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Item No. 12.1.1
Environment & Sustainability Standing Committee
May 12, 2016

TO: Chair and Members of the Environment & Sustainability Standing Committee

Original Signed

SUBMITTED BY:

Bob Bjerke, Chief Planner and Director, Planning and Development

DATE: March 12, 2016

SUBJECT: Ecology Action Centre – Home Adaptation Audit Program (“HAAP”)

RECOMMENDATION REPORT

ORIGIN

Environment & Sustainability Standing Committee, October 1, 2015, Item 8.3.2 Presentation of Robin Tress, Ecology Action Centre re: Home Adaptation Audit Program.

LEGISLATIVE AUTHORITY

Halifax Regional Municipality Charter, Power to expend money, 79 (1) The Council may expend money required by the Municipality for
(av) a grant or contribution to
 (v) any charitable, nursing, medical, athletic, educational, environmental, cultural, community, fraternal, recreational, religious, sporting or social organization within the Province
 (vii) a registered Canadian charitable organization

RECOMMENDATION

It is recommended that the Environment and Sustainability Standing Committee request that the Ecology Action Centre submit a formal, detailed proposal for the Home Adaptation Audit Program once the program details are finalized and partners are confirmed.

BACKGROUND

At the October 1, 2015 meeting of the Environment & Sustainability Standing Committee, the following motion was approved: that the Environment and Sustainability Standing Committee request a staff report examining request for interest in participating in the Ecology Action Centre’s Home Adaptation Audit Program (“HAAP”).

DISCUSSION

HRM has been approached by the Ecology Action Centre (“EAC”) to participate in their HAAP developed by the Intact Centre for Climate Adaptation (“ICCA”) at the University of Waterloo.

According to the program developer, Dr. Blair Feltmate, catastrophic insurable losses are on the rise with flood risk linked to climate change impacts. In order to mitigate the financial implications of flooding, HAAP aims to support individual property owners in understanding their vulnerability while proposing risk-management solutions. The ultimate aim is to have a more coordinated national approach to flood risk mitigation and to roll HAAP up into a federal initiative.

To date, HAAP has been piloted in Kitchener/Waterloo and Calgary. During this phase:

- Auditors visited 400 homes, giving 6-8 recommendations per home,
- 63% of homeowners implemented 75% of the recommendations within 8 weeks, reducing each homes’ risk of flood damage by approximately 80%,
- Higher frequency actions included:
 - 55% cleaned or repaired eaves troughs
 - 43% inspected their homes for water pooling during major storms
 - 35% disconnected downspouts and redirected water to permeable area
 - 35% moved storage and household items off basement floor
 - 32% extended downspouts to at least 2.5 m away from foundation
 - 30% moved snow storage away from foundation onto permeable area
 - 23% regraded around foundation
- Lower frequency actions included:
 - Installation of sewer backflow prevention
 - Large-scale regrading of property

HAAP is looking to expand into an audit program in Nova Scotia with the EAC and is gauging interest and commitment for the project in Halifax, Truro, and from the Province of Nova Scotia.

The goals of the Nova Scotia HAAP are:

- To enable individuals to understand the risks their property faces due to Nova Scotia’s expected climate change impacts;
- To audit 1800 Nova Scotian homes in 2016;
- To build partnerships with the EAC, ICCA, and municipal and provincial governments,
- To boost awareness and engagement with climate adaptation in Nova Scotia at the individual, community, and provincial level,
- To expand this project so audits are available across the province in the future, with the potential to save Nova Scotians in avoided costs.

In a follow-up presentation given by Dr. Blair Feltmate, program developer, he indicated that next steps are:

- To develop HAAP training material and certification standard (to avoid ‘fly-by-nighters’);
- Determine who pays for HAAP;
- HAAP insurance incentive – work with insurers to develop a position on risk-adjusted premiums/lower deductible/higher cap limit for HAAP home owners, and
- Engage Real Estate Boards to recognize HAAP in listings.

While staff is generally supportive of efforts such as this to increase focus on adaptation to flooding impacts, there are some outstanding concerns that will need to be addressed collaboratively to ensure the project is in line with Halifax Water and municipal approaches, and to maximize the municipal benefit derived from the project. Staff would like the project to include substantial public awareness and education, as an example.

The ICCA has stated that there are possible negative implications to the non-participating neighbouring residences as more stormwater is diverted from the audited homes. More information is needed on the impact to non-participating residents along with proposed solutions to this concern. More information is also needed on how homes will be identified for potential participation and how flood risks will be communicated. The value of this project remains unclear, as the measures proposed and adopted will not necessarily succeed in preventing flooding within the most flood prone areas of HRM.

Staff is currently working to consider flooding more substantively through research, cooperation and programming, and prioritizes initiatives that consider entire flood prone communities instead of individual properties. Current initiatives include: a detailed floodplain study of the Sackville and Little Sackville Rivers, incorporating predicted climate change impacts; the development of a stormwater bylaw; funding application from the Government of Canada to conduct flood risk assessments to increase our understanding of flood risks in HRM; the consideration of flood risks and green infrastructure in the development of the Centre Plan; collaboration with HRM's Emergency Management Office to increase emergency preparedness for flooding and other climate change impacts; and incorporating flooding considerations on a project-specific basis.

HRM operates based on business planning and annual budgeting in order to deliver services to residents based on Council priorities. It is difficult when approached to fund an initiative outside of this framework. The Energy & Environment Program team is striving to take a more comprehensive approach to environmental issues facing the municipality, and to develop more holistic, longer-term programming to achieve progress in these areas. HRM can only sole source to NGOs and academic institutions if they are providing a required service. Staff does not believe the HAAP qualifies as a required municipal service. A grant could be considered to either a non-profit organization or a registered Canadian charitable organization; however the maximum amount available through the HRM Grants Committee is \$5,000. The EAC has stated that it would be seeking a \$20,000 to \$30,000 contribution from the municipality. HRM expects that the Province of Nova Scotia will be the primary funding partner for this project, as the Province has a mandate to address flooding across several departments.

Should the Environment and Sustainability Standing Committee determine to proceed with this project, it should require a proposal by ICCA and EAC that includes a detailed scope and process, performance measurement, a communications plan, a public engagement plan, and specifics on what areas of HRM they plan to target. This proposal should be submitted once funding is secured by the Province and once Truro has agreed to participate in the project, as ICCA and EAC have stated it will not go forward without support from both Truro and HRM.

FINANCIAL IMPLICATIONS

There are no financial implications to the recommendation in this report. The municipality is under no obligation to financially contribute to the HAAP. However, following receipt and review of a formal, detailed proposal, if the Environment and Sustainability Standing Committee and Regional Council were to direct staff to fund this proposed project, a municipal funding source would need to be identified and HRM costs could be \$20,000 to \$30,000, based on representations by the EAC.

COMMUNITY ENGAGEMENT

No community engagement was conducted in the preparation of this report.

ENVIRONMENTAL IMPLICATIONS

There are no environmental implications to this report. The proposed program is expected to have some benefit to participating home owners in terms of mitigating flood risks. It does not, however, provide a solution for flood prone areas in HRM.

ALTERNATIVES

The Environment and Sustainability Standing Committee could recommend that Regional Council approve participation in the HAAP and determine the amount and source of funding. This project will not go forward without participation and funding from Truro, which is yet to be committed.

The Environment and Sustainability Standing Committee could decide not to give further consideration to the proposed HAAP.

ATTACHMENTS

Attachment A: Home Adaptation Audit Program (HAAP) PowerPoint Presentation, Ecology Action Centre, October 1, 2015.

Attachment B: Home Adaptation Audit Program Information Sheet, Ecology Action Centre

A copy of this report can be obtained online at <http://www.halifax.ca/commcoun/index.php> then choose the appropriate Community Council and meeting date, or by contacting the Office of the Municipal Clerk at 902.490.4210, or Fax 902.490.4208.

Original Signed

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Home Adaptation Audit Program (HAAP)

Presented by:

Robin Tress

Coastal Adaptation
Coordinator

Ecology Action Centre



October 1, 2015

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Climate adaptation in Halifax

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- Sackville River Floodplain Mapping
- Municipal Climate Change Action Plan
- ACAS – Atlantic Climate Adaptation Solutions
- Cost-benefit adaptation scenarios (NRCAN)
- Policy exchange
- Sponsored Rain Yards and Living Shorelines
- **Several reports and tools available to developers**
 - **But not homeowners**

Home Adaptation Audit Program



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- 40 point home inspection – inside and out
- Recommendations for reducing flood damage risk
- Recommendations are low or no cost
- Audit takes 1.5-2.5 hours, homeowner accompanies auditor
- Audit season: April – November





Pilot study: Results

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- 63% of audited home owners reported acting upon audit recommendations within 6-8 weeks of audit
- High frequency actions included:
 - 55% cleaned or repaired eaves troughs
 - 43% inspected their homes for water pooling during major storms
 - 35% redirected eaves/downspouts to permeable area
 - 35% moved storage and household items off basement floor
- Other actions:
 - Installation of sewer backflow prevention
 - Large-scale re-grading of property
 - Installing permeable features (rain gardens, permeable surface driveways)
- People love to talk about the audit program



Pilot study: ROI

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Parameters:

- Audit = \$110/house
- Average cost per flooded basement = \$20,537/house (IBC, 2014)

Cost of Auditing 1,000 Houses = 1,000 houses x \$110/house = **\$110,000**

If even 5 of 1000 audited homes avoid flooding, savings = **\$102,685**

Avoided Flood Losses/1,000 Houses (assume 10% of houses otherwise flooded over 10 years without audit): 100 x \$20,537/house = \$2,053,700 savings

Return Ratio (at 10% flood avoidance) = \$110,000 invested/\$2,053,700 return = **1:18.7**

For every \$1 invested in a home, the homeowner avoids almost \$20 damage



Proposed 2016 project

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- Audit 1800 homes in Nova Scotia
- Target high flood risk areas
- Show this works here
- Build base of informed and engaged residents
- Collaborate with municipality and the province
- Address gap in adaptation programs

Why Halifax?

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How Halifax will benefit:

- Real reduction of flood risk
- Contribute to overall resiliency
- Build reputation as climate prepared city

What EAC will contribute:

- History of smart projects
- Demonstrated ability to effect tangible change

What Waterloo will contribute:

- Developed the audit program
- Expertise, funding, and training

What Halifax can contribute:

- ID high risk focus areas
- Help with outreach
- Financial support

Questions?

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Robin Tress

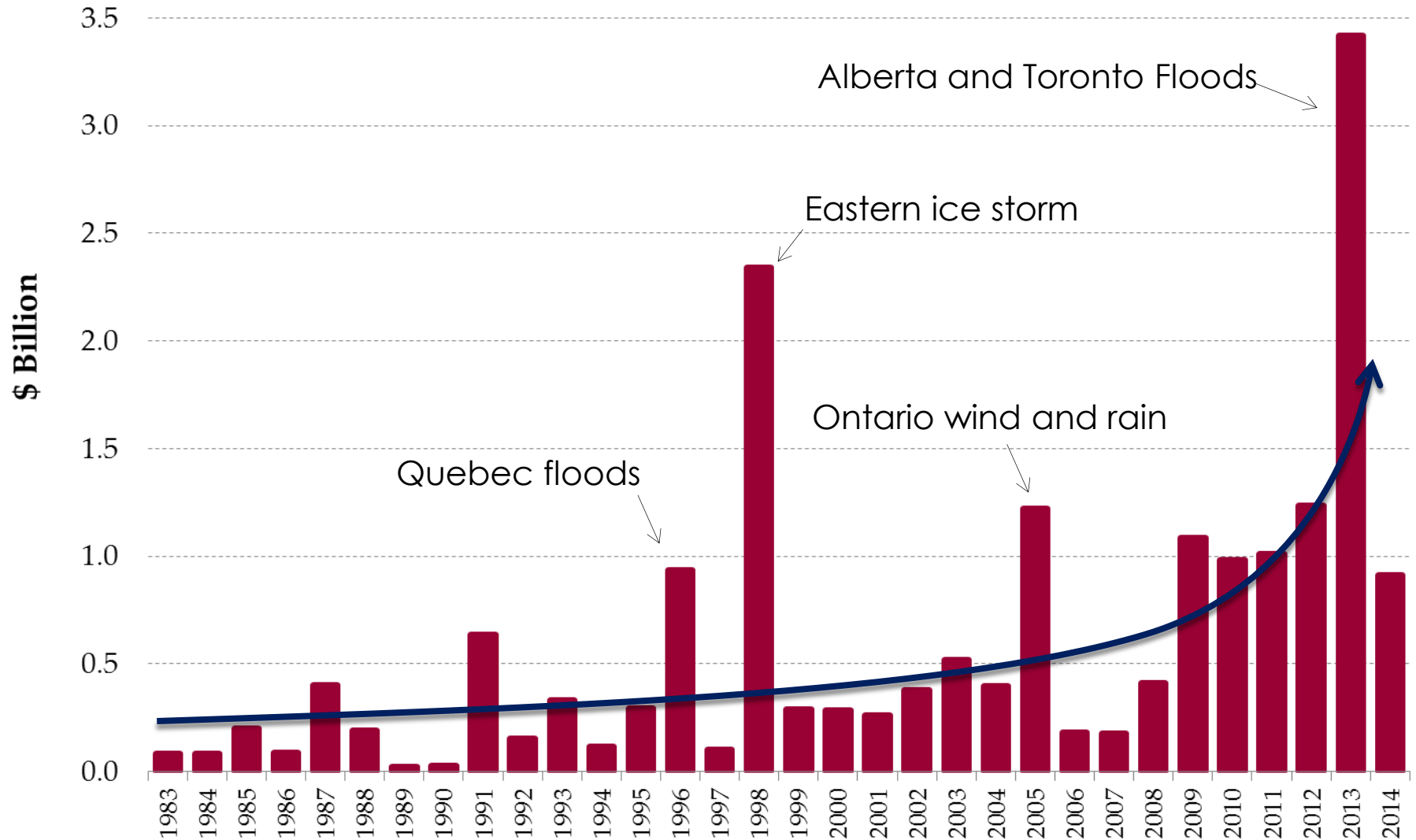
Coastal Adaptation Coordinator

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Canada's Climate Change Challenge: Catastrophic Insurable Losses



Courtesy: Insurance Bureau of Canada



Home Adaptation Audit Program – Intact Centre for Climate Adaptation & Ecology Action Centre

Overview

Climate change presents us with a suite of challenges. While our governments and communities are taking a number of measures to prepare for the impacts and be resilient in the face of climate change, little support is available in the Atlantic region to individual property owners, which exposes them to undue physical and financial risk.

The Home Adaptation Audit Program (HAAP) offers that support, and gives individual property owners a chance to better understand their risk associated with climate change impacts and receive expert advice on how to reduce that risk.

The HAAP was developed by the Intact Centre for Climate Adaptation at the University of Waterloo and has been piloted in Kitchener/Waterloo and Calgary. This pilot was a huge success:

- Auditors visited 400 homes, giving 6-8 recommendations per home
- 63% of homeowners implemented the majority of the recommendations within 8 weeks, reducing each homes' risk of flood damage by approximately 80%
- 91% of participating homeowners said they would recommend the audit to others
- 77% of participating homeowners told an average of 8 people about the audit, leading to a reach of 616 homeowners per 100 audits conducted
- For every \$1 spend on an audit, the homeowner avoids an average of \$7.5 in flood damage risk over 10 years, as demonstrated through the pilot project

The Intact Centre for Climate Adaptation is now ready to expand this pilot project into full-fledged audit programs in Burlington, ON, and, in partnership with the EAC, in Nova Scotia. We're looking for interest and commitment for this project from Halifax, Truro, and the provincial government.

The goals of the Nova Scotia HAAP are:

- To enable individuals to understand the risks their property faces due to Nova Scotia's expected climate change impacts
- To audit 1800 Nova Scotian homes in 2016, avoiding almost \$4M in flood damages
- To build partnerships with the EAC, ICCA, and municipal and provincial governments
- To boost awareness and engagement with climate adaptation in Nova Scotia at the individual, community, and provincial level
- To expand this project so audits are available across the province in the future, saving Nova Scotians millions in avoided flood costs over time

For more information please contact Robin Tress, EAC's Coastal Adaptation Coordinator.
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