urban heat island effect in the City of Windsor and options available to mitigate it.

Application of the Findings

The assessment of vulnerability to extreme heat events at the individual and community levels in Windsor will facilitate the development of effective public health interventions, such as the provision of targeted information, so that individuals can take the measures necessary to protect themselves and their family members.

References

Berry, P., Richters, K., Clarke, K-L., Brisbois, M-C. (2011). Assessment of Vulnerability to the Health Impacts of Extreme Heat Events in Windsor. Report Prepared for the City of Windsor, Ottawa.

Contact For further information please contact: Peter Berry at Peter.Berry@hc-sc.gc.ca