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# **Clean Air Council Resilient Homes and Buildings**

Date: May 25th 2018

Time: 10 am – 1 pm

Location: Room 310, Metro Hall, 55 John Street, Toronto, ON, M5V 3C6

# **Meeting Proceedings Links**

* Gabriella Kalapos, Joint Actions Update ([pdf of presentation](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/CAC-250518-1.pdf))
* Brian Kelly, Durham Region, [Resilient House Standard](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/DRCRSNH-Durham-Region-ICLR-Febrary-2018-Final.pdf) ([pdf of presentation](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/Durham-Region-Climate-Resilience-Standard-for-New-Houses.pptx-pics.pdf))
* Dan Sandink, ICLR, Resilient House Resources and Upcoming Actions ([pdf of presentation](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/CAC-May-25-2018-D-Sandink.pdf))  ([ICLR Resources](http://www.iclr.org/)) ([ICLR Videos](https://www.youtube.com/user/ICLRinfo))
* Cheryl Evans, Home Flood Protection Program, Intact Centre on Climate Adaptation ([pdf of presentation](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/Clean-Air-Partnership-presentation-May-25-2018.pdf))
* Stewart Dutfield , City of Toronto, LIC financing for resilience actions research and considerations ([pdf of presentation](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/Toronto_CAC_PresentationMAy25.pdf))
* [LIC Legislation Information](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/LIC-Legislation.pdf)

# **Meeting Summary Notes**

## 1.0 CAC Joint Action Discussion

### **1.1 Municipalities for Climate Innovation Program (MCIP): Transition 2050**

CAP has submitted a funding proposal to FCM under their Transition 2050 funding stream which proposes the development of a “*Centre for the Advancement of Low Carbon Implementation”*.

#### Goal

Implementation teams work to advance climate action and close implementation gaps across pre-identified areas of environmental municipal work. The project would Implementation Teams along three work streams:

1. *Green Development*

Task 1: Background Analysis & Resource and Process Identification

Task 2: Workplan Development and Consultation with GDS Cohort

Task 3: Development of GDS Toolkit compiling processes/frameworks/resources to support advancement of GDS across cohort and wider municipal network

Task 4: Implementation Support for GDS Advancement within GDS Cohort Jurisdictions

Task 5: Internal (Departmental) and External Stakeholder (Developer) Consultations within GDS Cohort Jurisdictions

Task 6: Identification of Uptake Opportunities and Mechanisms and Monitoring of GDS Uptake

Task 7: Documentation and Integration of GDS Cohort Experiences into GDS Toolkit

1. *Home Energy*

Task 1: Development of a Home Energy Efficiency Model Program Toolkit

Task 2: Testing Out the Model Program with Retrofit Team

Task 3: Financing Opportunities for Home Energy Efficiency Retrofits

Task 4: Model Program Tracking and Evaluation Mechanisms

Task 5: Documentation of Strategies, Actions, Experiences and Lessons Learned On Financing and Increasing Uptake of Home Energy Efficiency Retrofits

1. *Corporate (municipal)*

Task 1: Facilitating and Supporting a Municipal Corporate Energy Managers Implementation Team

Development and implementation of their 2019 Conservation Demand Management (CDM) Plan

Benchmarking process for these Plans and their respective actions

Task 2: Facilitating and Supporting a Green Fleets Managers Implementation Team.

Development of Electric Vehicle Business Cases and Electric Vehicle Employee Policies

### **1.2 GreenON Challenge**

CAP has proposed to undertake a pilot project with at least 10 Ontario municipalities to advance their uptake of an LIC-based home energy retrofits.

Year 1 | Planning stage:

* Identify the issues and challenges that arise as pilot municipalities attach LICs to property tax bills;
* Identify the additional administrative requirements that arise;
* Identify key actors (municipal and community) that can support third party delivery agents to increase outreach and uptake; and,
* Identify what mechanisms exist at the local level to reach out to contractors.

Year 2 | Implementation stage:

* Goal to move at least 50% of pilot municipalities to implementation;
* To provide supports to municipalities in doing so;
* To document the approaches, processes, and experiences of municipalities;
* To, in turn, update the draft LIC Toolkit with a view to increase capacity of other Ontario municipalities to uptake a LIC-based home energy retrofit program.

Year 3 | Increasing uptake:

* To on-board another 8 municipalities in advancing a LIC-based home energy retrofit program and identify local partnerships and stakeholders in their jurisdictions for opportunities to increase community level program outreach and promotion in order to increase .uptake.

### **1.3 Urban Sustainability Development Network (USDN): Partner Network Program**

CAP will be submitting a Letter of Interest for the CAC to be a partner network of the USDN.

The USDN is a member-driven practitioner network established in 2008 to accelerate the adoption of sustainability practices in urban areas.

Through their Partner Network Program, the USDN seeks to gain access to a broader network of urban sustainability practitioners in order to accelerate this mission.

A reciprocal partnership with the USDN can help to build CAC capacity by using USDN policy and implementation resources, best practices, and other supports.

### **1.4 CAC Declaration**

A new CAC Declaration gets developed with every new Council term. CAP would like the CAC’s input on what direction they would like to see the Declaration go for the next 4 years? Where do they want their municipalities climate and clean air actions go into the future. Focus more on implementation. More clarity on targets. CSAP will be reaching out to CAC staff to gather their input over the summer so that we can report back to the CAC in the fall with a summary of the suggested feedback from CAC members.

One of the suggested declaration actions would be for the CAC to have a Regional Adaptation Collaborative for southern Ontario municipalities as a Declaration action. Regional Adaptation Collaborative work to catalyse coordinated and sustained adaptation planning, decision-making, and action across climate zones.

The collaborative could serve as a vehicle for southern Ontario municipalities to share best practices, processes, frameworks and other supports while also requiring increased financial and human resources (e.g. 1-2 staff).

## 2.0 Presentations and Discussions

## 2.1 Resilient House Standard | Brian Kelly, Durham Region

Find the full presentation [here](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/Durham-Region-Climate-Resilience-Standard-for-New-Houses.pptx-pics.pdf).

### The Durham Region Climate Resilience Standards for New Homes, 2017

#### Why

* Population of Durham Region is set for rapid increase.
* 53,000+ new houses set to be built between now and 2025.

The municipality recognized that:

* This presented a moment of opportunity to increase building climate resiliency for a new generation; and,
* If new housing stock was built to current Ontario Building Code (OBC) they would not be climate resilient over their lifetime and so incur higher future costs.

There was a need to develop new climate resilience standards for future buildings.

#### What

The Durham Region Climate Resilience Standards for New Homes was produced under contract by the Institute for Catastrophic Lose Reduction (ICLR). They focus on standards aiming to increase building resilience to:

* Basement flooding;
* Extreme wind; and
* Extreme heat.

For each of the 3 areas, hazards and corresponding building science solutions were identified and recommendations offered. Recommendations were designed to be:

* Prescriptive as opposed to performance-based to better guide contractors on the ground;
* Utilize products currently available on the market;
* Cover the full property lot (i.e. building and surrounding land);
* Be standards and not codes; and,
* Focus on low-rise residential buildings.

#### How

Implementation of the Standards is being considered in a number of ways such as:

* Voluntary standards to attract interested innovative contractors.
* Reducing home insurance premiums as incentive to homeowners.
* Inserting the Standards into:
  + regional policies and conditions (e.g. Ops, site servicing agreements);
  + municipal conditions (e.g. OP, secondary plans, subdivision approval, site plans, site servicing approvals, architectural approvals and so on);
  + local building codes (Supplemental Standards to OBC, adopted through local by-laws); and,
  + the Ontario Building Code.

#### Next steps

Durham will be undertaking consultations with stakeholders in the buildings industry to review the climate resilience standards for feasibility, costs and benefits and other considerations with a view to reach “consensus standards”. From here, the Standards are looking to be presented to council in early 2019 and with implementation from 2020.

What can other Municipalities do?

* Introduce the Draft Standard to your building officials / public works / planning staff and develop support
* Adopt the standard into regional and municipal planning procedures and by-laws
* Pass council resolutions to Province requesting incorporation into the OBC

Question: How have you dealt with push back from the development industry?

Answer: The Municipality has begun to push the draft Standards through these channels and associated stakeholders to try and foster collaboration at an early stage.

Question: Why did you choose energy modelling to identify thermal characteristics of the building shell?

Answer: This was included based on the understanding that insulation requirements are not fully understood and so forming prescriptive standards in this area could introduce extra issues. Modelling was considered to be a way to bridge the prescriptive and performance based approach of standards.

Discussion: Concerns were raised that energy modelling is too much of a “black box” and there is some concern that models are not performing as their should when it comes to actual performance.

Question: Is there similar building standards work that divides measures by mitigation and adaptation benefit?

Answer: There has been increased awareness of mitigation actions that address the building envelop are also a resilience action as it makes that building less vulnerable to heat and cold during times of energy disruption. There are plans to update the Green Development Metrics and in particular for how it can increase resilience metrics. For more information on building envelope improvements and resilience, see ACEEE’s [Enhancing Community Resilience through Energy Efficiency.](http://aceee.org/research-report/u1508)

## 2.2 Resilient House Resource and Actions | Dan Sandink, ICLR

Find the full presentation [here](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/CAC-May-25-2018-D-Sandink.pdf). (presentation provides a summary of the various resources available from ICLR.

#### What

ICLR has a number of work streams that could support the work of municipalities in advancing resilient homes and buildings. These include:

1. Research (grey and academic) (e.g. Quick Response Program gathering perishable data on disaster events, flood insurance issues, resilient building construction issues)
2. Flood Protection Technologies (e.g. backwater valves, sump pumps etc.)
3. Consumer and industry education pieces (e.g. Focus on…, Protect your home from… etc.)
4. Videos and animations (e.g. basement flood protection videos, Friday Forums etc.)
5. Cities Adapt case study series (e.g. Cities Adapt to Extreme Rainfall, Extreme Heat and Extreme Weather)
6. Application work
   1. “Insurers Rebuild Stronger”
   2. Construction codes, guidelines, and standards (e.g. Durham Region Climate Resilience Standards for New Homes, CSA Basement Flood Protection Guideline)
7. Addressing critical information gaps (e.g. Wind Resilience Seed Document, Legal measures study)

## 2.3 Home Flood Protection Program & Toronto Home Resilience Program| Cheryl Evans, Intact Centre on Climate Adaptation

Find the full presentation [here](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/Clean-Air-Partnership-presentation-May-25-2018.pdf).

#### What

The Home Flood Risk Protection Program is a comprehensive flood risk education program aiming to:

* Help homeowners reduce their risk of basement flooding and minimize damage if flooding occurs; and,
* Rollout a nation-wide flood-risk reduction education program that provides Canadians with the practical resources they need to reduce their risk of basement flooding.

#### How

The Intact Centre, in partnership with AET Group Inc. environmental consultants, implements the program via:

* Free online self-help resources for home owners; and,
* Onsite flood risk assessment (“Home Flood Protection Assessment”) identifying top priority actions for flood risk reduction and local supports that can help implement these actions.

Assessments have so far been conducted in Burlington (2017-18) and Saskatoon (2018).

### Toronto Home Resilience Program

#### What

The Toronto Home Resilience Program is an evolution of this program and adds general resiliency layers to the risk assessment as well as flood protection. The Program is implemented in the same fashion as the Home Flood Protection Program but provides Toronto-specific emergency preparedness, local contractor, and additional information resources for homeowners.

## 2.4 LIC Financing for Resilience Actions Research & Considerations | Stewart Dutfield, City of Toronto

Find the full presentation [here](http://cleanairpartnership.org/cac/wp-content/uploads/2018/05/Toronto_CAC_PresentationMAy25.pdf).

#### Why

To achieve Transform TO, the homes and buildings sector needs to see rapid and deep reductions in energy consumption. Improved energy efficiency, especially in residential buildings, has been identified as a key area.

#### What

The Home Energy Loan Program (HELP) ran by the City of Toronto provides low interest loans (up to $75,000) for homeowners interested in undertaking energy efficiency, water conservation, and/or renewable energy retrofits. The loan is an LIC applied to the homeowner’s property tax bill.

#### How

Interested home owners are required to meet a range of eligibility criteria including:

* Ownership of a detached, semi-deteched or row house.
* All property owners consent to the program.
* The homeowner’s property tax and utility payments are in good standing.
* The mortgage lender provides written consent (if applicable).

From here a 5-step process is carried out:

1. Application
2. Home energy assessment and funding request
3. Property owner agreement
4. Completion of improvements
5. Repayment

#### Next steps

HELP is currently exploring:

* the integration of home climate resiliency into a broader improvement package;
* equity considerations for current LIC program; and,
* partnerships with financial institutions (in their capacity as funders and mortgage lenders) to increase implementation.

## The Use of LIC for Resilience Measures?

A number of municipalities have rebates/incentives for sump pump, backwater valves and there have been a number of municipalities who have been wondering if LICs can be applied for resilience actions. The legislation allowing for LIC on individual properties mentions water and energy savings but does not specifically mention resilience.

* “work” means a capital work. O. Reg. 586/06, s. 1 (1); O. Reg. 322/12, s. 2 (1).
* constructing energy efficiency works or renewable energy works. O. Reg. 586/06, s. 1 (2); O. Reg. 322/12, s. 2 (2, 3).
* Doesn’t specifically mention of resilience action, but there seems to be recognition of the municipalities authority for them to designate capital works that they wthink would be applicable and of value to them as a municipality.
* The Municipal Act/COTA does provide municipal authority to set up climate change by-laws of which resilience measures can be addressed via that mechanism.
* But would resilience LICs require legislative amendment to make progress within a municipal lawyer’s mind?