

A Community Climate Change Action Plan for the City of Brantford



CITY OF
BRANTFORD

Brantford.ca/ClimateAction



Table of Contents

Introduction	3
Need for Climate Action	4
Community Emissions Sources - 2019.....	5
Emissions Reduction Targets.....	6
Emissions Reduction Principles	7
Short Term Priorities.....	8
Transportation	9
Buildings	10
Waste.....	11
Education and Outreach.....	12
Offsets.....	13
Metrics	13-14



Introduction

Climate change is the greatest long-term global challenge that human society faces. Greenhouse gas emissions from human activity are warming the planet, and the resulting changes in temperature and weather patterns are negatively impacting human health, infrastructure, livelihoods, and ecosystems.

The Paris Climate Agreement signed in 2015 between 195 countries, including Canada, set a target of no more than 2°C increase from pre-industrial levels, and an aspirational target of no more than 1.5°C. The difference between a global temperature increase of 1.5°C and 2°C is significant and global efforts are required to ensure that global temperatures do not increase more than 1.5°C.

The City of Brantford declared a Climate Emergency in 2019 and is joining cities across the world in setting a target of net-zero emissions. Two plans, the Corporate and Community Climate Change Action Plans (CCAP) form Brantford's Climate Future. The Corporate CCAP identifies actions that can be taken by the Corporation of the City of Brantford to achieve net-zero emissions. The Community CCAP provides a guide for all members of the Brantford community on how they can adjust their own behaviours to reduce greenhouse gas emissions.

The Community CCAP to follow will present five categories for emission reductions and identify actions that can be taken by the community, along with City actions that can help facilitate behavioural changes. The five categories of focus for the Community CCAP are:

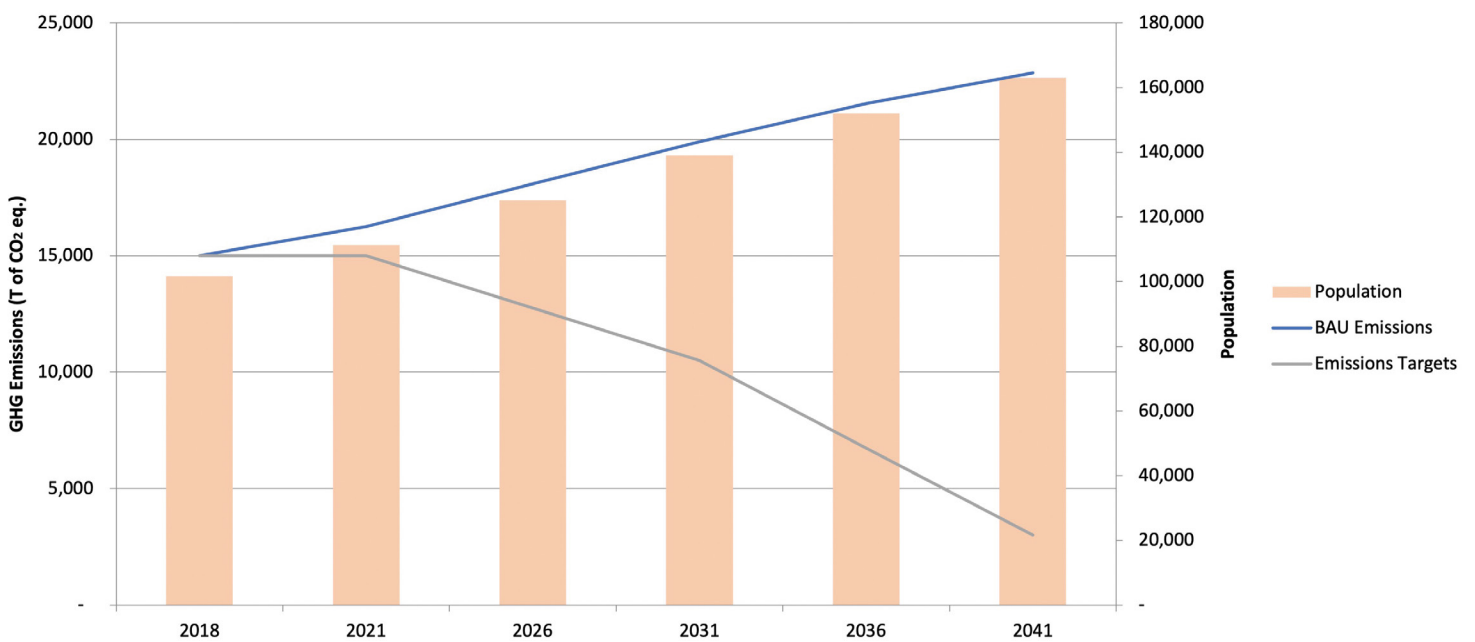
1. Transportation
2. Buildings
3. Waste
4. Education / Outreach
5. Offsets



Need for Climate Action

Brantford is a growing city and population estimates indicate that the City could become home to an additional 60,000 people by 2041. If emissions continue to grow relative to city population growth without any mitigating factors, this would be considered the “business as usual” (BAU) approach. In the chart below, the estimated population growth is shown out to 2041. Emissions are shown both for the BAU scenario where no mitigation action is taken and also shows the emissions if the reduction targets are met. The wedge between the blue and green lines is the emissions reduction work required to address growth and meet the emission reduction targets in order to stay below the 1.5°C temperature increase limit.

Figure 1: Emissions vs. Population Growth





Community Emissions Sources - 2019

GHG emissions were first inventoried in 2018 for all community emissions. A detailed Emissions Inventory report can be found on the City’s website and an updated report for the years 2019 and 2020 is also available. The inventory gathers data on most sources of energy used within the geographical boundaries of the City of Brantford. This section has aggregated consumption data from the major energy suppliers in the City (Brantford Power, Energy +, Enbridge Gas and fuel providers).

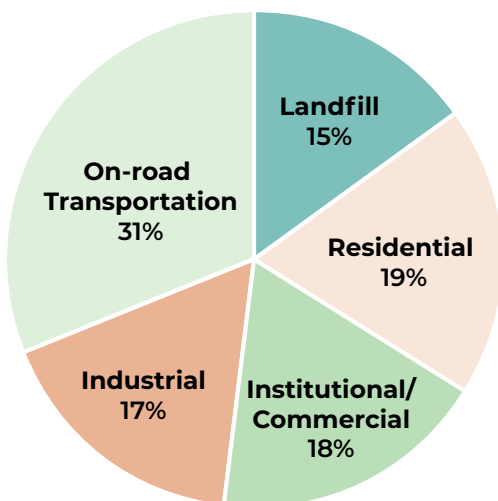
The results of the community inventory for 2019 are summarized below.

Data for 2020 are also available but were not used for this report due to the unusual energy consumption patterns due to COVID-19.

Emissions are measured in T of CO₂e., which means “metric tonnes of carbon dioxide equivalent”. Emissions from burning fossil fuels are not exclusively carbon dioxide; they also contain various percentages of methane and nitrous oxide and trace amounts of other GHGs. Each gas has different global warming potential as a GHG, so these are multiplied by the appropriate intensity factor and then converted to the equivalent strength for carbon dioxide and referred to as carbon dioxide equivalent (CO₂e.). More information on how this is calculated can be found in the City of Brantford Corporate and Community Greenhouse Gas Emissions 2018 Inventory.

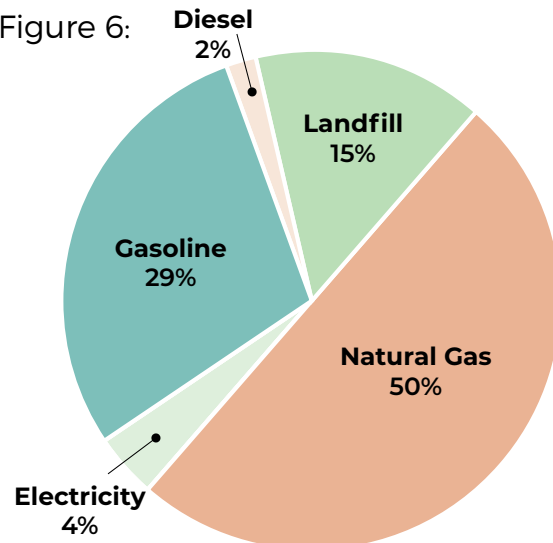
Total community GHG emissions (T of CO₂e) in 2019 were 743,515 T. The Community CCAP provides a guide for reducing emissions produced in all categories and by all fuel types.

Figure 5



Community Greenhouse Gas Emissions for the City of Brantford by source category

Figure 6:



Greenhouse Gas Emissions by fuel type across all community categories

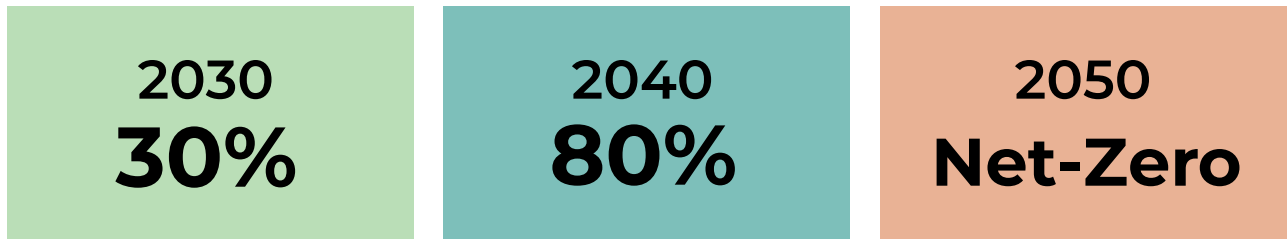
Total community greenhouse gas emissions (T of CO₂e) in 2019 were **743,515
 The Community CCAP provides a guide for reducing emissions produced in all categories and by all fuel types.



Emissions Reduction Targets

The emissions reduction targets for the Community CCAP are consistent with the targets approved in the Corporate CCAP. The targets for both the Community and Corporate CCAPs are below:

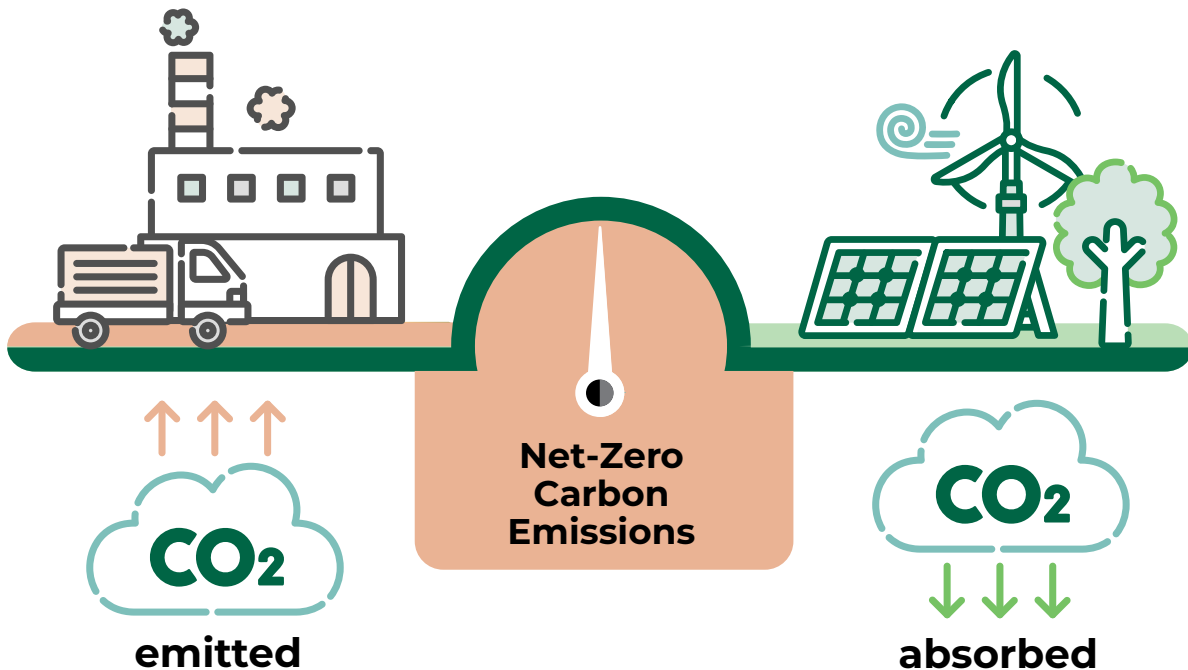
Figure 3



It is important to note that these targets are referring to **net emissions**, the total of all emissions produced and subtracted by all emissions offset through strategies such as absorption from trees and other vegetation, carbon capture technologies, purchasing carbon offsets, producing excess renewable energy generation, etc.

This is referred to as net-zero carbon or carbon neutral.

Figure 4





Emissions Reduction Principles

Much like “reduce, reuse, recycle” for waste reduction, the “reduce, improve, switch” principles for emissions reduction is a guideline for reducing energy consumption and emissions. The order of the steps is intentional with the most effective approach in transitioning to a low-carbon community is to first reduce the amount of energy needed as much as possible through energy conservation (Reduce). Next would be to improve the amount of work being done with that energy by increasing energy efficiency (Improve) and then finally switching to low carbon fuel sources to supply the remaining demand (Switch).

Reduce → Reduce the amount of energy used daily. This can involve habit changes such as walking somewhere instead of driving or turning off lights when you leave the room. It can also be a product of planning such as route planning for buses to reduce unnecessary kilometres. Energy is also reduced by insulating buildings so internal temperatures are more easily maintained. Reducing energy usage as much as possible first, saves having to address it (and pay for it) in the following two stages.

Improve → Improve the efficiency of the work that is being done to make the required energy have greater effects. Examples of how this can be done are buying more energy efficient appliances, furnaces and boilers, buying more fuel efficient vehicles, or replacing traditional light bulbs with LEDs.

Switch → Switch the source of the remaining energy required to a clean source of energy that doesn't use fossil fuels or produce GHG emissions. Clean energy sources include electricity (depending on the province), solar, geothermal, wind, renewable natural gas, waste heat recovery, etc.

Figure 2





Short-Term Priorities

The following short-term priorities were identified for community GHG reductions based on actions that are ongoing or are expected to occur in the near future. These short-term priorities are expected to have a great impact on community GHGs and target emissions in all source categories.

Organic Waste Diversion

- Will reduce greenhouse gas emissions from the landfill and promote circular economy
- Community responsibility to divert organics when program is implemented

Create a Sustainable Business Support Office

- Will support businesses in reducing their greenhouse gas emissions and promote environmentally friendly sustainable practices

Explore Home Energy Retrofit Loan/Grant Programs

- Will reduce greenhouse gas emissions from residential category and potentially reduce natural gas use

Complete Transit Route Optimization Study

- Will reduce greenhouse gas emissions from on-road transportation and emissions gasoline fuel use
- Community responsibility to use the transit to reduce their emissions

Climate Change Communication Strategy and Engagement

- Will reduce greenhouse gas emissions in each category with knowledge sharing about how behaviour can be adjusted
- Community responsibility to take ownership over their impact on greenhouse gas emissions and make active efforts to reduce their footprint

Emission Reduction Categories

The Community CCAP presents five categories for emission reductions and identifies actions that can be taken by the community, along with City actions that can help facilitate behavioural changes. The five categories of focus for the Community CCAP are:

- 1. Transportation
- 2. Buildings
- 3. Waste
- 4. Education / Outreach
- 5. Offsets



Transportation

Transportation is a key aspect of the City’s climate change efforts. The priority actions that have been identified for transportation focus on reducing emissions from single passenger vehicle trips within and outside of Brantford.

Goal	City Actions	Tips for the Community
Increase Transit Ridership	<ul style="list-style-type: none"> • Complete Transit Route Optimization Study • Promote use of public transit • Educate residents on public transit 	<ul style="list-style-type: none"> • Kids Ride Free Program (12 and under) • Go Transit connections outside of Brantford • Brantford Transit route planner can be used to map out your trip
Increase Active Transportation	<ul style="list-style-type: none"> • Complete Active Transportation Master Plan • Continuous improvements to on-road and off-road trail networks 	<ul style="list-style-type: none"> • Over 70km of trails to use in and around Brantford • Bike lanes available on several residential roads (over 18km) • Several bike safety programs available, including from Brant Cycling Club • Bike Month held in June every year to improve knowledge of cycling network
Promote Electric Vehicles	<ul style="list-style-type: none"> • Explore provision of public charging stations at locations across the City 	<ul style="list-style-type: none"> • 17 charging stations are available for public use at various locations, including Wilfrid Laurier University downtown • Market for electric vehicles is expanding, including more affordable options



Explore your city!
You can ride the bus, take a hike,
or bike our beautiful trails network.



Buildings

Actions identified in the buildings category focus on emissions that can be reduced from energy consumption in residential, commercial, and institutional buildings.

Goal	City Actions	Tips for the Community
Reduce Greenhouse Gas Emissions from Private Homes	<ul style="list-style-type: none"> • Explore a green building standard for new homes • Explore the provision of incentive programs to complete home retrofits 	<ul style="list-style-type: none"> • Switch to LED bulbs (75% more energy efficient) • Unplug electronics when they are not in use (use 5-10% less energy) • Wash laundry in cold water (90% more energy efficient) • Lower your thermostat by two degrees in the winter (save 1-3% on electric heating)
Reduce Greenhouse Gas Emissions from Businesses	<ul style="list-style-type: none"> • Promote ways that businesses are reducing their greenhouse gas emissions through a green business recognition program 	<ul style="list-style-type: none"> • Start a zero-waste workplace to encourage employees to divert waste • Switch to LED bulbs (75% more energy efficient)
Reduce Greenhouse Gas Emissions from Institutions and School Boards	<ul style="list-style-type: none"> • Assist schools with active transportation planning projects • Increase education on energy conservation programs for institutions 	<ul style="list-style-type: none"> • Start a zero-waste program at institutions to encourage waste diversion • Performing an energy consumption audit will help identify ways the institution can save on costs of the facility



Reducing greenhouse gas emissions from buildings not only helps curb climate change, it reduces costs of electricity and natural gas bills.



Waste

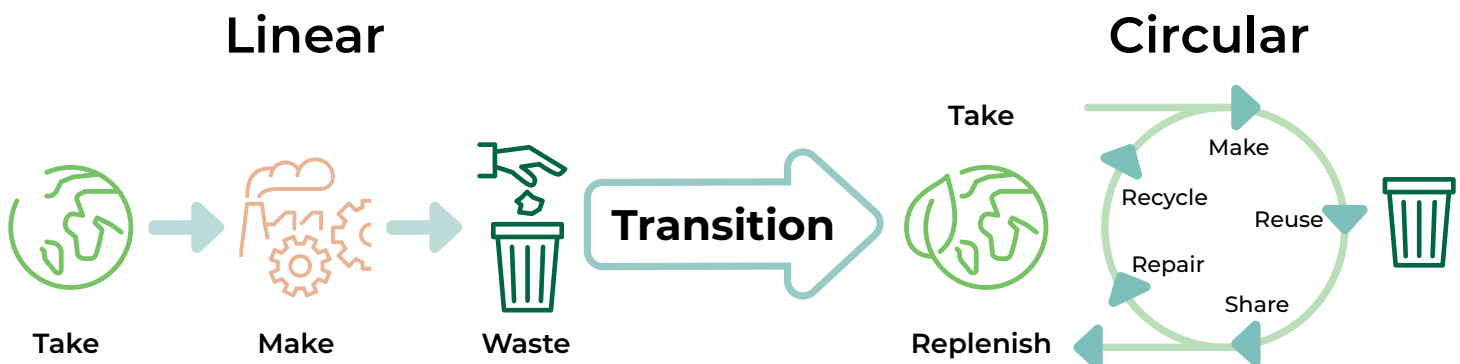
The actions identified in the waste category focus on waste that is produced by the community as well as emissions related from use of water.

Goal	City Actions	Tips for the Community
Reduce Greenhouse Gas Emissions Produced from Waste	<ul style="list-style-type: none"> Implement a green bin program to divert organic waste from the landfill Promote reducing, reusing, recycling, and composting – circular economy 	<ul style="list-style-type: none"> Use Brantford Recycling Coach for tips on properly recycling and collection schedule brantford.ca/recycling Use reusable bottles and cups instead of disposable Buy secondhand items and donate used goods
Reduce Water Consumption and Waste	<ul style="list-style-type: none"> Implement advanced water metering program Increase educational programs about water conservation 	<ul style="list-style-type: none"> Turn off the tap when water is not in use (save up to 6L per minute) Install water saving appliances (at least 20% can be saved by upgrading shower heads, toilets, dishwashers, and more) Use rain barrels to collect water for use Identify and fix household leaks



Help make the transition from a linear to a more sustainable circular economy.

Figure 7: Linear versus Circular Economy





Education and Outreach

The actions associated with education and outreach focus on educating the community on the importance of climate action.

Goal	City Actions	Tips for the Community
<p>Increase Resources to Educate the Community on Climate Change</p>	<ul style="list-style-type: none"> • Provide free resources to the community reflecting climate change information on City of Brantford website and via social media • Host climate action workshops to engage with the community on how they can reduce their greenhouse gas emissions • Partner with community groups to create a network that delivers key messaging about climate change 	<ul style="list-style-type: none"> • Talk to your neighbours, friends, coworkers, and family members about what they are doing to reduce greenhouse gas emissions – you might get inspired! • Join a volunteer organization or board with other passionate people who want to take climate action – examples are Equal Grounds Community Gardens and the Environmental Sustainability Policy Advisory Committee • Visit the City of Brantford’s climate action page at brantford.ca/climateaction for updates, tips and resources to reduce your greenhouse gas emissions
<p>Climate Change Adaptation Plan</p>	<ul style="list-style-type: none"> • Develop inventory of natural assets • Identify ways the City can adapt to climate change 	<ul style="list-style-type: none"> • Form an emergency plan within your household or business in the event of extreme weather – floods, extreme heat, windstorms, etc. by visiting brantford.ca/emergencypreparedness



Collectively as a community, and as individuals, we need to focus on reducing our carbon emissions as much as possible and move toward a carbon neutral future by 2050.



Offsets

The actions associated with offsets focus on those items that remove carbon from the atmosphere to help achieve net zero when some greenhouse gas emissions will be unavoidable.

Goal	City Actions	Tips for the Community
<p>Increase City Tree Canopy</p>	<ul style="list-style-type: none"> • Explore measures that encourage tree preservation through education and enforcement • Continue annual tree giveaways to residents 	<ul style="list-style-type: none"> • The City of Brantford hosts free tree giveaways in the spring on a first come first served basis to residents • The Brant Tree Coalition hosts annual tree planting events in Brantford that you can take part in • Research specific species of tree to learn how best to care for them – specific trees require specific care



Planting trees absorbs carbon in the atmosphere, as well as providing shade and beautifying the community!

Metrics



Success can be measured in a variety of ways; the most relevant for the purposes of this Plan is the consistent reduction of overall annual GHG emissions. Success will be measured by reaching the GHG targets identified in this Plan and the ultimate goal of net-zero emissions by 2050.

Targets have been identified for 2030, 2040 and 2050, but the interim years are very important to monitor and gauge success annually or bi-annually. If emissions are decreasing at a rate that is on track with the identified emissions, then staff, Council and the community are successfully implementing the Plan.

The following metrics have been identified in the five categories to measure the progress of the Community Climate Change Action Plan.



Metrics (cont.)

Goal	Metrics to Measure Progress in Each Emissions Category	
1. Transportation	<ul style="list-style-type: none"> • % of people using public transit for transportation • # of transit passes sold annually • # of transit riders monthly and annually 	<ul style="list-style-type: none"> • % of people using cycling for transportation • # of km of bike lanes • # of km of sidewalks and multi-use paths • # of EV chargers available for public use
2. Buildings	<ul style="list-style-type: none"> • # of incentives or grant programs introduced to assist with home retrofits • # of homes subject to green building standards 	<ul style="list-style-type: none"> • # of education materials shared about energy conservation programs • # of education materials shared about active transportation with schools • # of business recognition awards given
3. Waste	<ul style="list-style-type: none"> • # of tonnes of waste diverted from the landfill • # of education programs focused on importance of waste diversion 	<ul style="list-style-type: none"> • # of education programs focused on reducing water consumption • # of homes fitted with advanced water metering
4. Education and Outreach	<ul style="list-style-type: none"> • # of community members engaged in climate change discussion • # of education materials shared regarding climate change • # of workshops or events held to share climate change information 	<ul style="list-style-type: none"> • # social media posts about climate change • # of natural assets identified in inventory • Implementation of natural asset management plan • Development of Climate Change Adaptation Plan
5. Offsets	<ul style="list-style-type: none"> • % of tree canopy in the City of Brantford • # of trees given away to the community 	<ul style="list-style-type: none"> • # of trees planted during tree planting events

Aside from the metrics above, the City will continue to inventory the community greenhouse gas emissions to determine Brantford’s progress towards becoming Net Zero by 2050.

Progress updates on the Community CCAP will be provided annually to identify new actions the community can take to reduce their greenhouse gas emissions.

Brant County Health Unit staff clean downtown Brantford during the City's Let's Clean Our City community litter cleanup in April 2022.



© 2022, City of Brantford. All Rights Reserved.

The preparation of this plan was carried out with assistance from the Government of Canada and the Federation of Canadian Municipalities. Notwithstanding this support, the views expressed are the personal views of the authors, and the Federation of Canadian Municipalities and the Government of Canada accept no responsibility for them.



[Brantford.ca/ClimateAction](https://www.brantford.ca/ClimateAction)