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## Environmental Action Committee

### Date

2019/11/12

### Time

9:30 AM

### Location

Civic Centre, Committee Room A - Second Floor,  
300 Civic Centre Drive, Mississauga, Ontario, L5B 3C1

### Members

Matt Mahoney	Councillor - Ward 8 (Chair)
Stephen Dasko	Councillor - Ward 1 (Vice-Chair)
George Carlson	Councillor - Ward 11
Brad Bass	Citizen Member
Chelsea Dalton	Citizen Member
Lea Ann Mallett	Citizen Member
Pujita Verma	Citizen Member
Shazerah Qureshi	Peel Environmental Youth Alliance
Carina Suleiman	University of Toronto Mississauga
Alice Casselman	Association for Canadian Educational Resources
Britt McKee	Ecosource
Melanie Kramer	Credit Valley Conservation
Joel Longland	Partners in Project Green

### Non-Voting Members

Teresa Ierullo	Greening Sacred Spaces
Brad Butt	Mississauga Board of Trade
Sid Gendron	Sawmill Sid Inc.

### Contact

Dayna Obaseki, Legislative Coordinator, Legislative Services  
905-615-3200 ext. 5425  
[dayna.obaseki@mississauga.ca](mailto:dayna.obaseki@mississauga.ca)

### Find it Online

<http://www.mississauga.ca/portal/cityhall/councilcommittees>

## **EAC AGENDA INDEX**

1. **CALL TO ORDER**
2. **APPROVAL OF AGENDA**
3. **DECLARATION OF CONFLICT OF INTEREST**
4. **MINUTES OF PREVIOUS MEETING**
  - 4.1. Environmental Action Committee Minutes - October 8, 2019
5. **DEPUTATIONS**
  - 5.1. Bernadeta Suroweic, Specialist, Integrated Water Management, Credit Valley Conservation to present on the Smart Blue Roof Systems for Flood and Drought Resilience and Adaptation
  - 5.2. Muneef Ahmad, Manager, Stormwater Projects to present on the Stormwater Master Plan
  - 5.3. Leya Barry, Climate Change Specialist to present on the final version of the Climate Change Action Plan (Item 8.1)
6. **PUBLIC QUESTION PERIOD - 15 Minute Limit (5 Minutes per Speaker)**

Pursuant to Section 42 of the *Council Procedure By-law 0139-2013*, as amended:

Environmental Action Committee may grant permission to a member of the public to ask a question of Environmental Action Committee, with the following provisions:

  1. The question must pertain to a specific item on the current agenda and the speaker will state which item the question is related to.
  2. A person asking a question shall limit any background explanation to two (2) statements, followed by the question.
  3. The total speaking time shall be five (5) minutes maximum, per speaker.
7. **MATTERS TO BE CONSIDERED**
  - 7.1. Paperless Agendas (Verbal)
  - 7.2. Environmental Action Committee Work Plan
8. **INFORMATION ITEMS**

- 
- 8.1. Final Climate Change Action Plan Memo (**Item 5.3**)
  - 8.2. 2020 Environmental Action Committee Meeting Dates
  9. **OTHER BUSINESS**
  10. **ENQUIRIES**
  11. **DATE OF NEXT MEETING(S)**  
  
Tuesday, December 10, 2019 at 9:30am  
Committee Room A, Civic Centre  
300 City Centre Drive  
Mississauga, ON L5B 3C1
  12. **ADJOURNMENT**

# City of Mississauga

# Minutes



## Environmental Action Committee

### Date

2019/10/08

### Time

9:30 AM

### Location

Civic Centre, Committee Room A - Second Floor,  
300 Civic Centre Drive, Mississauga, Ontario, L5B 3C1

### Members Present

Matt Mahoney	Councillor - Ward 8 (Chair)
Stephen Dasko	Councillor - Ward 1 (Vice-Chair)
George Carlson	Councillor - Ward 11
Chelsea Dalton	Citizen Member
Lea Ann Mallett	Citizen Member
Pujita Verma	Citizen Member
Shazerah Qureshi	Peel Environmental Youth Alliance
Carina Suleiman	University of Toronto Mississauga
Melanie Kramer	Credit Valley Conservation
Joel Longland	Partners in Project Green

### Non-Voting Members

Alice Casselman	Association for Canadian Educational Resources
Sid Gendron	Sawmill Sid Inc.

### Members Absent

Brad Bass	Citizen Member
Britt McKee	Ecosource
Brad Butt	Mississauga Board of Trade
Teresa Ierullo	Greening Sacred Spaces

### Staff Present

Dianne Zimmerman, Manager, Environment  
 Lisa Urbani, Environment Research Assistant, Environment  
 Diane Gibson, Waste Management Assistant, Waste Management  
 Jamie Ferguson, Manager, Park Services  
 Anna Ferguson, Parks Community Development Assistant, Park Services  
 Diana Suzuki-Bracewell, Supervisor, Environmental Outreach  
 Dayna Obaseki, Legislative Coordinator, Legislative Services

### Find it online

<http://www.mississauga.ca/portal/cityhall/environmentalactioncommittee>

1. **CALL TO ORDER** – 9:34 AM2. **APPROVAL OF AGENDA**Approved (L. Mallet)3. **DECLARATION OF CONFLICT OF INTEREST** – Nil.4. **MINUTES OF PREVIOUS MEETING**4.1. Environmental Action Committee Minutes – September 9, 2019Approved (C. Dalton)5. **DEPUTATIONS**5.1. Adopt-a-Park and Litter Prevention

Diane Gibson, Waste Diversion Assistant, Parks, Forestry and Environment

Diane Gibson provided an overview on the Adopt-A-Park Environmental Action Committee Participation. Ms. Gibson outlined what the City of Mississauga is currently doing to help prevent litter, such as strategically placing waste container around the City, the Debris and Anti-Littering By-law 219-85, Mississauga's 20 Minute Makeovers, and participating in the Clean Canada Together initiative. The Adopt a Park or Street is a community focused program with a formal process and commitment of three clean-ups per year for a span of two years. The Environmental Action Committee Members have agreed to support the Adopt-A-Park Program and Pujita Verma, Citizen Member will coordinate dates for clean-ups in 2020. Anna Ferguson, Parks Community Development Assistant, Park Services provided a sample display of a clean-up kit for a small group of five individuals that includes, bags, gloves, and sanitizer.

Members of the Committee spoke to the matter and raised the following questions and concerns;

- Advocated for a fall clean-up in addition to spring clean-up;
- Expressed that low canopy areas need more focus;
- Suggested coordinating a tree planting in conjunction with a park clean-up;
- Inquired about the involvement from the schools;
- Inquired if the clean-up kit includes a tracking sheet;
  - Suggested the use of tracking application on a mobile device for ease.
- Inquired if the clean-up is encouraging separating the litter (garbage/recycling); and
- Inquired if there is signage and bins located at entrance and exit of the parks.

Ms. Gibson and Jamie Ferguson, Manager, Park Services responded to the questions from the Members of the Committee;

- The schools are involved as the students partake in their own Ecosource and Climate Change Program initiatives.

- The kit includes safety instructions, a writing utensil and a tracking sheet to record what items are being picked-up.
- There is misconception around clean and contaminated recyclables. The main focus of the program is to get the litter out of the parks. However, during the shoreline clean-up blue bags were available to separate the litter.
  - Educating the public by providing graphics as examples to make the separation of litter easier to decipher through.
- Bins are located at the entrance and exit of each park trail as well as though out the trail. During the winter season bins are decreased and increased during the summer season. Currently working on more signage to help further educate and communicate with the public.

#### RECOMMENDATION

That the deputation and associated presentation by Diane Gibson, Waste Diversion Assistant, Parks, Forestry and Environment with respect to Adopt-a-Park and Litter Prevention be received for information.

Received (Councillor Carlson)  
Recommendation EAC-0033-2019

#### 5.2. Waste Reduction Week

Diane Gibson, Waste Diversion Assistant, Parks, Forestry and Environment

Diane Gibson provided an overview on the Waste Reduction Week in Canada from October 21 – October 27, 2019. Ms. Gibson noted that in 2001, a national program was established by the Recycling Council of Ontario. A variety of organizations have a collection drive that allows the public the opportunity to donate old clothing and electronics. The City of Mississauga has a number of 2019 Collection locations that include all community centres, the Civic Centre, Central Library and Garry Morden Training Center.

Members of the Committee spoke to the matter and raised the following questions and concerns;

- Suggested expanding the targeted audiences to include moving companies and superintendents of apartment buildings;
- Suggested the lost and found boxes at schools to be donated at the end of each school year;
- Suggested coordination with the schools to help further expand Waste Reduction Week and the program;
- Inquired if the trading and renting items are presented as options;
- Suggested further expanding the items being donated and/or at hockey swaps; and
- Suggested Repair Cafés.

Ms. Gibson and Joel Longland, Group Representative (PPG) responded to the questions from the Members of the Committee;

- The Region of Peel is working with multi-resident buildings.

- Partners on Project Green mainly focus on business sustainability, however can have Diabetes Canada reach out to the schools regarding their involvement.
- The Ontario's Textile Diversion Symposium presents a list of helpful waste reduction options and uses social media to further educate the public.
- Community Centres are looking into further expanding the items collected in donation bins to include bikes, however want to ensure there is not an overhaul of bins.

#### RECOMMENDATION

That the deputation and associated presentation by Diane Gibson, Waste Diversion Assistant, Parks, Forestry and Environment with respect to Waste Reduction Week be received for information.

Received (Councillor Dasko)  
Recommendation EAC-0034-2019

#### 5.3. Seabin Litter Collection Container Jamie Ferguson, Manager, Park Services

Jamie Ferguson provided an overview on the Marina Seabin Project. Mr. Ferguson outlined the functionality of the Seabin, which consists of capturing up 20kg of waste of small to large debris, micro plastics, oil and fuel. The projected date for the installation in the Credit Village Marina is August 29, 2019. The seabins have no impact on the marine life and does not operate during the winter season.

Members of the Committee spoke to the matter and raised the following questions regarding the power functionality, whether the device can be anchored off-shore and the type of feedback received.

Mr. Ferguson responded to the questions from the Members of the Committee by noting the unit is electrically wired and works off a low electric motor that connects to a wall-base unit that goes out to daily to collect waste. Due to the electrically wiring anchoring offshore would require amendments to the wiring. The feedback has been positive - the marina looks cleaner, it is a LEAN initiative, and the device's popularity is increasing in the private sector.

#### RECOMMENDATION

That the deputation and associated presentation by Jamie Ferguson, Manager, Park Services with respect to Seabin Litter Collection Container be received for information.

Received (J. Longland)  
Recommendation EAC-0035-2019

#### 6. PUBLIC QUESTION PERIOD - 15 Minute Limit (5 Minutes per Speaker)

No members of the public requested to speak.

## 7. **MATTERS CONSIDERED**

### 7.1. **Group Representative EAC Vacancy (Verbal)**

Dayna Obaseki, Legislative Coordinator noted currently there is a vacant spot on the Environmental Action Committee under the Community Group Representative Members. Ms. Obaseki further noted that the previously selected Peel Aboriginal Network (The Indigenous Network) is unable to provide a representative at this time to sit on the Committee. The Members of the Committee voted that Alice Casselman, Non-Voting Community Group Representative for the Association for Canadian Educational Resources fill the vacant spot becoming a voting Group Representative.

#### **RECOMMENDATION**

1. That the verbal update regarding the Group Representative EAC Vacancy be received.
2. That the existing members of the Environmental Action Committee have selected Alice Casselman, Association for Canadian Educational Resources, Non-Voting Member to fill the Group Representative EAC Vacancy and to become a Voting Member.

Received/Approved (Councillor Dasko)  
Recommendation EAC-0036-2019

### 7.2. **Environmental Action Committee Work Plan**

#### **RECOMMENDATION**

That the Environmental Action Committee Work Plan be approved as discussed at the October 8, 2019 Environmental Action Committee meeting.

Received/Approved (M. Kramer)  
Recommendation EAC-0037-2019

## 8. **INFORMATION ITEMS**

### 8.1. **Climate Change Action Plan Consultation Opportunities**

Dianne Zimmerman, Manager, Environment presented a slide deck with the dates and alternative opportunities to provide feedback on the City's Climate Change Action Plan. Ms. Zimmerman noted how the huge turnout and how successful the last two consultations were. Ms. Zimmerman also encouraged Members to send these opportunities to their networks to provide feedback.

Members of the Committee inquired if what type of feedback has been received and Ms. Zimmerman noted the feedback has been positive.



**RECOMMENDATION**

That the Climate Change Action Plan Consultation Opportunities be received for information.

Received (C. Dalton)

Recommendation EAC-0038-2019

9. **OTHER BUSINESS**

9.1. Project Crossroads Update by Alice Casselman, Group Representative (**Verbal**)

Alice Casselman provided an update on the initially planning session regarding Project Crossroads. Sid Gendron, Group Representative suggested that trees planted should be fruit trees that could help feed the community as well as help from an environmental perspective.

10. **ENQUIRIES**

10.1. Melanie Kramer, Group Representative inquired about how the Committee receives updates after substantial items go to General Committee and Council. Ms. Kramer specifically inquired about a deputation regarding the Climate Emergency Declaration and the end result of that recommendation.

Councillor Mahoney responded by noting that the City officially declared a Climate Emergency as a result of that deputation recommendation. Substantial updates will be included in the EAC work plan.

10.2. Alice Casselman, Group Representative inquired about the lack of green space in the Lakeview Site. Councillor Dasko responded that the local resident group meeting did not display the entire site that includes a number of parks, 67 acres of parkland as well as an eco-park named after the late Councillor Tovey.

Chelsea Dalton, Citizen Member inquired if the Lakeview site will have deep lake water cooling. Councillor Dasko responded by noting that the current focus is on bigger items, such as vacuum waste and district energy.

11. **DATE OF NEXT MEETING(S)** - Tuesday, November 12, 2019 - 9:30am, Committee Room A

12. **ADJOURNMENT** – 10:53AM (Councillor Carlson)



**Credit Valley  
Conservation**  
inspired by nature

5.1 - 1

## **Smart Blue Roof Systems: An Innovative Green Infrastructure Approach for Flood and Drought Resilience and Adaptation**

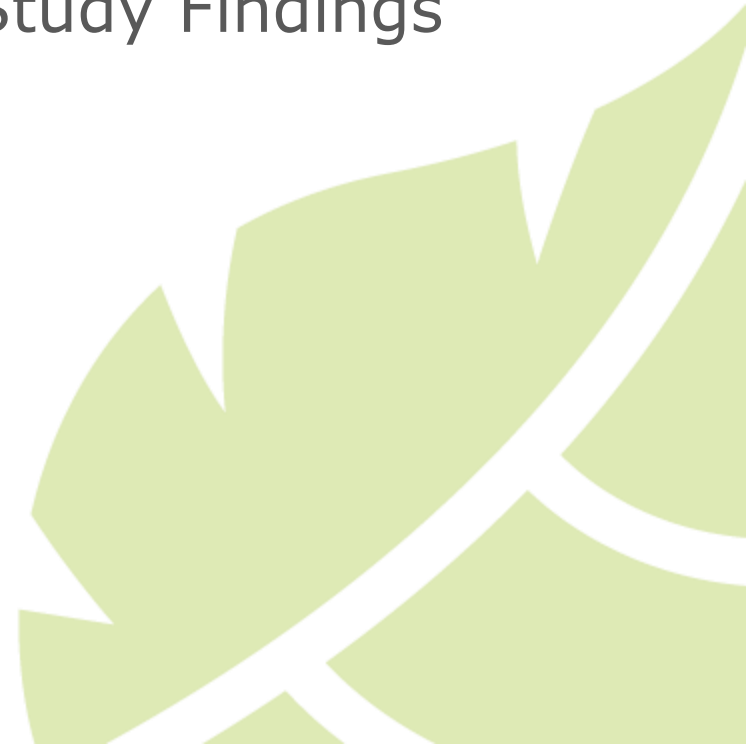
November 12<sup>th</sup>, 2019

Bernadeta Surowiec  
Credit Valley Conservation



## Outline

- Background
- Smart Blue Roof Feasibility Study Findings
- Transferability



## Smart Blue Roof Feasibility Study



FEDERATION  
OF CANADIAN  
MUNICIPALITIES

FÉDÉRATION  
CANADIENNE DES  
MUNICIPALITÉS



# ICI Sector Stormwater Management



Industrial



Commercial



Institutional

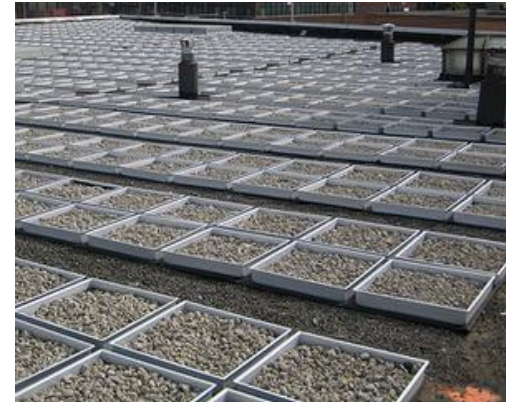
# The Evolution of Rooftop Stormwater Management



Conventional Flat Roof



Green Roof

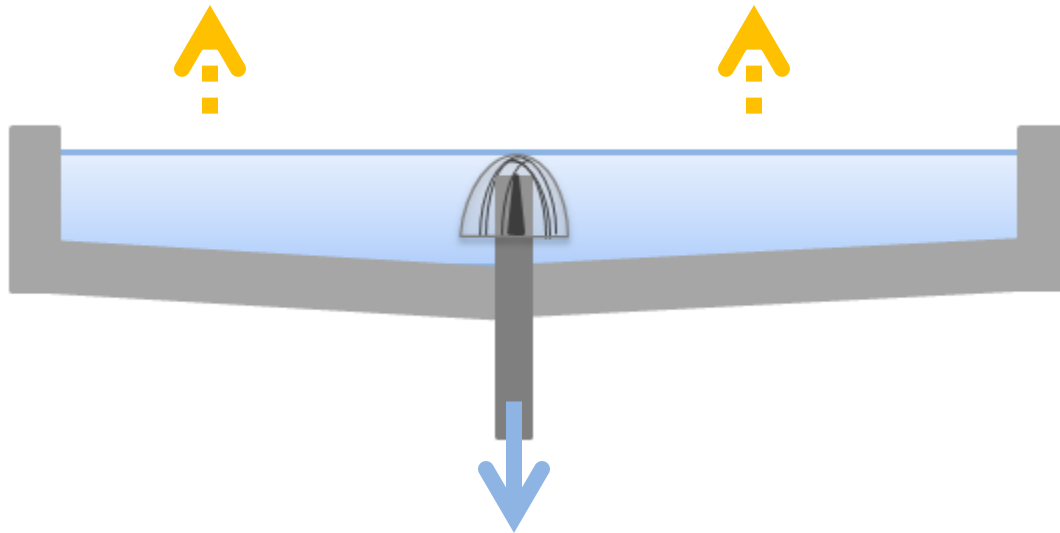


Blue Roof



## Defining Blue Roofs

- Temporary detention of rainwater on flat, low-sloped roofs
  - System stores and slowly releases stormwater



# Active vs. Passive Blue Roofs

## Active

- Valve configuration and controller used to regulate roof discharge
- Controller programmed to optimize release of ponded water
- “Smart” system approach



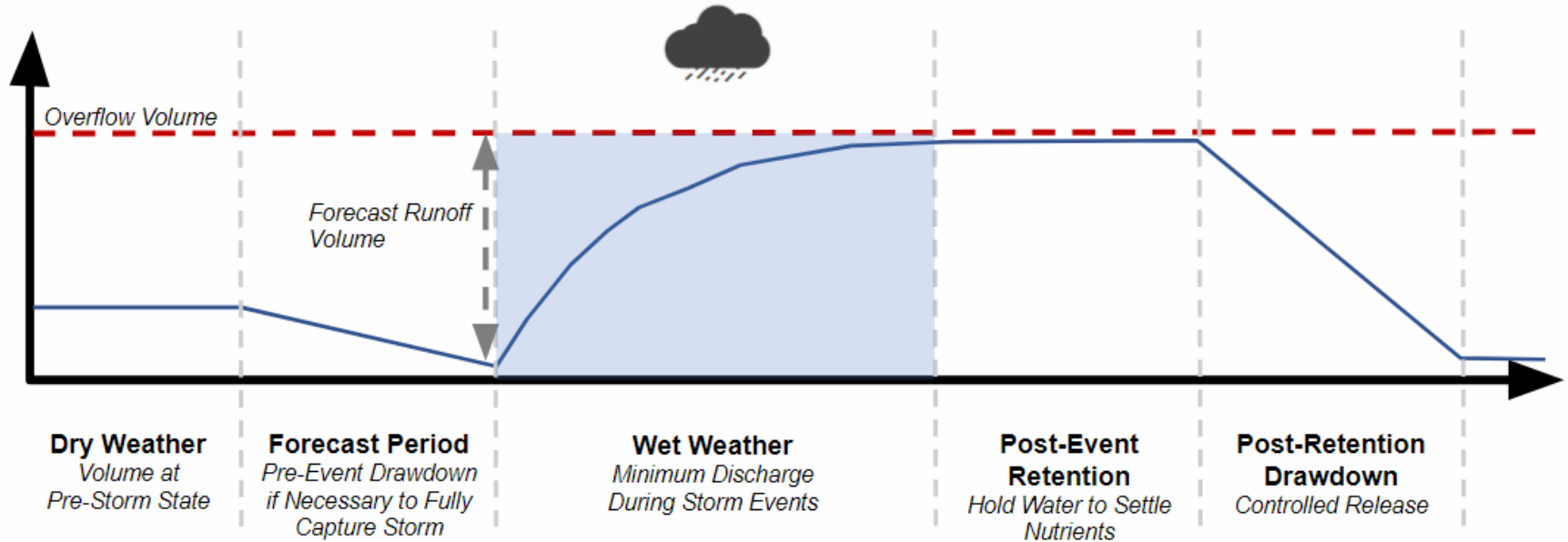
## Passive

- Use of stagnant hydraulic structures such as weirs, drains, orifice plates to regulate the release of rainwater from a rooftop



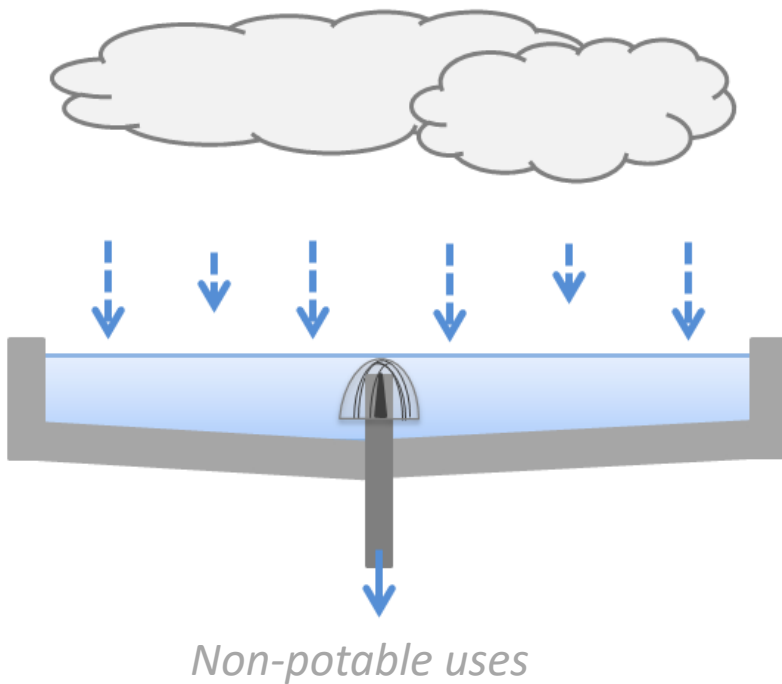


# Smart Blue Roof Control Logic

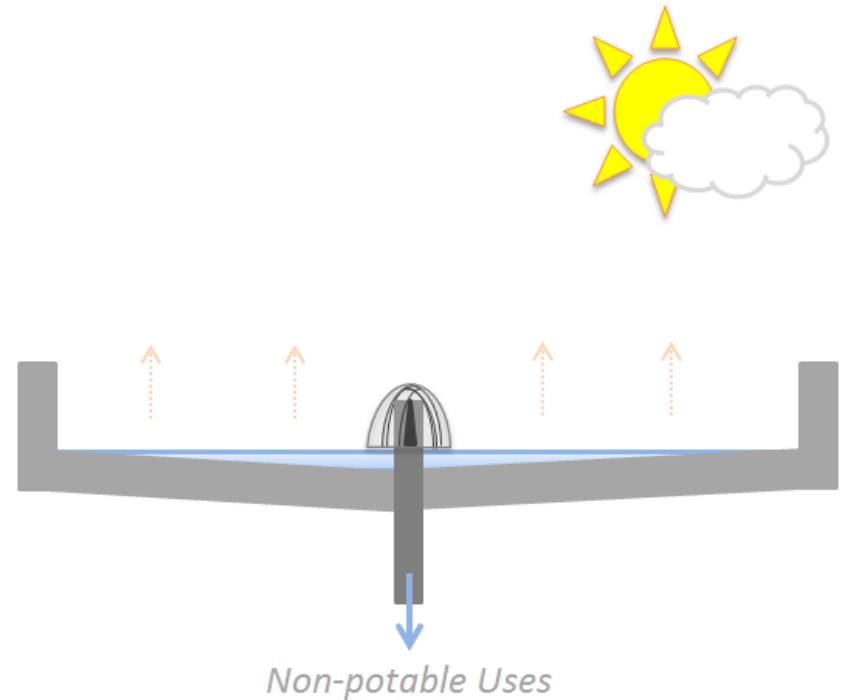


## Blue Roofs Improve Resiliency Against...

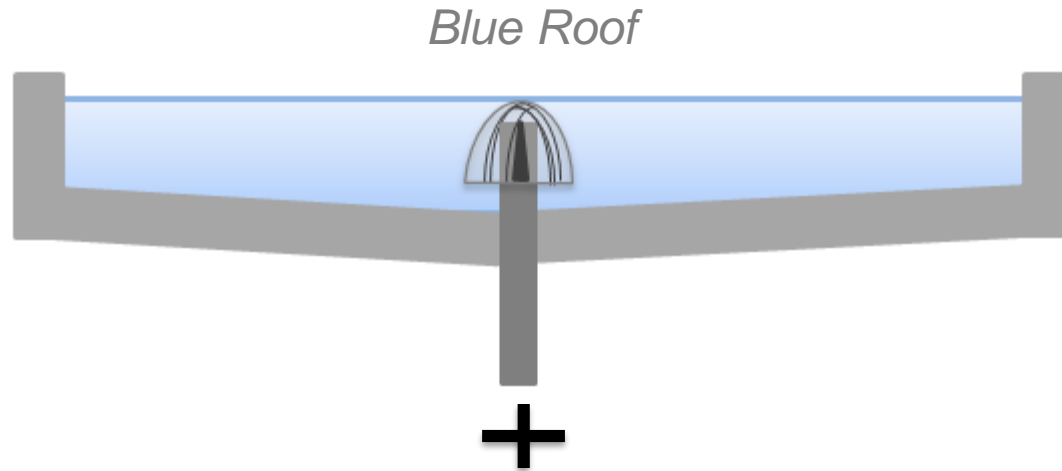
### 1. Flood Conditions



### 2. Drought Conditions



# Coupling Smart Blue Roof Systems



*Rainwater Harvesting Tank*



*Enhanced Grass Swale*



*Subsurface Chambers*



# CVC Head Office as a Template





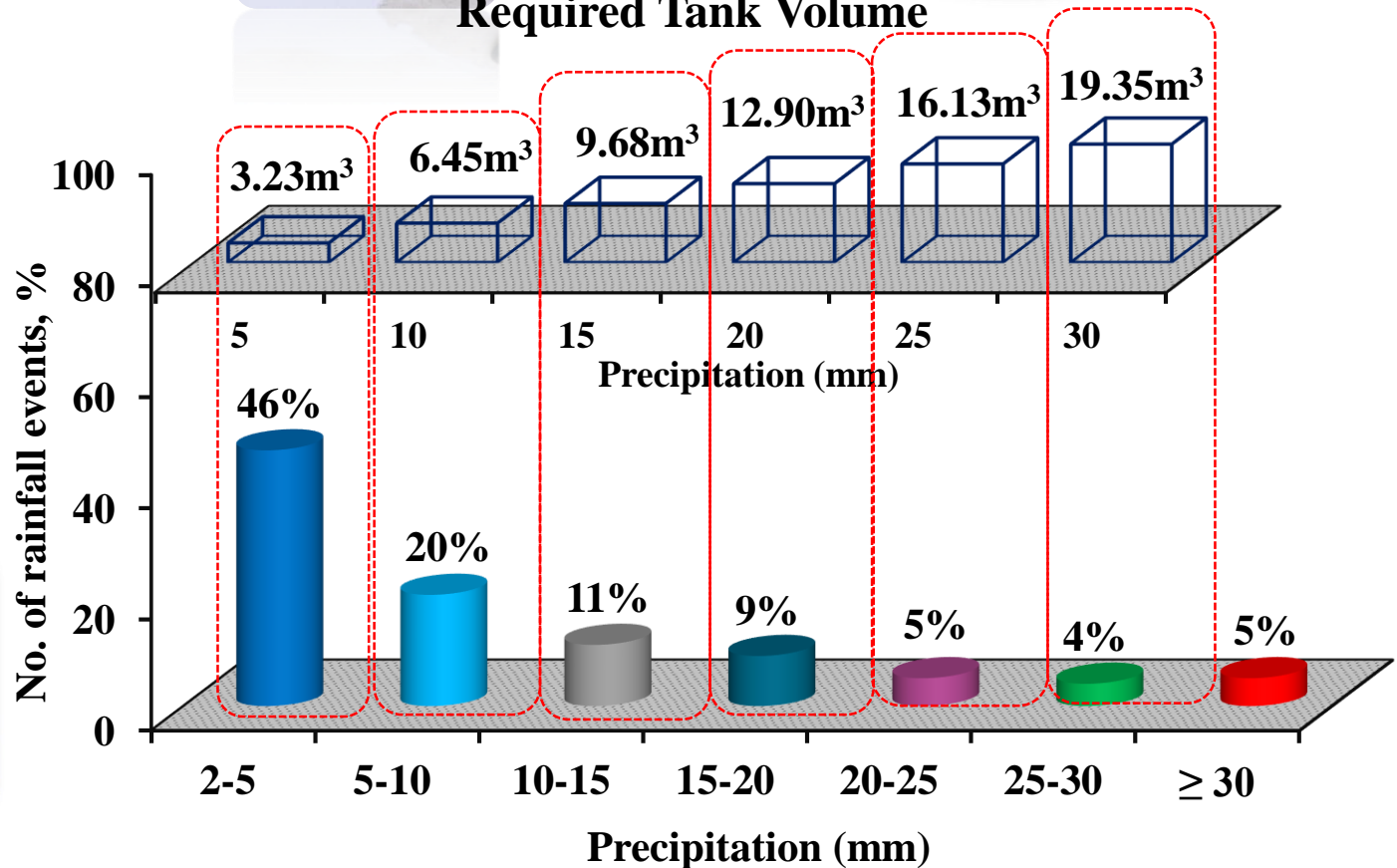
# Can't We Just Install a Bigger Tank? <sup>5.1 - 12</sup>



Parapet wall: 450mm



Required Tank Volume

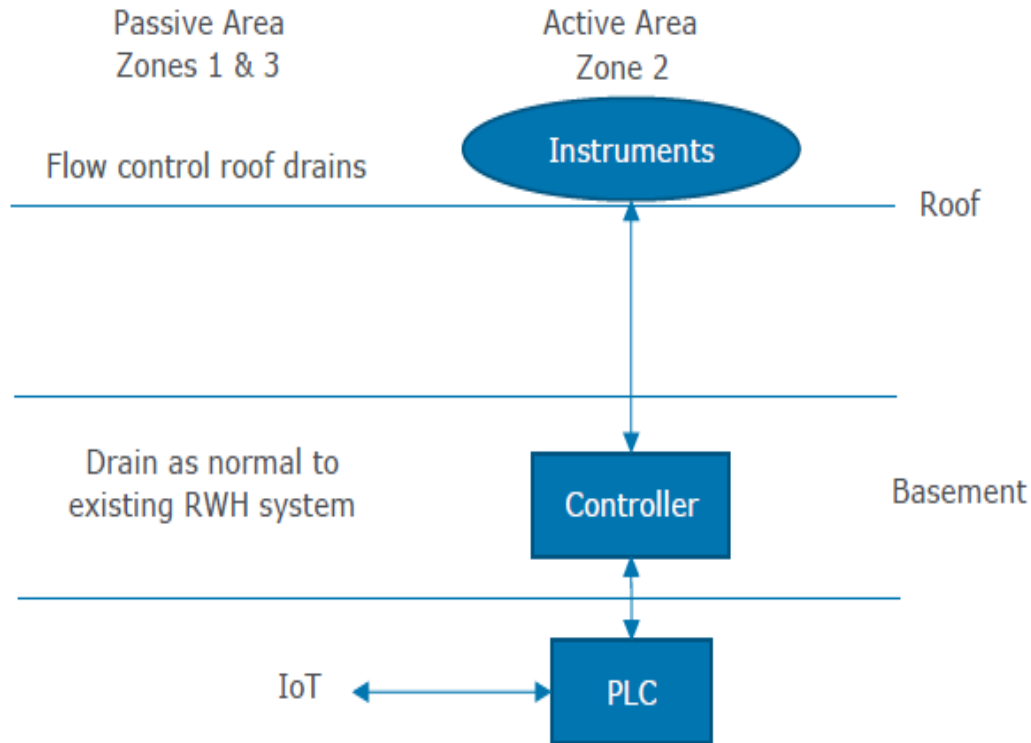


## Thinking Outside the Tank

- Currently the RWH tank storage is equal to 7 mm in rooftop storage
- The CVC office roof has the capacity to store 180 mm of water depth



# Schematic of the Smart Blue Roof and RWH System



## Benefits of Smart Blue Roof Systems

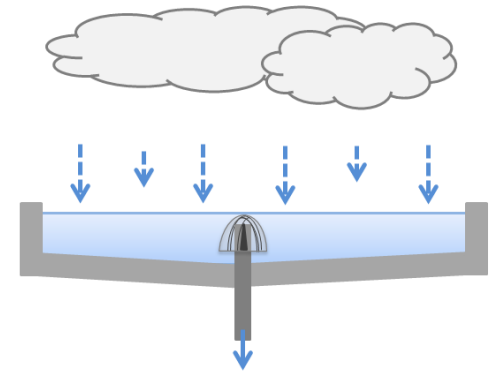


- ✓ Optimized system
  - ✓ Stormwater management
  - ✓ Water Efficiency
  - ✓ Energy Efficiency
- ✓ Benefits property owners, municipalities and the community



## Technical Feasibility Stormwater Management

- Roof structural capacity equivalent to 180 mm ponding depth
- Blue roof storage volume  $16 \text{ m}^3$  + rainwater harvesting tank  $5 \text{ m}^3$ 
  - Total storage for the entire system is  **$21 \text{ m}^3$**
- Smart blue roofs provide:
  - Peak flow control
  - Runoff mitigation



*(100-year Mississauga design storm event captured by system)*

## Technical Feasibility Water Reuse

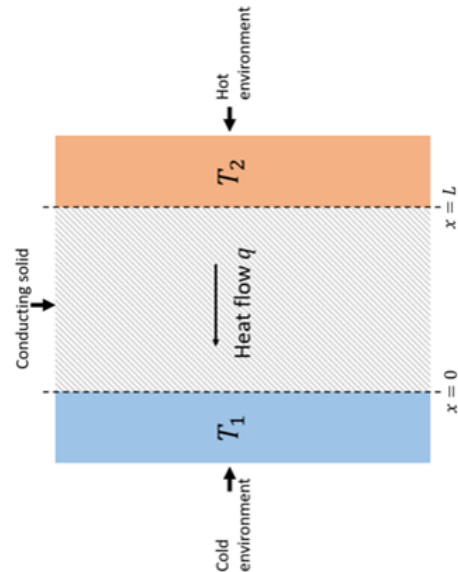
- Current average non-potable water demand **1.58 m<sup>3</sup>/day**
- Current average potable and non-potable water demand **5.68 m<sup>3</sup>/day**



- Smart blue roof with rainwater harvesting system can meet water demands of **8.84 m<sup>3</sup>/day**  
*(if rainwater was stored on roof for a maximum of three days)*
- Opportunity to expand non-potable uses at CVC office  
(ie. irrigation)

# Technical Feasibility

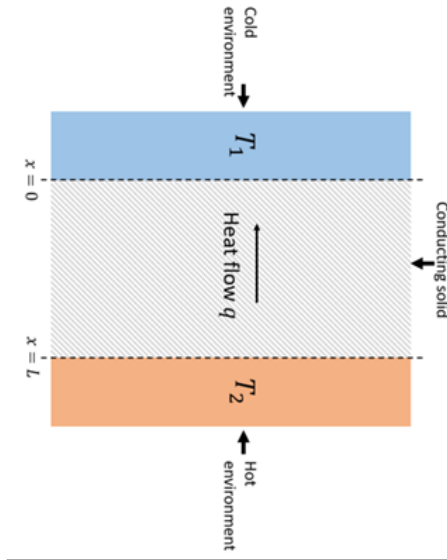
## Evaporative Cooling



**CVC Office Without Smart  
Blue Roof**

Heat flows into ceiling  
through roof from liner

21.3 GJ of heat is added onto  
the HVAC system load



**CVC Office With Smart  
Blue Roof**

Heat flows from ceiling  
through roof into water




13.3 GJ of heat is  
removed from the load on  
the HVAC system

**0.56 kg/y/m<sup>2</sup> GHG Reduction**

# Financial Feasibility

## Economies of Scale

5.1 - 19

	CVC Head Office	Street Scale	Neighbourhood Scale
			
<b>BENEFITS</b>			
Reduction in Pond Storage Volume Requirement (m <sup>3</sup> )			
Stormwater Benefits & Savings to Landowner * (\$/yr)			
Annual Water Savings (m <sup>3</sup> /yr) & Water Purchasing Cost Savings (\$/yr)			
Annual Energy Savings (\$/yr)			
<b>Stormwater Benefits &amp; Savings to Municipality</b>			
Property Tax Revenue (\$/yr)			
Avoided Land Acquisition Costs			
Avoided Flooding Damages			
Avoided Storm Sewer Pipe Replacement			
Avoided Matheson Pond Construction Cost			
<b>COSTS</b>			
Non-scalable retrofits			
Scalable retrofits			
Liner			
Smart system components (controller, software, development and commissioning)			
Annual Operation & Maintenance (\$/yr)			

→  
Cost-Benefit Increases

# Smart Blue Roof Stakeholder Workshop

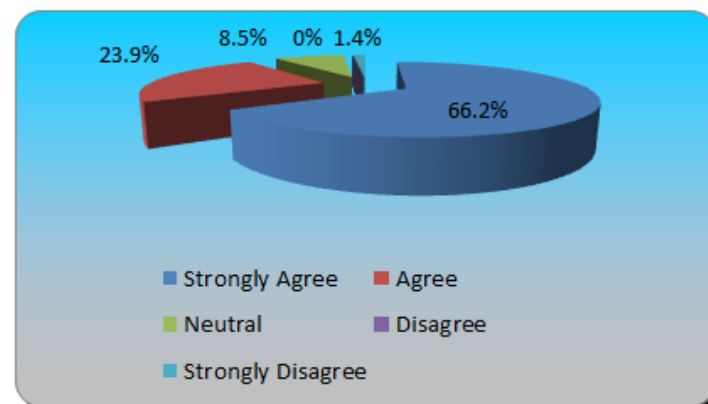
February 7<sup>th</sup>, 2019



## Smart Blue Roof Pilot Interest

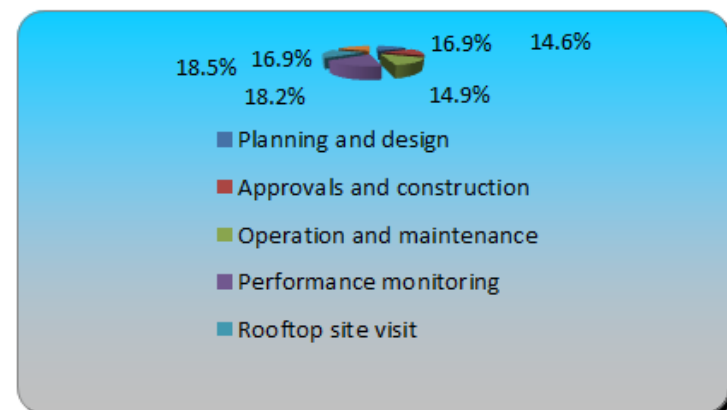
22.) I see value in building a smart blue roof demonstration/pilot project at the CVC head office in Mississauga? (multiple choice)

	Responses	
Strongly Agree	47	66.20%
Agree	17	23.94%
Neutral	6	8.45%
Disagree	0	0%
Strongly Disagree	1	1.41%
<b>Totals</b>	<b>71</b>	<b>100%</b>




23.) Should Credit Valley Conservation implement a pilot smart blue roof at their head office I would be most interested in the following: Select all that apply (multiple choice)

	Responses	
Planning and design	52	16.88%
Approvals and construction	45	14.61%
Operation and maintenance	46	14.94%
Performance monitoring	56	18.18%
Rooftop site visit	52	16.88%
Lessons learned	57	18.51%
<b>Totals</b>	<b>308</b>	<b>100%</b>





# For Project Updates



**Sustainable Technologies**  
 EVALUATION PROGRAM

Fostering Sustainability  
 Through Innovation

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## Blue Roofs

While green roof technology has been one of the main focus areas in the realm of low impact development for more than a decade, blue roofs are increasingly being recognized as a viable and cost-effective alternative for rooftop stormwater management. On blue roofs, stormwater is detained and then slowly released over time through the use of flow control devices or structures.

The resulting stormwater peak flow reduction is particularly important in areas with combined sewers, like Toronto, where large storm events result in overflows of untreated stormwater and sewage being discharged directly into rivers and lakes. In addition to reducing stormwater peak flows, this practice can also reduce the total volume of runoff from the roof through evaporation when designed appropriately. Monitoring of blue roof systems in New York demonstrated that they were capable of retaining significantly more runoff than a reference roof with no flow controls.<sup>1</sup>


Blue roof technology can be applied on flat roofs of buildings that are structurally capable of accommodating the additional load of system components and detained stormwater. Several different blue roof configurations are possible, including:

- flow-restricting roof drains;
- modular tray systems, weighed down with ballast; and
- check dams installed to pond sheet flow to roof drains.

The suitability of a blue roof and potential design options for a given building are determined based on various factors, including structural capacity, roof type and slope, local climate and local regulatory requirements. For example, the Ontario Building Code (O.Reg. 332/12) specifies the maximum allowable drain down time (24 hours) and ponding depth (15 cm) for rooftops where a flow control roof drain is installed.

<sup>1</sup>New York City Dept. of Environmental Protection, 2012. NYC Green Infrastructure Plan: 2012 Green Infrastructure Pilot Monitoring Report.

Photo credit: NYC Dept. of Environmental Protection



### Projects

» [Investigating the technical and financial feasibility of a smart blue roof](#)

### Downloads

[Opportunities for Building-integrated Low Impact Development](#)  
620 kB PDF

### Interested in learning more?

» [LID Stormwater Management Planning and Design Wiki: Blue Roofs](#)

» [NYC DEP Green Infrastructure Pilot Monitoring Report \(2012\)](#)

**inspired by nature**





# Stormwater Master Plan – Environmental Action Committee

November 12, 2019

INFRASTRUCTURE PLANNING & ENGINEERING  
MUNEEF AHMAD, MANAGER-STORMWATER PROJECTS

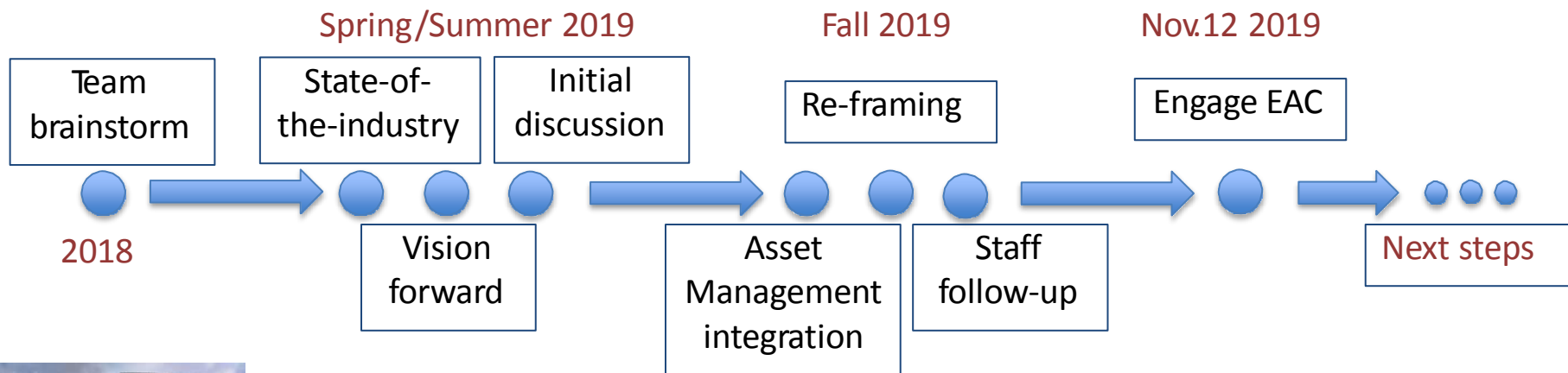


## Goal

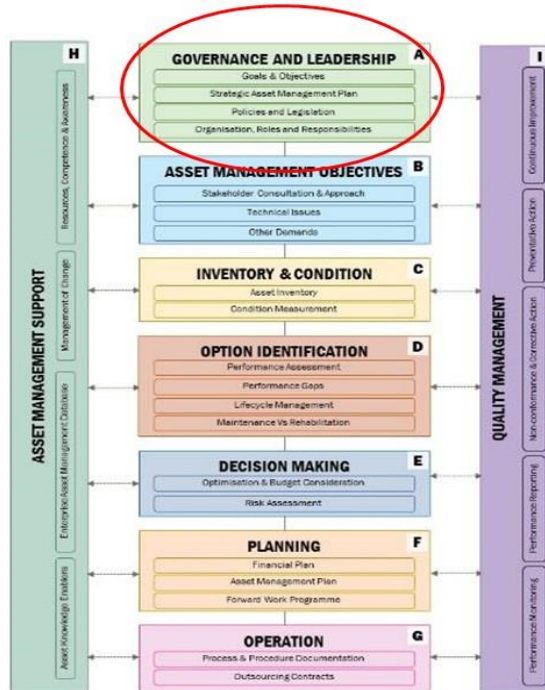
- Similar to City's TMP, derive a vision that goes beyond the 10-year plan and assists to prioritize future spending
- Consultant work would follow to complete technical work to support the Master Plan



# Process



# SW Master Plan & Asset Management Plan



What do we want?

What services do we want now and in the future?

What do we have?

What condition is it in?

What is it worth?

What do we need to do to it?

What shall we do ?

When do we need to it?

How much will it cost?

How to deliver it?



storm water

Stormwater MASTER PLAN



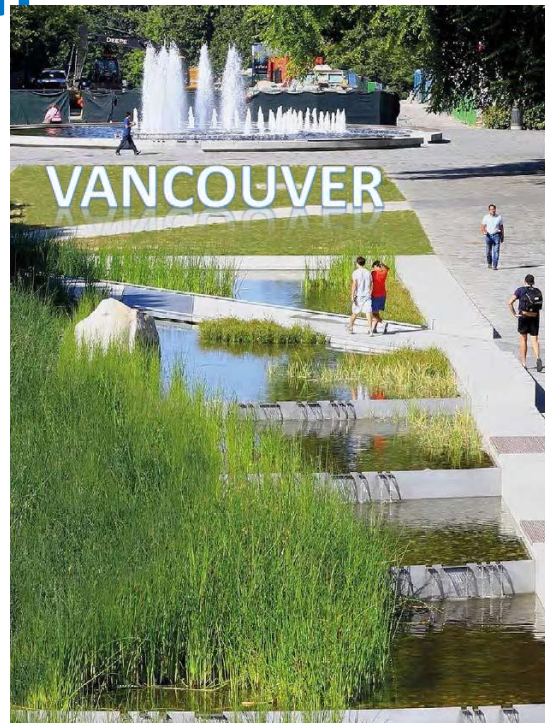
## A Vision-based Approach

CAPE TOWN



VERSUS

VANCOUVER



 **storm  
water**

*Stormwater*  
MASTER PLAN

A nighttime photograph of a city skyline, likely Mississauga, with numerous illuminated high-rise buildings against a dark blue sky. The lights from the buildings create a warm, golden glow. The text is overlaid on the left side of the image.

# Our Vision for the Future

Mississauga will inspire the world as a dynamic and beautiful global city for creativity and innovation, with vibrant, safe and connected communities; where we celebrate the rich diversity of our cultures, our historic villages, Lake Ontario and the Credit River valley.  
**A place where people choose to be.**



# A Vision-based Approach



- BUILD & MAINTAIN INFRASTRUCTURE
- CREATE GREAT PUBLIC SPACES
- BUILD VIBRANT COMMUNITIES

# A Vision-based Approach



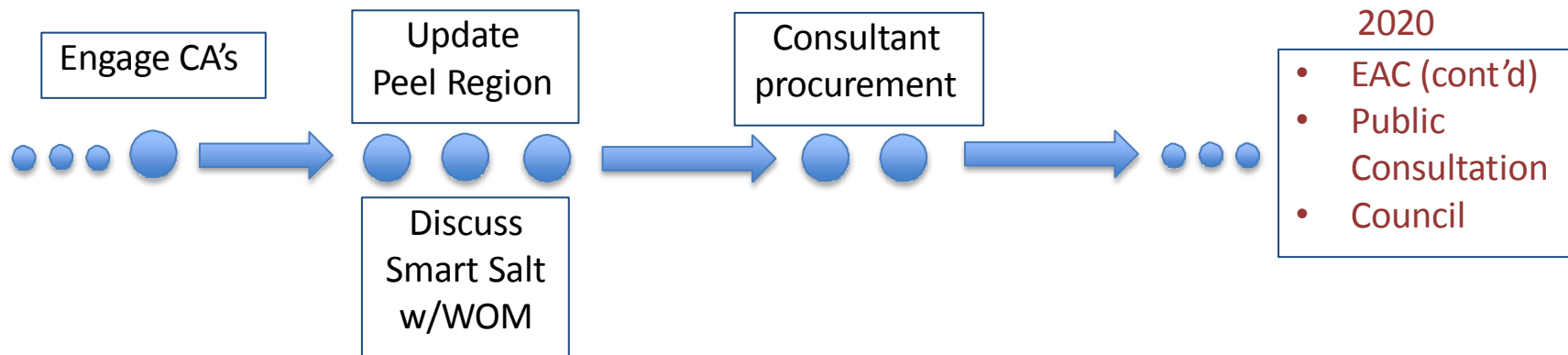
## VALUE PROPOSITION

CONNECT THE CITY  
WITH RAIN AS A  
RESOURCE





## Next steps



# *Build* **BEAUTIFUL**



**MISSISSAUGA**  
*Stormwater*  
**MASTER PLAN**



the  
**CLIMATE  
CHANGE**  
project

# CLIMATE CHANGE ACTION PLAN

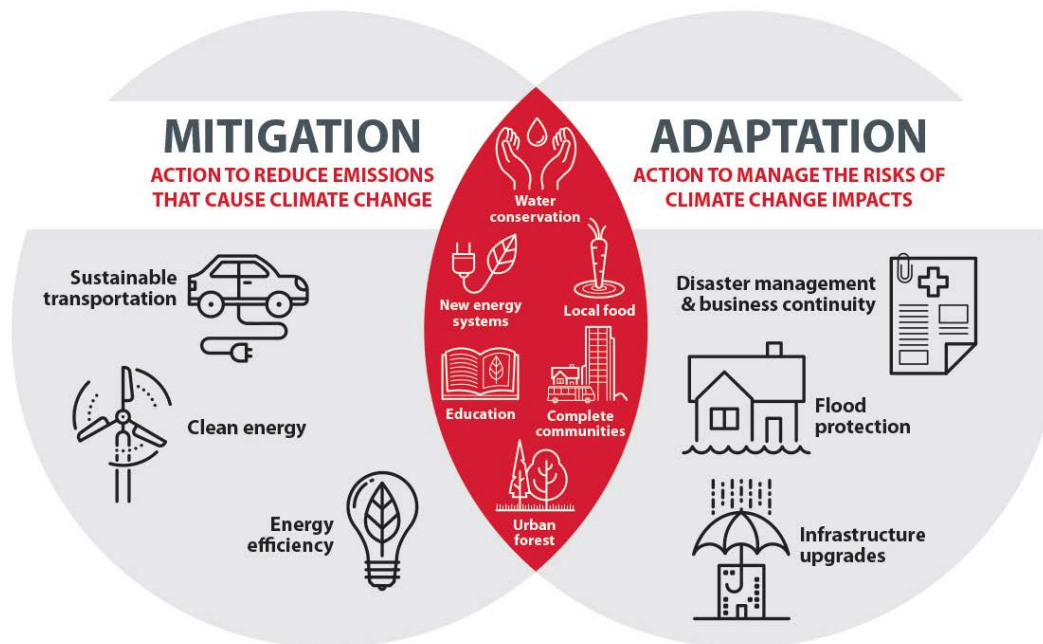
- Corporate **AND** Community

<b>Corporate Actions</b> Actions the City has direct authority over. Ways the city can <b><u>lead by example</u></b> .	<b>Community Actions</b> Actions that the City can lead or support to <b><u>influence or encourage change</u></b> in the community.
<b>Example Actions</b> <ul style="list-style-type: none"><li>• Install renewable energy (e.g. solar panels) at municipal buildings</li><li>• Convert the corporate and transit Fleets (and equipment) to low or zero emissions</li><li>• Reduce the consumption of electricity and natural gas in municipal buildings</li><li>• Upgrade and enhance stormwater infrastructure</li><li>• Develop a life cycle cost analysis framework to apply to all life cycle replacements, equipment, and new buildings</li></ul>	<b>Example Actions:</b> <ul style="list-style-type: none"><li>• Encourage developer-led efforts to include low carbon energy systems in new developments</li><li>• Deploy low-emissions vehicle charging infrastructure throughout the City</li><li>• Develop a community tree monitoring program</li><li>• Develop and enforce by-laws</li><li>• Update and enhance Green Development Standards</li><li>• Expand pedestrian and cycling infrastructure</li></ul>
<b>GHG IMPACT: LOW</b> <b>RISK MITIGATION: MEDIUM-HIGH</b>	<b>GHG IMPACT: MEDIUM-HIGH</b> <b>RISK MITIGATION: MEDIUM-LOW</b>



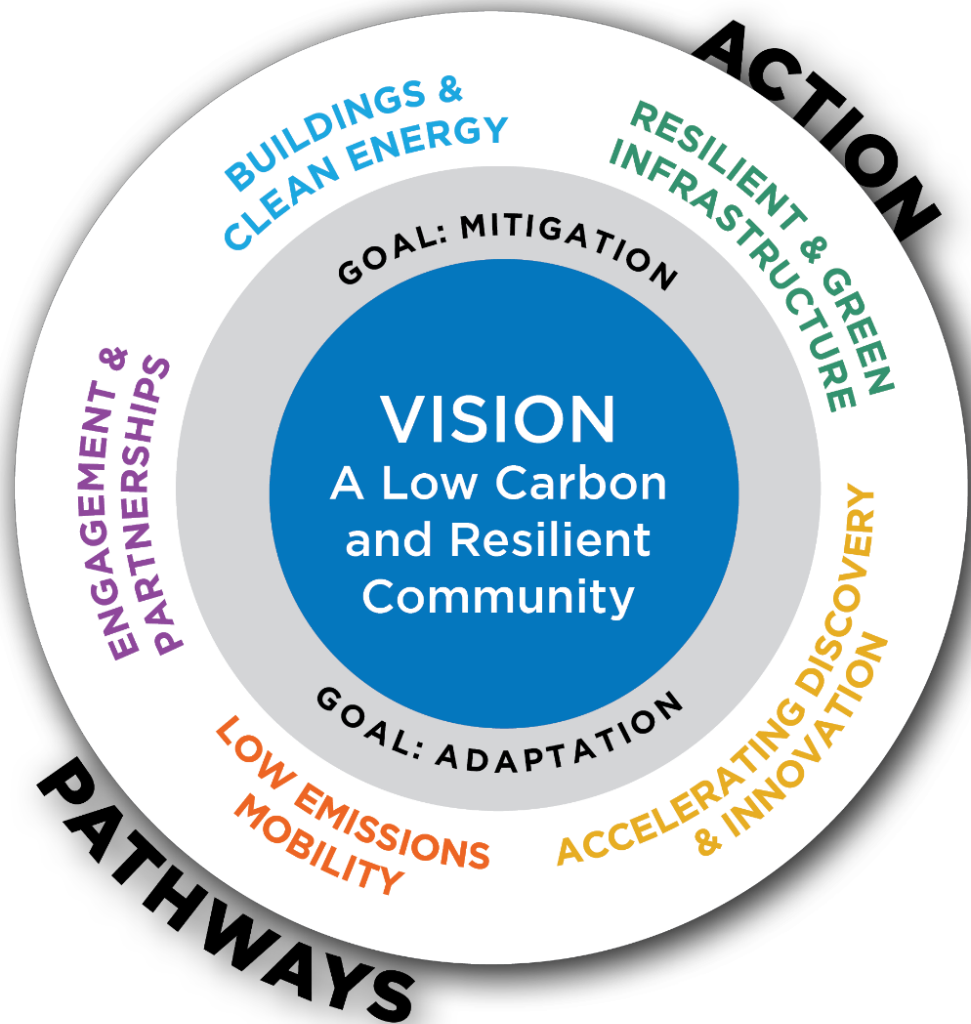
# CLIMATE CHANGE ACTION PLAN

- Adaptation **AND** Mitigation



- 1<sup>st</sup> comprehensive Climate Change Action Plan for Mississauga

# VISION



# Goal: MITIGATION

Reduce GHG emissions by 80% by 2050 (below 1990 levels) with the goal of becoming a net zero community

**Note:** As this is a ten year plan, an interim GHG reduction target of 40% by 2030 has also been set.



# Goal: ADAPTATION

Increase resilience and the capacity to deal with and respond to current and future climate-related risks

# PUBLIC AND STAFF ENGAGEMENT RECAP

## WE WANT TO HEAR FROM YOU!

Together we can build a low carbon, resilient city for generations to come.

**Wednesday, October 2 | 7-9 pm**  
Meadowvale Community Centre

**Tuesday, October 8 | 3-7 pm**  
University of Toronto, Mississauga

**Thursday, October 10 | 7-9 pm**  
Mississauga Valley Community Centre



the  
**CLIMATE  
CHANGE**  
project

[TheClimateChangeProject.ca](https://TheClimateChangeProject.ca)

 MISSISSAUGA

500+ Participants

2 Workshops

5 Public Town Halls



### RESILIENT & GREEN INFRASTRUCTURE

- Enhance community preparedness for climate risks
- Improve local air quality
- Support the development of green infrastructure and naturalized areas
- Enhance local food security

#### GUIDING QUESTIONS

- What are your top 2-3 questions or comments for this pathway?
- Some questions that may help you brainstorm:
  - What do you think of the actions in the pathway?
  - What are your priorities in the pathway?
  - Is there anything that does not make sense?
  - Are there any actions that are missing?

Agenda

7:25-7:50 Round 1
7:50-8:15 Round 2
8:15-8:40 Round 3



#### LOW EMISSIONS MOBILITY



#### ENGAGEMENT & PARTNERSHIP

#### BUILDINGS & CLEAN ENERGY

- Reduce greenhouse gas emissions from buildings
- Increase the energy efficiency of buildings
- Increase the use of renewable energy



the  
**CLIMATE  
CHANGE**  
project

# PUBLIC ENGAGEMENT RECAP

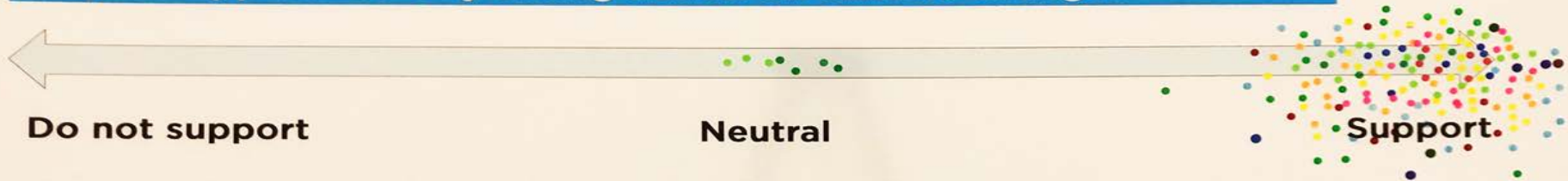
2,700+ VISITS TO PROJECT WEBSITE

435 SURVEY RESPONSE

20+ EMAILS FROM RESIDENTS



Do you support the City taking action on climate change?



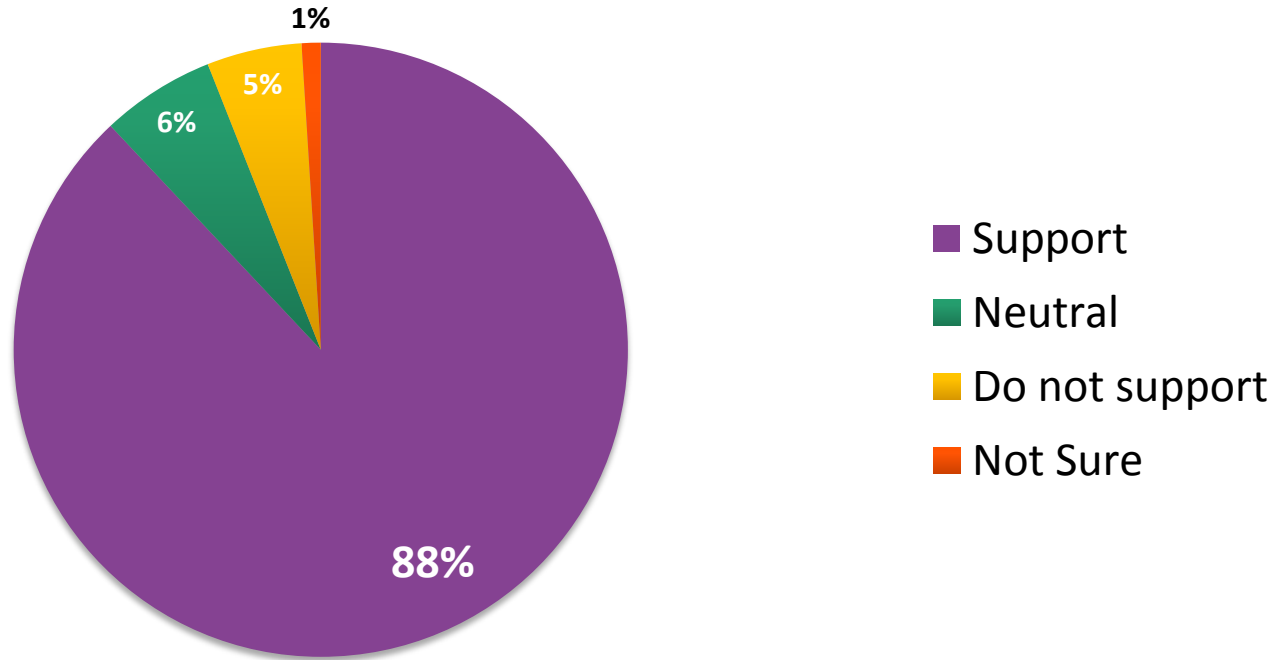
The first goal is to decrease greenhouse gas emissions by 80% from 1990 levels by 2050. What do you think of this goal?



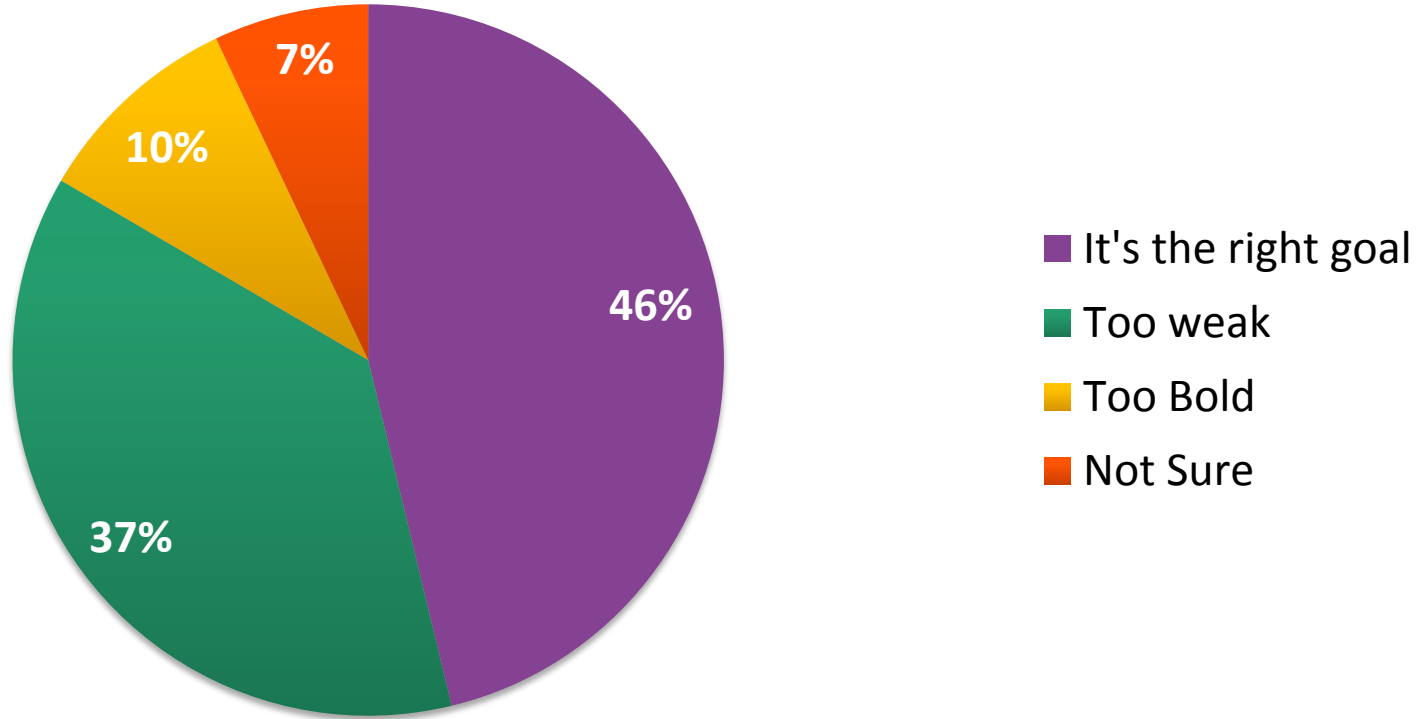
The second goal is to increase resilience and the capacity of the city to withstand and respond to future climate events. What do you think of this goal?



# DO YOU SUPPORT THE CITY TAKING ACTION ON CLIMATE CHANGE? - RESIDENTS



# WHAT DO YOU THINK OF THE GHG TARGETS?





# WHAT WE HEARD

*“Let's keep investing in climate change initiatives!”*

*“Make Mississauga a beacon of Canadian climate action”*

*“[The current targets are] not ambitious enough given the climate emergency”*

*“Mississauga is not yet a leader [in climate action] - but COULD BE”*

# CHANGES TO THE CCAP

- The addition of a longer-term net zero target has been added to the Goals section
- Additional actions regarding:
  - Corporate waste diversion
  - Goods movement/freight
  - Public health
  - Reducing emissions from the industrial sector
- Acknowledgement of the declaration of the climate emergency in June 2019 has been added



# BUILDINGS & CLEAN ENERGY

- Reduce greenhouse gases from homes and buildings
- Increase the supply of renewable energy
- Advance low carbon neighbourhoods
- Encourage energy conservation



# RESILIENT & GREEN INFRASTRUCTURE

- Enhance community preparedness for climate risks
- Improve local air quality
- Support the development of green infrastructure and naturalized areas
- Enhance local food security

# ACCELERATING DISCOVERY & INNOVATION



- Encourage Growth and Uptake of Low Carbon and Resilient Technologies
- Incorporate Climate Change into Municipal Decision-Making
- Monitor Innovation in Low Carbon and Resilient Technologies
- Provide Strategic Direction on the Management and Diversion of Municipal Waste and Litter

# LOW EMISSIONS MOBILITY



- Accelerate the adoption of zero emissions vehicles
- Support the shift towards lower-emission modes of transportation, such as transit, cycling
- Convert the corporate and transit fleet (and equipment) to low and/or zero emissions technologies



# ENGAGEMENT & PARTNERSHIPS

- Support and encourage action by providing financial and non-financial incentives
- Inspire and showcase climate action
- Raise awareness and provide meaningful engagement opportunities



# RECOMMENDATION

*That the Environmental Action Committee are in support of the Climate Change Action Plan and bringing it to General Committee on December 4, 2019 for endorsement.*



# THANK YOU!

**Leya Barry**

Climate Change Specialist

[Leya.Barry@mississauga.ca](mailto:Leya.Barry@mississauga.ca)

# 2019-2022 Environmental Action Committee Work Plan

WORK PLAN ITEM	ACTION FOR EAC MEMBERS	TIMING	PROGRESS	
			Action Taken or Date Completed	
Climate Change	Support approval and implementation of the Climate Change Action Plan.	Ongoing	May 29, 2019	At the May 29, 2019, General Committee meeting, students from Camilla Road Senior Public School requested the City of Mississauga declare climate change an emergency. The following recommendation was issued;  <i>That a motion provided by the students of Camilla Road Senior Public School regarding the City of Mississauga declaring climate change an emergency be referred to the Environmental Action Committee for further consideration. GC-0306-2019</i>
			June 11, 2019	Referred from the May29, 2019 GC meeting, the Eco Team Students from Camilla Road Senior Public School provided an overview on the crisis surrounding climate change and requested that the City of Mississauga declare a Climate Emergency at the June 11, 2019 EAC meeting. The following recommendation was issued;  <i>That the Environmental Action Committee supports Camilla Road Sr. Public School Eco Team's position that the City of Mississauga will declare a Climate Emergency and create an action plan to help achieve net zero emissions and increased renewable energy by 2050. EAC-0016-2019</i>
			June 16, 2019	At the June 16, 2019 Council, the following EAC-0016-2019 recommendation was amended and approved as;  <i>Climate change is a real and urgent crisis, driven by human activity, that impacts the environment, biodiversity, human health and the economy.</i>  <i>The City of Mississauga is committed to taking action on climate change, therefore the City if Mississauga declares a climate emergency and direct staff to develop and bring forward a climate change action plan to Council for approval by the end of 2019.</i>  <i>That the students of Camilla Road Senior P.S. be thanked for their initiative on this matter.</i> <b>0149-2019</b>
			July 9/2019	Deep dive discussion surrounding the Climate Change Action Plan with the EAC members gaining insightful comments and feedback for consideration during the finalization of the overall plan.
			July 25/2019	The Climate Change Stakeholder Panel workshop was held, where several EAC members participated. Comments received at this workshop were incorporated in the draft Climate Change Action Plan (CCAP). The updated CCAP will go to Council at the September 18 <sup>th</sup> meeting for information. If public consultation for this draft CCAP is approved by Council at this meeting, public consultations will run from Mid-September to October.

# 2019-2022 Environmental Action Committee Work Plan

Climate Change	Support approval and implementation of the Climate Change Action Plan.	Ongoing	<b>Sept. 9/2019</b>	The Corporate Green Building Standard for New Construction and Major Renovations Building Projects takes into account the Climate Change Action Plan to reach 80% GHG Reduction by 2050.
			<b>Sept. 19/2019</b>	An email was sent to EAC members to share public consultation opportunities (e.g., open houses, survey) for the draft Climate Change Action Plan. Consultation opportunities available between September 18, 2019 and October 18, 2019.
Volunteering	Participate in volunteering opportunities as members of the Community Green Leaders volunteer program.	Spring 2020	<b>Sept. 26/2019</b>	Opportunities for EAC members to participate in the program will be brought to the Committee in spring 2020.
		Ongoing	<b>Oct. 8/2019</b>	Adopt-a-Park deputation and discussion around the members of EAC participating in a litter pick-up at a local park. Pujita Verma, EAC Citizen Member will be coordinating the details of the volunteer event.
Support City Action on Environment	Be prepared to comment on City-led items brought forward to EAC meetings (E.g., strategic plans, by-laws).	At EAC meetings	<b>Sept. 9/2019</b>	The Corporate Green Building Standard for New Construction and Major Renovations Building Projects was presented to EAC and recommended by the members of Environmental Action Committee to General Committee for endorsement.
			<b>Sept. 9/2019</b>	The Downtown Strategy was presented at EAC, where the members provided comments and feedback. An email was sent post meeting asking for participation from the EAC members to fill out the survey to provide more insightful feedback.
Report on Committee Progress	Report to General Committee bi-annually on the progress of the EAC's work plan and activities. (Includes the EAC Actions Summary as an appendix)	Twice per year		
Additional/Other				

# City of Mississauga

## Memorandum




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Date: 2019/11/01

To: The Chair and Members of Environmental Action Committee

From: Leya Barry, Climate Change Specialist

Meeting Date: 2019/11/12

Subject: Final Climate Change Action Plan

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### Introduction

The Climate Change Action Plan comes as the impacts of climate change on people's health, our economy, and our infrastructure in Mississauga are clear and climate scientists widely agree on the need to rapidly reduce global greenhouse gas emissions. Governments around the world, including the City of Mississauga, have declared a state of climate emergency (June 2019). The Climate Change Action Plan (CCAP) is the City's response to the climate crisis and is built around the central vision that Mississauga will be a low carbon and resilient community. This vision is a long-term outcome that the City aims to achieve over the next 30+ years. The CCAP is a comprehensive plan that focuses on both mitigation and adaptation and recommends actions for both the Corporation and the Community over the next ten years.

The CCAP represents a significant step towards achieving meaningful emission reductions and the long-term goal of becoming a net zero community. It presents a way forward over the next ten years, providing an incremental process to take action, measure progress, adjust to changing conditions, and continue to build towards the 30+year vision of becoming a net zero community.

City leadership on climate action is essential to creating momentum for broad uptake and action in the community. Therefore, the CCAP takes a holistic approach to climate action and includes actions to be taken in the corporation and in the community.

The two goals set out in the CCAP are as follows.

#### Goal: Mitigation

Reduce community and corporate GHG emissions 80% by 2050, as compared to 1990 levels, with a long term goal of becoming a net zero community, and position the City competitively in the emerging low carbon economy. As this is a ten year plan, an interim GHG reduction milestone of 40% by 2030 has also been set.

#### Goal: Adaptation

Increase resilience and the capacity of the Community and Corporation to withstand and respond to future climate events by taking action on the highest climate-related risks.

### Targets

One of the key goals of the Strategic Plan is to promote a green culture and "transform Mississauga into a net-zero carbon city to become a leader in green initiatives by reducing greenhouse gas emissions".

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The CCAP has set an ambitious yet achievable greenhouse gas reduction target of 80% by 2050, with a long term goal of becoming a net zero community. The CCAP represents a significant step towards achieving meaningful emission reductions and the long-term goal of becoming net zero.

To ensure the City is on track to achieving our climate goals and targets, staff will provide annual progress and implementation reports which will include the outcomes and recommendations (including identified costs) of the studies and pilots that will be conducted as part of the CCAP including:

- A district energy feasibility study in the downtown;
- GHG Reduction and Solar Feasibility Study for Corporate Buildings; and
- Charging infrastructure assessment for future electrification of transit and corporate fleet vehicles and equipment.

A formal review and update of the plan and our GHG targets will also take place every five years and will be based on the results of implementation and progress over the given time period as well as advancements in technology to determine when we can achieve net zero.

### **Areas of Focus for the Next Ten Years**

The CCAP includes 21 key corporate and community Actions to be implemented within the next ten years, with additional supporting actions identified. The Actions are divided into five categories (called “pathways”): Buildings & Clean Energy; Resilient & Green Infrastructure; Accelerating Discovery & Innovation; Low Emissions Mobility; and Engagement & Partnerships. Below is an overview of each pathway.

### **Buildings and Clean Energy**

Buildings account for over 50% of GHG emissions in the community. Corporately, they account for over 25% of emissions. Buildings of all types require energy for cooling and heating, lighting, and operating equipment and appliances. By transitioning towards more energy efficient and climate resilient materials, the GHG emissions from the built environment can be reduced and the risks associated with climate change mitigated. In order to achieve the interim target of 40% below 1990 levels by 2030, the following actions have been identified:

- Reduce energy consumption in corporate buildings;
- Increase renewable energy capacity (e.g. Solar PV) in corporate buildings;
- Build all new corporate buildings to be more energy efficient and near net zero; and
- Lead by example and retrofit corporate buildings to reduce natural gas and energy consumption.

Additional supporting actions for the community include:

- Reduce GHG emissions from existing and newly developed buildings, both municipally owned and private developments, through energy conservation and green energy solutions;
- Encourage developer-led efforts to include low carbon energy systems in new developments (e.g. district energy) and explore the feasibility of a district energy system for the downtown;
- Introduce new legal and policy tools, including by-laws and updating the Green Development Standard, to require climate change measures in new developments (e.g. green roofs); and



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- Encouraging building occupants and owners to implement energy conservation and resilience measures (e.g. heat pumps).

### **Resilient & Green Infrastructure**

Climate change impacts, such as extreme weather events, can cause damage to physical infrastructure and disrupt municipal services which pose a multitude of challenges. By enhancing the resiliency of the built environment and reducing risk to some of the City's most critical services now, Mississauga will be better positioned to cope with the impacts of climate change into the future. In order to achieve the interim target of 40% below 1990 levels by 2030, the following actions have been identified:

- Increase total tree canopy cover to 22% (of total area); and
- Plant One Million Trees (by 2032).

Additional supporting actions for the community include:

- Identify and mitigation climate-related risks and enhance community-level resilience;
- Enhance flood resilience and stormwater management in the context of climate change;
- Develop an urban agriculture and food strategy;
- Develop a community tree monitoring program;
- Develop and implement invasive species monitoring and control within the context of climate change;
- Monitor and implement improvements to local air quality;
- Increase the urban tree canopy and the diversity of tree species being planted; and
- Support the development of green infrastructure and naturalized areas to improve resilience.

### **Accelerating Discovery & Innovation**

New technologies and innovative ways of doing business are essential to reaching the goals under the CCAP. The City will need to take steps to help accelerate discovery and innovation both corporately and in the community. The main areas of focus in this pathway are:

- Lead by example by creating policies and procedures that will result in climate considerations being routinely taken into account in municipal decision-making;
- Provide strategic direction on the management and improve diversion of corporate waste and litter;
- Monitor innovation and change in low carbon and resilient technologies for potential implementation at the City level; and
- Support growth of the green economy and the cleantech sector in Mississauga through partnerships with local businesses and industry leaders.

### **Low Emissions Mobility**

In the community, emissions from transportation account for over 30% of total GHG emissions. Corporately, emissions from transit, fleet, and fire fleet vehicles account for over 70% of emissions – making them the largest source of emissions in the Corporation. There is significant potential to decrease emissions from this sector. In order to achieve the interim target of 40% below 1990 levels by 2030, the following actions have been identified:

- Electrify the light duty corporate fleet (including non-revenue transit vehicles) and equipment
- Replace the transit fleet with low or zero emission vehicles
- Reduce GHG's per transit rider by 20%

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- Reduce corporate idling by 10%
- Reduce GHG's per kilometer travelled (by corporate fleet vehicles) by 15%
- Reduce the overall corporate fleet by 2%

Additional supporting actions for the community include:

- Develop a Zero Emissions Vehicle Strategy to accelerate the adoption of EV's in Mississauga; Work with industry partners and other levels of government to pursue alternative fuels and the integration of clean technologies in the goods movement sector;
- Install publicly accessible electric vehicle charging stations throughout the City; and
- Upgrade and expand cycling, transit, and pedestrian infrastructure and networks.

### **Engagement & Partnerships – Mitigation and Adaptation**

For the CCAP to be successful, the City will need to engage and mobilize all residents and stakeholders. Key supporting actions for this pathway are:

- Encourage and incentivize residents and business to take climate action;
- Inspire and showcase climate action at the City and in the community; and
- Work with partners to advocate to the provincial and federal governments to advance climate action.

### **Public Input**

The City has focused on engaging staff, residents, invited stakeholders, and members of Indigenous communities throughout the development of the CCAP. The intention of the engagement ranged from “inform” to “collaborate” based on the Engagement Framework in the City's Engagement Strategy.

Community representatives were consulted through the creation of a Climate Change Stakeholder Panel at the outset of the Climate Change Project. Members from a range of organizations participated in the Panel, including utility companies, developers, conservation authorities, academic organizations, school boards, the Mississauga Board of Trade, Metrolinx, and other community organizations. The Panel met on a regular basis at key decision-points and milestones throughout the development of the CCAP, including the visioning, climate risk assessment, and action planning stages.

In addition to the Stakeholder Panel, a series of public open houses and workshops were held in September-October 2019 to provide residents with the opportunity to comment and provide feedback on the draft CCAP. Workshops and open houses were held in the following wards: Ward 1, Ward 2, Ward 4, Ward 8, and Ward 9.

The Draft CCAP and a feedback survey were also posted online at [www.theclimatechangeproject.ca](http://www.theclimatechangeproject.ca). Over 500 residents attended our open houses and workshops and we received over 400 responses to the online survey. Through the online survey we heard resounding support for the City taking action and being a leader on climate change (~90%), with some (~40%) indicating a desire for the City to be more ambitious, particularly with respect to the GHG reduction targets.

### **Next Steps**

It is the aspiration of the City of Mississauga to become a net zero community, recognizing the need to further accelerate climate action and limit global temperature rise to 1.5 degrees Celsius. As studies identified in the CCAP are conducted and new technologies emerge, staff will be better able to determine when net zero can be realistically and financially achieved.

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The CCAP includes a series of practical and foundational actions to advance low carbon resilience in Mississauga. Beginning in 2020, Parks Forestry and Environment staff will be working with our internal teams and key external stakeholders to implement the CCAP, including community groups, conservation authorities, school boards, and utilities. This will include social media strategies (e.g. quick facts campaigns), speaking and video series, opportunities for youth engagement, including National Youth Week and sports and climate change themed events, and engagement on additional strategy development (e.g. zero emissions vehicle strategy, urban agriculture and food security strategy, and a Corporate waste reduction strategy).

Staff will be presenting the final CCAP to General Committee on December 4th, 2019 for endorsement.

### **Conclusion**

With Council's endorsement, the CCAP will provide a roadmap for climate change action in the City of Mississauga over the next 10 years. Dedicating appropriate resources to the implementation of the CCAP will ensure that climate change is integrated into municipal decision making, the actions outlined in the CCAP are advanced, and that the City of Mississauga achieves its climate change targets.

It is the aspiration of the City of Mississauga to become a net zero community, recognizing the need to further accelerate climate action and limit global temperature rise to 1.5 degrees Celsius. As studies identified in the CCAP are conducted and new technologies emerge, staff will be better able to determine when net zero can be realistically and financially achieved.

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Leya Barry, Climate Change Specialist

City of Mississauga  
**Memorandum**



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Date: October 17, 2019

To: Chair and Members of the Environmental Action Committee

From: Dayna Obaseki, Legislative Coordinator

Meeting Date: November 12, 2019

Subject: **Environmental Action Committee 2020 Meeting Dates**

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The 2020 meeting dates for the Environmental Action Committee have been scheduled as follows:

- Tuesday February 4, 2020
- Tuesday March 3, 2020 in Committee Room A
- Tuesday April 7, 2020 in Committee Room A
- Tuesday May 5, 2020
- Tuesday June 2, 2020 in Committee Room A
- Tuesday July 7, 2020
- Tuesday September 15, 2020
- Tuesday October 6, 2020
- Tuesday November 3, 2020
- Tuesday December 8, 2020

Unless otherwise advised, all meetings will be held at 9:30 AM at the Mississauga Civic Centre, Hearing Room, 2nd Floor, 300 City Centre Drive, Mississauga.

Meetings may be cancelled at the call of the Chair due to insufficient agenda items or lack of quorum. Please kindly contact me in advance of the meeting if you will be absent or late so that quorum issues can be anticipated and dealt with accordingly.

For the most up to date Council and Committee dates please visit the Council and Committee Calendar Listings webpage at <http://www.mississauga.ca/portal/cityhall/calendar>.

Kind Regards,

*DObaseki*

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