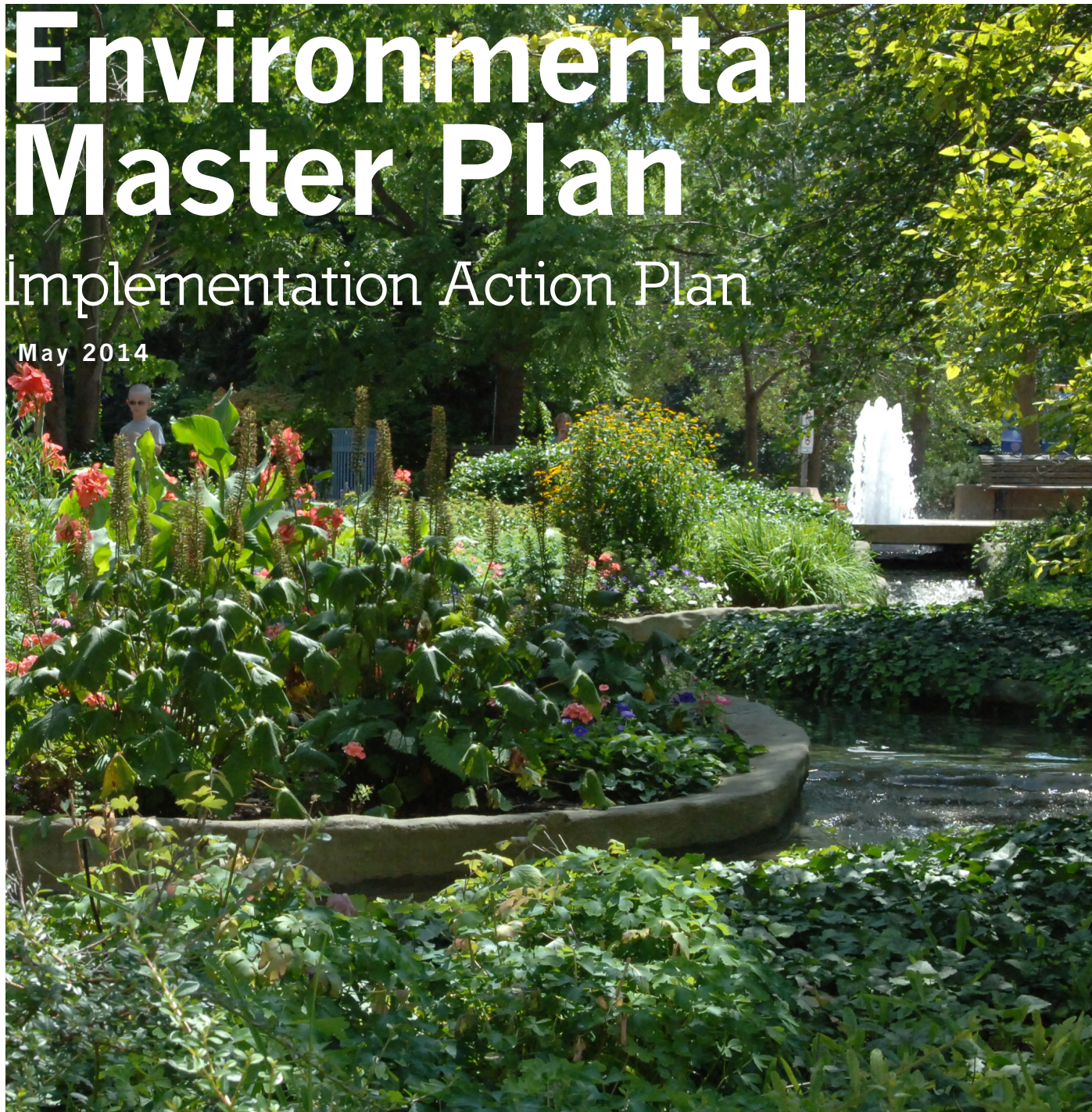


Brampton Grow Green

Environmental Master Plan

Implementation Action Plan

May 2014




City-building
for our future



THRIVING



GROWING



SERVING



PRESERVING



ENGAGING

These icons represent the five Strategic Priorities that are the foundation of the City of Brampton Strategic Plan: City-building for Our Future



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BRAMPTON
Flower City

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Grow Green Executive Summary

WHAT IS BRAMPTON GROW GREEN?

Brampton Grow Green is the City's first Environmental Master Plan (EMP) – an environmental sustainability plan to understand what the City does well, to identify gaps and opportunities to change City operations and service delivery, and to establish sustainable directions, including actions and targets that will improve upon the environmental qualities of Brampton's built and natural landscapes.

The EMP is intended to act as a catalyst to engage, involve and support others in improving Brampton's environment and will most effectively be implemented as a collaborative effort. Businesses, industries, seniors, environmental groups, community associations, schools, students, families, professional organizations, and all parts of the community have a role to play in helping to achieve Brampton's goals. Are you a partner yet?

The EMP is a living document that will grow and change with the City as its environmental priorities and goals evolve in the future.



Vision

Brampton is a community that will conserve, enhance and balance our natural and built environments to create a healthy, 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

The vision, guiding principles, core components and partnerships create a foundation to guide and structure the EMP.



Leadership

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



Accountability

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



Responsibility

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



Stewardship

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



Balance

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



Partnership

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



What is included in Brampton Grow Green?

Brampton Grow Green is a family of documents including:

- **The Background Report (2012)** – provides a snapshot of Brampton today and contains a review of the environmental efforts of the City and its partners including policies, strategies, studies, programs and initiatives currently underway. It includes a review of best practices, a draft vision, guiding principles and goals.
- **The Green Paper (2013)** – is the technical foundation of the Environmental Master Plan. It includes a summary of the project process, vision, guiding principles, environmental metrics, priority actions and implementation strategies.
- **The Implementation Action Plan (2014)** – is an action-focused document containing the highlights of the Green Paper, including priority environmental metrics and corporate strategies for the City of Brampton to take the lead in effecting environmental change
- **Technical Appendices** including:
 - Action Table
 - Canvas of Environmental Initiatives
 - Consultation Summary

How does it link to the Strategic Plan?

The Strategic Plan – City-Building For Our Future – contains a vision and five strategic priorities based on the input of Brampton residents, business owners and other community stakeholders. These priorities and their related goals and initiatives will drive Brampton toward achieving its vision:

Brampton is a world-class city of opportunity. We honour the past. We build on success. We plan for a future that thrives.

One of the Plan's strategic priorities is "Preserving" which includes environmental stewardship and heritage preservation.

The Environmental Master Plan is included as a tactic to support the strategic initiative of building a world-class city that balances our natural, built and cultural environments.

How will the EMP be used?

The Environmental Master Plan will be used by the City, its partners and residents as a tool to inform decision-making by relating decisions to environmental sustainability, and to monitor success. The EMP will focus the 175+ environmental initiatives in the City today toward achieving progress that can be tracked over time. The EMP defines specific environmental goals and targets in each of the six core component areas (people, air, water, land, energy and waste) and outlines the actions and partnerships required to reach those goals and targets in the future.

How can I be involved?

The City of Brampton will need your help to achieve the vision and goals of the Environmental Master Plan. Each of the six core components include actions for environmental progress that can be achieved within the Corporation of the City of Brampton and in the community at large. Your own choices – recycling, carpooling, taking transit, conserving water and energy, planting trees, can all help Brampton reach its environmental goals. Check out the Implementation Action Plan for more information.

<http://www.brampton.ca/bramptongrowgreen>

1 Introduction

Statement from Mayor Fennell



On behalf of Council, it gives me immense pleasure to present the City of Brampton's Environmental Master Plan.

Brampton is Flower City. We take immense pride in our beautiful parks, trails, lakes, beaches, and rivers. They are open, accessible and preserved for all to enjoy.

Our local environment brings residents together. It adds to our world-class city's unrivalled quality of life, and attracts people to invest, work, and live here in our diverse and thriving community.

This Environmental Master Plan builds on the mandate and goals of our Strategic Plan. Taken together, they will deliver real results for Brampton residents by ensuring our environment remains an unwavering priority for our city's future.

Sincerely,

Susan Fennell, Mayor
April 2014

Statement from CAO Corbett



Balance. It's what makes a community healthy. In Brampton, successful city-building is about balancing our natural, built and cultural environments. This balance affects our city's identity, pride, vitality and economic prosperity – now, and in the future.

Our Strategic Plan identifies environmental stewardship as one of our top priorities. "Brampton Grow Green" is the City's very first Environmental Master Plan. It reinforces Brampton's position as an environmental leader, guiding initiatives among six components: air, land, water, energy, waste and people.

We want this plan to inspire commitments, partnerships and investments among stakeholders – from City operations and service delivery, to building construction and managing green spaces. Together, we will deliver responsible, achievable, educational and affordable environmental programs, activities and land use development.

Together, we are city-building.

John Corbett, Chief Administrative Officer
April 2014

Role of the Implementation Action Plan

The Implementation Action Plan (IAP), together with the Background Report and the Green Paper, make up Brampton Grow Green, the City's first Environmental Master Plan. The Environmental Master Plan provides a framework for the City's environmental decision-making that builds upon the City's ongoing environmental initiatives and provides an integrated approach to community sustainability, translating environmental goals into tangible tasks, actions, benchmarks and targets.

The Background Report (2012) forms the groundwork for the EMP and provides a snapshot of Brampton's current environmental efforts, City policies, programs and initiatives currently underway. The Green Paper (2013) provides the technical foundation of the Environmental Master Plan including a summary of the project process, vision, guiding principles, environmental metrics, priority actions and implementation strategies. A set of technical appendices is also part of the Brampton Grow Green family, providing detailed information on community consultation, the full list of Brampton's environmental initiatives and a comprehensive list of environmental indicators and related implementation actions known as the Environmental Performance Framework. The IAP

is the final, implementation-focused document of the Environmental Master Plan, crystallizing how the City, our partners and the Brampton community at large will move to achieve Brampton Grow Green's environmental objectives and targets. The IAP includes identification of (internal) corporate actions and (external) community actions for the City of Brampton and identifies priority metrics for measuring environmental performance in each of the core components of people, air, water, land, energy and waste. The internal actions identify opportunities for the City to make corporate changes necessary to support the implementation of the EMP. The external actions identify the City's environmental partners' roles or opportunities to expand and develop new partnerships with agencies, organizations and the community at large. To provide clarity and maintain momentum, the actions are tied to leaders within the City and supportive partners within the community at large.

2 Grow Green Framework

The vision, guiding principles, core components and partnerships described in this section create a foundation to guide and structure the EMP.

Vision

Brampton is a community that will conserve, enhance and balance our natural and built environments to create a healthy, 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.



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Stewardship

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Balance

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



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

Six Core Components have been identified under which indicators, metrics, targets, actions and directions will be organized:



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 material considered **WASTE**.

Collaboration and Partnerships to Effect Change

The environment is a precious resource and at the heart of the quality of life that residents of Brampton enjoy. While Brampton can be proud of its many environmental initiatives, it must also recognize the need to align and strengthen current operations and environmental programs and to improve its efforts of environmental stewardship. To achieve the vision of Brampton Grow Green and become more effective environmental stewards, Brampton must change the ways it does business and put environmental performance as a key consideration into its decision-making process.

The EMP provides the framework to guide and support Brampton toward achieving its environmental goals both at the level of the City government and for the community at large. The EMP provides metrics, targets and actions that clearly show how to get started, where to make changes and who to partner with to ensure long term success.

To achieve the Brampton Grow Green vision, the City of Brampton will need to work collaboratively within and across its own departments and rely on the support and partnerships with conservation agencies, community-based organizations, local industry, businesses, schools, other levels of government and the public. The City's role with these partners will be as a leader, demonstrating progressive sustainability actions in areas of municipal

jurisdiction, and as a facilitator, providing support and access to environmental resources for its many partners.

The City has a strong community of support to implement the EMP. The actions identified in this IAP propose to strengthen partnerships and clearly share the responsibility for environmental change. Important partners include:

The **Province of Ontario**, which is responsible for:

- Health • Education • Energy Systems • Natural Resources
- Transportation

Provincial ministries and agencies apply legislation and regulations, policies, plans and programming that deliver services to residents and which direct the Region of Peel and City of Brampton, as corporations, land use planning authorities and service providers. In this regard, the Province:

- Directly funds health care, education and provincial highways;
- Regulates water quality (potable water, sewage, stormwater drainage, salt management); air quality; natural resources (aggregates, forest products, species at risk) and natural hazards;
- Guides the growth of communities (Growth Plan) and land use development; the protection of agricultural lands (Greenbelt Plan), and the conservation of regional ecosystems (Greenbelt, Oak Ridges Moraine, Niagara Escarpment).



The **Region of Peel**, which is responsible for:

- Waste Water • Water • Transportation • Solid Waste • Public Health • Affordable Housing • Emergency Services • Growth Management

The Region of Peel, including Public Health, apply policies, plans and programming that deliver services directly to residents, and which guide the development of Brampton, including the conservation of the natural heritage system and support its (remaining) agricultural lands. In this regard, the Region:

- Provides potable water and waste water (sewage) treatment, residential waste/recycling collection, public health services, public housing, and the construction of major roads (Queen Street, Bovaird Drive) including a multi-use path network;
- Guides the growth of Brampton, through the Region of Peel Official Plan, in respect of provincial/regional services and remaining agricultural lands, and the conservation of a Greenland System,
- Collaborates with the Conservation Authorities to secure significant natural heritage areas in public ownership, inventory natural areas, and address climate change impacts;

The **Conservation Authorities** (Toronto and Region Conservation and Credit Valley Conservation) have mandates for:

- Natural Hazards • Natural Heritage Systems
- Environmental Education • Conservation Lands
- Environmental Monitoring

CVC and TRCA apply regulations, policies, plans and programming that deliver services directly to residents, protect natural hazards and natural heritage systems, and engage and educate the community including schools. In this regard, the Conservation Authorities:

- Regulate development and activities with floodplains, riverine and valley slope and erosion hazards, wetlands, and the Lake Ontario shoreline;
- Guide development to eliminate, minimize and mitigate impacts to natural features, functions and linkages, including terrestrial, aquatic and water systems;

- Develop and support science-based research, inventories and monitoring programs for natural heritage conservation, water management, adaptive management, cumulative impacts and ecosystems services;
- Collaborate with regional and area municipalities, school boards, NGOs and other levels of government to deliver environmental education and stewardship programs to residents, local businesses, community organizations and schools;
- Manage conservation lands, including natural features and functions, and hazards lands for their protection, restoration and enhancement, and for passive public recreational and educational opportunities.

Municipal environmental committees of Council support the City's environmental stewardship efforts. In this regard, the Brampton Environmental Planning Advisory Committee (BEPAC) and Brampton Clean City Committee (BCCC) have mandates to provide community input into strategic planning studies and initiatives and can provide leadership and support for community programs, activities and events, respectively. Brampton Grow Green envisions expanding the role of BEPAC and BCCC as an EMP community resource for education and outreach.

Lastly, the **Federal Government** establishes priorities that influence the provinces and municipalities, and which are reflected in a variety of funding programs (e.g. Gas Tax, Green Municipal Fund, etc.) that support municipal infrastructure development, environmental studies and initiatives, etc.

Brampton and these partners will need to work collaboratively to achieve mutual environmental goals through the delivery of their mandates and legislative responsibilities, and through educating, engaging and organizing community programs. While the IAP focuses on what the City of Brampton can do itself to improve its environmental performance, the environment transcends political borders and the City is committed to working with all levels of government and community partners to advance the goals of the IAP.

We all have a role to play in environmental stewardship and the actions contained in the IAP help define that role and make clear the long-term environmental goals Brampton is working towards.

3 Getting There

Achieving the goals of the Environmental Master Plan will be a long-term commitment by the City, its partners and the Brampton community at large.

The City will need to set a strong example and foster corporate direction that is clearly tied and committed to improving environmental performance. The City's Senior Management Team (SMT) will assume the role of a "corporate environmental leadership team". The SMT will have responsibility for overseeing implementation of EMP actions, ensuring capital budget planning, progress reporting, and integrating the EMP across municipal departmental mandates, and through collaboration with environmental partners and the Brampton community at large.

The City will implement actions to modify the way it does business, communicates between departments, collects environmental data, makes decisions, manages its operations and updates its standards to contribute to achieving the goals of the EMP. The corporate actions outlined on the following pages will facilitate the City's implementation of the EMP's recommended actions. These corporate actions focus on five key directions:

1 Municipal Sustainability Resources

Define and assign municipal sustainability resources

– Brampton Grow Green must be embedded in the organizational configuration and composition of City departments and their associated divisions. A City department is typically responsible for specific tasks, goals and responsibilities relevant to its departmental mandate and function. The way the EMP is positioned within the City structure will influence collaboration between departments, promote corporate awareness of environmental initiatives and performance, and enhance public messaging about the priority of environmental sustainability within the City. The following municipal resources and actions will create changes that will help the EMP succeed in the long term.

- The Senior Management Team will lead and support the Departments responsible for each action and facilitate interdepartmental collaboration, communication, education, and reporting on the City's environmental performance.
- SMT will promote, coordinate and monitor Corporate and Community Actions to achieve improvements to the City's environmental performance.
- SMT, with support of an integrated divisional Grow Green Team, will operationalize the EMP actions including partnership collaboration.

2 Educate and promote awareness

Educate and promote awareness within and beyond the Corporation. Communication of environmental imperatives, goals, policies and actions within the Corporation as well as to the community, including residents, private corporations, non-profit organizations, stakeholders and other levels of government, will be an important element of the EMP's success. Internal and external education must focus on engaging stakeholders and building support to undertake environmental actions. The public and City staff must understand what it is they are expected to do, what supports are in place to assist them and what benefits are expected from their actions. The following are actions for the City to expand awareness and educate the community at large and its partners about the EMP.

- Expand the role of the Brampton Environmental Planning Advisory Committee to act as EMP community resource for education and outreach.
- Expand the role of the Brampton Clean City Committee to act as EMP community resource for education and outreach.
- Establish a Sustainability Hub/Environmental Learning Centre to champion the environment to Brampton residents, business and stakeholders.
- Develop a Mandate for the Sustainability Hub to promote, coordinate and monitor Community Actions to achieve improvements to the City's environmental performance.
- Develop annual environmental recognition/incentives for businesses, institutions and citizens.
- Host an Environmental Event in conjunction with the Brampton Environmental Planning Advisory Committee and Brampton Clean City Committee to share and learn best practices being implemented at home and abroad.
- Develop a comprehensive Brampton Grow Green Communication Strategy.

3 Performance monitoring

Establish data collection and performance monitoring methods. The impact of the EMP cannot be known without baseline data collection, ongoing monitoring and a refinement of the environmental performance framework and strategies over time to ensure effectiveness. Quantitative tracking of environmental metrics will demonstrate whether the City is making progress towards its environmental goals and provide powerful evidence to support additional environmental initiatives.

Performance benchmarking is a key element of the EMP and involves choosing metrics that reflect attributes that are important to the city. Establishing performance targets for priority metrics and targets (based on a knowledge of current performance and precedents), and monitoring actual performance over time is necessary to evaluate Brampton's environmental performance. The following actions are required to establish the basis for a successful long-term monitoring of the City's environmental progress.

- Determine baseline data, and confirm and/or develop targets for all priority metrics.
- Identify departmental and corporate responsibilities for monitoring of Corporate and Community EMP Performance Targets, including data management and reporting.
- Establish protocols for data collection, analysis and reporting for each EMP Performance Target.
- Engage a third party environmental auditor to review data collection, analysis and reporting protocols, and annual environmental performance results.
- Annually update the Canvas of Environmental Initiatives, a snapshot of current ways in which Brampton and its conservation partners are improving the City's environmental performance.
- Prepare an annual Council report that describes the status of the implementation of the Environmental Master Plan.
- Prepare a Sustainable Brampton Report that describes and shares the status of the City's Corporate and Community environmental performance, issued at 5-year intervals.

4 Budgeting and decision making framework

Detail a budgeting and decision-making framework.

How Brampton budgets for and makes decisions about environmental initiatives and programs is key to the implementation of the EMP. Successful implementation of the EMP will require a commitment of resources, both capital and staff, and institutional resources. The decision-making framework of each City department needs to closely consider the EMP's environmental framework, directions and priorities, as well as the environmental cost of its action and inactions. The EMP can open up access to external resources such as Provincial and Federal funding sources, staff internships and partnerships. Providing such support to the EMP will assist with its long-term success.

- Allocate a portion of the City's annual budget to implementation of the EMP, with an allocation of funds for municipal staff and funding for pilot projects.
- Initiate a True Cost Accounting approach to decision making in all City departments. The environmental cost of options [GHG emissions; water pollution, etc.] and actions should be directly included in budgeting and reporting process.
- Tie budgets to environmental performance; projects that make a contribution to the environment should rank higher on the priority list.
- Develop a strategy to secure external funding opportunities and partners to help supplement the municipal resources and budget for environmental initiatives.

5 Municipal operations and procurement

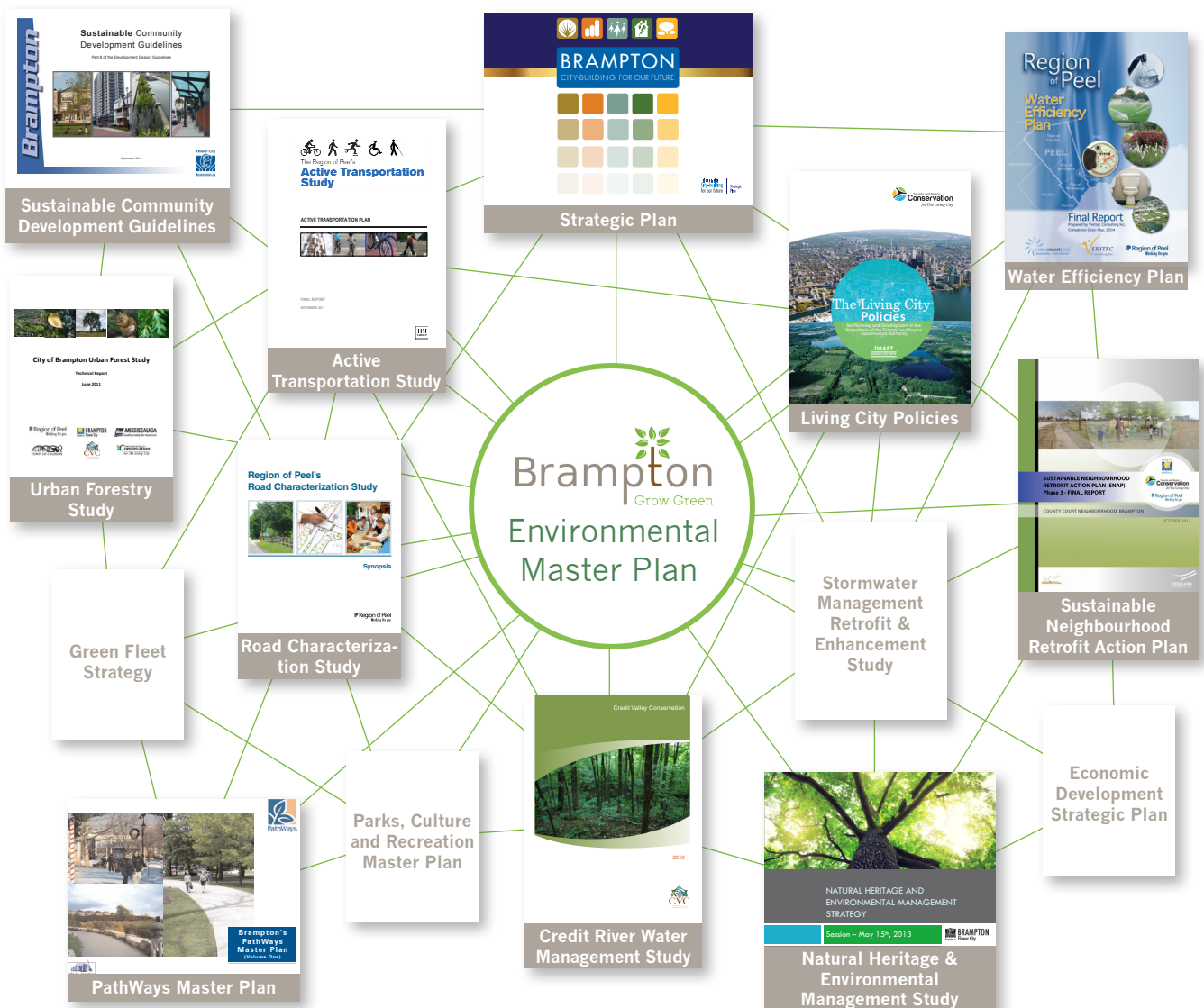
Manage municipal operations and procurement standards.

Municipal procurement is defined as the acquisition of goods, services and works and can range from the purchasing of office supplies or the procurement of food, to funding complex, large-scale municipal contracts such as building a recreational facility. Through procurement practices, cities are becoming increasingly focused on how environmentally sustainable their contractors, suppliers and service providers offer services and manage their internal operations. The following actions describe how the City of Brampton can incorporate environmental practices into the planning and operation of municipal facilities and services provided to the City.

- Develop a Sustainable Procurement Strategy.
- Follow the practices of the G.I.P.P.E.R.'s (Governments Incorporating Procurement Policies to Eliminate Refuse) Guide to Environmental Purchasing that provides recommendations and guidance to City staff at all levels for environmentally responsible procurement.
- Develop a code of sustainable qualifications that vendors/contractors are encouraged to meet when managing their operations or providing services to the City.
- Require contracts with professional service providers to demonstrate an internal responsibility to sustainability and, through product delivery, how they are reducing environmental impacts.
- Develop an assessment protocol that evaluates the environmental consequences of an acquisition at various life cycle stages. Consider life cycle costing for products, buildings and facilities and demonstrate how they meet the City's environmental performance goals.

Brampton Grow Green supports and builds on the intent of many other strategic City plans and studies, and is intended to bring cohesion to Brampton's many ongoing environmental initiatives, policies and programs from across all City departments, operations and services. Other City plans, in their updates or in their implementation, will need to reference the EMP, particularly recognizing targets, collection of monitoring data as appropriate and the actions that implement the Brampton Grow Green Plan. Cross referencing and supporting the EMP through the implementation of other plans will ensure that the goals and objectives of the EMP are entrenched in the City's policy making across its departments.

As described under Collaboration and Partnerships to Effect Change and illustrated via the Actions (Sec. 4.2), the EMP recognizes the integral relationship of Brampton's environmental goals and targets in the mandates, responsibilities and programs of its partners, the Province, the Region of Peel and the Conservation Authorities (Credit Valley Conservation and Toronto and Region Conservation). The EMP is not intended to direct our partners, but rather identify shared environmental interests and opportunities for collaboration and mutual support. The City of Brampton is responsible for implementing the EMP, and will work with its partners including individual departments to assist in achieving actions, and the consistent collection of data for monitoring purposes.



4 Achieving Environmental Performance



To measure Brampton's environmental progress overtime, the City has developed a set of targets, related metrics and actions in each of the six core components of People, Air, Water, Land, Energy, and Waste.

To understand how Brampton is advancing towards its environmental goals, progress must be tracked using concrete measurements. To measure Brampton's environmental performance over time, the City has developed a set of targets, related metrics and actions in the six core components of People, Air, Water, Land, Energy and Waste.

To show progress toward achieving the goals and vision of the EMP, each core component includes **priority indicators** that describe what is being measured and why, related **metrics** to measure progress, **baseline data** from which progress will be measured and **targets** to reach in 2016 and in 2021.

The following section includes two resources necessary to understand the manner in which progress will be monitored: the Priority Indicators Table and Actions.

1. Priority Indicators Table

This table includes the set of priority indicators (short and long-term), metrics and targets identified through the Brampton Grow Green process that can express how Brampton is doing with regard to its goals in the six core components.

2. Actions

Detailed information sheets related to each of the core components are provided to list actions. Through the implementation of these actions, the City and the community will help make progress toward achieving the targets set out in the Priority Indicators Table.

Setting environmental targets and measuring progress is still a new process for many municipalities. In developing a monitoring process, the municipality's choice of indicators, benchmarks, standards and criteria should be based

on the principle of adaptive management, wherein new information, science and monitoring information are fed back into the process to inform management programs and actions. The indicators selected should provide flexibility in measuring environmental performance at different scales; internal (corporate progress), how neighbourhoods are performing (the community at large), and how Brampton may compare to other municipalities.

The EMP Priority Indicators and Actions were identified through the Brampton Grow Green planning process and were based on: research of industry best practices and broad municipality experience; expert advice from all City departments and environmental partners; and input from conservation agencies and community stakeholders. The metrics leverage, where possible, data already being collected or that can be easily collected by the City and partners.

Table 4.1 provides a list of 14 indicators (approx. two indicators for each EMP goal) that have been selected for the following reasons:



- Provides meaningful data that reflects Strategic Plan priorities and targets such as: corporate energy conservation, trees planted, natural heritage features conserved, etc. These indicators can be collected to assess City and community progress and the Strategic Plan can report environmental performance on a city-wide level.
- Where feasible metrics can be used to provide a meaningful understanding of City progress (corporate buildings, facilities, operations and services) and Community progress (all neighbourhoods across the city).
- Assesses short and long-term effectiveness or performance of the City's environmental efforts:

Short-term metrics build on existing baseline data and can report the annual accomplishment of actions. These metrics provide a snapshot of City or community progress that can be easily understood, measured at a reasonable cost, and can be compiled without long delays.

Long-term metrics generally provide data that reflects aggregated environmental performance (i.e. the success cannot be solely attributed to one particular project or service). This data can be used to provide a quantitative and qualitative assessment of environmental progress.



In moving forward, the Corporate Environmental Team will ensure that each department clearly understands its responsibility for data collection, how that data should be organized and maintained for monitoring purposes to be used annually and for the long-term Sustainable Brampton Report. In reporting on environmental performance and progress, the City will ensure that the information provided related to the indicators, metrics and targets is easily understood and relates to tangible outcomes. Where appropriate, the data will be stated in absolutes and also will be extrapolated to reference information as percentages of the total population to ensure it remains relevant as the city grows. Further, the reporting will ensure to connect and describe the interrelationships between indicators including those listed for other EMP goals.

4.1 Priority Indicators

Core Component			Metric	Current Performance
People 	Short Term	Community	Number of Participants/year <i>Why use this Metric?</i> To monitor the number of participants (Brampton residents or City staff) in environmental initiatives and/or programs.	2010 Data Youth School Programs: 147,768 Stewardship Programs: 122,557 Summer Camps: 22,327
		City	Number of Participants/year	2010 Data Commissioner's Spring Challenge: 1,278
	Long Term	Community	Number of citizen outreach programs: Number of programs <i>Why use this Metric?</i> To monitor the outreach programs that contribute to achieving the EMP	2010 Data Over 40 community stewardship programs and activities
Air 	Short Term	Community	Tonnes eCO ² per capita/year <i>Why use this Metric?</i> To monitor the reduction in green house gas (GHG) emissions for the community at large or City buildings, facilities and operations.	Based on Climate Change Strategy City of Brampton (Population: 433,806) Measured in tonnes of CO ₂ e
		City	Total tonnes eCO ² /year	Based on Climate Change Strategy: Table 4.1 Total Corporate Emissions of CO₂, for 2010 Source Type: CO ²
		Community	Number of transit trips per capita/year <i>Why use this Metric?</i> To measure the total number of transit trips taken in the year divided by the City's population.	2010 Data 27.2 trips/resident
	Long Term	Community	Transportation: Vehicle kilometres travelled (VKT)/capita/day	2006 data 25.8 km/per person/day



Current Performance	Target Performance		
	2014	2016	2021 (every 5 years)
Business Partners in Project Green: TBD Community Clean City Activities: 393,000 Tree Planting: TBD CVC: 2,583	Begin Tracking	25% Increase from baseline	25% Increase from 2016
	Begin Tracking	25% Increase from baseline	25% Increase from 2016
	<ul style="list-style-type: none"> • 1 outreach program / component • Set target for 2020 	<ul style="list-style-type: none"> • 1 outreach program / component • Set target for 2020 	
Stationary Energy: 2,779,052 Transportation: 1,042,714 Industrial: 0 Waste: 26,647 Agriculture: 9,184 Total: 3,857,597	Set targets for 2016 and 2021	TBD	TBD
Buildings: 15,248 eCO ² Vehicle Fleet: 22,235 eCO ² Lighting/Signals: 4,979 eCO ² Totals: 39,434 eCO²	Set target for 2016 and 2021	19% reduction from baseline	27% reduction from baseline
	Set target for 2016 and 2021	32 trips	36 trips
	<ul style="list-style-type: none"> • Start tracking VKT/cap/day • Determine baseline 	10% reduction from 2012	25% reduction from 2012

4.1 Priority Indicators

Core Component			Metric	Current Performance
Water 	Short Term	Community	Potable water demand (litre/capita/day) <i>Why use this Metric?</i> To monitor the amount of potable water being consumed by the community at large.	2010 Data Residential: 225 L/cap/day Non-residential: 84 L/cap/day Total use in 2010 Residential: 42,979,330 m ³ IC: 16,063,136 m ³
		City	Potable water demand (m ³ /m ²) <i>Why use this Metric?</i> To monitor the amount of potable water being consumed in City buildings, facilities and operations.	2011 Data (To align with 2010 data) Building: 1.1 m ³ /m ² Irrigation: 16,330 m ³
	Long Term	City	Watercourse Channel and Corridor Naturalization: Measured in Metres and/or % of total area	(To align with 2010 data)
	Land 	Short Term	Community	Number of Trees Planted/year <i>Why use this Metric?</i> To assess and monitor the total number of trees planted per year either city-wide or municipally owned lands.
City			Number of Trees Planted on City Land/year	2010 Data 1000 trees or shrubs/year (Valley Naturalization Strategy)
Community			Density (People and jobs/hectare) <i>Why use this Metric?</i> To understand the degree to which Brampton's development pattern is creating complete, compact communities.	2011 Data Urban Growth Centre: 103 pj/ha Built Up Area: 42 pj/ha Greenfield Land: 8 pj/ha
Long Term		City & Community	Natural Heritage System: Hectares protected	2010 Data Total City land base 26,900 ha
		City & Community	Natural Heritage System: Biodiversity restoration and enhancement by hectare	(To align with 2010 data) 14 ha/year restoration and invasive species management

Current Performance	Target Performance		
	2014	2016	2021 (every 5 years)
	Residential: Track + determine baseline Non Residential: Track + determine baseline	20% reduction from baseline	30% reduction from baseline
	10% reduction	20% reduction from baseline	30% reduction from baseline
	<ul style="list-style-type: none"> • Start tracking amount of naturalization • Determine baseline • Set target for 2016 and 2020 	TBD	TBD
	Establish targets	TBD	TBD
1000 trees/year planted by Scouts 800 parkland trees	Establish targets	TBD	TBD
	Establish targets	Urban Growth Centre: 136 pj/ha Built Up Area: 44 pj/ha Greenfield Land: 21pj/ha	Urban Growth Centre: 182 pj/ha Built Up Area: 47 pj/ha Greenfield Land: 42 pj/ha
8% of City land base is NHS: City – 1,136 ha TRCA – 994 ha Total in public ownership: 2130 ha	(2400 ha)	2840 ha	3280 ha 2031: 4200 ha Beyond 2031: 5400 ha: more than 20% of City land base
	(16 ha/year)	20 ha/year	25 ha/year

4.1 Priority Indicators

Core Component			Metric	Current Performance
Energy 	Short Term	Community	Building energy intensity by sector (lowrise residential, multi-unit residential, office): equivalent megawatt-hours/capita (per person of the total city population) <i>Why use this Metric?</i> <i>To measure the energy intensity of buildings, including energy utilized for heating, cooling, lighting and appliance/machinery use. Building energy intensity is the ratio of total building energy use to total building floor area.</i>	Based on Climate Change Strategy: Natural Gas–2006 Residential: 314,993,942 Commercial: 153,611,164 Industry: 198,283,325 Total: 666,888,432
		City	Building energy intensity: equivalent kilowatt-hours/m ² of floor area (ekWh/ m ²)	2010 Data Corporate: 223 ekWh/m ² Works: 327 ekWh/m ² Recreation: 410 ekWh/m ²
	Long Term	Community	Energy supply coming from on-site renewable resources: % of energy coming from on-site renewables	2010 data .15%
Waste 	Short Term	Community	Waste diversion rate (percent diverted from landfill/year) <i>Why use this Metric?</i> <i>To measure the annual waste diversion rate, or the percentage of total materials diverted from landfill through recycling, reuse and composting.</i>	2008 Data Region of Peel: 49.8% diversion - need to determine Brampton specific rate
		City	Waste diversion rate (percent diverted from landfill/year)	(To align with 2010 data) Determine Baseline

Current Performance	Target Performance		
	2014	2016	2021 (every 5 years)
Hydro–2006 Residential: 1,102,306,661 Commercial and Institutional: 329,635,749 Industrial: 2,407,366,267 2006 Brampton Census: 433,806	Track and determine baseline	10% decrease from baseline	30% decrease from baseline
Parks: 410 ekWh/m ² Transit: 576 ekWh/m ² Fire: 300 ekWh/m ²	(5% reduction from 2008)	15% decrease from baseline	30% decrease from baseline
	<ul style="list-style-type: none"> • Continue tracking on-site renewable energy supply • Determine baseline 	0.5 W/cap: 200kW	1 W/cap: 500kW
	Track and determine baseline	70% diverted from baseline	90% diverted from baseline
	Track and determine baseline	80% reduction from baseline	100% reduction from baseline

4.2 Actions



People

Goal: Invest in PEOPLE to create a healthy, livable and safe community.

Why is this important?

People are a fundamental element of the earth and its natural systems. To survive and thrive, humans need productive land, clean water and air, and abundant energy. However, by our very nature and daily activities – how we live, work and play, we consume resources, generate waste and cause impacts to local air, water and land resources. As stewards of the environment, we need to reduce our resource consumption and waste, and manage our local environments in a manner that improves local air and water quality while supporting and enhancing natural heritage biodiversity.

Brampton's EMP objectives involve empowering residents and businesses to live active and healthy lifestyles, embrace a culture of conservation, establish a green economy, and protect the natural environment. To move down this path the City will need to engage residents and businesses to participate in stewardship projects in their local neighbourhoods and front yards, to conserve water and energy, reduce waste and restore and enhance the natural ecosystem features and functions. EMP actions to accomplish these objectives include education and awareness programs, fostering partnerships with a diverse range of community champions, and reporting on environmental progress.

Education and Awareness

Brampton has a diverse community, and therefore, education and stewardship programs need to reach a wide audience. Corporate operations and community programs need to inspire political and social will and long-lasting environmental activities; demonstrate environmental progress within a practical timeline; and illustrate the positive effects that individual, community and corporate decisions and actions have on achieving the environmental goals of the community.

P 1 Develop a corporate Brampton Grow Green Engagement Strategy to promote the EMP goals of air, water, land, energy and waste.

P 1.1 Develop awareness and education materials for each core component that includes a comprehensive website such as a database of environmental resources, services, activities, calendar of events, etc.

P 1.2 Develop a staff participation baseline and engagement tactics and incentives to increase participation (i.e. in at least one environmental event per year).

P 1.3 Develop a Recognition Program to celebrate the City's environmental leaders (staff, department) and programs.

P 1.4 Utilize technology and establish smart approaches to access and share environmental data, information and successes between City departments.

P 2 Develop a community Brampton Grow Green Campaign to promote the EMP framework and actions and to celebrate successes.

P 2.1 Inform Council and the community of the implementation and success of Brampton Grow Green through a variety of communication materials, e.g. annual updates, reports to Council and 'state of the environment' reports.

P 2.2 Develop an annual city-wide event.

P 2.3 Develop a Recognition Program to celebrate the city's environmental leaders including conservation partners, residents, businesses, NGOs, etc.

P 3 Develop a community Brampton Grow Green Awareness and Engagement Strategy.

P 3.1 Develop a series of awareness and education campaigns (graphic information brochures) for each of the EMP core components.

P 3.2 Develop and maintain a community participation baseline and database.

P 3.3 Develop and maintain an inventory of community environmental programs.

P 3.4 Develop a comprehensive website that includes a database of environmental resources, services, activities and events.

- P 3.5** Continue to expand Brampton's Environmental Education Programs to support the needs of a wide range of learners in a community-based agenda that:
- Improves the outcomes of schools and communities which receive environmental education and services;
 - Increases the capacity for schools and communities to meet the educational needs of a variety of learners in settings ranging from interactive programming in regular and self-contained classrooms, outdoor classrooms and in community-based locations (i.e. recreation and community centres);
 - Ensures that environmental education and programming are linked to the Ontario Curriculum;
 - Improves the balance between a focus on teaching and learning, and the need for appropriate process and accountability; and
 - Closes all environmental education gaps.

Expand Partnerships

Building partnerships with existing environmental stewards and agencies and establishing new partnership opportunities with businesses, institutions, and the community will be key to achieving the goals of the EMP.

P 4 Develop and implement a community Brampton Grow Green Partnership Strategy

- P 4.1** Support school boards (Peel District, Dufferin-Peel Catholic District, and Brampton Private, Alternative and Independent boards) to implement and complete the Ontario Eco-Schools Certification Program.
- P 4.2** Establish a Brampton Grow Green Network and events for environmental NGOs and community groups, businesses and faith groups.
- P 4.3** Establish a database of priority community Brampton Grow Green projects that is accessible by a community network.

P 4.4 Establish and maintain a green business database.

P 5 Expand Region of Peel and Conservation Authority partnerships to engage residents in EMP actions.

P 6 Develop Brampton-specific baselines and performance targets for community participation and citizen outreach programs including municipal environmental programs, and engagement and stewardship programs of the Region of Peel, Conservation Authorities including Partners in Project Green, schools, etc.

P 7 Develop research partnerships with government, conservation agencies, post-secondary institutions, etc. to assist in monitoring Brampton's environmental performance and the health of its built and natural communities.

P 7.1 Work with Region of Peel Public Health to assist with the measurement of long-term health indicators.

P 8 Seek partnerships with other municipalities and conservation organizations to further the City's EMP.

P 8.1 Continue to work with Vaughan and Richmond Hill to expand opportunities associated with Sustainable Community Development Guidelines.

P 8.2 Continue to participate in interregional partnerships such as the GTA Clean Air Council, Peel Climate Change Strategy, Peel Air Quality Management, Peel Urban Forestry Working Group, etc.

P 8.3 Develop cross-jurisdictional partnerships with adjacent municipalities and conservation authorities that focus on watershed, landscape and local sustainability initiatives and public education.



Air

Goal: Reduce impacts on AIR quality.

Why is this important?

Clean air is fundamental to life. Air pollution impacts human health and damages ecosystems. Poor air quality in cities contributes to respiratory diseases, including increased levels of asthma, particularly amongst children and the elderly. Poor air quality has many sources, from traffic congestion to energy consumed for heating and cooling buildings. As Brampton and the GTA grow, the levels of air contaminants are expected to rise and health risks will increase.

Climate change is any change in climate over time, whether due to natural changes or as a result of human activity. For Brampton, this means warmer winters and hotter summers, with more frequent and extreme weather events, that will threaten the city’s infrastructure and natural heritage system. This shift in climate conditions in Brampton will have an effect on the economy, our communities, and Brampton’s natural and urban landscapes.

Brampton’s Grow Green air objectives and actions relate to decreasing greenhouse gas emissions, promoting active transportation and transit-oriented communities, enhancing natural areas and the urban forest, and partnering with the Region of Peel to monitor and raise awareness about Brampton’s air quality.

GHG Emissions Reductions

The measurement of greenhouse gas emissions (GHG) is a widely used measurement of some of the key contributors to climate change. Brampton’s GHG emissions result from the operation of buildings and facilities, transportation, industry, agriculture, waste and waste facilities. The City of Brampton will respond to climate change by reducing GHG emissions (mitigation) and/or by adapting to its impacts.

A 1 Develop a corporate GHG Emissions Reduction Strategy.

- A 1.1 Finalize a corporate Greenhouse Gas (GHG) emissions inventory and establish short-, medium- and long-term reduction targets.
- A 1.2 Develop GHG Emissions Reduction Plan for City buildings and facilities, including sports fields.
- A 1.3 Develop a GHG Emissions Reduction Plan for corporate fleet, including Transit and small equipment.
- A 1.4 Develop a GHG Emissions Reduction Plan for street lighting.
- A 1.5 Establish a protocol for annual monitoring and reporting of corporate GHG emissions.

A 2 Develop a community Greenhouse Gas Reduction Strategy with the Peel Climate Change Strategy (PCCS) partners.

- A 2.1 Finalize a community Greenhouse Gas (GHG) emission inventory and establish short-, medium- and long-term reduction targets.
- A 2.2 Establish a protocol for monitoring and reporting community GHG emissions.
- A 2.3 Develop and promote a GHG Emissions Reduction Plan and tactics for buildings and facilities.
- A 2.4 Develop and promote a GHG Emissions Reduction Plan and tactics for mobile GHG emission sources.

A 3 Work with the PCCS partners to develop and implement a comprehensive community Education Strategy designed to encourage community GHG reductions and potential savings of energy efficient appliances and retrofits.

- A 3.1 Expand ‘Earth Hour’ program to help residents easily make changes to reduce energy use.
- A 3.2 Expand and develop new municipal and partnership communications programs (e.g. Let Your Green Show campaign, Partner in Project Green energy audits, etc.) to engage residents and businesses in energy consumption, reduction and renewable energies.

Transportation Management

Vehicle emissions contribute to air and water pollution. Road infrastructure including parking lots, contribute to stormwater runoff, heat island effect and occupy land that could otherwise be green or living space. Reducing automobile use, improving regional transportation systems and local transit networks, expanding travel demand management programs (e.g. Smart Commute Brampton-Caledon) and encouraging active transportation such as cycling and walking will promote healthy lifestyles while improving Brampton's air quality and reducing its GHG emissions. These measures will also mitigate negative impacts on water and preserve land area.

A 4 Work with the Province, Metrolinx, Region of Peel and area municipalities to improve the local transportation system including local and regional transit networks, GO rail service, travel demand management measures and programs, higher order vehicle (HOV) lanes, etc.

- A 4.1** Coordinate funding programs and opportunities to maximize local and regional priorities.
- A 4.2** Implement the Hurontario-Main Street Light Rail Transit (LRT) project.
- A 4.3** Develop a Transit Education and Awareness Campaign targeted at Brampton youth and adults about the economic, social and environmental benefits of using transit.

A 5 Update and implement the City's Transportation Master Plan

- A 5.1** Prioritize transit uses on roads including transit traffic light control and reserved lanes.
- A 5.2** Implement higher-order vehicle (HOV) lanes on heavily traveled roads or roads with frequent transit service.
- A 5.3** Expand Brampton's Züm Bus Rapid Transit program (BRT) service.
- A 5.4** Establish a baseline of transit trips per year and develop a monitoring protocol.
- A 5.5** Establish a baseline of vehicle kilometres travelled per capita per year and reduction targets and develop a monitoring protocol.
- A 5.6** Establish a database of city-wide capital projects (e.g. stormwater management facility retrofits, naturalization projects) to be integrated with road Environmental Assessment projects and the Road Repaving Program.

A 6 Work with stakeholders and agencies to develop a Community Engagement and Education Campaign about transportation including the impact of automobile use on air quality and the environment and the costs savings associated with car-sharing and transit use

A 6.1 Further promote the Smart Commute Transit Pass Program.

A 7 Work with Smart Commute Brampton-Caledon to develop a corporate Movement Strategy that promotes alternative transportation options for City employees to commute to work and accessing work locations during the business day.

- A 7.1** Develop a promotional campaign to inform employees about their option to receive discounted transit passes for commuting to work.
- A 7.2** Communicate Flexible Work Hour and Work Week options as a way for employees to improve Brampton's air quality and reduce GHG emissions (e.g. compressed work week, telecommuting, etc).
- A 7.3** Reduce single occupant car travel through free transit passes, carpooling to meetings/conferences, teleconferences, employee bike program (i.e. bikes for bylaw officers, mail delivery, etc.).

A 8 Establish a Cycling Advisory Committee and invest in cycling infrastructure (through planning, engineering, enforcement, education and evaluation) to become a Bicycle Friendly Community.

- A 8.1** Build on the City's Pathways Master Plan to develop and implement a Pedestrian and Cycling Master Plan.
- A 8.2** Establish bike-friendly design requirements and bike infrastructure standards for municipal roads, and at municipal buildings, public spaces, parks and transit stops.
- A 8.3** Establish bike-friendly design requirements and bike parking standards for public, private and institutional facilities, including updating Secondary Plan Policies, site plan requirements and applicable zoning bylaws.

- A 8.4** Coordinate with the Region of Peel to implement the Peel Active Transportation Plan.
- A 8.5** Develop a Communication Plan to promote Active Transportation to residents.

Air Quality

Environment Canada reports that emissions associated with vehicles are the largest source of nitrogen oxide and the third largest sources of volatile organic compounds (VOC). Understanding and communicating the sources of pollution is a key action in the City's efforts to improve Brampton's air quality.

- A 9** Work with school boards and Region of Peel to encourage 'walking school buses' in neighbourhoods and the use of transit for older children.

- A 10** Continue to work with the Peel Regional Air Quality Working Group (Public Health) and municipal and Conservation Authority partners.

- A 10.1** Develop a community Air Quality Awareness Campaign to educate the community about Brampton's air quality, including the important sources of air pollution and its human health impacts.

- A 10.2** Work with the Province and Region of Peel to establish Brampton air quality monitoring stations.

- A 10.3** Work with the Region of Peel to identify local areas of air quality concern and develop a local action plan to address sources of pollution.

- A 11** Work with the Region of Peel to develop a Brampton-specific Smog Alert Campaign.

- A 12** Work with the Greater Toronto Area Clean Air Council to promote, educate and coordinate regional clean air initiatives.

- A 13** Implement the City's Anti-Idling Bylaw.

- A 13.1** Develop and implement a city-wide Idling Awareness Campaign to educate residents and businesses on the economic and environmental impacts of idling vehicles.

- A 13.2** Develop and implement a Targeted Enforcement Plan at idling hot spots.



Water

Goal: Protect and respect WATER as a non-renewable, life critical resource

Why is this important?

Access to clean potable water needs to be recognized as a limited resource. New integrated water management approaches that encompass the economic, social and environmental benefits of water conservation and water quality protection are critical to address this vital resource. Brampton's water objectives and related actions relate to managing water resources through:

1. Potable Water Conservation – reducing consumption and encouraging wise use of potable water.
2. Water Resource Management – protecting and enhancing Brampton's watersheds to improve water quality.
3. Stormwater Management – increasing the use of captured or recycled site water, and reducing and managing stormwater runoff.

Potable Water Conservation

We depend on clean water for drinking, a healthy natural environment, recreation, household and commercial uses, sewage treatment and many other functions. The Region of Peel is responsible for treating and distributing Brampton's potable water supply, which is drawn from Lake Ontario.

WT 1 Develop Official Plan policies to promote urban development forms including buildings and facilities that support reduced water consumption.

WT 1.1 Develop policies and standards requiring new development applications to submit a Water Conservation Plan that details proposed water reduction targets, tactics and water saving devices.

WT 2 Work with Region of Peel to communicate the value of water and its conservation.

WT 2.1 Work with Peel to develop Brampton-specific potable water use baseline and reduction targets.

WT 3 Work with Region of Peel to expand current education about potable water demand and use including the impact of water use on watershed resources, cost of treating and distributing water, current lawn watering regulations and the use of potable water for swimming pools, etc.

WT 3.1 Develop and distribute public information on water efficiency.

WT 3.2 Support Peel's Fusion Landscaping Program to encourage the planting of native species to reduce watering requirements for residents and industrial, commercial and institutional (ICI) land uses.

WT 4 Work with Region of Peel and Conservation Authorities to promote the Peel's ICI Indoor Water Efficiency Program to educate and assist ICI customers on how to reduce their water consumption.

WT 5 Support the Region of Peel to systematically reduce leakage in the water distribution systems.

WT 6 Work with PCCS partners to develop an Infrastructure Risk Management Assessment and Renewal Strategy to address climate change adaptation.

WT 7 Develop a Water Conservation Plan for new and existing City buildings and facilities.

WT 7.1 Develop a plan to install water conserving technology and/or retrofit low-flow fixtures.

WT 7.2 Implement wastewater and grey water demonstration projects (e.g. greywater recycling, composting toilets).

WT 8 Develop a Water Conservation Plan for City indoor recreation facilities.

WT 8.1 Collect and reuse swimming pool water to irrigate local parkland and sports fields, as appropriate.

WT 9 Develop a Water Conservation Plan for City outdoor recreation facilities, sports fields and landscaped areas.

WT 9.1 Install computerized central controls for conservation on parks and open space irrigation systems.

Water Resource Management

Management and improvement of water resources begins at the watershed scale. A watershed is an area of land including its inhabitants and communities, agricultural, open space and natural areas that are connected by water draining to a common stream or river. Brampton consists of five major subwatersheds - Credit River, Fletcher's Creek, Etobicoke Creek, Mimico Creek and West Humber River. In Brampton, rainwater and snowmelt should be managed as a resource, not a management impact. This section outlines actions related to protecting, restoring and enhancing natural heritage features, such as wetlands, lakes, rivers and streams, open spaces and parkland and green infrastructure to ensure clean water reaches groundwater and surface water features and eventually Lake Ontario.

WT 10 Undertake and update subwatershed studies with the Province, Region of Peel, Conservation Authorities, conservation agencies and community groups to maintain, restore and enhance subwatershed health and identify new initiatives to improve watershed biodiversity and connectivity.

WT 10.1 Implement subwatershed recommendations in all new development plans including developing urban Master Environmental Servicing Plans for areas of redevelopment and intensification.

WT 10.2 Collaborate with TRCA's Humber Watershed Alliance and Etobicoke-Mimico Creek Coalition to implement subwatershed recommendations through municipal and CA environmental education, restoration and stewardship programs.

WT 10.3 Collaborate with CVC to implement subwatershed recommendations through municipal and CA environmental education, restoration and stewardship programs.

WT 11 Develop and implement a comprehensive Channel Remediation and Stream Restoration Strategy in conjunction with the Province, Region of Peel, Conservation Authorities and conservation agencies (e.g. Ontario Streams).

WT 11.1 Implement the recommendations of the Peel Channels Remediation Study, including a cost-benefit analysis, and the pilot projects identified for Spring Creek.

WT 11.2 Develop a Funding Strategy to implement the Channel Remediation and Stream Restoration Strategy.

WT 11.3 Establish a baseline and targets for channel remediation and stream restoration works.

WT 12 Support the Conservation Authorities' ongoing Watershed Monitoring programs.

WT 12.1 Work with Conservation Authorities to develop an Education and Awareness Campaign about the water quality impacts of stormwater runoff from private properties, including issues from fertilizers, pesticides, car washing, pets, swimming pool care, etc.

WT 12.2 Collaborate with other levels of government, research institutions, conservation organizations, etc. to undertake monitoring efforts that support watershed monitoring.

WT 13 Update the Lake Management Strategy 2005 including recommendations for conservation and management with regard to watershed plans, etc.

WT 13.1 Implement the recommendations of the updated Lake Management Strategy through municipal programs and activities and the development of partnerships with the Province, Region of Peel, Conservation Authorities and local community groups.

WT 14 Work with the Region of Peel and Conservation Authorities to promote the use of rainwater and snowmelt as public and private resources, not a management impact.

WT 14.1 Develop a pilot project that captures rainwater / snowmelt to irrigate City sport fields.

WT 14.2 Encourage the development of plans to manage stormwater runoff as a resource to irrigate active recreation lands such as golf courses.

WT 14.3 Develop a strategy to plant demonstration rain gardens in city parks, gateway features and boulevards.

WT 14.4 Develop and implement a homeowner Rainwater Capture Program, including the use of rain-barrels and rain gardens.

Stormwater Management

Stormwater management involves integrated best practices, from sediment and erosion control, to quantity and quality control facilities, to measures that can be implemented in front and rear yards, parking lots and along roads, and pollution prevention. All of these efforts are intended to provide greater water management to protect life and property from the hazards of stormwater and flooding, and to protect natural features that are reliant on clean surface and groundwater, particularly streams and wetlands that provide sensitive fish and wildlife habitat.

WT 15 Develop a Stormwater Management Retrofit & Enhancement Study.

WT 15.1 Develop a residential stormwater management utilities fee to help fund stormwater management retrofits and maintenance.

WT 15.2 Work with the Province, Region of Peel and Conservation Authorities to implement the Stormwater Management Retrofit and Enhancement Study.

WT 16 Develop and implement a Stormwater Management Facility Maintenance Strategy.

WT 17 Develop a Low Impact Development (LID) Strategy for the development of alternative City standards and practices that address stormwater management.

WT 17.1 Develop and implement planning policies and standards that require a “treatment train” approach to stormwater management for new development applications, including redevelopment and intensification.

WT 17.2 Partner with Conservation Authorities to implement LID strategies, including monitoring.

WT 17.3 Implement LID boulevard pilot projects in conjunction with the City’s Road Repaving Program.

WT 18 Develop a corporate Green Roof Strategy.

WT 18.1 Establish guidelines that will require the City to consider the installation of a green roof for the reconstruction and/or replacement of existing roofs at City-owned buildings and facilities.

WT 18.2 Consider the establishment of standards for the installation of green roofs for all new City-owned buildings and facilities.

WT 19 Develop community Green Roof policies and standards.

WT 19.1 Establish Official Plan policies that requires ICI development applications to consider the installation of a green roof for new development and/or the reconstruction/replacement of existing roofs.

WT 19.2 Consider the establishment of standards for the installation of green roofs for all new ICI buildings and facilities.

WT 20 Develop/update Erosion and Sediment Control Bylaw (e.g. monitoring requirements, enforcement practices and resources).

WT 21 Continue to implement and update the City’s Salt Management and Snow Management programs.



Land

Goal: Manage LAND to sustain the natural environment.

Why is this important?

Planning and designing cities involves allocating space for housing, transportation systems, industry, education, energy production, recreation, agriculture and natural heritage protection. Healthy natural heritage features and the urban forest provide a range of free ecological services (clean water, improved air quality, reduced energy needs etc) that sustain Brampton's quality of life and the broader health of the built and natural environments.

Good urban design means planning communities to include a mixture of land uses, that are walkable and served by convenient transit service, contain a diversity of housing types, public spaces and recreational amenities and a healthy, diverse natural heritage system. Good urban planning can have a profound impact on improving air and water quality, reducing energy use, protecting natural heritage features and creating a sense of place.

Brampton's land objectives and actions relate to conserving its natural heritage system and promoting ecological diversity and services, managing the impacts of development by focusing on good urban design and community sustainability including walkability, and increasing local food availability.

Natural Heritage

Brampton's Natural Heritage System (NHS) occupies 17 per cent of the city's land base and is a network of protected natural heritage features and waters within the Credit River, Etobicoke and Mimico Creeks, and Humber/West Humber River watersheds. Brampton's natural heritage system provides habitat that supports a diverse range of native plants and animals while providing ecosystem services crucial to the well-being and quality of life enjoyed by Brampton residents. The success of a community's natural landscape will be measured by its biological diversity and landscape health, as well as the environmental health of the city, including:

- Clean air and water
- Reduced energy use
- Recreation and education opportunities
- Flood protection and mitigation
- Erosion control
- Wildlife habitat and genetic diversity

L 1 Collaborate with Conservation Authorities to implement subwatershed recommendations through municipal and Conservation Authority environmental education, restoration and stewardship programs, e.g. SNAP neighbourhood retrofits.

L 1.1 Address natural heritage, open space, urban forest and green infrastructure regulatory, policy and program gaps.

L 1.2 Develop a policy to restrict the selling of natural heritage features/lands from public ownership.

L 2 Develop and implement a Natural Heritage and Environmental Management Strategy (NHEMS).

L 2.1 Establish a Natural Heritage Network of internal and external partners to implement the recommendations of the strategy.

L 2.2 Establish a baseline and targets for ecological remediation, restoration and enhancement projects, and a protocol to track and monitor progress.

L 2.3 Develop a NHEMS Communication and Engagement Strategy, to educate and motivate the city's stakeholders, residents and businesses to participate in stewardship, restoration and enhancement activities on public and private lands.

L 2.4 Establish a baseline and targets for natural heritage system biodiversity restoration and enhancement and a protocol to track and monitor progress.

L 2.5 Continue and maintain a Natural Areas Inventory of the city's water, aquatic and terrestrial resources in conjunction with the Conservation Authorities and the Region of Peel.

L 3 Continue to participate in the Region of Peel Greenland Securement Program.

L 3.1 Develop and implement a Brampton-specific Greenland Securement Strategy, including funding for the acquisition and/or incentives for the donation of natural heritage lands.

L 3.2 Implement the Landowner Securement Contact and Education Program to encourage landowners of identified natural heritage areas to dedicate these lands into public ownership.

L 4 Finalize Trails Hierarchy Strategy which includes trail design standards to minimize impacts to natural areas and buffers.

L 4.1 Build on the Pathways Master Plan and complete the highest priority gaps in the network, including interregional connections.

L 4.2 Review and update trail signage program.

L 4.3 Develop Official Plan policies to address trail planning, design and construction to mitigate the impacts of trails and users on natural heritage features and functions.

L 5 Work with Conservation Authorities, community associations, ICI sectors, School Boards and residents to restore, expand and enhance natural heritage features and functions on private properties.

L 6 Work with the Province, Region of Peel, Conservation Authorities and the Ontario Road Ecology Group to develop a city-wide Road Ecology Strategy.

L 6.1 Develop Official Plan policies to require consideration of road ecology for new development, and for municipal road reconstruction and expansion projects.

L 6.2 Implement a long-term Road Ecology Mitigation Strategy for Heart Lake Road, including traffic management and road improvements, such as eco-passages, environmental awareness, signage, etc.

Naturalization

Brampton's pioneering heritage involved extensive clearing of forests (almost 90 per cent) and wetlands to build settlements, facilitate agricultural and establish family farms across the flat Peel Plain. This legacy of land clearing combined with extensive, fast-paced development since the 1970s has resulted in the loss of natural areas, physical changes to valleys and watercourses, and fragmentation of Brampton's remaining natural vegetation communities that are now being affected by invasive species and extreme weather events.

The City's naturalization efforts are aimed at addressing these historical conditions and current impacts by planting native and naturalized plant species, removing invasive species, constructing wetlands and establishing environmental buffers around natural heritage features. Naturalizing the city's NHS will improve ecosystem services provided to Brampton residents while maintaining native communities and species, and conserving species of risk.

L 7 Develop a Naturalization Engagement Strategy to improve community acceptance of naturalization programs on City-owned lands.

L 7.1 Require new developments to prepare Homeowner Guides and open space signage to promote environmental awareness of NHS protection and naturalization.

L 7.2 Develop and distribute communication materials to existing neighbourhoods that describes municipal and Conservation Authority naturalization efforts.

L 7.3 Develop communication materials that identifies and promotes naturalization programs for private homeowners including the Conservation Authorities' 'Green Yards' and the Region of Peel 'Fusion Landscaping'.

L 7.4 Develop a signage program for areas that have been naturalized to educate residents of the environmental benefits of natural landscapes.

L 7.5 Develop native species planting lists and management factsheets in consultation with the Conservation Authorities to guide planning applications and assist homeowners.

Urban Forest

An Urban forest is defined as a collection of tree, shrubs and groundcover that grow within a city. Brampton's urban forest canopy covers 11 per cent of its land area and provides ecological services that contribute to Brampton's quality of life, including climate change mitigation, improved local air quality, water quality control, energy conservation and recreational opportunities. Trees also increase urban property values, reduce noise impacts, and provide stormwater management and erosion protection for our lakes and streams. Extending from street trees to backyards and parks, forests and valleys, trees contribute to safe, walkable and beautiful communities that reduce our stress and create stronger community connections between people and the natural environment.

L 11 Develop Official Plan policies for new development to require mitigation and compensation for the loss of tableland vegetation to facilitate development.

L 11.1 Update Landscape Standards and guidelines to increase tree planting requirements for new residential, commercial, industrial and institutional sites.

L 11.2 Update Landscape Standards to increase tree planting requirements for City and Regional road projects.

L 11.3 Update Landscape Standards to increase soil quantity and quality for park and boulevard tree planting.

L 12 Implement the recommendations of the Brampton Urban Forest Study.

L 12.1 Review and update the Brampton Urban Forest Study every 10 years, including the urban forest canopy assessment and recommendations for urban forest improvements.

L 12.2 Develop a range of tree canopy targets for the city.

L 12.3 Develop a Priority Planting Tool to assist municipal staff and community partners to identify planting sites to maximize urban forest benefits across the city.

L 12.4 Develop an Urban Forest Management Strategy.

L 12.5 Establish a baseline and monitoring protocol for the total number of trees planted on City-owned land per year.

L 8 Expand the City's Naturalization Program

L 8.1 Develop partnership opportunities with Conservation Authorities, Region of Peel, provincial ministries and community groups, to restore and enhance the city's natural heritage system.

L 8.2 Update the Naturalization Program to focus on improving natural vegetation communities including wetlands and wildlife habitat, and support invasive species management efforts

L 8.3 Review and define the need for Natural Area Management Plans for public lands.

L 8.4 Provide support for the naturalization of the Claireville Conservation Area.

L 9 Develop and implement an Open Space Naturalization Program to prioritize areas to be naturalized in municipal open space, parks, boulevards, and areas of green infrastructure.

L 9.1 Undertake pilot projects in city boulevards and right-of-ways, parks and open spaces to demonstrate the benefits of naturalized landscapes.

L 9.2 Undertake wildflower / wild grass meadows pilot projects to reduce mowing in parks, open space and boulevards, and to naturalize municipal 'no mow' and 'no maintenance' buffers.

L 9.3 Update Planting Standards to promote native and/or naturalized species (trees, shrubs and groundcover), and identify; planting requirements including species diversity, size, stocking age and soil volumes.

L 9.4 Establish pollinator gardens across the city to educate residents of the value and biological imperative of conserving pollinator wildlife species.

L 9.5 Update Boulevard Maintenance, Grass and Weed Cutting, and Property Standards by-laws to ensure that they do not restrict naturalization efforts on public and private lands.

L 10 Develop an Invasive Species Management Strategy for all City properties.

L 10.1 Develop Official Plan and Secondary Plan policies to require new development applications to undertake invasive species management efforts.

L 12.6 Establish a baseline and monitoring protocol for the total number of trees planted city-wide per year.

L 12.7 Undertake and maintain an inventory of all street and park trees.

L 13 Implement the Emerald Ash Borer Management Program through annual funding and staff resources, and undertaking community plantings in parks and open spaces, etc.

L 14 Implement the Peel Urban Forest Strategy and support the Peel Urban Forest Working Group.

L 15 Support the Conservation Authorities' 'Greening Corporate Grounds' and 'Partners in Project Green' programs.

L 15.1 Work with Conservation Authorities to partner with community associations, ICI sectors and School Boards to plant trees on their properties, including greening parking lots.

L 16 Work with Conservation Authorities to establish a residential Tree Planting Program in Brampton.

L 16.1 Develop an annual private tree planting program that includes discounted trees and planting advice for homeowners.

L 16.2 Develop a communication strategy to educate residents on the benefits of Brampton's urban forest and how they can assist in maintaining its health.

Sustainable Development

Brampton's urban environment comprises approximately 83 per cent of the city's land area. Concerns over public health, climate change, energy and resource use has brought sustainable urban design to the forefront for those planning, building and managing communities in Ontario. Provincial legislation, plans and policies now direct municipalities to establish walkable, healthy, complete, sustainable communities.

L 17 Implement the Sustainable Community Development Guidelines (SCDG) for new development, including redevelopment, infill and intensification.

L 17.1 Implement and maintain a tool to measure the sustainability of new development.

L 17.2 Establish minimum and aspirational thresholds (scores) for site plan, draft plan and block plan applications.

L 17.3 Revise Official Plan policies and engineering and landscape standards to remove barriers to innovative sustainable development and community forms.

L 17.4 Expand the City's Alternative Design Standards to include new development forms that encourage sustainable community development.

L 17.5 Develop a protocol for monitoring the success of the SCDG program.

L 17.6 Assess and identify incentives/financing necessary to support sustainable standards for the design and construction of new buildings or retrofits of existing buildings.

L 18 Develop a comprehensive public education strategy about urban growth, design and density, including transit-oriented communities.

L 19 Develop an Alternative Parking Strategy to encourage underground parking, tiered parking structures, green parking lots and opportunities to reduce parking requirements in exchange for community benefits.

Urban Agriculture and Local Food

Urban agriculture can be broadly defined as the practice of cultivating, processing, and distributing food in or around a community and can range from private and public horticulture, animal husbandry, aquaculture, agro-forestry and urban beekeeping. Urban agriculture can reflect varying social and economic needs for more direct access to local, fresh vegetables, fruits, and meat products, and is considered an element of sustainable urban development that includes food security and food safety.

L 20 Develop a vision and sustainable design framework for the Urban Growth Centre.

L 20.1 Partner with private landowners and developers to attract and accommodate growth along Corridors and in Mobility Hubs and Urban Growth Centre including public reinvestment and incentives.

L 21 Monitor the success of Community Improvement Plan for the downtown core.

L 22 Expand the Sustainable Neighbourhood Retrofit Action Plan (SNAP) program to existing neighbourhoods across the City in conjunction with CVC, TRCA and the Region of Peel.

L 22.1 Implement the recommendations of the County Court SNAP through municipal operations and programs, and by leading and supporting community efforts.

L 22.2 Establish an annual SNAP capital budget for program development and implementation.

L 23 Work with senior government to reduce barriers for infill development on contaminated brownfield sites.

L 24 Update the City's Community Garden policies and procedures.

L 24.1 Identify spaces within the city's park inventory to expand the Community Garden Program

L 24.2 Create a Community Garden Communication and Education Campaign.

L 24.3 Assess opportunities to develop an Allotment Garden Program.

L 24.4 Assess opportunities to use municipal green roof space for urban agriculture purposes.

L 25 Develop policies to encourage private property community gardens in areas of high density in collaboration with businesses, institutions, etc.

L 25.1 Work with community organizations and residents to harvest backyard gardens, fruit trees, etc.

L 26 Work with Region of Peel and Conservation Authorities to develop a Food Strategy that includes urban agriculture, heritage agriculture, incentives for productive green roofs in new construction, neighbourhood farmers markets, etc.

L 26.1 Support TRCA's Urban Agriculture initiative at the Claireville Conservation Area.

L 26.2 Partner with Region of Peel and Local Food Banks to identify and address local food deserts.



Energy

Goal: Reduce ENERGY consumption and manage the impact of energy usage on our environment

Why is this important?

Energy powers our cities, our homes and our businesses. We use substantial amount of energy that is expensive to generate and has significant environmental impact to public and community health and natural systems, including air quality, water quality and thermal pollution.

Energy conservation and the use of renewable energy sources offer the greatest opportunity to establish a resilient energy system, and reduce greenhouse gas emissions to improve air quality. Brampton’s energy objectives and actions relate to managing the demand for energy, improving energy efficiency and performance, and increasing the use of renewable energy.

Energy Management

Energy management covers a range of specialties including the efficient design and use of energy systems in buildings, facilities and transportation systems, measuring and monitoring energy use, and assessing and implementing the relative costs of energy conservation and energy production, including green energy in various applications.

E 1 Develop Official Plan policies to explicitly promote urban development forms and buildings that support reduced energy consumption and the use of renewable energy.

E 1.1 Develop policies and standards requiring new development applications to submit an Energy Conservation Plan that details proposed energy reduction targets, tactics and energy saving devices.

E 2 Prepare a Feasibility Study for District Energy opportunities in Brampton’s Central Area.

E 3 Develop a comprehensive Energy Management Strategy for City buildings and facilities, including sports fields.

E 3.1 Conform with the Green Energy Act requirements to track and report energy use.

E 3.2 Develop policies and standards requiring LEED gold accreditation or equivalent energy accreditation for new and retrofitted corporate buildings and facilities over 500 square metres.

E 3.3 Undertake energy audits and develop an Energy Conservation Plan for each municipal building and facility, including retrofits program.

E 3.4 Develop a comprehensive corporate education program about energy consumption and reduction

E 4 Update the City’s Green Fleet Strategy.

E 4.1 Continue right-sizing vehicles, and ‘greening’ the municipal fleet with new biodiesel products, hybrid and electric vehicles, etc.

E 4.2 Implement city-wide electric vehicle plug-in stations for corporate and community uses

E 5 Work with PCCS partners to develop a Community Energy Plan.

E 5.1 Work with local distribution companies (Enbridge and Hydro One Brampton) to develop a residential and ICI energy use data base that can be used to track community energy use.

E 5.2 Work with local distribution companies (Enbridge and Hydro One Brampton) to revise utility bills to illustrate usage.

E 5.3 Develop a city-wide Community Energy Map.

E 5.4 Identify high-energy use communities and develop local action plans to reduce energy use.

E 5.5 Develop a Residential Retrofit Program to assist homeowners with energy efficiency retrofits, including Local Improvement Charges.

E 5.6 Develop a comprehensive education program about energy consumption and reduction.

E 5.7 Explore partnership opportunities with renewable energy providers to provide information about private renewable energy options.

E 6 Develop a Renewable Energy Strategy for City buildings and facilities.

E 6.1 Identify opportunities for alternative and renewable power sources at City buildings and facilities.

E 6.2 Investigate public/private partnership opportunities to integrate FIT applications onto City buildings and facilities.

E 6.3 Identify opportunities to research and invest in green energy (e.g. Fuel Cell Demonstration Project and Green Energy Procurement).



Waste

Goal: Reduce waste generation to limit resource use, greenhouse gas emissions, preserve habitats and resources and decrease management costs

Why is this important?

Solid and organic waste in landfills takes up a significant amount of land, contributes to GHG emissions and poor air quality, and poses a risk to water resources as a result of landfill leachate. Waste reduction, recycling and reuse can help to preserve our resources, lessen pollution and decrease management costs.

Waste management is the responsibility of the Region of Peel, but the City of Brampton can do more to support and promote waste management within the community and through changes to corporate operations and land management. Engaging the community to understand the value of waste both as a resource and onsite municipal costs will bring awareness to waste strategies to rethink, reduce, reuse, recycle and repair and compost our organic and non-organic materials.

Waste Reduction

Reducing waste at the source through corporate green procurement practices and the efficient use of resources is the first and foremost means of addressing the problem of waste generation.

WS 1 Develop a corporate Waste Management Strategy to implement and promote waste reduction, reuse, recycling and composting for all City facilities, buildings, parks and streets including organic materials from forestry operations.

WS 1.1 Undertake a corporate waste audit; and develop a corporate waste baseline, reduction targets and monitoring protocol.

WS 1.2 Develop a Waste Reduction Plan for each City-owned building and facility, including targets and tracking/monitoring.

WS 1.3 Develop a comprehensive corporate Education Program designed to encourage solid waste diversion.

WS 1.4 Develop a strategy to replace hard copy (written) materials for all municipal meetings, files, etc. through the use of electronic equipment (e.g. tablets) and digital filing systems, including document libraries.

WS 1.5 Establish standards for environmentally responsible printing.

WS 1.6 Develop corporate procurement standards, practices and procedures to minimize waste generation for City operations, including service suppliers.

WS 1.7 Develop policies and procedures to reduce packaging and/or require that it is returned to material suppliers.

WS 1.8 Create a “no water bottle” policy for municipal buildings and facilities, and provide alternative water bottle filling stations.

WS 2 Work with Region of Peel and private businesses to develop a Recognition Program for businesses with exemplary practices for minimizing waste generation.

WS 3 Work with the Region of Peel to develop and implement a community Waste Management Strategy for Brampton.

WS 3.1 Develop a Brampton-specific community waste generation baseline, reduction targets and monitoring protocol.

WS 3.2 Develop an education strategy for waste reduction, recycling, reuse and composting including the environmental and economic costs of waste disposal and the range of materials that can be recycled.

WS 3.3 Work with the School Boards to expand education on waste diversion i.e. reduce, reuse, recycle and composting through the City’s environmental school programs and at municipal buildings and facilities, including libraries.

Recycling

Reducing waste is the first step in managing the impact on our built and natural environments. However, there are many items that we use in our everyday lives that can be recycled, such as aluminum, glass and paper, plastic and organic material. Recycling reduces the demand for virgin resources and improves air and water quality and reduces the need for landfills. In addition, recycling creates more economic activity in comparison to incineration and landfilling, and many recycling programs are self-sustaining as the products will help fund the curbside collection.

WS 4 Develop a corporate Recycling Strategy for City-owned buildings, facilities, parks, streets and operations.

WS 4.1 Undertake a corporate recycling audit, and develop a corporate recycling baseline, targets and monitoring protocol.

WS 4.2 Develop a corporate Recycling Awareness Campaign.

WS 4.3 Provide recycling bins in all City buildings, facilities, parks and streets.

WS 4.4 Reuse and recycle City construction material.

WS 4.5 Update minimum requirements for City standards for the use of recycled materials in municipal construction and road projects.

WS 5 Work with the Region of Peel to review and expand the range of recyclable materials for community collection.

WS 5.1 Work with Peel to expand recycling collection services and organic waste program for multi-residential buildings, commercial, institutional and industrial uses.

WS 5.2 Work with Peel to implement a recycling program for construction and demolition materials, in partnership with private sector.

WS 6 Work with the Region of Peel to develop “extended” producer responsibility programs.

Hazardous Waste

Hazardous wastes are primarily generated by industrial and manufacturing processes, and these wastes can be found in a broad range of products that are used in our homes, including but not limited to: biomedical wastes from home health care, photo-finishing chemicals, home and yard pesticides, motor oil, paints, unused cleaning products, electronics and discarded batteries. Hazardous wastes require special handling to reduce adverse effects to human health and the environment. The Province has identified requirements to manage hazardous wastes including collection, storage, transportation, treatment, recovery and disposal. Hazardous waste collection sites for residents are managed by the Region of Peel, although certain commercial and industrial businesses are assisting with the collection of electronics, batteries, etc.

WS 7 Develop corporate Hazardous Waste Management Strategy to track, manage, collect and safely dispose of all toxic materials used within City-owned buildings, facilities and operations.

WS 7.1 Develop a staff education program for working with hazardous material.

WS 7.2 Develop a comprehensive database of optional non-hazardous substitutes for hazardous materials.

WS 7.3 Develop a list of environmentally friendly cleaning suppliers and products to be used in all City buildings and facilities.

WS 8 Support the Region of Peel Hazardous Waste Management Strategy.

WS 8.1 Work with Peel to identify the most commonly used hazardous products and recommend alternatives.

WS 8.2 Work with Peel to handle all hazardous residential waste materials (e.g. batteries).

5 Sharing Environmental Performance

Reporting the City's environmental initiatives and progress to the community is a way to continually promote environmental awareness, share and celebrate successes and build strong community support for the EMP and its goals. Reporting on what is measured and monitored creates a dialogue between Council, municipal departments, and the public. Providing information that the community can easily access increases engagement, generates new ideas and instills ownership for Brampton's environmental future.

The City of Brampton has identified a range of tools that it will use to share its progress with the public. The primary communication tools to showcase the progress made through Brampton Grow Green, will be:

- 1. Canvas of Environmental Initiatives**
- 2. Annual report to Council and**
- 3. A Sustainable Brampton Report.**

Canvas of Environmental Initiatives

A key step in understanding the extent and nature of current environmental initiatives in the City of Brampton was the development of the Canvas of Environmental Initiatives. The Canvas provides a snapshot of the many studies, programs and activities that Brampton and its conservation partners (Region of Peel, TRCA and CVC) are undertaking to improve the City's environmental performance. The initial Canvas was provided in the Background Report (2012) and has been updated for the Implementation Action Plan (2014). The Canvas is a 'working list' that will be updated annually to reflect new environmentally sustainable initiatives as they are identified and implemented. The Canvas can be found at www.brampton.ca/bramptongrowgreen.

It should be noted that the Canvas does not yet highlight the many green initiatives that are being undertaken by Brampton businesses, residents and / or environmental groups. The City will update the Canvas as these efforts are brought to our attention.

Annual Council Report

An annual report to Council will focus on what actions from the EMP have been implemented over the preceding year. This report will clearly and plainly describe what elements of the Brampton Grow Green Plan the City has implemented, and where and how the City will concentrate its efforts in the coming year to move the Plan ahead.

Sustainable Brampton Report

The Sustainable Brampton Report will not only include information that Brampton is collecting regarding EMP metrics and targets, but will also be a natural place to share long range data and monitoring provided by the City's partners such as the Province (e.g. Transportation for Tomorrow), Region of Peel (e.g. Water Management Systems) and Conservation Authorities (e.g. Watershed Report Cards). This report will be available in a variety of languages and will clearly and plainly describe what elements of the Brampton Grow Green Plan the City has implemented, what progress is being made to achieve the targets, and where and how the City will concentrate its efforts in the coming years to move the Plan ahead. Over time, members of the community will look to the Sustainable Brampton Report to get the most comprehensive picture of Brampton's environmental progress.

The City encourages our residents, businesses, institutions and visitors to connect with our conservation partners to understand what is happening in and around the province, Region of Peel and within the Conservation Authorities' watersheds that contributes to the health of Brampton's built and natural environments. The conservation agencies websites provide information regarding new and ongoing initiatives, including legislation and regulations, plans, policies and programs.

6 How the EMP will Evolve










Developing the Environmental Master Plan is a good first step, however, the Plan needs to grow and change with Brampton as the City and its environmental priorities change. The Plan, like other City master plans, will be required to be updated every five years to ensure the document remains current, relevant and reflective of the City's changing environmental goals and areas of focus. While the EMP will always take a comprehensive approach to all elements of the environment, changing local or global conditions may impact how Brampton wants to position its environmental efforts. Environmental priorities like water or air may become more important if the region enters a time of extended drought, poor air quality or experiences an environmental disaster. The Brampton Grow Green Environmental Performance Framework has the flexibility to add additional indicators and metrics that may track different data and targets that become more relevant as priorities or environmental conditions shift.

The evolution of the EMP will be largely found in the Priority Indicators and related Actions which are expected to grow over time. As the City becomes more accustomed to measuring and tracking environmental data, it may add additional indicators and targets to its list of priorities and in turn, add or modify the actions identified to help reach those targets. The Environmental Master Plan reflects the best practices and ambitions for the City and community at this time of the Plan's creation, but provides flexibility for improvement, enhancement and change over time to reflect the community it serves.








Appendix

- 1 Action Table
- 2 Canvas of Environmental Initiatives
- 3 Consultation Summary








Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline					
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10	
	Education and Awareness	P 1 Develop a corporate Grow Green Engagement Strategy to promote the EMP goals of air, water, land, energy and waste. P1.1 Develop awareness and education materials for each component that includes a comprehensive website such as a data base of environmental resources, services, activities, calendar of events, etc. P 1.2 Develop a staff participation baseline and engagement tactics to increase staff participation (i.e. require staff participation in at least one environmental event per year). P1.3 Develop a Grow Green Recognition Program to celebrate the City's environmental leaders (staff, department) and programs. P 1.4 Utilize technology and establish smart approaches to access and share environmental data, information and successes between City departments.						
		P 2 Develop a Community Grow Green Campaign to promote the EMP framework and actions and to celebrate successes. P 2.1 Inform Council and the community of the implementation and success of Brampton Grow Green through a variety of communication materials, e.g. annual updates, reports to Council and 'state of the environment' reports.. P2.2 Develop an annual Grow Green city-wide event .P2.3 Develop a Grow Green Recognition Program to celebrate the City's environmental leaders including conservation partners, residents, businesses, NGOs, etc.						






Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		P 3 Develop a Community Grow Green Awareness and Engagement Strategy.					
		P 3.1 Develop a series of awareness and education campaigns (graphic information brochures) for each of the EMP core components.					
		P 3.2 Develop and maintain a community participation baseline and database.					
		P 3.3 Develop and maintain an inventory of Community Environmental Programs.					
		P 3.4 Develop a comprehensive website that includes a database of environmental resources, services, activities and events.					
		P 3.5 Continue to expand Brampton's Environmental Education Program to support the needs of a wide range of learners in a community-based agenda that: <ul style="list-style-type: none"> • Improve the delivery of education and services to schools and communities. • Increase school/community capacity for variety of learners in different settings (i.e. interactive programs in regular, self-contained or outdoor classrooms, .and recreation and community centres; • Ensure link to the Ontario Curriculum; • Improve balance between teaching and learning, and process and accountability. • Closes all environmental education gaps. 					








Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline					
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10	
	Expanded Partnerships	P 4 Develop and implement a community Grow Green Partnership Strategy P 4.1 Support school boards (Peel District, Dufferin-Peel Catholic District, Brampton Private, Alternative and Independent boards) to implement and complete the Ontario Eco Schools Certification Program. P 4.2 Establish a Grow Green Network and events for environmental NGO's and community groups, businesses and faith groups. P 4.3 Establish a database of priority community Grow Green projects that is accessible by community Grow Green Network P 4.4 Establish and maintain a green business database.			 			
		P 5 Expand partnership opportunities with the Region of Peel and Conservation Authorities to engage residents in Grow Green actions.						
		P 6 Develop Brampton specific baselines and performance targets for community participation and citizen outreach programs including municipal environmental programs, and engagement and stewardship programs of the Region of Peel, Conservation Authorities including Partners in Project Green, schools, etc.						
		P 7 Develop research partnerships with other levels of government, conservation agencies, post-secondary institutions, etc. to assist in monitoring of Brampton's environmental performance and the health of its built and natural communities.						










Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		P 7.1 Work with Peel Public Health to assist with the measurement of long term health indicators.					
		P 8 Seek cross jurisdictional partnership opportunities with other municipalities and conservation organizations to further the City's Grow Green program.					
		P 8.1 Continue to work with Vaughn and Richmond Hill to expand opportunities associated with Sustainable Community Development Guidelines.					
		P 8.2 Continue to participate in interregional partnerships such as the GTA Clean Air Partnership, Peel Climate Change Strategy, Peel Air Quality Management, Peel Urban Forestry Working Group, etc.					













Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
	GHG Emissions	A 1 Develop a Corporate GHG Emissions Reduction Strategy.					
		A 1.1 Finalize a corporate Greenhouse Gas (GHG) emissions inventory and establish short, medium and long term reduction targets.					
		A 1.2 Develop GHG Emissions Reduction Plan for City buildings and facilities, including sports fields.					
		A 1.3 Develop GHG Emissions Reduction Plan for corporate fleet, including Transit and small equipment.					
		A 1.4 Develop GHG Emissions Reduction Plan for street lighting.					
		A 1.5 Establish a protocol for annual monitoring and reporting of corporate GHG emissions.					









Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline					
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10	
		<p>A 2 Develop a Community Greenhouse Gas Reduction Strategy with Peel Climate Change Strategy (PCCS) partners.</p> <p>A 2.1 Finalize a community Greenhouse Gas (GHG) emission inventory and establish short, medium and long term reduction targets.</p> <p>A 2.2 Establish a protocol for monitoring and reporting community GHG emissions.</p> <p>A 2.3 Develop and promote a GHG Emissions Reduction Plan and tactics for private buildings.</p> <p>A 2.4 Develop and promote a GHG Emissions Reduction Plan and tactics for mobile GHG emission sources.</p>			 	 		
		<p>A 3 Work with the PCCS partners to develop and implement a comprehensive Community Education Strategy designed to encourage community GHG reductions and potential savings of energy efficient appliances and retrofits.</p> <p>A 3.1 Expand 'Earth Hour' program to help residents to easily make changes to reduce energy use.</p> <p>A 3.2 Expand and develop new municipal and partnership communications programs (e.g. Let Your Green Show campaign, Partner in Project Green energy audits, etc.) to engage residents and businesses in energy consumption, reduction and renewable energies.</p>	 					





Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
	Transportation Management	A 4 Work with the Province, Metrolinx, Region of Peel and area municipalities to improve the local transit network and regional transportation system, including GO Service, higher order vehicle (HOV) lanes, etc.					
		A 4.1 Coordinate funding programs and opportunities to maximize local and regional priorities.					
		A 4.2 Implement the Hurontario-Main Street LRT project.					
		A 4.3 Develop a Transit Education and Awareness Campaign targeted at Brampton youth and adults about the economic, social and environmental benefits of using transit.					
		A 4.4 Expand a discounted transit pass for students to encourage a new generation of public transit users.					
		A 5 Update and implement the City's Transit and Transportation Master Plan					
		A 5.1 Prioritize transit uses on highways and roads including transit traffic light control, reserved lanes on highways, etc.					
		A 5.2 Implement higher order vehicle (HOV) lanes on heavily traveled roads/roads with frequent transit service.					
		A 5.3 Expand the Brampton Rapid Transit program including Zum.					
		A 5.4 Establish a baseline of transit trips per year and develop a monitoring protocol.					
		A 5.5 Establish a baseline of vehicle kilometres travelled per year and reduction targets and develop a monitoring protocol.					











Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>A 5.6 Establish a database of city-wide capital projects (SWMP retrofits, naturalization projects) to be integrated with Road EA projects and the Road Repaving program.</p>					
		<p>A 6 Work with Smart Commute Brampton-Caledon to develop a Community Engagement and Education Campaign about transportation including the impact of automobile use on air quality and the environment and the costs savings associated with car-sharing and transit use.</p> <p>A 6.1 Implement a Bus Pass program for local business employees.</p>					
		<p>A 7 Work with Smart Commute Brampton-Caledon to develop a Corporate Movement Strategy that promotes alternative transportation options for City employees to commute to work and accessing work locations during the business day.</p> <p>A 7.1 Create flexibility with employee discounted transit passes for commuting.</p> <p>A 7.2 Communicate Flexible Work Hour and Work Week options as a way for employees to improve Brampton's air quality and reduce GHG emissions.</p> <p>A 7.3 Reduce single occupant car travel through free transit passes, carpooling to meetings/conferences, teleconferences, employee bike program (i.e. bikes for bylaw officers, mail delivery, BIXI, etc</p>	 				

Appendix 1: Grow Green Action Plan









Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>A 8 Establish a Cycling Advisory Committee and invest in cycling infrastructure (through planning, engineering, enforcement, education and evaluation) to become a Bicycle Friendly Community.</p> <p>A 8.1 Update and Implement the City's Pathways Master Plan</p> <p>A 8.2 Establish bike-friendly design requirements and bike infrastructure standards at municipal buildings, public spaces, parks and transit stops.</p> <p>A 8.3 Establish bike-friendly design requirements and bike parking standards for public, private and institutional facilities, including updating Secondary Plan Policies, site plan requirements and applicable zoning bylaws</p> <p>A 8.4 Co-ordinate with the Region of Peel to implement the Peel Active Transportation Plan</p> <p>A 8.5 Develop a Communication Plan to promote Active Transportation to residents.</p>					
		<p>A 9 Continue to work with school boards and Peel to encourage 'walking school buses' in neighbourhoods and the use of transit for older children</p>					

Appendix 1: Grow Green Action Plan











Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
	Air Quality Education	A 10 Continue to work with the Peel Regional Air Quality Working Group (Public Health), Peel Transportation Planning and municipal and CA partners. A 10.1 Develop a Community Air Quality Awareness Campaign to educate the community about Brampton's air quality, including the important sources of air pollution and its human health impacts. A 10.2 Work with the Province and Region of Peel to establish Brampton air quality monitoring stations. A 10.3 Work with Peel to identify local areas of air quality concern and develop a local action plan to address sources of pollution					
		A 11 Work with the Region of Peel to develop a Brampton-specific Smog Alert campaign.					
		A 12 Continue to work with the Greater Toronto Area Clean Air Council to promote, educate and coordinate regional clean air initiatives.					
		A 13 Implement the City's Anti – Idling Bylaw A 13.1 Develop and implement a city-wide Idling Awareness Campaign to educate residents on the economic and environmental impacts of idling cars. A 13.2 Develop and implement a Targeted Enforcement Plan a idling hot spots					

Appendix 1: Grow Green Action Plan








Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10

	Potable Water Conservation	WT 1 Develop Official Plan policies to promote urban development forms and buildings that support reduced water consumption. WT 1.1 Develop policies and standards requiring new development applications to submit a Water Conservation Plan that details proposed water reduction targets, tactics and water saving devices.					
		WT 2 Work with Region of Peel to review communications material to draw attention to the value of water and its conservation. WT 2.1 Work with Peel to develop Brampton specific potable water use baseline and reduction targets.		 			
		WT 3 Work with Region of Peel to expand current education about potable water demand and use including the impact of water use on watershed resources, cost of treating and distributing water, current lawn watering regulations and the use of potable water for swimming pools, etc. WT 3.1 Work with the Region of Peel to enhance public information on water efficiency WT 3.2 Support the Region's Fusion Landscaping Program to encourage the planting of native species to reduce watering requirements for residents and ICI.		  			








Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		WT 4 Work with Region of Peel and Conservation Authorities to promote the Region of Peel's ICI Indoor Water Efficiency Program to educate and assist ICI customers on how to reduce their consumption					
		WT 5 Support Peel to systematically reduce leakage in the water distribution systems.					
		WT 6 Work with Peel Climate Change Strategy (PCCS) partners to develop an Infrastructure Risk Management Assessment and Renewal Strategy to address climate change adaptation.					
		WT 7 Undertake Water Use Audits and develop a Water Conservation Plan for City buildings and facilities for potable water.					
		WT 7.1 Develop a plan to install water conserving technology and/or retrofit low-flow fixtures in new and existing City facilities.					
		WT 7.2 Pilot grey water systems in municipal buildings and facilities (e.g. composting toilets; on-site treatment in public buildings).					
		WT 7.3 Implement wastewater demonstration projects in municipal buildings and facilities (e.g. LID, greywater recycling, green roofs).					
		WT 8 Develop a Water Conservation Plan for City indoor recreation facilities.					
		WT 8.1 Collect and reuse swimming pool water to irrigate local parkland and sports fields, as appropriate					









Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>WT 9 Develop a Water Conservation Plan for City outdoor recreational facilities, sports fields and landscaped areas.</p> <p>WT 9.1 Install computerized central controls for conservation on parks and open space irrigation systems.</p> <p>WT 9.2 Update current landscape standards for City lands to require the planting of native and naturalized plant species to reduce watering requirements.</p>			  		
	Water Resource Management	<p>WT 10 Undertake and update subwatershed studies with the Province, Region of Peel, Conservation Authorities, conservation agencies and community groups.</p> <p>WT 10.1 Implement subwatershed recommendations in all new development plans including developing urban Master Environmental Servicing Plans for areas of redevelopment and intensification.</p> <p>WT 10.2 Collaborate with TRCA's Humber Watershed Alliance and Etobicoke-Mimico Creek Coalition to implement subwatershed recommendations to maintain, restore and enhance subwatershed health and identify new initiatives to improve watershed biodiversity and connectivity.</p> <p>WT 10.3 Collaborate with CVC to implement subwatershed recommendations through municipal and CA environmental education, restoration and stewardship programs, e.g. SNAP neighbourhood</p>	 				








Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline					
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10	
		<p style="text-align: center;">retrofits</p> <p>WT 11 Develop and implement a comprehensive Channel Remediation and Stream Restoration Strategy in conjunction with the Province, Region of Peel, Conservation Authorities and conservation agencies (e.g. Ontario Streams).</p> <p>WT 11.1 Implement the recommendations of the Peel Channels Remediation Study, including a cost-benefit analysis, and the pilot projects identified for Spring Creek.</p> <p>WT 11.2 Develop a Funding Strategy to implement the Channel Remediation and Stream Restoration Strategy.</p> <p>WT 11.3 Establish a baseline and targets for channel remediation and stream restoration works.</p>						
		<p>WT 12 Support the Conservation Authorities ongoing Watershed Monitoring programs.</p> <p>WT 12.1 Work with Conservation Authorities to develop an Education and Awareness campaign about the water quality impacts of stormwater runoff from private properties including issues from fertilizers, pesticides, car washing, pets, swimming pool care, etc.</p> <p>WT 12.2 Collaborate with other levels of government, research institutions, conservation organizations, etc. to undertake monitoring efforts that support watershed monitoring.</p>						







Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline					
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10	
		<p>WT 13 Update the Lake Management Strategy 2005 including recommendations for conservation and management that have regard to watershed plans, etc.</p> <p>WT 13.1 Implement the recommendations of the updated Lake Management Strategy through municipal programs and activities and the development of partnerships with the Province, Region of Peel, Conservation Authorities and local community groups.</p>						
		<p>WT 14 Promote the use of rainwater and snowmelt as a resource</p> <p>WT 14.1 Development plans to manage stormwater runoff as a resource to irrigate active recreational lands, flower beds, etc.</p> <p>WT 14.2 Implement a pilot project that captures rainwater / snowmelt to irrigate City sport fields</p> <p>WT 14.3 Develop a strategy to plant demonstration Rain Gardens in City parks, gateway features and boulevards.</p> <p>WT 14.4 Work with the Region of Peel and Conservation Authorities to develop and implement a Homeowner Rainwater Capture Program, including the use of rain-barrels and Rain Gardens</p>						
	Stormwater Management	<p>WT 15 Develop a Stormwater Management Retrofit & Enhancement Study.</p> <p>WT 15.1 Develop a residential stormwater management utilities fee to help fund stormwater management retrofits and</p>						










Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		maintenance. WT 15.2 Work with the Province, Region of Peel and Conservation Authorities to implement Stormwater Management Retrofit & Enhancement Study.					
		WT 16 Develop and implement a Stormwater Management Facility Maintenance Strategy.					
		WT 17 Develop a Low Impact Development (LID) Strategy for the development of alternative City standards and practices that address stormwater management. WT 17.1 Develop and Implement planning policies and standards that require a “treatment train” approach to stormwater management for new development applications, including redevelopment and intensification. WT 17.2 Partner with Conservation Authorities to implement Low Impact Development (LID) Strategy, including monitoring. WT 17.3 Implement LID boulevard pilot projects in conjunction with the City’s Road Repaving Program.			 		
		W 18 Develop planning policies and guidelines that require all new applications for commercial and industrial development to give consideration to incorporation of Green Roofs in new construction.					









Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		WT 19 Develop a Corporate Green Roof Strategy. WT 19.1 Establish guidelines that will require the City to consider the installation of a green roof for the reconstruction and/or replacement of existing roofs at municipally-owned buildings and facilities. WT 19.2 Consider the establishment of standards for the installation of green roofs for all new municipally-owned building and facilities.			  		
		WT 20 Develop / update Erosion and Sediment Control Bylaw (e.g. monitoring requirements, enforcement practices and resources).					
		WT 21 Continue to implement and update the City's Salt Management and Snow Management programs.					








Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
	Natural Heritage	L 1 Develop Official Plan policies to address the mitigation and compensation for loss of natural heritage areas and local features, and the removal of tableland vegetation and urban tree canopy to facilitate development.					
		L 1.1 Address natural heritage, open space, urban forest and green infrastructure policy gaps.					
		L 1.2 Develop a policy to restrict the selling of natural heritage features/lands from public ownership					
		L 2 Develop and implement a Natural Heritage and Environmental Management Strategy (NHEMS).					
		L 2.1 Establish a Natural Heritage Network of internal and external partners to implement the recommendations of the Strategy.					
		L 2.2 Establish a baseline and targets for ecological remediation, restoration and enhancement projects and a protocol to track and monitor progress.					
		L 2.3 Develop a NHEMS Communication and Engagement Strategy, to education and motivate the City's stakeholders, residents and businesses to participate in stewardship, restoration and enhancement activities on public and private lands					
		L 2.4 Continue and maintain a Natural Areas Inventory project with the Conservation Authorities and the Region of Peel of the water, aquatic and terrestrial resources of the City's natural areas, watercourses, lakes and pond.					











Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>L 3 Continue to participate in the Region's Greenland Securement Program</p> <p>L 3.1 Develop and implement a Brampton-specific Greenland Securement Strategy, including funding for the acquisition and/or incentives for the donation of natural heritage lands.</p> <p>L 3.2 Implement the Landowner Securement Contact and Education Program to encourage private landowners of identified natural heritage areas to dedicate these lands into public ownership.</p>					
		<p>L 4 Finalize Trails Hierarchy Strategy which includes trail design standards to minimize impacts to natural areas and buffers.</p> <p>L 4.1 Build on the Pathways Master Plan and complete the highest priority gaps in the network, including interregional connections.</p> <p>L 4.2 Continue to implement the pathways signage program.</p> <p>L 4.3 Develop Official Plan policies to address trail planning, design and construction to mitigate the impacts of trails and users on natural heritage features and functions.</p>					
		<p>L 5 Work with Conservation Authorities, community associations, ICI sectors and School Boards to restore, expand and enhance natural heritage features and functions on their properties.</p>					
		<p>L 6 Work with the Province, Region of Peel, Conservation Authorities and the Ontario Road Ecology Group to develop a city-wide Road Ecology Strategy.</p>					











Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>L6.1 Develop Official Plan policies to require consideration of road ecology for new development and for municipal road reconstruction and expansion projects.</p> <p>L 6.2 Implement a Road Ecology Mitigation Strategy for Heart Lake Road including traffic management and road improvements, such as eco-passages, and environmental awareness, signage, etc.</p>					
	Naturalization	<p>L 7 Develop a Naturalization Communications Strategy to improve the community's acceptance of naturalization programs on City lands.</p> <p>L 7.1 Require new developments to prepare Homeowner Guides and open space signage that promotes environmental awareness and education of NHS protection and naturalization.</p> <p>L7.2 Develop and distribute communication materials to existing neighbourhoods that describes municipal and Conservation Authority naturalization efforts.</p> <p>L 7.3 Distribute communication materials that promotes naturalization programs for private homeowners including the Conservation Authorities 'green yards' and the Region of Peel 'Fusion Landscaping'.</p> <p>L 7.4 Develop a signage program for areas that have been naturalized to educate residents of the benefits of naturalized landscapes</p>			  		






Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>L 8 Expand the City's Valleyland Naturalization Program</p> <p>L 8.1 Expand partnership opportunities with Conservation Authorities, Region of Peel, provincial ministries, and community groups to restore and enhance the City's natural heritage system</p> <p>L 8.2 Update the Naturalization Program to focus on improving natural vegetation communities including wetlands and wildlife habitat, and support invasive species management efforts.</p> <p>L 8.3 Review and define the need for Natural Area Management Plans for public lands.</p> <p>L8.4 Provide support for the naturalization of the Claireville Conservation Area.</p>			   		
		<p>L 9 Develop and implement an Open Space Naturalization Program to prioritize areas to be naturalized in municipal open space, parks, boulevards, and areas of green infrastructure.</p> <p>L 9.1 Undertake pilot projects in City boulevards and right-of-ways, parks and open spaces to demonstrate the benefits of naturalized landscapes.</p> <p>L 9.2 Undertake wildflower / wild grass meadows pilot projects to reduce mowing in parks, open space and boulevards, and to naturalize municipal 'no mow' and 'no maintenance' buffers.</p> <p>L 9.3 Update Planting Standards to promote native and/or naturalized species (trees, shrubs and groundcover); species diversity, size and age; and planting requirements including soil volumes.</p>			  		












Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>L 9.4 Establish pollinator gardens across the City to educate residents of the value and biological imperative of conserving pollinator wildlife species.</p>					
		<p>L 9.5 Update Boulevard Maintenance, Grass and Weed Cutting, and Property Standards bylaws to ensure that they do not restrict naturalization efforts on public and private lands.</p>					
	<p>Urban Forest</p>	<p>L 10 Develop an Invasive Species Management Strategy for all City properties</p>					
		<p>L 10.1 Develop Official Plan and Secondary Plan policies to require new development applications to undertake invasive species management efforts.</p>					
		<p>L 11 Develop Official Plan policies for new development to require mitigation and compensation for the loss of tableland vegetation to facilitate development.</p>					
		<p>L 11.1 Update Landscape Standards and guidelines to increase tree planting requirements for new residential, commercial, industrial and institutional sites.</p>					
<p>L 11.2 Update Landscape Standards to increase tree planting requirements for City and Regional road projects</p>							
<p>L 11.3 Update Landscape Standards to increase soil quantity and quality for park and boulevard tree planting.</p>							
		<p>L12 Implement the recommendations of the Brampton Urban Forest Study.</p>					
		<p>L12.1 Review and update the Brampton Urban Forest</p>					












Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>Study every ten years, including the urban forest canopy assessment and recommendations for urban forest improvements.</p> <p>L 12.2 Develop a range of tree canopy targets for the City.</p> <p>L.12.3 Develop a Priority Planting Tool to assist municipal staff and community partners to identify planting sites to maximize urban forest benefits across the city.</p> <p>L12.4 Develop an Urban Forest Management Strategy.</p> <p>L12.5 Establish a baseline and monitoring protocol for the total of number of trees planted on City land per year.</p> <p>L12.6 Establish a baseline and monitoring protocol for the total of number of trees planted city-wide per year.</p> <p>L12.7 Undertake and maintain an inventory of all street and park trees.</p>			  		
		<p>L13 Implement the Emerald Ash Borer Management Program through annual funding and staff resources, and undertaking community plantings in parks and open spaces, etc.</p>					





Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		L14 Implement the Peel Urban Forest Strategy and support the Peel Urban Forest Working Group.					
		L15 Continue to support the Conservation Authorities 'Greening Corporate Grounds' and 'Partners in Project Green' programs. L15.1 Work with Conservation Authorities to partner with community associations, ICI sectors and School Boards to plant trees on their properties, including greening parking lots.					
		L16 Work with Conservation Authorities to establish a Residential Tree Planting Program in Brampton L 16.1 Develop an annual private tree planting program that includes discounted trees and planting advice for homeowners. L16.2 Develop a communication strategy to educate residents on the benefits of Brampton's urban forest and how they can assist in maintaining its health.			 		
	Sustainable Development	L17 Implement the Sustainable Community Development Guidelines (SCDG) for new development, infill and intensification. L17.1 Implement and maintain a tool to measure the sustainability of new development. L17.2 Establish SCDG sustainability thresholds for minimum and aspirational scores site plan, draft plan and block plan applications. L17.3 Revise Official Plan policies and Engineering and Landscape Standards to remove barriers	 	 			









Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>L 22 Expand the Sustainable Neighbourhood Retrofit Action Plan (SNAP) program to existing neighbourhoods across the City in conjunction with CVC, TRCA and Peel.</p> <p>L 22.1 Implement the recommendations of the County Court SNAP through municipal operations and programs, and by leading and supporting community efforts. .</p> <p>L 22.1 Establish an annual SNAP capital budget for program development and implementation.</p>					
		<p>L23 Work with senior government to reduce barriers for infill development on contaminated brownfield sites.</p>					
	<p>Urban Agriculture and Local Food</p>	<p>L24 Update the City's Community Garden policies and procedures</p> <p>L 24.1 Identify spaces within the City's park inventory to expand the Community Garden Program</p> <p>L 24.2 Create a Community Garden Communication and Education Campaign.</p> <p>L 24.3 Assess opportunities to develop an Allotment Garden Program.</p> <p>L 24.4 Assess opportunities to use municipal green roof space for urban agriculture purposes.</p>			 	 	
		<p>L25 Develop policies to encourage private property community gardens in areas of high density, in collaboration with institutions, etc.</p> <p>L 25.1 Work with community organizations and residents to harvest backyard gardens, fruit trees, etc.</p>					









Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		<p>L26 Work with Peel and Conservation Authorities to develop a Food Strategy that includes urban agriculture, heritage agriculture, incentives for productive green roofs in new construction, neighbourhood farmers markets, etc.</p> <p>L 26.1 Support TRCA's Urban Agriculture initiative at the Claireville Conservation Area.</p> <p>L 26.2 Partner with Region of Peel and Local Food Banks to identify and address local food deserts</p>			 		






Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
	Energy Management	E 1 Develop Official Plan policies to explicitly promote urban development forms and buildings that support reduced energy consumption and the use of renewable energy. E 1.1 Develop policies and standards requiring new development applications to submit an Energy Conservation Plan that details proposed energy reduction targets, tactics and energy saving devices.					
		E 2 Prepare a Feasibility Study for District Energy opportunities in Brampton's Central Area.					
		E 3 Develop a Comprehensive Energy Management Strategy for City buildings and facilities, including sports fields. E 3.1 Conform with the Green Energy Act requirements to track and report energy use. E 3.2 Develop policies and standards requiring LEED gold accreditation or equivalent energy accreditation for new and retrofitted corporate buildings and facilities over 500 square metres. E 3.3 Undertake energy audits and develop an Energy Conservation Plan for each municipal building and facility, including retrofits program. E 3.4 Develop a comprehensive Corporate Energy Consumption and Reduction Education program		   			










Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline					
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10	
		<p>E 4 Update the City's Green Fleet Strategy</p> <p>E 4.1 Continue right-sizing vehicles, and 'greening' the municipal fleet with new biodiesel products, hybrid and electric vehicles, etc.</p> <p>E 4.1 Implement city-wide electric vehicle plug-in stations for corporate and community uses.</p>						
		<p>E 5 Work with PCCS partners to develop a Community Energy Plan.</p> <p>E 5.1 Work with local distribution companies (Enbridge and Hydro One Brampton) to develop a residential and ICI energy use data base that can be used to track community energy use.</p> <p>E 5.2 Work with local distribution companies (Enbridge and Hydro One Brampton) to revise utility bills to illustrate usage</p> <p>E 5.3 Develop a city-wide Community Energy Map</p> <p>E 5.4 Identify high-energy use communities and develop local action plans to reduce energy use</p> <p>E 5.5 Develop a Residential Retrofit Program to assist homeowners with energy efficiency retrofits, including Local Improvement Charges.</p> <p>E. 5.6 Develop a comprehensive education program about energy consumption and reduction.</p> <p>E 5.7 Explore partnership opportunities with renewable energy providers to provide information about private renewable energy options</p>						








Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		E 6 Develop a Renewable Energy Strategy for City buildings and facilities					
		E 6.1 Identify opportunities for alternative and renewable power sources at City buildings and facilities					
		E 6.2 Investigate public/private partnership opportunities to integrate FIT applications onto City buildings and facilities					
		E 6.3 Identify opportunities to research and invest in green energy (e.g. Fuel Cell Demonstration Project and Green Energy Procurement).					










Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
	Waste Reduction	WS 1 Develop a Corporate Waste Management Strategy to implement and promote waste reduction, reuse, recycling and composting for all City facilities, buildings, parks and streets including organic materials from forestry operations.					
		WS 1.1 Undertake a corporate waste audit; and develop a corporate waste baseline, reduction targets and monitoring protocol.					
		WS 1.2 Develop a Waste Reduction Plan for each municipal building and facility, including targets and tracking/monitoring.					
		WS 1.3 Develop a comprehensive Corporate Education Program designed to encourage solid waste diversion.					
		WS 1.4 Develop a strategy to replace hard copy (written) materials for all municipal meetings, files, etc. through the use of electronic equipment (e.g. tablets) and digital filing systems, including document libraries.					
		WS 1.5 Establish standards for environmentally responsible printing.					
		WS 1.6 Develop Corporate procurement standards, practices and procedures to minimize waste generation for City operations, including service suppliers.					
		WS 1.7 Develop policies and procedures to reduce packaging and/or require that it is returned to material suppliers.					
		WS 1.8 Create a “no water bottle” policy for municipal buildings and facilities, and					










Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
		provide alternative water bottling filling.					
		<p>WS 2 Work with Region of Peel and private businesses to develop a Recognition Program for businesses with exemplary practices for minimizing waste generation.</p>					
		<p>WS 3 Work with the Region of Peel to develop and implement a Community Waste Management Strategy for Brampton.</p> <p>WS 3.1 Develop a Brampton-specific community waste generation baseline, reduction targets and monitoring protocol.</p> <p>WS 3.2 Develop a Brampton-specific Community Education Plan for waste reduction, recycling, reuse and composting including the environmental and economic costs of waste disposal and the range of materials that can be recycled.</p> <p>WS 3.3 Work with the School Boards to expand education on waste diversion i.e. reduction, reuse, recycle and composting through the City's environmental school programs and at municipal buildings and facilities, including libraries.</p>			 		

Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
	Recycling	WS 4 Develop and implement a corporate Recycling Strategy for city buildings, facilities, parks, streets and operations.					
		WS 4.1 Undertake a corporate recycling audit, and develop a corporate recycling baseline, targets and monitoring protocol					
		WS 4.2 Develop a corporate Recycling Awareness Campaign					
		WS 4.3 Provide recycling bins in all city buildings, facilities, parks and streets.					
		WS 4.4 Update minimum requirements for city standards for the use of recycled materials in municipal construction and road projects.					
		WS 5 Work with the Region of Peel to review and expand the range of recyclable materials for community collection.					
		WS 5.1 Work with the Region of Peel to expand recycling collection services and organic waste program for multi-residential buildings, commercial, institutional and industrial uses.					
		WS 5.2 Work with the Region of Peel to implement a recycling program for construction and demolition materials, in partnership with private sector.					

Appendix 1: Grow Green Action Plan

Goal	Subsector	Action Item	Timeline				
			Ongoing	Year 1	Year 2 - 3	Year 4 - 5	Year 6 - 10
	Hazardous Waste	WS 6 Work with the Region of Peel to develop “extended” producer responsibility programs.					
		WS 7 Develop Corporate Hazardous Waste Management Strategy to track, manage, collect and safely dispose of all toxic materials used within City of Brampton buildings, facilities and operations.					
		WS 7.1 Develop a staff Education Program for working with Hazardous Material					
		WS 7.2 Develop a comprehensive database of optional non-hazardous substitutes for hazardous materials					
		WS 7.3 Develop a list of environmentally friendly cleaning suppliers and products to be used in all City facilities					
		WS 8 Support the Region of Peel’s Hazardous Waste Management Strategy.					
		WS 8.1 Work with Region of Peel to identify the most commonly used hazardous products and recommend alternatives.					
		WS 8.2 Continue to work with Region of Peel to handle all hazardous residential waste materials (e.g. batteries).					

Canvas of Environmental Initiatives

The Canvas of Environmental Initiatives is a snapshot of the many ways in which Brampton and its conservation partners are improving the City's environmental performance today. Over 250 initiatives are listed according to their relative relationship to the Six Core Components, Brampton Environmental Master Plan. Given the inter-related nature of many of these initiatives, some may relate to more than one of the core components. The canvas includes initiatives that are currently being spearheaded by



PEOPLE

Strategic Priorities and Direction

Flower City

Flower City Strategy
Communities in Bloom
Urban Design Awards
Downtown Beautification Program
Gateways Program
Flower City Floral Beds
10 Million Bulb Challenge
Brampton Fall Fair
William Osler: Brampton Civic Hospital

Priority Direction

Emergency Management Plans
Environmental Master Plan
Green Procurement Strategy
Green Economic Strategy

Education and Awareness

School Programs

Green Education Programs (BCC)
Green Education Stewardship Programs (BCC)
Green Education: Teacher Preparation Package
Blue Education Programs (BCC)
Blue Education Stewardship Programs (BCC)
Environmental Education Registered Programs (BCC)
Green Education Summer Camp Programs (BCC)
Commissioners Green Challenge (BCC)
School Visits: Urban Forestry
Brampton Wilderness Centre
Let Your Green Show Campaign (ROP|TRCA|CVC| Area Municipalities)
Yellow Fish Road (TRCA)
Stream of Dreams (CVC)

Community Events

Spring and Harvest Clean-Up Campaigns (BCC)
Information Booths for Special Events, Open Houses, Conferences, Fairs (BCC)
Adopt-a-Park Program (BCC)
Play Clean Program (BCC)
Door Hangers: Residential Tree Pruning
2014 Environmental Advisory Committee Symposium (BEPAC)
Multi-Cultural Outreach & Education (CVC)

Partnerships

Committees of Council

Brampton Environmental Planning Advisory Committee
Brampton Clean City Committee
Brampton Heritage Committee
Youth

High School Green Club Council
Mayor's Youth Team
Clean and Green Schools
Eco-Buzz (Peel Environmental Youth Alliance)
Heart Lake Secondary School
Roberta Bondar Public School: Passionate Earthlings
David Suzuki Secondary School
Sandalwood Parkway Secondary School
North Peel Secondary School
Rotary Club of Brampton (Loafer's Lake beautification)
Conservation Youth Corp (CVC)
Conservation Youth Corp (TRCA_

Community

Meadowvale Cremation Gardens
Valleybrook Green Team & Community Stewardship



AIR

Strategic Priorities and Directions

Peel Climate Change Strategy (ROP|CVC| TRCA| Area Municipalities)
Transportation and Transit Master Plan Update

Strategic Partnerships

Smog Response Plan
Clean Air Partnership/GTA Clean Air Council
Peel Region Air Quality Working Group (ROP)
Peel's Air Quality Partnership (ROP)
Peel Air Quality Monitoring Program (ROP)

GHG Emissions Reductions

Corporate GHG Emissions Inventory
Community GHG Emissions Inventory
Biodiesel Fuel Program
Municipal Fleet Anti-Idling Policy
Municipal Anti-Idling Bylaw
Open Air Burning Strategy

Transportation Management

Transit

AcceleRide Program
BRT Strategic Implementation Plan (ZÜM)
Connect 10 – Hurontario Study
Hurontario Light Rail Transit Study
Employee Transit Pass Agreement
E-Ride
Ridership awareness campaign
SmartBus technology
Smart Commute Brampton-Caledon

SmartDriver

Fleet

EPoke
Green Fleet Plan
M5/Vehicle software
Smart Cars and Hybrids

Active Transportation

Alternative Design Standards
Bike & Ride
Pathways Master Plan
Pathways Pocket Book
Pedestrian Safety Plan
New Road ROW Standards (bike paths/lanes – Rutherford Road Implementation)
Walk to Work-School Day
Active Transportation Plan (ROP)
Active Transportation Interactive Web-Based Map
Brampton Bicycle Advisory Committee (Community)

Road Operations

Environmental Assessments
Green Guide for Roads
LED traffic signals
Low-VOC & water-borne paints in traffic markings
Solar Panels for Parking Meters
Streetscape Buffer Planting Guidelines

Air Quality Education

Expansion of Peel Smoke-Free By-law (ROP)
Anti-Idling Policy and Communications Plan
Sustainable Update - City of Brampton Air Quality
Peel Five Year Community Air Quality Modeling Program
Peel Air Monitoring
Province of Ontario Air Quality Monitoring Network



WATER

Strategic Priorities and Directions

Liveable Peel: Ensuring Sustainable Watersheds in 2051 (ROP)

Potable Water Conservation

Water Efficiency Plan (ROP for Potable Water)
Water Smart Peel (ROP)

Water Resource Management

Watershed Management

CVC Watershed Planning and Regulations Policies (CVC)
Planning & Development Administrative Procedure Manual (CVC)

Partner Acronyms:

BEPAC – Brampton Environmental Planning Advisory Committee

BCC – Brampton Clean City

COB – City of Brampton

the City of Brampton, Region of Peel, Credit Valley Conservation and the Toronto and Region Conservation. The Canvas does not yet highlight the many green initiatives that are being undertaken by Brampton businesses, residents, and/or environmental groups. The Canvas of Environmental Initiatives is intended to be a working list and will be updated annually to reflect new environmentally sustainable initiatives as they are identified and implemented.

Credit River Water Management Strategy Update (CVC)
 Credit River Flow Management Study (CVC)
 CVC Monitoring Programs (Integrated Watershed, Effectiveness, Comprehensive Groundwater)
 TRCA Living City Strategy and Policies
 Greening our Watersheds: Revitalization Strategies for the Etobicoke and Mimico Creeks (TRCA)
 Heart Lake Road Ecology Monitoring Program (TRCA)
 Humber River Watershed Plan (TRCA)
 Listen to River (Humber River Watershed Report) (TRCA)
 Sewage Bylaw

Community Groups

Etobicoke-Mimico Watershed Coalition (TRCA)
 Brampton Etobicoke Working Group (TRCA)
 Humber Watershed Alliance (TRCA)

Lakes and Watercourses

City of Brampton Lake Assessment Study
 City of Brampton Lake Management and Monitoring
 Watercourse Remediation and Restoration Program
 Peel Rural Water Quality Program (ROP)
 Peel Well Decommissioning Program (ROP)
 Credit River Fisheries Management Plan (CVC)
 Draft CRFMP – Guide for Planners (CVC)
 Stream of Dreams Program (CVC)
 Evaluation, Classification & Management of Headwater Drainage Features Guidelines (CVC)
 Humber River Fisheries Management Plan (TRCA)
 Peel Channels Remediation Study (TRCA)
 Redside Dace Rehabilitation Project (Ontario Streams)

Stormwater Management

Strategic Studies

Stormwater Management Master Plan
 Stormwater Management Retrofit & Enhancement Study
 Functional Servicing Report Terms of Reference
 CVC Stormwater Management Criteria (CVC)
 Low Impact Development Stormwater Management Planning and Design Guideline (TRCA|CVC)
 Thermal Impacts of Urbanization and Preventative and Mitigation Measures (CVC study)
 LID Infrastructure Performance Assessment Program (CVC)

Management Programs

Stormwater Management Facility Clean-out Program
 Low Impact Development Pilot Projects
 County Court Bioswales
 Salt Management Plan
 Street Sweeping

Education and Awareness

Peel Children’s Groundwater Festival (ROP|CVC|TRCA)
 Making It Work: Professional Training & Leaders for Clean Water (CVC)



LAND

Strategic Priorities and Directions

Strategic Plan 2013
 2006 Official Plan
 Official Plan Update (underway 2013)
 OP Amendment and Growth Plan Conformity
 Downtown – Special Policy Area Update
 Mount Pleasant Transit-Oriented Community Growth Management Program
 Development Team
 Region of Peel Official Plan

Natural Heritage

Watershed Planning

Natural Heritage and Environmental Management Strategy (underway 2014)
 City of Brampton Subwatershed Studies (in consultation with CVC & TRCA)
 CVC Watershed: Mount Pleasant, Fletcher’s Creek, Credit Valley, Northwest Sandalwood Parkway, Tributary 8B, Bram West; Heritage Heights
 TRCA Watershed: Countryside Villages, Vales of Humber, Springdale, SP47, Bram East
 Terrestrial Natural Heritage Strategy (TRCA)
 Credit River Watershed Natural Heritage System & CVC Natural Heritage System Strategy (CVC)
 Urban Natural Heritage Systems Science (CVC)
 Ecological Goods & Services (CVC)

Climate Change

Climate Change Natural Heritage Vulnerability Assessment (ROP|TRCA|CVC)

Ecosystem Management

Invasive Pest Preparedness and Integrated Pest Management
 Peel-Watersheds Natural Areas Inventory (ROP|TRCA|CVC)
 Brampton Natural Areas Inventory

Emerald Ash Borer Management Strategy (CVC)
 Invasive Species Strategy (CVC)
 Emerald Ash Borer Management Program (TRCA)
 Goose Management
 Natural Feature Water Budget (LID) Measures for New Development

Greenland Securement

Peel Greenland Securement Program (ROP)
 Landowner Contact and Education Program (ROP|COB)
 Greenland Securement Strategies (CVC|TRCA)
 Greenland Securement Committee (ROP)

Environmental Studies and Guidelines

Comprehensive Study Terms of Reference:
 Environmental Implementation Report
 Environmental Impact Study
 Woodlot Development Guidelines
 Guidelines for the Assessment of Existing Tableland Vegetation

Conservation Areas

Claireville Conservation Area Management Plan Update (TRCA)
 Heart Lake Conservation Area Management Plan (TRCA)
 Education and Awareness
 Adopt “Your” Tree Program
 Tree Dedication Program
 Community Tree Planting Days (Scouts Canada, Landowner Guides to Natural-Open Space Areas)

Naturalization

Woodlands

Forest Maintenance Manual
 Parks Naturalization
 Hickory Wood Restoration Project
 Brampton Wilderness Centre Restoration Project

Valleylands

Valleybrook Restoration Project (COB|TRCA and Community)
 Beresford Park Restoration Project (COB|CVC and David Suzuki Secondary School)
 Brampton Valley Naturalization Program
 Main’s/Fletcher’s Creek Corridor Planting
 Fletcher’s Creek Restoration Study (CVC)
 Buffer Planting Specifications/Guidelines

Public and Private Open Space

Parks and Recreation Master Plan
 Chinguacousy Park Redevelopment
 Loafers Lake and Norton Place Master Plans
 Gore Meadows Community Park Development
 Etobicoke Creek Wildflower Meadow Pilot Project
 Etobicoke Creek Pollinator Garden Pilot Project

City Hall Expansion Green Roof
Peel Village Golf Course Audubon Certification
Fusion Landscaping Consultations (ROP)

Urban Forest

Peel Urban Forest Strategy (ROP|TRCA|CVC and Area Municipalities)
Urban Forest Working Group (ROP|TRCA|CVC and Area Municipalities)
Peel Street Tree Inventory (TRCA)
Urban Forest Effects Model Study (UFORE)
Brampton Urban Forest Technical Study
Brampton Urban Forest Management Program
Brampton EAB Management Program
AgPlan Forest Inventory
Arboricultural Assessments
Woodlot Management Program
Disease and Pest Program
Active Tree Inventory System
Heritage Tree Proposals
Block Pruning Program

Sustainable Development

Healthy Communities

Sustainable Neighbourhood Retrofit Action Plan (SNAP) – County Court Project (COB|TRCA)
Fletcher’s Creek SNAP (COB |CVC)
Downtown Etobicoke Creek Revitalization
Heritage Studies and Adaptive Reuse Plans
Development Design Guidelines
Sustainable Community Development Guidelines
Measuring Sustainability of New Development
Community Improvement Plans
Subdivision Design Manual
Landscape Design Guidelines
Street Tree Planting Standards
Street and Park Tree Replacement Program
Peel Sustainable Development Guidelines Study (ROP)
Greening Corporate Grounds (CVC)
Your Green Yard (CVC)

Public Health and Housing

Healthy Community Guidelines (ROP)
Healthy Development Index (ROP)
Chapelview Housing Development LEED (ROP)

Environmental Programs

Branch Out! (CVC)
Partners in Project Green (TRCA|CVC)
Living City Campaign (TRCA)
Peel Region Living City Carbon Footprint Calculator (TRCA|ROP)

Heritage Conservation

Snelgrove Restoration Plan
Heritage Cemetery Conservation Program
Alderlea Restoration Project

Bowstring Bridge Rehabilitation Project
Heritage Property Incentive Grant Program (bylaw)

Employment Lands and Districts

Employment Land Strategy
Pearson Eco-Industrial Park Strategy
Mount Pleasant Station Area
Downtown Revitalization
Central Area Community Improvement Plan

Bylaws and Enforcement

Emergency Plan Bylaw
Parklands Dedication Bylaw
Woodlot Conservation Bylaw
Tree Preservation Bylaw
Topsoil Removal Bylaw
Fill Bylaw
Noise Bylaw
Property Standards Bylaw
Anti-Idling Bylaw and Communications /Education Plan
Purchasing Bylaw

Urban Agricultural and Local Food

Local Food

Brampton Farmer’s Market
Community Gardens
Harvest Community Services of Peel (ROP)
Claireville Farm Start Program (TRCA)

Community Group

Brampton Horticultural Society
Chingaucousy Garden Club



ENERGY

Strategic Priorities and Directions

Sustainable Procurement/Life Cycle Cost-Based Decision Making
PCCS Implementation Plan

Energy Management

Facilities

Solar Panels on Fire Stations
Geo Thermal Heating
Wellness and Casey Campbell are now benefiting from the installation of heat plat exchangers
LEED Buildings – 2 fire stations (Gold)
Asbestos Management Program
Updating electricity & gas procurement strategy
Lighting retrofits
Standardize Building Automation Systems & Operations

Building Retrofits

Energy

Algonquin Power Energy from Waste Facility (Private)
Energy conservation audits
Rethinking Energy
Municipal Building Retrofit Program
Energy Consumption Annual Report
Energy Awareness for Office & Operational staff
Energy Consumption Benchmarking – internal/external
Energy Partnerships
Preventative Maintenance Programs



WASTE

Strategic Priorities and Directions

Long-term Waste Resource Management Strategy (ROP)

Waste Reduction

City Hall Waste Audit Study
Peel Residential and Institutional Waste Composition Audits (ROP)
Incineration and Waste Transfer and Disposal Study

Composting

Peel Organics Composting Program (ROP)
Fall Leaf Vacuum Program

Hazardous Waste

Battery Recycling Program at Municipal Buildings
Hazardous Waste Registration
Hazardous or Special Waste Collection (ROP)

Recycling

Municipal Community Recycling Centres (ROP)
Brampton Re-Use Store

Partner Acronyms:

BEPAC – Brampton Environmental Planning Advisory Committee

BCC – Brampton Clean City

COB – City of Brampton

CVC – Credit Valley Conservation

TRCA – Toronto and Region Conservation

ROP – Region of Peel

Consultation Summary

The Green Paper described consultation events from 2009 through 2012. The following consultation events contributed to the development of the EMP Implementation Action Plan.

City-Wide Strategic Plan Consultation 2013	Using surveys, stakeholder workshops and town hall meetings over the course of early 2013, the City consulted residents, businesses and community stakeholders of Brampton on the Strategic Plan. One outcome of the consultation was the feeling that City can do a better job of setting an environmentally-friendly example for residents to follow. In addition, the most consistent message around the Environmental Stewardship pillar was to protect and connect more of Brampton’s green space.
EMP workshop, June 2013	As part of the strategic plan consultation process, a diverse group of attendees from the City of Brampton, City of Mississauga, Region of Peel, Credit Valley Conservation, members of the public and non-profit environmental organizations were brought together to review the role of the EMP within the Strategic Plan, and discuss the indicators and metrics that were selected to monitor each of the Core Components.
Implementation Action Plan Steering Committee and Technical Advisory Committee Workshop, April 2014	Held on April 3, 2014, this workshop included a range of attendees from various City departments, the Region of Peel and Credit Valley Conservation to review the proposed actions to make environmental progress towards the goals of the IAP, and provide input as to who would be the ideal leader or partner to spearhead a specific action.

