

Date: 2018-01-31

Subject: **Recommendation Report: Brampton Grow Green Environmental Master Plan Implementation - Status Update**

Contact: Stavroula Kassaris, Environmental Planner
Environment and Development Engineering, 905-874-2083,
stavroula.kassaris@brampton.ca

Recommendations:

1. That the report from Stavroula Kassaris, Environmental Planner, Public Works and Engineering, dated January 31, 2018, to the Committee of Council meeting of April 11, 2018, **re: Brampton Grow Green Environmental Master Plan Implementation - Status Update - All Wards (File HA.A (GRO), Cor. 2018)**, be received;
2. That Council direct staff to develop a Community Energy and Emissions Reduction Plan, including the development of a community-wide greenhouse gas (GHG) inventory, emissions reduction targets, and supporting action plan;
3. That the City of Brampton join the Federation of Canadian Municipalities' Partners for Climate Protection program, and that the program declaration, as outlined in Appendix 4 of this report, be endorsed; and
4. That the City Council representative of the Brampton Environmental Advisory Committee (BEAC), and a staff member of the Environment and Development Engineering Division be selected as liaisons to the Partners for Climate Protection program.

Overview:

- This report provides an update on the City's progress on the implementation of *Brampton Grow Green* (the City's Environmental Master Plan), which was adopted by Council in 2014.

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- ***Brampton Grow Green* established a comprehensive framework to improve Brampton's environmental performance, including a vision, goals, action plan, metrics, and targets.**
- **Progress has been made in implementing *Brampton Grow Green*, although much remains to be accomplished.**
- **Approximately 30 percent of the Action Plan is complete, with the Energy core component experiencing the most progress and the Waste core component the least.**
- **To be an environmental leader, the City should commit and invest in achieving its *Brampton Grow Green* Action Plan and targets through identifying resources, creating a corporate culture of conservation, elevating environmental sustainability within the Strategic Plan, leveraging external funding, developing a Climate Change Strategy, and joining the Federation of Canadian Municipalities' ("FCM") Partners for Climate Protection ("PCP") program.**
- **The City, in partnership with Sheridan College, is embarking on the development of a Community Energy and Emissions Reduction Plan, which will facilitate access to external funding and provide input toward the completion of our Climate Change Strategy.**
- **By becoming a member of the Federation of Canadian Municipalities' PCP program, the City of Brampton will join the other Greater Toronto and Hamilton Area (GTHA) municipalities in having better access to resources, including external funding programs.**
- **Council adoption of the PCP program declaration is a requirement of joining this program.**

Background:

This report provides the first status update on the City's implementation of its Environmental Master Plan, known as *Brampton Grow Green*. It highlights our progress, and provides recommendations on ways to improve and strengthen Brampton's performance as we become a more healthy, resilient, and environmentally sustainable city.

In 2014, Council adopted *Brampton Grow Green*, the City's first Environmental Master Plan (Resolutions CW200-2014 and C165-2014). The purpose of *Brampton Grow Green* was two-fold: 1) it established a comprehensive framework to improve Brampton's

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environmental performance, and 2) it qualified the City to access funding through the Federal Gas Tax Fund.

Brampton Grow Green directs the City's environmental sustainability approach, and identifies six core components:

- People
- Air
- Water
- Land
- Energy
- Waste

The *Brampton Grow Green* goals, metrics, and targets are organized according to these six core components, and an Action Plan has been developed for each, which includes corporate actions (internal), and community actions (external) focused over a five-year timeframe.

Brampton Grow Green is a living document that will be refined over time as the City's environmental priorities evolve. It will help guide and support healthy and complete communities, economic development, social progress, and environmental sustainability.

Current Situation:

In the last year, the Environmental Planning team re-established the implementation of the *Brampton Grow Green* recommendations as a priority, and focused on three vehicles to achieve our goals:

- Engaging key staff across all departments to champion *Brampton Grow Green* and to help implement actions within their departments. Staff department champions are collectively known as the Grow Green Team.
- Fostering collaboration between the City and external organizations, including active environmental community groups, known as the Grow Green Network.
- Gathering performance data, defining lessons learned, and reporting progress.

Corporate Grow Green Team

In 2017, the Corporate Leadership Team (CLT) endorsed the establishment of a corporate Grow Green Team, a group of cross-departmental staff led by Environmental Planning, to help facilitate the implementation of the *Brampton Grow Green* Action Plan, track progress, and promote a culture of conservation. The benefits of having one team are multifaceted, including shared information, improved communication, and increased collaboration between departments. In addition, the Grow Green Team has been instrumental in providing an in-depth understanding of the successes, opportunities, and challenges of implementing *Brampton Grow Green*.

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Community Grow Green Network

In 2017, City staff, in collaboration with the Brampton Environmental Advisory Committee (BEAC), launched the Grow Green Network - a collective of local organizations focusing on environmental stewardship and sustainability. To date, over 10 organizations have joined this network, including Sheridan College, Sierra Club Peel, Brampton Blue Dot, Toronto and Region Conservation Authority, and Credit Valley Conservation. Network members can identify like priorities, and leverage each other's resources and ideas. As a result, members are able to expand their reach and impact. The network also provides an effective forum for the City to engage with active community groups, and track activities beyond City initiatives.

Measuring Our Progress

While much remains to be accomplished, progress has been made in implementing *Brampton Grow Green*, specifically:

- Approximately 30 percent of the Action Plan has been completed. This includes 33 percent of actions with a Year 1 (2014-2015) target timeline, 16 percent with a Year 2-3 (2016-2017) timeline, and 63 percent with an Ongoing timeline (refer to Appendix 1).
- The core component of Energy has seen the most actions completed proportionally, while Waste has seen the least (refer to Appendix 1).

Appendix 2 highlights various action items achieved since 2014, while the complete Action Plan is available on the City's website at www.brampton.ca/growgreen.

Brampton Grow Green also identifies metrics for each core component, as well as targets for 2014, 2016, and 2021. Below is a brief update on the progress of the City's performance. A more detailed review will be provided following the fifth year implementation (2020) with the development of a comprehensive Sustainable Brampton Report.

Data, baselines and metrics are currently available for eight of the short-term priority indicators, and only two metrics have met their targets:

- Number of transit trips per capital per year (Air)
- Community waste diversion rate (Waste).

The remaining metrics have not met their 2014 and/or 2016 targets, and are not on track to meeting their 2021 targets. They will require investment along with focused efforts to reach their targets.

Lessons Learned

In the last year, Environmental Planning identified a number of valuable lessons about the successes and challenges with implementing *Brampton Grow Green*:

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- Culture Shift – Core components exhibiting positive trends are those that are the responsibility of a specific lead team, have allocated resources, dedicated staff, and a clear directive to improve environmental performance, such as Energy Management and Transit.
- Departmental Participation – Individual departments have all expressed a strong willingness to participate in achieving the City’s environmental goals. However, Environmental Planning is only able to provide limited support, such as coordinating the City’s natural heritage restoration program.
- Communication and Engagement – To improve the implementation of the *Brampton Grow Green* there should be a sustained investment in communicating to staff and the public.
- Funding – There are a number of federal and provincial funding opportunities related to the *Brampton Grow Green* Action Plan. The City should establish a coordinated effort to align these funding opportunities to corporate Grow Green priority actions.
- Corporate Framework - To foster a strong, green corporate direction, the City should elevate environmental sustainability within its directional documents, particularly its next Strategic Plan.

Moving Forward - Becoming an Environmental Leader

The City has made progress toward our goal of becoming an environmental leader, however, with only 30 percent of the Action Plan completed, we have a long way to go. The environmental goals laid out in *Brampton Grow Green* are still as valid as they were in 2014, and the desire to achieve an environmentally healthy and sustainable city was a strong message heard from the community during the recent Planning Vision engagement.

In becoming an environmental leader, commitment and investment in achieving the *Brampton Grow Green* Action Plan and targets is paramount. This course would see the City invest resources to assist all departments and divisions with integrating environmental sustainability into their portfolios and fulfilling their respective *Brampton Grow Green* responsibilities. Priority areas should include:

- Implementing a comprehensive staff and community engagement program;
- Creating green procurement policies and procedures;
- Updating the Green Fleet Strategy;
- Establishing a green economic development program;
- Developing a Climate Change Strategy (required to access federal and provincial funding); and
- Leveraging external funding opportunities.

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In 2017, the Province launched the Municipal GHG Challenge Fund, a component of the Ontario Five Year Climate Change Action Plan: 2016-2020. This program supports community-led action on climate change and the province recently announced that successful applications showed a reduction in GHG emissions, and a clear alignment with municipal GHG emissions planning. A report was brought forward to Council in November 2017 (Resolution CW387-2017) detailing the Municipal GHG Challenge Fund, its requirements and the city's application (refer to Appendix 3). While Brampton did not receive funding under this program in 2018, it is evident that the development of a strong Climate Change Strategy with GHG emissions targets will be instrumental in achieving success for future applications.

To this end, City staff is partnering with Sheridan College to develop a Community Energy and Emissions Reduction Plan. This plan will provide the first half of the content required to complete a Climate Change Strategy. Federal and provincial funding has been secured by Sheridan College for this portion of work.

In order to facilitate completion of the second half of the Climate Change Strategy, staff recommends that the City joins the Partners for Climate Protection (PCP) program, which is a network of over 300 Canadian municipal governments coordinated by Federation of Canadian Municipalities (FCM) and ICLEI - Local Governments for Sustainability. PCP members are committed to reducing GHGs and acting on climate change. Being a member of the PCP program provides access to a number of resources, including funds to develop a Climate Change Strategy, and will improve our success in receiving grants under FCM's Municipalities for Climate Innovation Program. Joining the PCP program is free, and requires Council to adopt the program's "joining resolution" (refer to Appendix 4) and appoint a staff and an elected official liaison. An overview of the program and its benefits are provided in Appendix 5.

The City of Brampton is also a member of the Peel Community Climate Change Partnership, alongside the Region of Peel, City of Mississauga, Town of Caledon, TRCA, and CVC. The Partnership continues to develop and implement a climate change strategy for the region.

Corporate Implications:

Financial Implications:

Funding for the Brampton Grow Green implementation is available from the following sources:

Project #	Budget Available
117480-001	\$61,100
187485-001	\$100,000

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Subject to Council approval, funding for Brampton Grow Green initiatives will be requested by each department responsible for the action as departmental work plans are developed.

There are a number of federal and provincial funding opportunities related to the *Brampton Grow Green* Action Plan, and with support from Partners for Climate Protection (PCP), the City will be applying for municipal grants through the Municipal Energy Plan Program (Ministry of Energy) and the Municipal GHG Challenge Fund (Ministry of Environment & Climate Change) to fund the Climate Change Strategy.

Other Implications:

There are no other corporate implications as a result of the recommendations outlined in this report.

Strategic Plan:

The implementation of *Brampton Grow Green* and actions associated with the core components of People, Air, Water, Land, Energy, and Waste touches every aspect of the City's operations and decision making business. As such, it achieves all four Strategic Plan priorities of Smart Growth, Good Government, Move and Connect, and Strong Communities.

Conclusion:

A future ready city is ecologically innovative and focused on sustainability and resiliency. The *Brampton Grow Green* Environmental Master Plan is a strong plan, an ambitious but achievable one that will make us leaders in Ontario, and allow Brampton to join with fellow municipalities across the country in living sustainably with our environment. Progress has been made over the last several years, however, to ensure that the momentum is not lost and that we position ourselves for success, it is recommended that the City identify resources, create a corporate culture of conservation, elevate environmental sustainability within the Strategic Plan, leverage external funding, and join the PCP program to facilitate the completion of a Climate Change Strategy.

Approved by:

Approved by:

Laurian Farrell
Senior Manager, Environment
Project Lead, Riverwalk

Michael Won
Director, Environment and Development
Engineering

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Attachments:

Appendix 1 - Brampton Grow Green Implementation by the Numbers

Appendix 2 - Brampton Grow Green Action Plan: Highlight of Achievements

Appendix 3 - Information Report: Climate Change Strategy

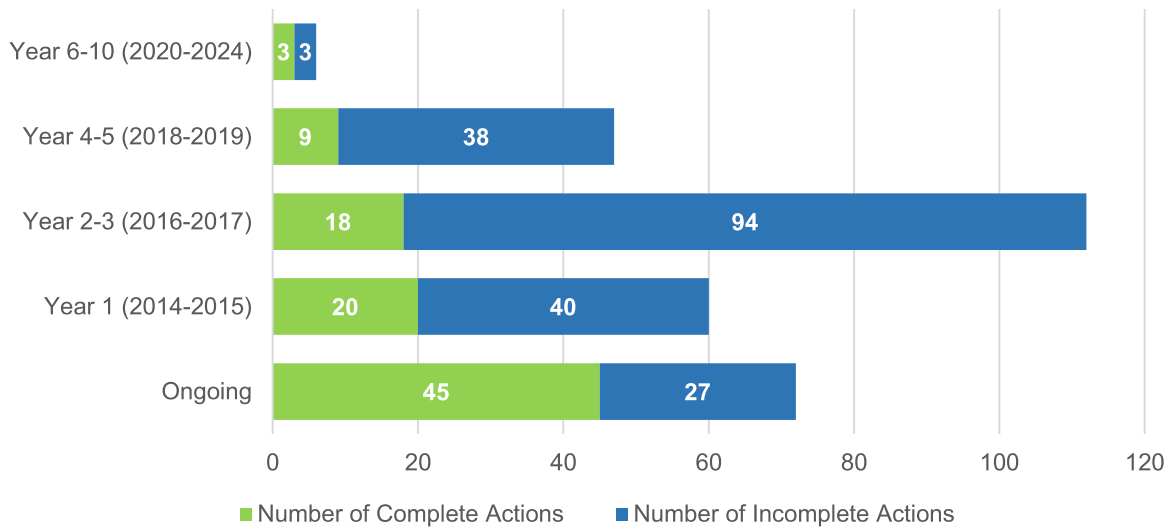
Appendix 4 - Council Resolution to Join the FCM-ICLEI Partners for Climate Protection Program

Appendix 5 - Partners for Climate Protection program brochure

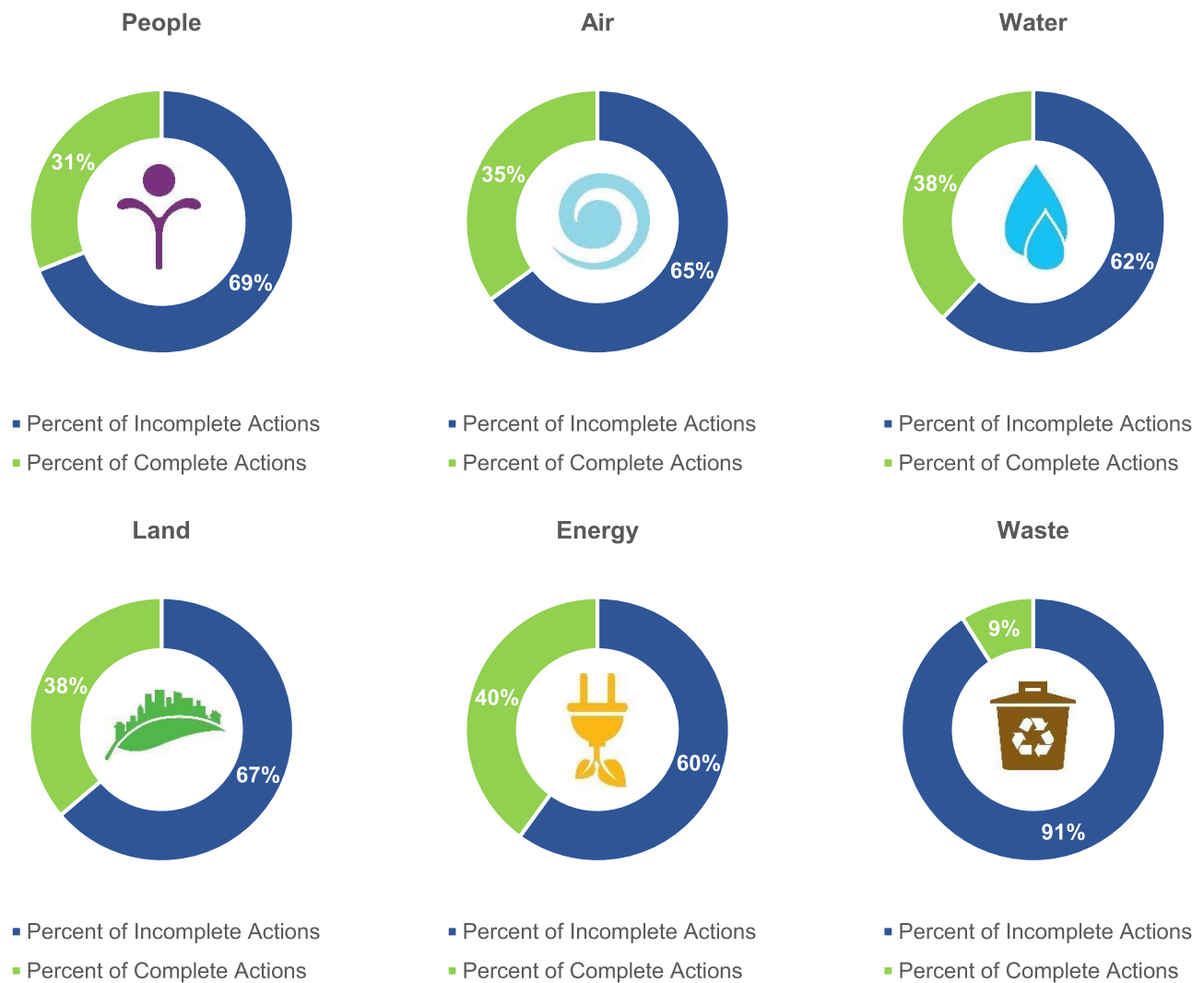
Report authored by: Stavroula Kassaris, Environmental Planner
Public Works & Engineering

BRAMPTON GROW GREEN IMPLEMENTATION BY THE NUMBERS

Brampton Grow Green Action Plan Progress by Target Timeline



Brampton Grow Green Action Plan Progress by Core Component



BRAMPTON GROW GREEN ACTION PLAN: HIGHLIGHT OF ACHIEVEMENTS

Provided below is a highlight of some of the *Brampton Grow Green* Action Plan items achieved since 2014. The complete Action Plan, including the status of each action item, is available on the City's website at www.brampton.ca/growgreen



Establishment of an interdepartmental Grow Green Team, to coordinate and champion the implementation of *Brampton Grow Green*.



Creation of the Grow Green Network, fostering collaboration between local environmentally focused organizations and the City.



Launch of the Grow Green Eco Pledge program, with over 500 participants committing to eco-friendly actions in its first year.



Initiation of the all-electric bus program, as well as solar powered transit bus shelters.



Establishment of a Cycling Advisory Committee, and Bicycle Friendly Community Bronze status.



Piloting of grey water/brown water systems in City Hall West Tower, Fire Station 212, and Springdale Library.



Development of a Sustainable Community program, including design guidelines and metrics for development proposals, as well as the launch of the Fletcher's Creek Sustainable Neighbourhood Retrofit Action Plan (SNAP).



Development of an Energy Conservation and Demand Management Plan for City-owned facilities, which has facilitated over 3 million equivalent kilowatt hours of energy savings and 330 tonnes of greenhouse gas (GHG) reductions.



Implementation of 32 electric vehicle plug-in stations for corporate and community use at 11 City-owned facilities.



Installation of solar power sources at Fire Station 205, Clark Transit Facility, Sandalwood Transit Facility, and Gore Meadows Recreation Centre generating 157,320 kilowatt hours of energy.



Launch of a new green printing strategy, which resulted in approximately 500,000 sheets of paper saved in one year.



Incorporation of recycled asphalt into road repaving projects.



Report
Committee of Council
 The Corporation of the City of Brampton
 2017-11-01

Date: 2017-10-02

Subject: Information Report: Climate Change Strategy

Contact: Michael Hoy, Environmental Planner

Recommendations:

1. That the report from Michael Hoy, Environmental Planner, Public Works and Engineering, dated October 2, 2017, to the Committee of Council Meeting of November 1, 2017, re: **Information Report: Climate Change Action Plan All Wards (File# HAA.CLI)**, be received.

Overview:

- In 2015, the Provincial government released its Climate Change Strategy committing Ontario to significantly reduce its greenhouse gas emissions (GHG).
- In August 2017, the Province announced the creation of a \$100 million Municipal GHG Challenge Fund. Municipalities are eligible for funding if they have completed a community-wide GHG inventory, emissions reductions targets, and a strategy/plan to reduce community emissions OR a council resolution committing to complete a strategy within 18 months.
- In 2014, Council resolution #C165-2014 approved the City's first Environmental Master Plan that specifically commits the City of Brampton to develop a Climate Change Strategy with GHG inventory, targets and action plan.
- A September 28, 2017 report to Regional Council #2014-730, entitled "Mitigating and Adapting to the Effects of Climate Change", highlighted the Region's Climate Change Partnership and its ongoing efforts to implement Climate Change projects. The Partnership is currently investigating opportunities to align municipal funding applications.
- Staff will be submitting an application to the first round of the Municipal GHG Challenge Fund for projects that address GHG reduction related initiatives under Fleet, Facilities, Environment and Transit. In addition, Brampton will be partnering with the Region on the Regional Climate Change application to the provincial fund.

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Background:

In 2015, the Ontario government released the Ontario Five Year Climate Change Action Plan (2016-2020) that committed Ontario to reducing greenhouse gas emissions (GHG) by 15% of 1990 levels by 2020, 37% by 2030, and 80% by 2050. Also in 2015, the Province announced its intention to join the cap and trade system under the Western Climate Initiative, which included Quebec and California. The Province has since implemented cap and trade, and the auctioning of carbon allowances to large emitters provides an estimated \$1.9 billion in annual proceeds. These funds are mandated to be invested in initiatives that reduce GHG emissions.

The GHG Challenge Fund is a \$100 million fund (anticipated to be an ongoing fund) that was created in August 2017. The program is designed to support community-led action on climate change and is funded by the proceeds from the Ontario carbon market. This competitive application-based program will fund up to \$10 million per project and up to 100% of eligible costs. The deadline to apply for the fund is November 14, 2017.

Current Situation:

On June 4, 2014, Council passed Resolution C165-2014 that endorsed the City's first Environmental Master Plan (EMP). The EMP addresses six core components: People, Air, Water Land, Energy and Waste. The development of a city-wide Climate Change Strategy was identified as one of the key initiatives under the Air goal. As such, the City is now eligible to apply for the first round of funding. Staff from Facility Operations and Maintenance, Road Maintenance, Operations and Fleet, and Brampton Transit have identified several projects with potential to receive funding under Municipal GHG Challenge program.

Staff will be submitting an application to the first round of the Municipal GHG Challenge Fund by the November 14th, 2017 deadline. Should the Province require an additional Council Resolution, this will need to be obtained prior to signing of the Transfer Payment Agreement.

The City of Brampton, City of Mississauga, Town of Caledon, Credit Valley Conservation Authority, Toronto and Region Conservation Authority, and the Region of Peel formed the Peel Community Climate Change Partnership. The Partnership continues to develop and implement a climate change strategy for the region. With respect to the Municipal GHG Challenge Fund, the Partnership is currently investigating opportunities to align municipal funding applications.

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Corporate Implications:

Financial Implications:

There are no direct financial impacts associated with this report. Should any projects be approved and require municipal funding, staff will return to Council for direction and/or approval.

Strategic Plan:

This report achieves the Strategic Plan priorities of Good Government and Smart Growth by positioning the City to receive provincial funding and assisting the City to achieve the goals and objectives of the City's Environmental Master Plan.

Conclusion:

The Ontario government has an ambitious 5-year Climate Change Action Plan (2016-2020) that commits Ontarians to reduce their greenhouse gas emissions. A Municipal GHG Challenge Fund, which is funded by the Ontario Cap and Trade system, has been established to support the Action Plan.

The City of Brampton will be taking advantage of the recently updated eligibility requirements for the Fund; the new requirements allow municipalities who have committed to develop a Climate Change Strategy (that includes a community-wide GHG inventory and emissions reductions targets) through a council resolution, to submit an application for the first round of funding by November 14, 2017. This will serve to achieve the City's Strategic Plan priorities and Environmental Master Plan objectives. In addition, the city staff are investigating opportunities to realize synergies with its Regional Partners on their Municipal GHG Challenge Fund applications.

Approved by:

Approved by:

Laurian Farrell
Sr. Manager, Environment
Engineering Division
Public Works and
Engineering Department

Michael Won
Director, Engineering
Division
Public Works and
Engineering Department

Report authored by: Michael Hoy

Council Resolution to Join the FCM–ICLEI (Local Governments for Sustainability) Partners for Climate Protection Program

WHEREAS it is well established that climate change is increasing the frequency of extreme weather events and posing other risks, such as drought, forest fires and rising sea levels, which present serious threats to our natural environment, our health, our jobs and our economy;

WHEREAS the 2016 Paris Agreement, signed by more than 190 countries, including Canada, committed to limit the global temperature increase to below two degrees Celsius and to pursue efforts to limit this increase to 1.5 degrees Celsius, in order to avoid the most severe climate change impacts;

WHEREAS local governments are essential to the successful implementation of the Paris Agreement;

WHEREAS Canada's cities and communities influence approximately 50 per cent of national greenhouse gas (GHG) emissions and can drive systemic low-carbon practices, including: building high-efficiency buildings, undertaking building retrofits and developing district heating; building active transit, electric vehicle infrastructure and electrified public transit; implementing near-zero GHG waste plans; and delivering high-efficiency water and wastewater services;

WHEREAS investments in these types of measures also reduce operating costs, help municipalities maintain and plan for future community services, protect public health, support sustainable community development, increase community resilience and reduce a community's vulnerability to environmental, economic and social stresses;

WHEREAS a number of government and international and national organizations have called for greater cooperation among all stakeholders to meet reduction targets, including Canada's Big City Mayors' Caucus, which supports binding GHG emission reduction targets at the international, national and city levels, action plans that cut emissions, identification of risks and mitigation solutions, and regular municipal GHG emissions reporting;

WHEREAS the **Federation of Canadian Municipalities (FCM)** and **ICLEI–Local Governments for Sustainability** have established the Partners for Climate Protection (PCP) program to provide a forum for municipal governments to share their knowledge and experience with other municipal governments on how to reduce GHG emissions;

WHEREAS over 300 municipal governments across Canada representing more than 65 per cent of the population have already committed to reducing corporate and community GHG emissions through the PCP program since its inception in 1994;

WHEREAS PCP members commit to adopt a community GHG reduction target of 30 per cent below 2005 levels by 2030, in line with the Government of Canada's target, and to adopt a corporate GHG reduction target that is similar or more ambitious, and to consider adopting a deeper community and corporate emissions reduction target of 80 per cent by 2050;

WHEREAS the PCP program is based on a five-milestone framework that involves completing a GHG inventory and forecast, setting a GHG reduction target, developing a local action plan, implementing the plan, and monitoring progress and reporting results;



FEDERATION
OF CANADIAN
MUNICIPALITIES

FÉDÉRATION
CANADIENNE DES
MUNICIPALITÉS



SCIENTIFIC BACKGROUND

The International Panel on Climate Change (IPCC) says in its 2014 *Fifth Assessment Report* that warming of the Earth's climate system is unequivocal and that "the IPCC is now 95 per cent certain that humans are the main cause of current global warming."

The IPCC concludes this warming is caused primarily by increased atmospheric concentrations of carbon dioxide, methane and nitrous oxide released from burning coal, oil and natural gas and from cutting trees and clearing land for agriculture and development.

The IPCC has a high degree of confidence that the following climate-related impacts are occurring or will occur over the next century in North America:

- More frequent hot and fewer cold temperature extremes, resulting in longer and more frequent heat waves.
- More frequent and intense extreme precipitation events.
- Thawing of permafrost, causing greater emissions of greenhouse gases and leading to disruptions to infrastructure and the traditional ways of life in northern communities.
- Melting of glaciers and polar ice, causing sea level rise in over 70 per cent of coastal communities.
- Increased risk of extinction for a large fraction of terrestrial, freshwater and marine species, undermining food security in many regions.
- In urban areas, increase risks for people, assets, economies and ecosystems including risks from heat stress, storms and extreme precipitation, flooding, landslides, air pollution, drought, water scarcity, sea level rise and storm surges.
- In rural areas, impacts on water availability and supply, food security, infrastructure, and agricultural incomes, including shifts in food production areas.

Under business-as-usual scenarios, the IPCC has high confidence that global surface temperature is likely to exceed two degrees Celsius by the end of the 21st Century.

The IPCC observes that warming resulting from human influences could lead to abrupt or irreversible impacts, depending on the rate and magnitude of climate change, and that the more human activities disrupt the climate, the greater the risks.

Under a stringent emission reduction scenario, the IPCC concludes that surface warming could be kept under two degrees Celsius, which would reduce the risks and impacts of climate change.



PARTNERS FOR CLIMATE PROTECTION

Creating a change
in climate through
local action



www.fcm.ca/pcp



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“Edmonton has participated in the Partners for Climate Protection (PCP) program right from the start. We see this program as an important part of moving toward our long-term goal of becoming carbon neutral.”

Mayor Stephen Mandel, City of Edmonton

“The Town of Annapolis Royal sees climate action as one of the most important strategic initiatives of our time. The environment is the air we breathe, the water we drink and the soil we grow our food in. If we don’t protect the envelope we live in, there will be no future.”

Mayor Phil Roberts, Town of Annapolis Royal

“Richmond Hill is a proud participant in the Partners for Climate Protection program and committed to doing our part to protect the environment. Through our Clean Air programs, Richmond Hill not only met our target of 20% reduction below 2000 levels by 2009, but also exceeded our target by reducing our greenhouse gas emissions by 33% below 2000 levels. We plan to keep this momentum going by continuing to make the environment a priority.”

Councillor Brenda Hogg, Town of Richmond Hill



WHAT ARE GREENHOUSE GASES?

Greenhouse gases (GHGs) are gases such as carbon dioxide, methane, nitrogen oxide, sulphur oxide and others that trap heat in the earth's atmosphere. The effect they create is called the greenhouse effect. Human activity has caused an increase in these gases. Their release into the atmosphere has contributed to global warming.

CLIMATE CHANGE IN CANADA

Canada is feeling the impacts of climate change

Climate change is having an impact in your community and across the country. Average temperatures are rising, snow and ice cover are declining, and natural disasters, such as wildfires and floods, are affecting more Canadian communities more often.

Integrated action on climate change is crucial. An effective response will aim to reduce the rate and magnitude of climate change, while we cope with the damages from climate change that we cannot avoid. The direct benefits that come from action include energy cost savings, avoided infrastructure impacts, and local job creation.

According to the National Round Table on the Environment and the Economy (NRTEE), costs from climate impacts could exceed \$5 billion in 2020 and grow to more than \$21 billion by 2050.



HOW CAN YOUR MUNICIPALITY CUT GHGs?

Local governments across Canada are creating momentum for climate protection through simple, cost-effective activities that improve quality of life. These activities are reducing GHG emissions through:

land use, energy and transportation planning – bylaws and development incentives – infrastructure design – green procurement – building retrofits – water conservation – solid waste diversion – renewable energy

MUNICIPALITIES AND CLIMATE CHANGE

Local governments and the communities they serve are taking action

Hundreds of local governments and communities in Canada are taking a stance on climate change. They are moving forward with sustainable policies and approaches to manage water supplies, reduce energy consumption, optimize transportation and examine land use policies. These actions yield two benefits: they increase economic efficiencies and reduce GHG emissions.

Your role matters today and for the future



Local governments play a key role in climate protection. More than 44 % of Canada's GHG emissions are under the direct or indirect control of municipalities. Local

governments are making important contributions to climate protection by cutting emissions from municipal operations. They are also implementing cost-effective investments and creating incentive-based policies that support sustainable infrastructure and development practices.

CHANGING THE BUSINESS CLIMATE TO A CLIMATE BUSINESS

Local governments' investments reap rewards

By investing in emission reductions, especially as part of a whole-system sustainability strategy, your local government can achieve multiple benefits for municipal operations, civic services and the broader community. These benefits go well beyond reducing GHG emissions.

Building the business case



The economy of tomorrow offers local governments like yours a business opportunity, but only if you position yourself to maximize climate advantages. Investment opportunities in the green economy have a strong multiplier effect

that deliver good economic, employment and business dividends. For example, green investments to expand transit service and energy efficiency retrofits create about 18 jobs in the repair and maintenance industry per million dollars invested.

Depending on the range of actions you take and the needs of your community, the dividends you reap may include better financial performance due to energy and materials cost savings. This can have an impact in areas like facilities design, government operations and fleet management. Other benefits to consider are improved air quality leading to better public health and your ability to respond more readily to federal and provincial carbon and energy regulations in the future.

WHAT GREEN ECONOMY BENEFITS CAN YOU REALIZE?

Save money by cutting energy costs – Be a leader in energy efficiency and enhance your corporate image and community relations – Improve air quality and citizens’ health – Create more jobs by investing in alternative energy sources – Generate power locally and reduce dependencies on energy suppliers outside your municipality – Measure and report on quantifiable results once your green economy framework is in place

Money is leaking out of your municipality faster than GHGs!



Did you know municipalities directly control and indirectly influence more than 44% of GHG emissions in Canada? Moreover, most municipalities do not have a complete understanding of

how much they spend each year on energy costs? Municipalities can spend several million dollars annually for energy costs, depending on population size.

Population	Municipal Corporate Energy Expenditures (\$)	Total Community Energy Expenditures (\$)
under 5,000	200,000	8.9 million
under 10,000	300,000	30 million
10,000 to 49,999	970,000	97 million
50,000 to 99,999	2 million	105 million
100,000 to 499,999	7.5 million	600 million
500,000 to 999,999	10 million	700 million
1 million and over	100 million	3.7 billion

Most of this money leaves the municipality. Climate action is an economic development opportunity that can improve energy efficiency and lead to your municipality generating clean energy.

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PARTNERS FOR CLIMATE PROTECTION

“We expect to save more than \$13,000 a year in energy costs, which gives us a payback in 5.6 years.”

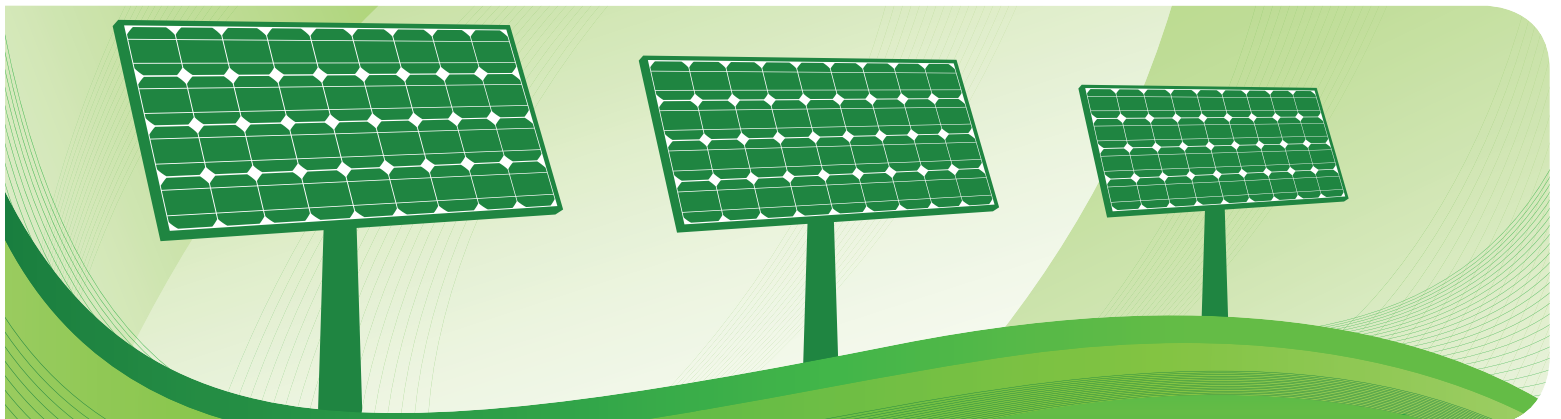
Jihad Elzamer, City of Fredericton Energy Analyst, on the installation of an ammonia heat recovery system at the Lady Beaverbrook Rink, which will cut GHG emissions by 35 tonnes annually

“In the first six months...we’ve already saved \$6,400, which includes the cost of energy and the B.C. carbon tax.”

Ryan Schmidt, Township of Langley Environmental Coordinator, on the use of a geothermal heating and cooling system at the Aldergrove water treatment plant, which is expected to cut GHG emissions by 70 tonnes annually

“Annual savings are between \$20,000 and \$25,000, based on 2007 natural gas prices, and GHG reductions are about 186 tonnes. The SolarWall is paying for itself and the first installation has a capital budget payback period of only two to three years.”

Richard Munn, Manager of Technical Services, Greater Sudbury Housing Corporation



MUNICIPAL ACTIONS TO REDUCE GHGs



IN THE CORPORATE SECTOR:

- 1** Retrofit buildings and adopt green building standards for new buildings and sites.
- 2** Change traffic lights to energy-saving light-emitting diodes (LEDs).
- 3** Replace streetlights with more efficient bulbs.
- 4** Start a water conservation program.
- 5** Plant trees to improve air quality.
- 6** Start an anti-idling program for municipal vehicles.
- 7** Create staff incentives for carpooling and the use of public transit.
- 8** Promote green fleet management practices such as 'right sizing', low carbon fuels, and hybrid/ electric vehicles.
- 9** Purchase renewable energy or develop local sources for generation (such as wind, solar or district energy).
- 10** Implement comprehensive landfill gas recovery systems at municipal landfill sites.

IN THE COMMUNITY SECTOR:

- 1** Start a community-wide composting program.
- 2** Sell rain barrels at a reduced cost and launch an awareness program on water conservation.
- 3** Use financial incentives to help residents reduce waste.
- 4** Promote energy efficiency in the industrial sector.
- 5** Create incentives for using public transit.
- 6** Use bylaws and development approval incentives to increase building standards and land use mix.
- 7** Support and encourage energy efficiency initiatives in the residential and private sectors.
- 8** Develop and maintain infrastructure friendly to pedestrians and bicycles.
- 9** Initiate commuter challenges to reduce vehicle use.
- 10** Support community garden initiatives or urban agriculture using surplus land or by developing green roofs.

6.2.1-24

PARTNERS FOR CLIMATE PROTECTION



MUNICIPALITIES IN ACTION

How municipalities are leading the way on climate action



Over the past two decades, local governments in Canada have emerged as leaders in the field of climate change mitigation. All across the country, local and regional governments are pursuing strategies to monitor and reduce GHG emissions.

Over the past two decades, local governments in Canada have emerged as leaders in the field of climate change mitigation. All across the country, local and regional

Whistler Geo-exchange — Population 10,228

The Resort Municipality of Whistler, British Columbia adopted a Green Building Policy with higher efficiency standards. The Spruce Grove Field House installed a geo-exchange system to heat the building. The system saved the equivalent of 1,100 gigajoules (GJ) of propane usage and reduced GHG emissions by 65 tonnes per year. The geo-exchange system cost about \$126,000 and produces annual savings of about \$21,000.

New Glasgow Stadium Heat Recovery — Population 9,455

The Town of New Glasgow, Nova Scotia made a commitment to reduce energy and GHG emissions at both the corporate and community levels. It installed an ice plant heat recovery system to capture and reuse waste heat at the 60-year-old John Brother MacDonald Stadium. The heat recovery project cuts annual GHG emissions by about 153 tonnes and saves the town about \$22,000 a year in heating energy costs. The project cost about \$300,000, and the town expects the payback period to be about 10 years. With a typical arena producing enough waste heat to meet the needs of 30-60 homes, the stadium's system is designed so that any extra waste heat can be used to heat other buildings in the future.

Saskatoon Rain Barrels — Population 202,340

In 2010, the City of Saskatoon sold its citizens more than 1,500 rain barrels. The barrels conserve water by capturing runoff from roofs. This relieves pressure on local water systems and indirectly reduces GHG emissions due to less demand on the plants that treat and distribute water. The 1,500 rain barrels sold by Saskatoon have the potential to reduce annual GHG emissions by 94 tonnes and reduce energy costs at the water plants.

6.2.1-25

PARTNERS FOR CLIMATE PROTECTION

Calgary District Energy Centre – Population 1,019,994

The City of Calgary recently developed a district energy centre that generates energy through the use of natural gas, rather than coal. The system became operational in March 2010, and is capable of supplying heat for up to 930,000 m² (10 million ft²) of new and existing commercial and residential space. The city's municipal building was the first facility to be connected to the district energy system. The switch has allowed the city to replace seven aging boilers, and to profit from both lower energy and maintenance costs. These savings bode well for future connections anticipated in the community.

Burlington Solar Heating and Waste Heat Recovery – Population 163,000

The City of Burlington recently installed seasonal solar heating and a year-round waste heat recovery system at its Tansley Woods Community Centre. The 90-panel solar installation covers an area of 398 m², and is capable of supplying up to 325 kW of thermal energy—roughly 25% of the energy used to heat the centre's swimming pool. The total implementation cost of this measure was \$116,970. As a result of this initiative, the city should expect to see annual cost savings of \$28,275, with the system paying for itself in a little over two years. The alternative energy systems will not only save the city money, but will also contribute to significant GHG reductions. The local utility provider, Burlington Hydro, estimates that the measure will save 24,138 m³ of natural gas and 101,000 kWh of electricity per year. These energy savings amount to 67.5 tonnes of avoided GHG emissions.

Vancouver Landfill Gas Recovery System – Population 545,671

The City of Vancouver owns and operates a large municipal solid waste facility located in Delta, British Columbia. Since 2003, the city has been piping a portion of the landfill gas to a nearby cogeneration facility, where it is used to generate both electricity and heat. The system works to reduce GHG emissions in two key ways: by avoiding direct emissions of landfill gas (methane), and by displacing emissions from conventional electricity and heat generation (i.e. natural gas fired boilers). In 2008, the recovery system collected 38,971,000 m³ of landfill gas. The project is currently the largest GHG reduction initiative in the Lower Mainland, eliminating more than 250,000 tonnes in annual GHG emissions. In addition to these impressive reductions, the project also generates considerable revenue. The city currently earns \$400,000 annually through an agreement with MAXIM Power.



6.2.1-26

PARTNERS FOR CLIMATE PROTECTION

PARTNERS FOR CLIMATE PROTECTION

We can help.

What is PCP?

The Partners for Climate Protection (PCP) program is a network of more than 200 Canadian municipal governments committed to reducing GHGs and acting on climate change.

PCP is a partnership between the Federation of Canadian Municipalities (FCM) and ICLEI - Local Governments for Sustainability. It is the Canadian component of ICLEI's international Cities for Climate Protection (CCP) program. PCP receives financial support from FCM's Green Municipal Fund™ (GMF).

What does PCP offer?

PCP can help empower your community to decide where, when and how it will take action on climate change.

It is up to local governments to develop and evaluate their reasons for taking action on climate change. The PCP milestone framework and toolkit can be a platform for your municipality to

- build the business case for climate protection
- foster collaborative approaches with the wider community
- engage the public on issues surrounding climate change and local sustainability

BY WORKING WITHIN PCP, YOUR MUNICIPALITY BENEFITS FROM:

A plan:

PCP's five-milestone framework is a proven municipal strategy to cut GHGs and reduce energy consumption.

Milestone 1

Create a Baseline Emissions Inventory and Forecast



Milestone 2

Set Emissions Reduction Targets



Milestone 3

Develop a Local Action Plan



Milestone 4

Implement the Local Action Plan



Milestone 5

Monitor Progress and Report Results



What is the Green Municipal Fund?

The Green Municipal Fund (GMF) is a unique program administered by FCM. It supports municipal initiatives across Canada that benefit the environment, local economies and quality of life. Municipal endeavours aligned with GMF's goals and criteria are eligible to receive grants and below-market loans to plan for and implement activities that will reduce GHGs.

Networking:

PCP offers valuable opportunities to share experiences with more than 200 participating municipalities and an international network of municipal governments.

Resources:

PCP members have access to useful resources and information, including case studies, templates, technical assistance and newsletters.

Recognition:

PCP recognizes the achievements of its members. As they implement each milestone or emission reduction project, they receive letters of recognition from the FCM President for their leadership. Municipal representatives are also invited to speak about their leadership during conferences and workshops, providing a broader profile to their accomplishments.

Free Support:

Your municipality can be part of PCP at no cost. Because cost does not present a barrier, municipalities of all sizes can be engaged in climate protection.

What are other municipalities doing?

Municipalities are taking action and generating measurable GHG reductions and cost savings through various innovative measures in their communities. To help highlight such efforts, PCP produces the *GHG Reduction Initiative of the Month* (GRIM). This report shares the environmental and economic results of action, along with lessons learned and next steps.

The *Enviro-Fleets Guide to Helpful Resources* provides fleet managers with information and tools from across Canada on greening municipal heavy-duty fleet vehicles and reducing emissions.

View our collection of sustainability bylaws

A growing number of Canadian municipalities are integrating sustainability into their planning processes. Planning is a complex process in itself, and developing the policies and bylaws needed to support planning can be an added challenge. The Federation of Canadian Municipalities' GMF has prepared a collection of sustainability bylaws for municipalities. It provides excellent examples of municipal bylaws, policies and procedures implemented by small and large Canadian municipalities in a range of sectors, including energy.

JOIN PCP TODAY!

MEMBERSHIP IS ONLY FIVE STEPS AWAY:

- 1** After reviewing this document, contact the secretariat for more details, and to ask questions.
- 2** Download a sample council resolution at www.fcm.ca/pcp or contact the PCP secretariat.
- 3** Appoint one staff member and one elected official to be your main contacts with PCP.
- 4** Fax, mail or e-mail your adopted council resolution, along with the staff member's and elected official's contact information, to the PCP secretariat. (See contact information below.)
- 5** The PCP secretariat will send you a PCP information package, including a list of resources and the PCP Milestone Framework. Apply to GMF for a grant to cover up to 50% of the costs of completing milestones 1, 2 and 3.

CONTACT PCP

Find out more about PCP by visiting www.fcm.ca/pcp or by contacting the PCP secretariat at 613 907 6346. Email pcp@fcm.ca



January 2012

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