

BRAMPTON GROW GREEN

Environmental Master Plan

Refresh (2020)



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Introduction

Municipalities are at the centre of sustainability efforts and the global movement toward reducing our impact on the planet. In 2014, City Council approved the Brampton Grow Green Environmental Master Plan (EMP), the City's first blueprint for improving environmental sustainability at both the City (internal) and community (external) level. The outcome of extensive research, consultation, and collaboration, Brampton Grow Green outlines a vision, guiding principles, goals, and actions for a more sustainable future, as well as performance metrics and targets to drive and evaluate our progress.

The Plan is organized around the six core components of People, Air, Water, Land, Energy, and Waste, recognizing the multifaceted nature of environmental sustainability. The actions and targets identified under the core components are not independent, but work together to deliver results. Brampton Grow Green is a long-term, comprehensive plan that aims to position the city as a model for responsible growth and meaningful environmental action.

Brampton Grow Green, like other master plans, is a living document that should be regularly updated to ensure it remains current, relevant, and reflective of the City's evolving environmental priorities and ambitions. The original Environmental Master Plan recommends that this exercise be undertaken every five years. This updated Brampton Grow Green Environmental Master Plan is the second generation of the pivotal document.



The intent of this renewed Brampton Grow Green Environmental Master Plan is not a complete reinvention or redesign of the Plan. The Brampton Grow Green vision, guiding principles, and core components remain pertinent, and will continue to act as the foundation of the Environmental Master Plan. Instead, this update focuses on providing a refreshed and streamlined Action Plan and Metrics that:

- reflects knowledge garnered from the first five years of implementation,
- aligns with the Brampton 2040 Vision and the Term of Council Priorities,
- connects to the City's strategic documents and their long term vision, and
- integrates the community's desired direction for the future of Brampton.

In addition, it includes refined metrics that are clear, relevant, actionable, and based on data availability. These metrics will continue to be used for monitoring progress towards Brampton's environmental goals - to highlight successes, to reveal challenges, and to inform action.



Brampton Grow Green Vision

Brampton is a community that will conserve, enhance, and balance our natural and built environments to create a healthy, resilient, and sustainable city. We will carry out our responsibilities to meet the needs of the present community without compromising the ability of future generations to meet their own needs.

Guiding Principles

Leadership

We will be innovative, lead by example, and advocate environmental sustainability within and beyond our community.

Balance

We will achieve our environmental goals within a balanced environmental, social, cultural, and fiscal agenda.

Stewardship

We will inform, educate, engage, and participate with the community to protect, conserve and enhance our natural and built environments.

Responsibility

We will integrate community and natural systems sustainability into everything we do.

Accountability

We will be open in our decision-making and actions, and we will monitor, evaluate, and report our environmental progress.

Partnership

We recognize the need for, and value of, partnerships with other levels of government, conservation agencies, conservation groups, stakeholders, and the community.



Core Components



People

Invest in people to create a healthy, livable, and safe community.



Air

Reduce impacts on air quality.



Water

Protect and respect water as a non-renewable, life critical resource.



Land

Manage land to sustain the natural environment.



Energy

Reduce energy consumption and manage the impact of energy usage on our environment.



Waste

Reduce and manage the materials considered waste.



How Have We Done So Far?

Brampton has come a long way since City Council approved the Brampton Grow Green Environmental Master Plan in 2014. Brampton Grow Green has been the catalyst for many of the City's plans, policies, projects, and practices that are improving Brampton's environmental performance, quality of life, and economic development.

Strategic Documents

A broader suite of plans were developed following the launch of Brampton Grow Green that reinforce the objectives of the Environmental Master Plan, and provide more detailed direction for achieving its goals. These include, but are not limited to:

Transportation Master Plan (2015)

The City's Transportation Master Plan (TMP) provides strategic direction for the development of Brampton's transportation network to support the city's growth over the next 25 years. A key focus of the Plan is to implement a truly multi-modal transportation system that supports sustainable growth. The City is currently completing an update of this Plan.

Natural Heritage and Environmental Management Strategy (2016)

The Natural Heritage and Environmental Management Strategy (NHEMS) outlines a proactive approach to ensure that the abundance of natural heritage and built green spaces found in the city are conserved, restored, connected, and enhanced to support the green diversity and health of the natural and built environments. The goals, objectives, and actions support the maximization of ecosystem structure, function, and services.

Parks and Recreation Master Plan (2017)

The Parks and Recreation Master Plan (PRMP) looks at providing a sustainable system of parks, facilities, and programs. The Plan contains over one hundred recommendations spanning the delivery of parks and recreation facilities and services. In addition to providing recreational and social opportunities and spaces, one of the primary goals of PRMP is to protect and enhance Brampton's natural heritage features through initiatives including the naturalization of park spaces.

Brampton 2040 Vision: Living the Mosaic (2018)

The City of Brampton's 2040 Vision is a strategic plan that captures the community's vision for how Brampton should evolve until 2040. It provides seven target vision statements, each with a set of catalytic actions. The first vision statement (Vision 1), "Sustainability and the Environment", calls for 'one-planet living'.

Let Connect: Active Transportation Master Plan (2019)

The Active Transportation Master Plan (ATMP) outlines a network plan, policies and programs to support a mosaic of safe, integrated transportation choices, emphasizing walking, cycling, and transit. It underscores the importance of providing accessible, high quality, and connected active transportation infrastructure to encourage the use of active modes and to build sustainable and livable communities.



Corporate Energy and Emissions Management Plan 2019-2024: A Zero Carbon Transition (2019)

The City's Corporate Energy and Emissions Management Plan supports the federal and provincial emissions reduction targets while providing a transition plan for zero carbon and high-performance City facilities. The Plan sets out a pathway to minimize energy and emissions intensity and maximize cost recovery for City-owned buildings.

Brampton Eco Park Strategy (2020)

A catalytic action identified in the Brampton 2040 Vision, the Brampton Eco Park Strategy calls for an interconnected network of sustainable urban and natural spaces interwoven and embedded in the city's urban form. It defines what Brampton Eco Park is, characterizes its formation, and sets out the vision, goals, and actions to guide Brampton Eco Park implementation.

Our 2040 Energy Transition: Community Energy and Emissions Reduction Plan (2020)

Brampton's Community Energy and Emissions Reduction Plan (CEERP) is an evidence-based, comprehensive plan that will drive innovation, economic development, and social benefits while achieving the City's environmental and climate change goals. It provides a roadmap to improve energy efficiency, reduce greenhouse gas emissions, create economic advantage, ensure energy security, and increase Brampton's resilience to climate change.

There are also several strategic documents in the process of being developed by the City that are inspired by the Brampton Grow Green, such as the:

- Sustainable Fleet Strategy
- Urban Forest Management Plan
- Complete Street Guidelines
- Sustainable Procurement Strategy



Programs and Initiatives

A range of other initiatives related to Brampton Grow Green have commenced or been expanded since the launch of the Environmental Master Plan, such as:

People

- Advance Brampton Fund: Green City Stream
- Blue Dot Movement Signatory
- Grow Green Eco Pledge Program
- Grow Green Network
- Grow Green Team
- Lighthouse Program
- Our Ecosystem, Our Home, Our Responsibility Campaign
- Parks Environmental Stewardship Education Program

Air

- Active Transportation Infrastructure Expansion
- Bike the Creek Event
- Bike to Work Day
- Brampton Cycling Advisory Committee
- Council Climate Emergency Declaration
- Electric Bus Pilot Program
- Electric Vehicle Charging Stations Initiative
- Global Covenant of Mayors Membership
- iRide School Bus Routes
- Bike & Ride
- Next Ride
- Solar Powered Brampton Transit Shelters Initiative
- ZUM Expansion

Water

- County Court Bio-filter Swale
- Glendale Public School Rain Garden
- Stormwater Management Charge

Land

- Adopt-a-Park Program
- Backyard Garden Program
- Brampton One Million Trees Program

- Community Gardens Program
- Don't Mow Let it Grow Initiative
- Heart Lake Wildlife Crossings
- Landscape Development Guidelines
- Natural Heritage Brochure Series
- Natural Heritage Restoration Program
- Perennial Planting Conversion Initiative
- Sustainability Metrics for New Developments
- Sustainable Community Development Guidelines
- Tableland Tree Assessment Guidelines
- Tree Planting Tracker Map
- Valley Naturalization Program

Energy

- Renewable energy projects
- Energy conservation and efficiency projects
- Green roof construction
- Leadership Energy and Environmental Design (LEED) Certifications
- LED Street Light Retrofit Program
- LED Traffic Signal Retrofit Program
- Solar Powered Brampton Transit Shelters Initiative
- Solar Powered Flashing Traffic Beacons Initiative
- Solar Powered Parking Meter Initiative

Waste

- Cleanup Program
- Printer Fleet Replacement Project
- Don't be Trashy Anti-Litter Campaign

For more details on the plans and projects that translated the strategic direction of Brampton Grow Green into meaningful action, refer to the Canvas of Environmental Initiatives and the Grow Green Achievement Summary.



By the Numbers

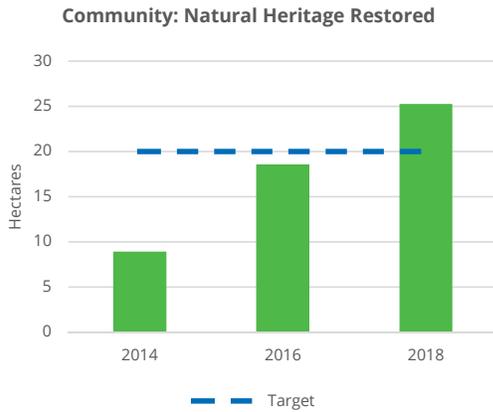
The Brampton Grow Green Environmental Master Plan identified a series of City and community performance metrics to help measure and monitor the environmental performance in each of the core components of People, Air, Water, Land, Energy, and Waste. The EMP also included ambitious performance targets for a majority of the metrics to motivate action and drive change.

As outlined in the table below, three metrics are on target, five are progressing toward their targets, while four are off target. The remaining metrics either had no or limited data available or had no targets established in the first iteration of the EMP.

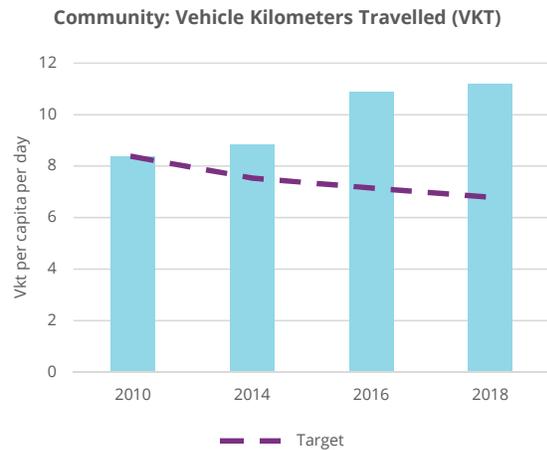
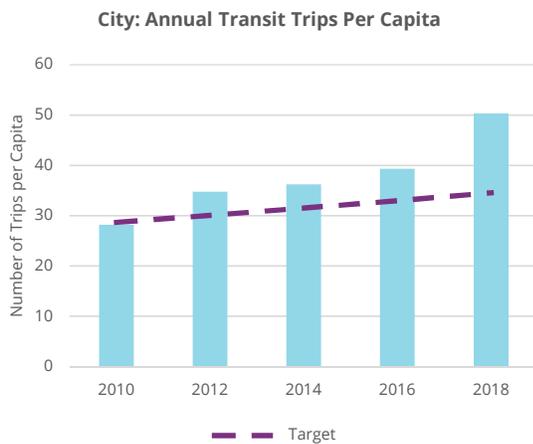
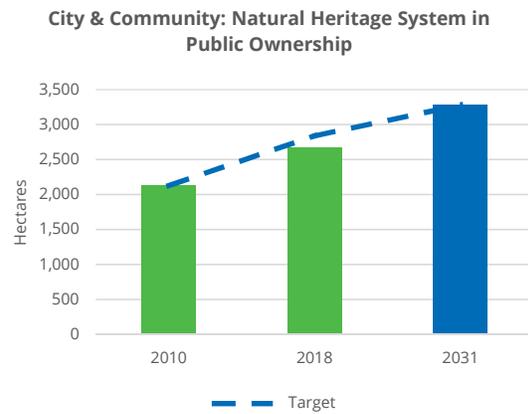
Brampton Grow Green includes City/corporate (internal) and community (external) actions, metrics, and targets. The use of the term City, with a capital "C" refers to the Corporation of the City of Brampton – the organization itself.

On Target	Progressing Toward Target	Off Target	No Target Established in Original EMP	Data Unavailable	Limited Data
City: Transit trips	City: Building energy use intensity	Comm: Vehicle km traveled	Comm: GHG emissions	Comm: Renewable energy	Comm: Energy intensity
City: NHS restoration	City: NHS in public ownership	Comm: Public participation in programs	City: GHG emissions	City: Waste diversion	
Comm: NHS restoration	City: Community environmental programs	City: Staff participation in programs	City: Watercourse channel naturalization		
	Comm: Waste Diversion	Comm: Potable water demand	City: Trees planted		
	Comm: Density	City: Potable water demand	Comm: Trees planted		



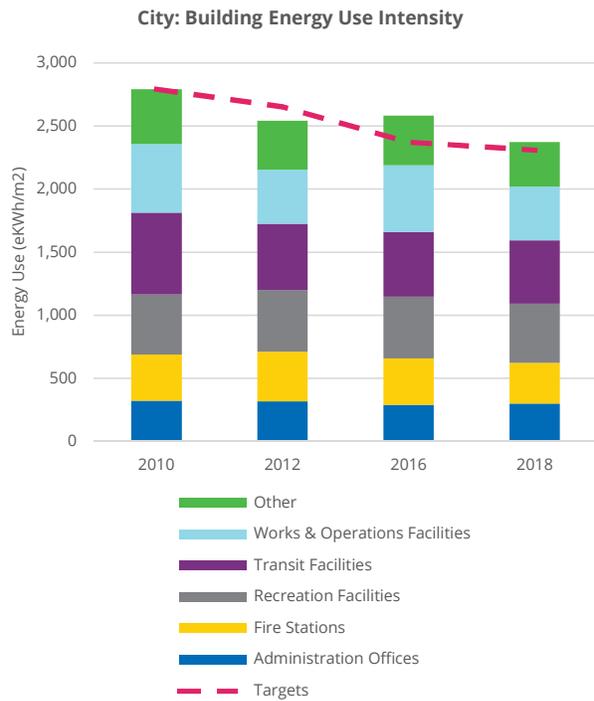


Land-related metrics, particularly related to natural heritage restoration, illustrate the expanding restoration programs and partnerships between the City and its Conservation Authority partners (Toronto & Region Conservation Authority and Credit Valley Conservation). Transit has performed exceptionally well, with Brampton Transit being one of the fastest growing transit systems in Canada. Yet while public transportation use is increasing, so is the average distance Brampton drivers are travelling each day, highlighting the need to create complete communities, foster local economic development, and invest in multi-modal transportation options.

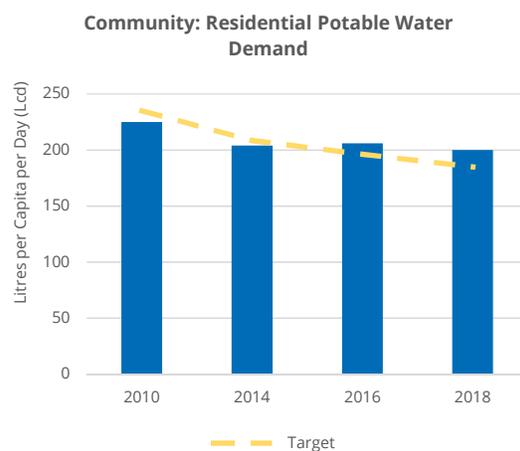
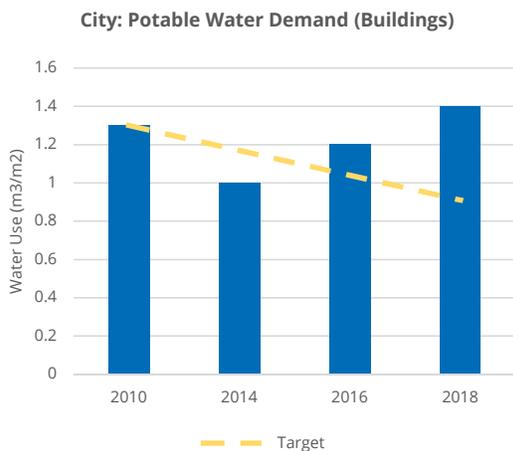


Building energy use intensity of City facilities has improved, largely driven by the guidance of the City's Energy Management team and their Corporate Energy and Emissions Management Plan. The City's greenhouse gas (GHG) emissions, on the other hand, have been trending in the wrong direction, primarily due to our fleet. To change the direction of this trend, the City has embarked on the development of a Sustainable Fleet Strategy.

The City must also change the trajectory of its potable water use through the creation and application of Water Efficiency Strategies for both facilities and outdoor amenities. The Community per capita water use has declined, but not at a rate that would achieve the long term target. The City will continue to collaborate with the Region of Peel on water efficiency and conservation efforts of residents and businesses.



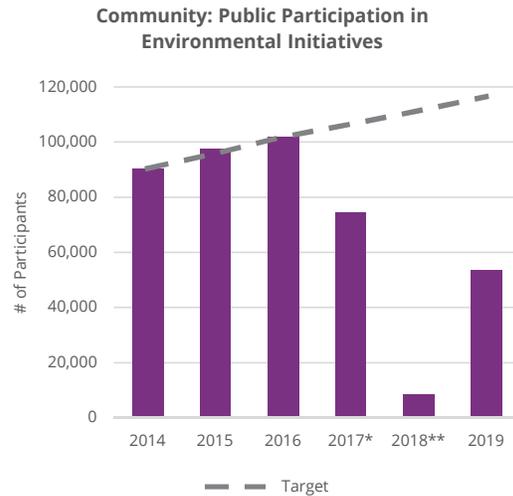
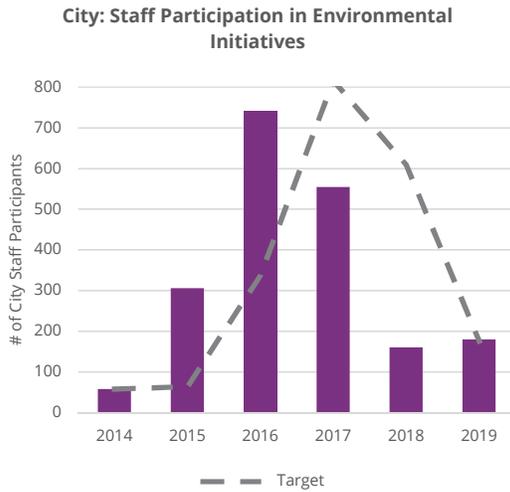
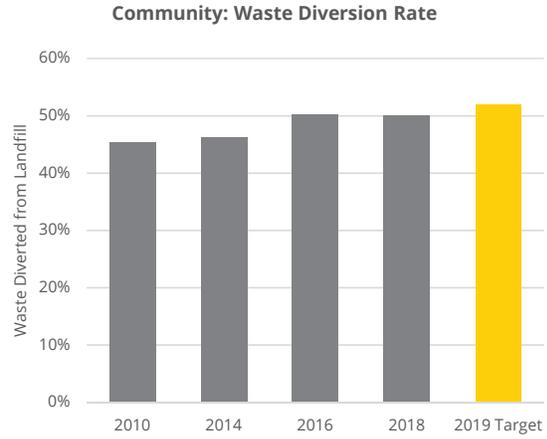
*Energy usage intensities are weather normalized, except for 2018.
 ** Other type of facilities include a Transit Terminal Lunch room, a greenhouse, garages, warehouses, a vehicle wash facility, an animal shelter, and libraries.
 ***Includes CAA Centre, which is not operated by the City of Brampton.



While the Community waste diversion rate across Peel region has improved over the last several years, progress regarding waste cannot yet be evaluated for City indoor and outdoor facilities because this information is not currently being tracked.

Community and City staff participation in environmental initiatives and events have seen declines, mainly attributed to the wind down of the Brampton Clean City team and the Smart Commute Brampton-Caledon initiative.

Through the development of Our Energy Transition: Community Energy and Emissions Reduction Plan, community energy use and GHG emission baselines and targets are now available, and the implementation of the Plan will result in a pathway to achieve an 80% GHG emissions reduction by 2050.



* Participation data for the Spring Cleanup was not available for 2017

** Participation data for the Spring and Harvest Cleanups was not available for 2018



What Has Evolved?

The Brampton Grow Green Environmental Master Plan was approved in 2014, and in the years since, several notable changes have occurred.

Empowered City Staff

The endorsement of the Brampton Grow Green Environmental Master Plan by Council emboldened City staff to increasingly apply an environmental sustainability lens to their work and decision making. For example, the City's Energy Management team leveraged the goals, targets, and actions identified under the Energy component of Brampton Grow Green to drive energy efficiency and renewable energy projects in City facilities.

The momentum was amplified by the establishment of a corporate Grow Green Team, a group of cross-departmental staff that 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.

Building Awareness

As directed by the Brampton Grow Green EMP, the City has increased its outreach efforts for both internal staff and the general public to develop awareness of the Plan, local environmental issues and initiatives, and steps that can be taken at work and home to reduce impact on the planet. Examples include the natural heritage brochure series, anti-litter campaigns, Eco Pledge Program for residents and staff, information signage in parks and valleylands, social media posts, and information booths at community events across the city. It also includes completing on-the-ground-projects, such as tree plantings and pollinator gardens, as demonstration and motivation for the public. These efforts were not simply to inform, but to inspire behavioural change as well. The City has leveraged the Grow Green Network of over 20 organizations (see "Connecting Community Organizations" below), as well as an email list of close to 1000 residents who are interested in learning about environmental initiatives happening in Brampton. The role of Brampton's Environment Advisory Committee has also pivoted to be more public facing, assisting the City with engaging the community.

Growing Expectations

As environmental awareness has increased, so too has the public's call for environmental action locally, nationally, and globally. Whether resource depletion, pollution, biodiversity loss, climate change, or rising inequalities, there is widespread recognition that the human impacts on the earth have reached a tipping point and that immediate, targeted, and sustained efforts are necessary from all levels of government, business, and civil society. Through the public consultation process for the Brampton 2040 Vision, the largest public engagement exercise ever undertaken by the City to date, such a large number of residents appealed for a greener Brampton, that "Sustainability and the Environment" was selected as the first vision statement of this seminal document. Public expectation also helped cultivate Climate Emergency Declarations by municipalities around the globe, including Brampton.



Incorporating Sustainability into Plans and Programs

Environmental sustainability has been incorporated into a broader suite of City strategic documents and directives, most notably the Brampton 2040 Vision and the Term of Council Priorities. In addition, since the launch of Brampton Grow Green, directions identified in the EMP Action Plan have been further developed and delivered through other plans and programs, such as the Active Transportation Master Plan and the Brampton One Million Trees Program. Environmental sustainability is increasingly becoming a core element of policies, programs, and practices corporate-wide.

Connecting Community Organizations

In 2017, City staff, in collaboration with Brampton's Environmental Advisory Committee, launched the Grow Green Network - a collective of local organizations focusing on environmental stewardship and sustainability. To date, over 20 organizations have joined this network, including Sheridan College, Sierra Club Peel, David Suzuki Foundation, Toronto & Region Conservation Authority (TRCA), and Credit Valley Conservation (CVC). 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.

More recently, Council directed staff to establish a Centre for Community Energy Transformation (CCET), a not-for-profit community organization to help Brampton accelerate towards a low carbon future and act as a catalyst to implement the Community Energy and Emissions Reduction Plan.



Incorporating the Three Dimensions of Sustainability

Sustainability is comprised of the three E's – environment, economy, and equity. When the Brampton Grow Green Environmental Master Plan was initially developed, it did not fully acknowledge their interrelated nature, and instead it focused only on improving Brampton's environmental performance. This updated EMP aims to better recognize the correlation between environmental, economic, and equity issues, because to spark the transformation needed to achieve our environmental goals, we need an integrated approach that also includes efforts toward Brampton's economic development and social equity goals.

Equity

The intersection between environmental sustainability and social equity is increasingly recognized as a critical component of a sustainable and thriving community. Marginalized populations, which generally include low income earners, racialized communities, persons with disabilities, seniors, and other impoverished groups, are the first and most affected by the negative impacts of environmental degradation and destruction. For example, low-income communities are more likely to be located in areas with low tree canopy cover, less access to green space, and air pollution hot spots.

Climate change is compounding the exposure to and burden of negative environmental conditions and hazards on all communities, especially on marginalized ones. An increase in heat waves and flood events, particularly in urban areas, is anticipated in Ontario as a result of climate change, both of which marginalized communities are poorly equipped to deal with and recover from. Local governments are major actors in fostering healthy, vibrant, and resilience communities through the adoption of policies, regulations, and programs that promote social equity and provide quality of life for all.

Social equity refers to the fair and equal access to resources, and the equal opportunities to develop and prosper in the community. It stresses inclusiveness and the sharing of benefits across all members of society.¹

Strategic environmental actions can improve a community's livability and economic development, however, if done without considering marginalized communities they can further contribute to greater marginalization and inequalities. Advancing social equity involves "...putting forth efforts toward rectifying previous environmental injustices, avoiding environmental injustices going forward, and providing equal access to participate in sustainability activities and shape their development".² It requires responsible and strategic decisions and investments. For example, as marginalized groups will feel the brunt of climate change, greater priority, investment, and focus should be afforded to mitigating the severity of these impacts on these groups.

Municipalities can simultaneously address environmental sustainability and social equity goals through increasing policies, programs, and services that support:

- food security/urban agriculture;
- housing choice and affordability;
- reducing energy costs;
- access to transit and active transportation;
- improving air quality;
- reducing and mitigating urban heat island effect;
- exposure to and stewardship of natural heritage;
- neighbourhood renewal;
- empowering community organizations;
- local economic opportunity and workforce development;
- disaster/emergency preparedness;
- public health and wellbeing; and
- civic engagement.

The City of Brampton has already commenced numerous initiatives reflective of the list noted above, such as the Community Garden Program, Active Transportation Master Plan, School Walking Route Program, Sustainable Neighbourhood Action Program, Sustainability Performance Metrics for new development, Natural Heritage Restoration Program, Eco Park Strategy, One Million Trees Program, and the Lighthouse Program (refer to the Canvas of Environmental Initiatives for more details). Better integrating the social equity lens will only improve outcomes and help ensure under-served or harder-to-reach populations contribute to and benefit from the City's environmental efforts.

The effectiveness of the City's efforts to incorporate social equity in our sustainability approach will rest on the ability to:

- identify current marginalized populations and local equity issues;
- assess the outcomes of previous actions taken for vulnerable communities;
- expand opportunities for and quality of public engagement and action;
- create explicit social equity goals and related actions;
- thoughtfully consider implications of choices on marginalized populations prior to action development/implementation;
- target policy direction and investments; and
- build capacity within local marginalized groups to articulate issues and contribute toward solutions.

Environmental sustainability initiatives can be a vehicle for delivering a more equitable society and improve the lives of all residents. It takes careful planning and execution to realize mutually reinforcing benefits, whereby social conditions and opportunities enhance environmental protection and vice versa. The Brampton Grow Green EMP provides the foundation for meaningful integration of social equity into the City's implementation of environmental action and creating a more fair and truly sustainable Brampton.

Economy

Traditionally viewed as disparate goals, there is growing interest in economic progress that contributes to stronger ecosystems and improved quality of life for all. A green response is also being acknowledged by many governments, international organizations, and academia as the way forward from the economic and environmental crises experienced globally in recent decades. More investors are now using environmental, social, and governance (ESG) criteria when evaluating the companies in which to invest in.

As a new and growing engine of economic growth, the green economy focuses on key sectors such as renewable energy production and distribution, building retrofits and green building construction for increased energy efficiency, decarbonisation of transport, water management, waste reduction and management, and natural heritage conservation. These sectors involve ongoing innovation, require and support the development of a skilled and agile workforce, and can generate millions of new jobs. Moving forward with focused policies and investment to transition to a low-carbon, energy and resource efficient economy, in particular, can result in expand businesses, jobs, and incomes, poverty reduction, higher standards of living, and social inclusion.³

Studies have shown that meeting Canada's climate change goals could generate over 3.3 million direct jobs by 2050 in the building trades alone. This number rises to 17 million jobs if induced, indirect, and supply chain jobs are included in the total.⁴ According to Statistics Canada, environmental and clean technology industry continue to grow, accounting for up 3.1% of Canadian gross domestic product (GDP) and accounting for 282,000 jobs (versus 203,000 workers in the oil sector) in 2017. The average worker in Canada earns \$63,600 per year, while the average annual income in the clean-economy sector is almost 50% higher at \$94,000.⁵



In addition to triggering new investments and employment, greening the economy offers the opportunity to improve social equity and the inclusiveness of economic growth. For example, a carefully planned and targeted program for energy conservation through building retrofits and new construction can lower energy costs and address energy poverty. In addition, education and skills training in green economy sectors can be aimed at marginalized and underemployed communities.

Improving local economic development also brings jobs closer to the local workforce, reducing total vehicle kilometers travelled to get to work and making active transportation and transit a more appealing choice, helping decrease GHG emissions related to commuting.

Talent, industries, and investors are increasingly moving to and staying in cities that are leaders in environmental sustainability and actively fostering green economies. When determining where to locate, leading businesses today are looking for cities with robust public transit networks, transit oriented development, a mix of housing types, and parks and other public green spaces/amenities, because these attributes are what increasingly attract talent and capital.⁶ Global consultancy firm Bain & Company conducted a survey in 2018 of just under 300 global companies, and 81% stated that sustainability is more important to their business today than it was five years ago, and 85% believe that it will be even more important in five years.⁷

The City of Vancouver showcases these benefits. With a long history of sustainability and a commitment to becoming the 'Greenest City' by 2050, Vancouver continues to be one of the top performing and most diverse economies in Canada, and is often ranked one of the best places to live in North America.⁸

“

A green economy is defined as low carbon, resource efficient and socially inclusive. In a green economy, growth in employment and income are driven by public and private investment into such economic activities, infrastructure and assets that allow reduced carbon emissions and pollution, enhanced energy and resource efficiency, and prevention of the loss of biodiversity and ecosystem services.”

- United Nations



Through policies, programs, investments, and incentives, municipalities play an important role in nurturing and benefiting from a green economy. The early integration of a green lens into the City's economic strategies is crucial in gaining economic competitive advantage in both local and global markets.

This updated EMP illustrates an evolution in our sustainability approach. The new Action Plan aims to better acknowledge, constructively influence, and strategically leverage the interrelationships between environment, economic, and equity. This includes initiatives to support the local growth of green industry, as well as green business practices in Brampton.

In addition to Brampton Grow Green EMP, the City's commitment toward cultivating a greener economy is also illustrated through the:

- Brampton 2040 Vision: Living the Mosaic
- Community Energy and Emissions Reduction Plan
- Sustainable Community Design Guidelines and Performance Metrics for new development
- Corporate Energy and Emissions Management Plan
- Efforts to establish a Centre for Community Energy Transformation

The City of Brampton must now, more than ever, work toward transformative change. Moving towards a green economy can lead Brampton towards greater economic prosperity and standard of living while also achieving its environmental goals.



Advancing the EMP

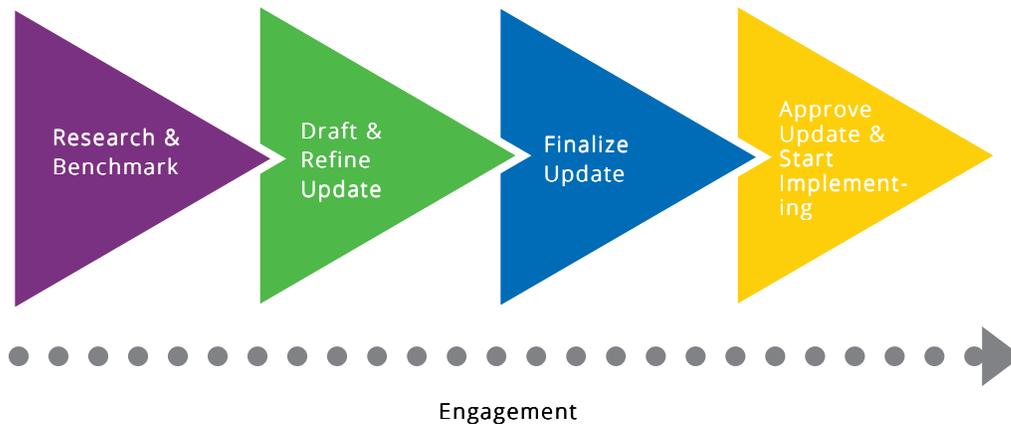
Brampton Grow Green Update Process

The update of the Brampton Grow Green Environmental Master Plan was an iterative process that involved:

- evaluating and understanding the City's progress toward achieving the goals and actions identified in the initial Brampton Grow Green Environmental Master Plan, including the successes and challenges of the first five years of implementation;
- reviewing the City's strategic documents that were approved since the launch of the Brampton Grow Green EMP;
- leveraging information gathered as part of other city-wide plans that recently underwent public engagement and input, such as the Brampton 2040 Vision and the Community Energy and Emissions Reduction Plan;
- performing a jurisdictional scan to identify current international, federal, provincial and local plans, policies, and priorities for environmental sustainability;
- benchmarking against environmental plans of other municipalities of similar size;
- undertaking interviews and meetings with City staff and other stakeholders, including Councillors;
- conducting an online survey for public input on potential actions and their prioritization; and
- consulting with Brampton's Environment Advisory Committee.

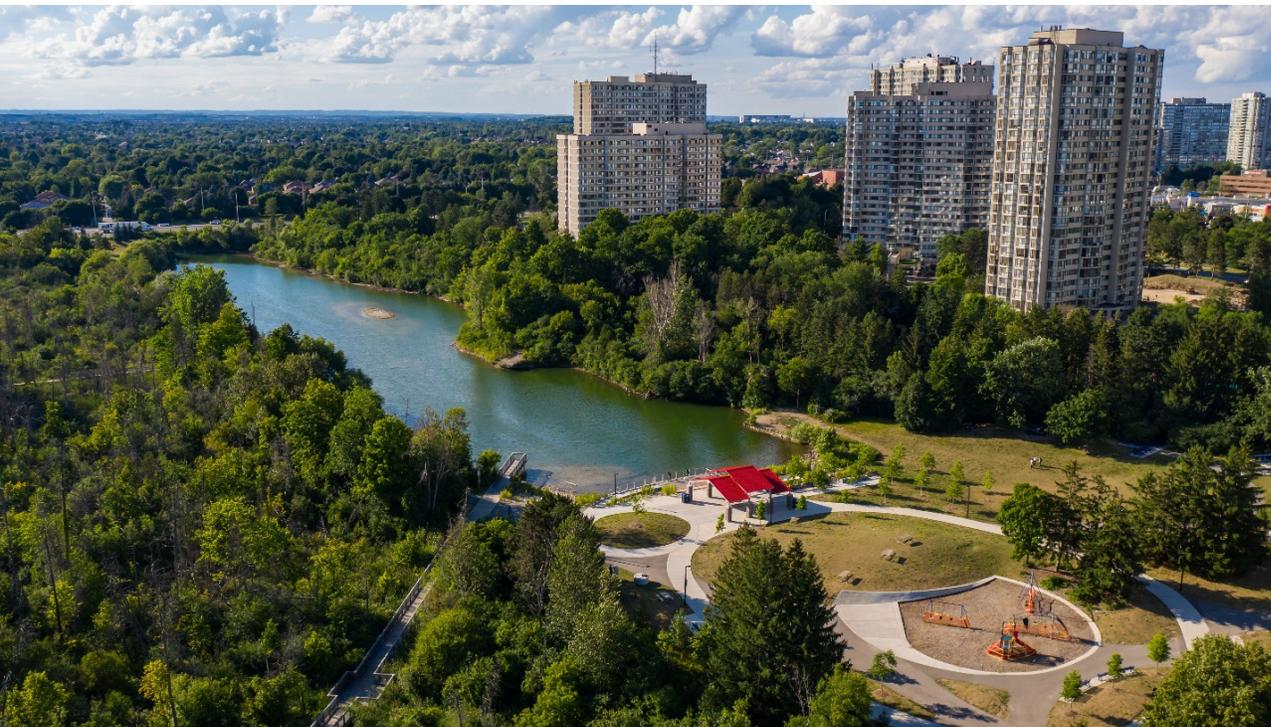
The City's Grow Green Team acted as the technical advisory committee for this project, providing information and input that was critical to the successful development of a refreshed Action Plan and Metrics.

Due to the coronavirus (COVID-19) pandemic and associated precautions, the engagement process for this updated EMP was scoped, pivoting to primarily online tactics. Nevertheless, stakeholder/public input was gathered throughout the project, and helped inform the final outcome.



As part of the background research for the Brampton Grow Green update, a range of sustainability plans of partner agencies and upper level governments were reviewed including, but not limited to, the Region of Peel's Climate Change Master Plan, the Province of Ontario's Made in Ontario Environment Plan, the Government of Canada's Federal Sustainable Development Strategy and the Pan-Canadian Framework on Clean Growth and Climate Change, as well as the United Nation's Sustainable Development Goals. The top themes that emerged are listed below, and guided the development of the new EMP Action Plan.

- Building partnerships
- Empowering the community
- Expanding multimodal transportation
- Creating complete communities
- Fostering natural heritage stewardship
- Improving water quality
- Advancing public health
- Cultivating green jobs
- Supporting a circular economy
- Transitioning to a low-carbon future (climate change mitigation)
- Increasing climate change adaptation and resilience



Refined Metrics

Brampton Grow Green included metrics to keep the pulse on how we are performing against the Plan. These metrics and their associated targets were established with the understanding and expectation that they would be refined over time. Implementing the EMP revealed better things and ways to measure, calculate, and report progress. It also uncovered challenges related to data quality and usability. As a result, while the majority of the metrics remain the same, several metrics, baselines, and targets have been refined based on:

- review of metric suitability;
- availability and accuracy of data;
- methodological improvements related to gathering, calculating, and/or interpreting data; and
- direction garnered from technical studies and plans developed following the establishment of the Brampton Grow Green EMP.

Above all, the refresh exercise ensures that metrics moving forward are clear, pragmatic, useful, and locally relevant. The metrics will continue to help assess progress toward our sustainability goals, as well as inform future plans, policies, and programs.



Performance Metrics

PEOPLE	Baseline	Targets
City: Number of environmental education and engagement initiatives per year	-	At least 1 initiative per core component
City: Number of staff participants in environmental education and engagement initiatives per year	742 (2016)	10% increase per year
Community: Number of public participants in environmental education and engagement initiatives per year	101 880 (2016)	10% increase per year
AIR	Baseline	Targets
City: Greenhouse Gas emissions per year (tonnes of eCO2)	50,208 (2010)	20% reduction by 2024 30% reduction by 2030 <i>Informed by Corporate Energy & Emissions Management Plan (2019)</i>
Community: Greenhouse Gas emissions per capita per year (tonnes of eCO2)	5.6 (2016)	2% reduction by 2020 9% reduction by 2025 30% reduction by 2030 <i>Informed by Community Energy & Emissions Reduction Plan (2020)</i>
Community: Number of Brampton Transit trips per capita per year	50.23 (2018)	44.2 trips by 2020 52.2 trips by 2025 66.8 trips by 2030 <i>Informed by Transportation Master Plan (2015)</i>
Community: Vehicle kilometers travelled (VKT) per capita per day	10.88 (2016)	Establish new targets through Transportation Master Plan update <i>Targets should support Community Energy & Emissions Reduction Plan (2020)</i>
WATER	Baseline	Targets
City: Potable water demand per year (meter ³ per meter ²)	1.4 (Building) (2018)	Establish targets through development of Water Efficiency Strategies (buildings and outdoor amenities)
Community: Potable water demand (litres per capita per day)	206 Lcd (2016)	174 Lcd by 2020 150 Lcd by 2025 <i>Informed by the Region of Peel's Water Efficiency Strategy (2012)</i>
City & Community: Removal of hard surfaces (e.g. concrete) from watercourse channels (meters) *	500 m (2018)	1000 meters every five years



LAND	Baseline	Targets
City: Number of trees planted per year	8409 (2016)	10 000 trees per year <i>Informed by the Brampton One Million Trees Strategy (2019)</i>
Community: Number of trees planted per year	38,744 (2016)	40 000 trees per year <i>Informed by the Brampton One Million Trees Strategy (2019)</i>
City: Density (residents and jobs per hectare)	Downtown Brampton: 85 residents & jobs per ha (2020) Greenfield Area: 56 residents & jobs per ha (2020)	Downtown Brampton (Urban Growth Centre) = 200 residents & jobs per ha by 2031; <i>Informed by A Place to Grow: Growth Plan for the Greater Golden Horseshoe (2020)</i> Designated Greenfield Area = 51 people & jobs per ha <i>Informed by Region of Peel Official Plan (2018)</i>
City & Community: Natural Heritage System in public ownership (hectares) *	2670 (2018)	3280 ha by 2030 4200 ha by 2040
City: Natural heritage enhancement/restoration per year (hectares)	10.9 (2016)	10 hectares per year
Community: Natural heritage enhancement/restoration per year (hectares)	18.5 (2016)	20 hectares per year
Community: Number of development proposals that achieve a Sustainability Score above the Bronze threshold **	N/A	Determine baseline and targets as part of the update to the Sustainability Metrics and Thresholds.

ENERGY	Baseline	Targets
City: Building energy use intensity per year (kilowatt hours per meter ²)	Admin: 289 F&ES: 367 Rec: 489 Trans 514 Works:529 Other: 392 (2016)	8% reduction by 2020 29% reduction by 2025 39% reduction by 2030 <i>Informed by Community Energy & Emissions Reduction Plan. May be subject to revision.</i>
Community: Energy use reduction per capita per year (gigajoules) *	150 GJ (2016)	6% reduction by 2020 18% reduction by 2025 30% reduction by 2030 <i>Informed by Community Energy & Emissions Reduction Plan.</i>
City: Energy supply coming from on-site renewable sources *	N/A	1% by 2020 2% by 2025 4% by 2030 <i>Informed by Community Energy & Emissions Reduction Plan. May be subject to revision.</i>

WASTE	Baseline	Targets
City: Waste diversion rate	N/A	Establish baseline and targets through a Corporate Waste Diversion Strategy
Community: Waste diversion rate	50.1 (2016)	74% waste diversion by 2034 <i>Informed by Region of Peels community waste diversion target.</i>

* Metric revised from the original Brampton Grow Green EMP (2014)

** New metric not included in the original Brampton Grow Green EMP (2014)



A Refreshed Action Plan

The refreshed action plan focuses on the next ten years and charts the course for a greener Brampton. It carries forward and adapts key actions from the original EMP that have yet to be achieved, and adds new actions reflective of best practice and tailored to the qualities, needs, and opportunities of Brampton. It aims to accelerate our efforts, and demonstrate commitment to and leadership in environmental sustainability at the municipal level. Many of the actions will require technical work, detailed design, and stakeholder engagement prior to implementation.



Action Plan

	PEOPLE	Benefits	City or Community	Priority	Lead Department
1	Establish a Grow Green recognition program to acknowledge and celebrate environmental leaders within the corporation.		City	Short Term	Public Works & Eng: Env Planning
2	Establish a Grow Green recognition program to acknowledge and celebrate environmental leaders within the community.		Community	Short Term	Public Works & Eng: Env Planning
3	Host an annual City-wide Grow Green celebration and showcase event.		City	Short Term	Public Works & Eng: Env Planning
4	Add an Environmental Sustainability Implications section to reports for Council and its Committees.		City	Short Term	Legislative Services: City Clerk
5	Establish an Environmental Education Centre on City lands at Bovaird Dr and Heritage Rd in collaboration with the Credit Valley Conservation and other partners.		Community	Long Term	Public Works & Eng: Bldg Design & Construction
6	Develop and publish a Brampton green business inventory.		Community	Long Term	Plng, Bldg & Ec Dev: Ec Development
7	Develop and commence implementation of initiatives to attract jobs and investments in the green economy as part of the Investment Cornerstone of the City's Economic Recovery Strategy.		Community	Medium Term	Plng, Bldg & Ec Dev: Ec Development
8	Collaborate with regional organizations like Partners in Project Green to promote green businesses and environmentally friendly business practices.		Community	Long Term	Plng, Bldg & Ec Dev: Ec Development
	AIR	Benefits	City or Community	Priority	Lead Department
9	Update and commence implementation of the Transportation Master Plan.		City	Short Term	Plng, Bldg & Ec Dev: Transportation Plng
10	Develop and commence implementation of a Sustainable Fleet Strategy.		City	Short Term	Public Works & Eng: Fleet Services
11	Develop and commence implementation of a Corporate Transportation Demand Management (TDM) strategy to reduce single occupancy auto vehicle trips generated by City staff and for City operations.		City	Short Term	Plng, Bldg & Ec Dev: Transportation Plng
12	Develop Complete Street Guidelines and update City standards to implement these guidelines.		City	Short Term	Plng, Bldg & Ec Dev: Transportation Plng
13	Establish policies/procedures for new City facilities to provide 10% of parking spaces with electric vehicle supply equipment (EVSE), and 25% of remaining parking spaces designed to permit future EVSE installation.		City	Short Term	Public Works & Eng.: Bldg Design & Construction
14	Complete a Network Electrification Feasibility Analysis for Brampton Transit.		City	Short Term	Brampton Transit



15	Establish policies/procedures that ensure new City facilities strive to achieve and maintain net zero carbon emissions in their annual operations.		City	Medium Term	Public Works & Eng.: Bldg Design & Construction
16	Establish policies/procedures that ensure retrofits of existing City facilities to strive to achieve and maintain net zero carbon emissions in their annual operations.		City	Long Term	Public Works & Eng: Facilities Ops & Maint
17	Collaborate with the Province and/or Region of Peel to establish air quality monitoring stations in Brampton.		Community	Medium Term	Public Works & Eng: Env Planning
18	Develop and commence implementation of a targeted enforcement strategy for the City's anti-idling by-law.		Community	Medium Term	Legislative Services: Enforcement & By-law Services
WATER		Benefits	City or Community	Priority	Lead Department
19	Develop and commence a Water Efficiency Strategy for City buildings, including potable water reduction targets, as well as water efficiency standards for buildings retrofits and new construction.		City	Medium Term	Public Works & Eng: Bldg Design & Construction
20	Develop and commence a Water Efficiency Strategy for the City's outdoor amenities (e.g. sports fields, splash pads, garden beds), including reducing potable water use for irrigation.		City	Medium Term	Comm Services: Parks Maint & Forestry
21	Transition at least 50% of City's planting beds from annual plants to draught tolerant, non-invasive, perennial plants.		City	Medium Term	Comm. Services: Forestry, Hort & Cem Services
22	Establish policies and guidelines that require the submission of a Water Conservation Plan as part of development applications, which recommends measures that can facilitate potable water conservation.		Community	Medium Term	Public Works & Eng: Env Planning
23	Establish policies/procedures for City facilities to provide a minimum of 50% green roof, blue roof, and/or cool roof.		City	Medium Term	Public Works & Eng: Bldg Design & Construction
24	Establish policies and incentives to encourage green roofs, blue roofs, and cool roofs on new commercial, institutional, and residential development with a minimum gross floor area.		Community	Medium Term	Public Works & Eng: Env Planning
25	Update and commence the implementation of a Lake Management Strategy to improve the water quality, recreational use, and ecosystem health of Brampton's lakes.		City	Medium Term	Public Works & Eng: Env Engineering
26	Establish a water quality monitoring program for stormwater management assets.		City	Medium Term	Public Works & Eng: Env Engineering
27	Develop policies/procedures to evaluate the opportunity to incorporate Low Impact Development (LID) into major City capital projects (roads, parks, and buildings).		City	Medium Term	Public Works & Eng: Env Engineering



28	Develop and commence implementation of an outreach and education strategy regarding stormwater management.	 	City	Short Term	Public Works & Eng: Env Engineering
29	Update and commence implementation of a Salt Management Strategy for City's operations.	 	City	Medium Term	Public Works & Eng: Road Maint, Ops & Fleet
30	Develop and commence implementation of a Climate Change Adaptation Plan.	  	City	Medium Term	Public Works & Eng: Env Planning
LAND					
	Benefits	City or Community	Priority	Lead Department	
31	Develop and commence implementation of an Urban Forest Management Plan.	    	City	Short Term	Comm Services: Forestry, Hort & Cem Services
32	Update the Tree Preservation By-law to enhance preservation of healthy tableland trees.	   	City	Short Term	Comm Services: Forestry, Hort & Cem Services
33	Launch a marketing campaign to increase awareness of and compliance with the Tree Preservation By-law.	 	City	Short Term	Comm Services: Forestry, Hort & Cem Services
34	Develop and commence implementation of a Woodland Management Strategy for City-owned woodlands.	   	City	Medium Term	Public Works & Eng: Env Planning
35	Transition the Valleyland Naturalization Program to the Naturalization Program to widen its scope from solely valleyland restoration to both valleyland restoration and tableland naturalization.	   	City	Short Term	Comm Services: Open Space Dev
36	Develop and commence implementation of a Naturalization Communications Strategy to increase awareness of and support for naturalization efforts on both public and private land.	 	Community	Short Term	Public Works & Eng: Env Planning
37	Review and update the City by-laws to ensure they do not restrict designed naturalization efforts on public and private lands.		City	Short Term	Public Works & Eng: Env Planning
38	Develop and host workshops to promote gardening and naturalization on private property in collaboration with Conservation Authorities and the Region of Peel.	 	Community	Medium Term	Comm Services: Parks Comm Programs
39	Develop and commence implementation of an Invasive Species Management Strategy for City-owned land.		City	Short Term	Comm Services: Forestry, Hort & Cem Services
40	Develop planning policies that require invasive species management to be undertaken as part of new development.		Community	Medium Term	Public Works & Eng: Env Planning
41	Pursue the Bee City designation from Bee City Canada to facilitate and celebrate efforts that support pollinators.		City	Short Term	Comm Services: Parks Comm Programs
42	Pursue a Bird Friendly designation to facilitate and celebrate efforts that support birds.		City	Medium Term	Public Works & Eng: Parks Comm Programs
43	Develop and commence implementation of a city-wide Road Ecology Strategy in collaboration with the Province, Region of Peel,		City	Medium Term	Public Works & Eng: Env Planning



	Conservation Authorities, and the Ontario Road Ecology Group.				
44	Expand the City's Alternative Design Standards for public right-of-ways (e.g. roads, streets, sidewalks) to improve active transportation, naturalization, street tree health, and stormwater management.		City	Short Term	Public Works & Eng: Capital Works
45	Integrate natural assets into the City's Annual Financial Statement.		City	Medium Term	Corp Support Services: Finance
46	Develop and commence implementation of a strategy to expand the Community Gardens program, including supporting community gardens on private lands, requiring new recreation centres and large parks to provide community gardens, and increasing opportunities for year-round gardening.	 	Community	Long Term	Comm Services: Parks Comm Programs
47	Establish a pilot project with a local school to create horticultural lessons that can support community gardening and naturalization initiatives.	 	Community	Long Term	Comm Services: Parks Comm Programs
48	Develop a communication strategy to promote the Adopt-a-Park program and increase participation.	 	Community	Medium Term	Comm Services: Parks Comm Programs
49	Update and commence implementation of an updated Sustainability Communities Program: New Development (i.e. Sustainability Metrics and Thresholds).	    	Community	Medium Term	Public Works & Eng: Env Planning
50	Establish upgraded Sustainability Thresholds for urban centres as part of the Sustainability Communities Program: New Development.	    	Community	Medium Term	Public Works & Eng: Env Planning
51	Develop a strategy to expand the Sustainable Neighbourhood Action Program (SNAP) across the city in collaboration with the Region of Peel and Conservation Authorities.	     	Community	Long Term	Public Works & Eng: Env Planning
ENERGY		Benefits	City or Community	Priority	Lead Department
52	Establish policies that require the submission of an Integrated Energy Management Plan as part development applications, which recommends potential measures to increase energy efficiency and conserve energy, and explores opportunities for district energy.	 	Community	Short Term	Public Works & Eng: Env Planning
53	Facilitate the launch of a Centre for Community Energy Transformation (formerly referred to as the Institute of Sustainable Brampton) in collaboration with Sheridan College and other partners.	  	Community	Medium Term	Public Works & Eng: Env Planning
WASTE		Benefits	City or Community	Priority	Lead Department
54	Develop and commence implementation of a Waste Diversion Strategy for City indoor and	 	City	Long Term	TBD



	outdoor facilities, including a minimum 75% diversion target.				
55	Explore the opportunity to develop a waste management team to facilitate a centralized model for waste diversion for City operations.		City	Long Term	TBD
56	Develop and commence implementation of a Green/Sustainable Procurement Strategy.	    	City	Long Term	Corp Support Services: Purchasing
57	Develop policies/procedures for lifecycle assessments, including lifecycle GHG emissions, of major capital projects.	    	City	Long Term	Corp Support Services: Corp Asset Management



Growing the Momentum

Education

Building upon the foundational work that is already underway, the City and its partners must expand education efforts and capacity building both in-house and community wide. Education and engagement should not only focus on building knowledge about and support for environmental causes and initiatives, but also on fostering participation and empowering people, business, and institutions to take action.

Collaboration

Central to the success of the Brampton Grow Green EMP is the continued collaboration and partnership between the City, residents, schools, business, places of worship, community groups, the development industry, conservation authorities, and other government agencies.

Monitoring

With a revamped action plan, metrics, and targets, the City will continue monitoring performance to help us understand where we are, where we are going, and if we are moving in the right direction.

Reporting

Reporting will take the form of progress reporting to Council every two years. A comprehensive update will be commenced in another five years to rejuvenate the Plan. Reporting will also include posting information on the City website, such as new, ongoing, and completed initiatives, as well as a performance dashboard to illustrate progress toward achieving targets.



Conclusion

The update of the Brampton Grow Green EMP aims to accelerate progress in creating a more healthy, resilient, and environmentally sustainable city. While Brampton has made great strides since the launch of the Plan in 2014, gradual progress must be replaced with transformative action if we are to address today's environmental challenges and avert climate disaster.

As noted in the initial Brampton Grow Green EMP, environmental sustainability has to be embedded in the corporate culture - the environmental lens must be an imperative when developing new or revising existing plans and policies, establishing and assessing capital projects, operations, and programming, making purchases, and designing infrastructure systems. Realizing the Grow Green vision will require support from leadership, inter-department cooperation, sustained and dedicated resources, ongoing education, sector-wide collaboration, and persistence.

Under this renewed Plan, tomorrow's Brampton will be characterized by mix of housing that accommodates people of all incomes and stages of life, a range of jobs that contribute to a circular economy, and a community of informed and active stewards of our build and natural spaces living in resilient neighbourhoods. Electric vehicles and buses along with cyclists and pedestrians will dominate our complete streets, while urban agriculture supplies affordable healthy food to residents and visitors. Brampton will have a destination environmental education centre, provide recycling and green bins at all its public spaces. It will be a local leader in and mentor on clean energy and GHG emission reductions. Brampton will be a better place for both people and planet.



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