



# DUFFERIN CLIMATE ACTION PLAN

## 2021

**COVER ART:**

**Blueprinting (Dufferin County)**

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*Elements taken from Mulmur (Murphy's Pinnacle), Shelburne (Residential Development),  
Melancthon (Wind Turbines) and Mono (Mono Cliffs Provincial Park).*



# A LETTER FROM THE FUTURE

January 3, 2050

Dear Dufferin residents,

We are writing to you today, as we gaze out of the electric bus window, looking at the farmland and natural areas we've so graciously preserved. We smile, realizing how far we've come. The improvements made over the past few decades were crucial to mitigate the impacts of climate change in Dufferin County and to create the vibrancy that defines our community today.

Dufferin County has experienced a significant population increase over the past 30 years, and, thanks to the Dufferin Climate Action Plan, we have accommodated for this increase in an environmentally-conscious way. Neighborhoods have become more affordable and space-efficient, allowing for more public parks and greenspace. Thanks to land preservation efforts, natural areas are absorbing carbon dioxide, sustaining habitat for wildlife, and guaranteeing clean air for everyone. Citizens are able to easily access and afford local foods – In fact, local farmers now feed most of the County. This was a critical step to ensure food security for all.

It was inevitable that Dufferin would have to face drastically warmer temperatures and increasingly frequent and severe weather occurrences. However, the impacts were mitigated by our work to reduce our greenhouse gas emissions and increase clean energy use. Practically every building in the County has been retrofitted with solar panels, making it possible to have power even in the worst of storms. A fleet of electric buses, trails, and bike lanes now connect all of Dufferin County – it is rare to see individual cars on town roads nowadays.

We write this letter to you today to prove that change is possible. We could not be more grateful for the Dufferin Climate Action Plan that Dufferin County implemented in 2021. Without this effort, life in Dufferin County could have taken a turn for the worst. Dufferin Climate Action Plan sets us on a path of environmental and social resilience; one that will create a safe, livable, and prosperous future for generations to come.

Sincerely,

Climate Action Orangeville  
Gabriel Lonuzzo, Age 48  
Joshua Lonuzzo, Age 48  
Nicole Rob, Age 47  
Olivia Rowan, Age 47



# ACKNOWLEDGEMENTS

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This report represents the culmination of efforts invested by many parties who offered their expertise and advice to the research and insights compiled in this report. We are grateful for the support of the members of the Dufferin County Climate Change Collaborative (DC4), who committed their time and consideration to planning the future of our County.

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# INDIGENOUS LAND ACKNOWLEDGEMENT

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We would like to begin by respectfully acknowledging that Dufferin County resides within the traditional territory and ancestral lands of the Tionontati (Petun), Attawandaron (Neutral), Haudenosaunee (Six Nations), and Anishinaabe peoples.

We also acknowledge that various municipalities within the County of Dufferin reside within the treaty lands named under the Haldimand Deed of 1784 and two of the Williams Treaties of 1818: Treaty 18: the Nottawasaga Purchase, and Treaty 19: The Ajetance Treaty.

These traditional territories upon which we live and learn, are steeped in rich Indigenous history and traditions. It is with this statement that we declare to honour and respect the past and present connection of Indigenous peoples with this land, its waterways and resources.

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# GLOSSARY

The following table provides an overview of key terms used within climate change conversations, necessary for navigating the Dufferin Climate Action Plan. Many definitions are adapted from the Intergovernmental Panel on Climate Change (IPCC), an international body established under the United Nations to assess the science, impacts, and response options to climate change.

<b>Adaptation</b>	Adjusting to the actual or expected climate and taking actions to reduce the impacts while also taking advantage of new opportunities provided under a changing climate.
<b>Capacity</b>	The combination of all the strengths, attributes, and resources available to an individual, community, society, or organization, which can be used to achieve established goals.
<b>Climate Change</b>	Climate change is the change in average weather patterns that persist over long periods of time – at least 30 years or more. In the Dufferin Climate Action Plan, climate change refers specifically to human-caused climate change that has been taking place since the Industrial Era.
<b>Carbon Dioxide Equivalent (CO<sub>2</sub>e)</b>	A metric used to compare the emissions from various greenhouse gases on the basis of their global-warming potential, by converting amounts of other greenhouse gases to the equivalent amount of carbon dioxide.
<b>Co-Benefits</b>	Co-benefits are the potentially large and diverse range of benefits associated with climate action initiatives that go beyond direct contributions to climate change mitigation or adaptation.
<b>Energy Poverty</b>	Energy poverty refers to the experience of households or communities that struggle to heat and cool their homes and power their lights and appliances.
<b>Equity</b>	Equity is the fair and respectful treatment of all people. This involves the creation of opportunities and reduction of disparities in opportunities and outcomes for diverse communities.
<b>Greenhouse Gas Emissions (GHGs)</b>	Gases in the atmosphere that absorb and emit infrared radiation, contributing to the greenhouse effect.
<b>Impacts</b>	Climate change impacts are the consequences of climate change, both expected and realized, on human and natural systems.
<b>Intergovernmental Panel on Climate Change (IPCC)</b>	An international body established under the United Nations to assess the science, impacts, and response options to climate change.



## GLOSSARY

<b>Justice</b>	Addressing the root cause of inequalities to remove systemic barriers.
<b>Low-Carbon Resilience</b>	Low-carbon resilience is the strategic alignment of climate adaptation and emission reductions efforts to maximize effectiveness and to achieve co-benefits. In the context of the DCAP, we use low-carbon resilience to refer to all greenhouse gas emissions.
<b>Mitigation</b>	A human intervention to reduce emissions or enhance the sinks of greenhouse gases.
<b>Net-zero</b>	Net-zero is achieved through the reduction of anthropogenic emissions of greenhouse gases with the goal of balancing emissions produced and emissions removed from the atmosphere. It is important to note net-zero emphasizes a commitment to reducing greenhouse gas emissions as much as possible.
<b>Offset</b>	The reduction of greenhouse gas emissions to compensate for (“offset”) emissions made elsewhere.
<b>PACE program</b>	“Property Assessed Clean Energy” (PACE) is an innovative financing tool that allows property owners to borrow money to undertake a broad spectrum of clean energy improvements to their buildings.
<b>Paris Agreement</b>	An international agreement to keep global temperature rise this century well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius.
<b>Resilience</b>	<p>The ability of a system and its component parts to anticipate, absorb, accommodate, or recover in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions.</p> <p>In the context of the Dufferin Climate Action Plan, resilience is not simply the ability to bounce back, but rather refers to bouncing forward – to transform and enhance the capacities of the community to prepare and respond to future climate impacts.</p>
<b>Sequestration</b>	The process of storing greenhouse gases in a sink. A carbon sink is a reservoir (natural or human, in soil, oceans, and plants) where greenhouse gas is stored.
<b>Sovereignty</b>	Sovereignty is the full right and power of a governing body over itself, without any interference from outside sources or bodies.
<b>Vulnerability</b>	The sensitivity or predisposition to be adversely affected by climate change. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

# LIST OF ACRONYMS

<b>AMO</b>	Association of Municipalities of Ontario
<b>BIA</b>	Business Improvement Areas
<b>CIP</b>	Community Improvement Plan
<b>CO2e</b>	Carbon dioxide equivalent
<b>DC4</b>	Dufferin County Climate Change Collaborative
<b>EVSE</b>	Electric vehicle supply equipment
<b>FCM</b>	Federation of Canadian Municipalities
<b>GDP</b>	Gross domestic product
<b>GGH</b>	Greater Golden Horseshoe
<b>GHG</b>	Greenhouse gas
<b>IESO</b>	Independent Electricity System Operator
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>KPI</b>	Key performance indicator
<b>LCR</b>	Low-carbon resilience
<b>MTO</b>	Ministry of Transportation Ontario
<b>NRCan</b>	Natural Resources Canada
<b>PACE</b>	Property Assessed Clean Energy
<b>PCP</b>	Partners for Climate Protection
<b>RCP</b>	Representative Concentration Pathway
<b>tCO2e</b>	Tonnes of carbon dioxide equivalent
<b>Tmax</b>	Temperature maximum
<b>Tmin</b>	Temperature minimum
<b>UNFCC</b>	United Nations Framework Convention on Climate Change

# EXECUTIVE SUMMARY

The climate crisis requires urgent action. In May 2018, Dufferin County became part of the Partners for Climate Protection (PCP) program, joining a national network of over 350 municipalities across Canada in a commitment to climate action. The Dufferin Climate Action Plan lays out a pathway to reach net-zero emissions by 2050, while also increasing community resilience to the impacts of climate change.

## THE CLIMATE CHALLENGE

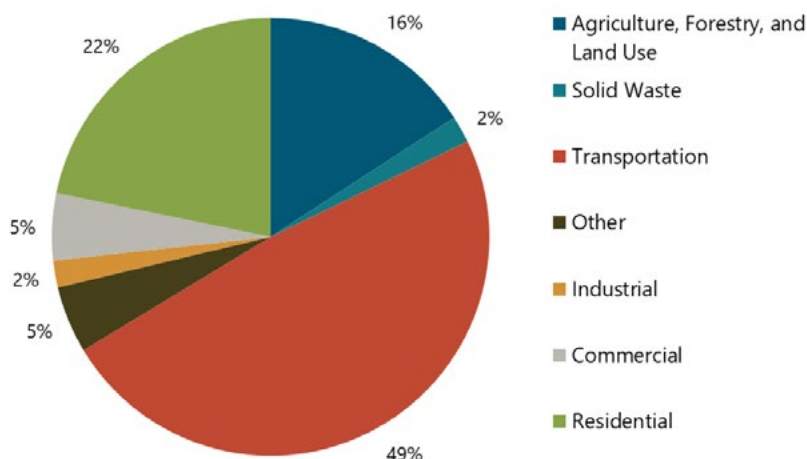
Climate change will impact Dufferin County. Local climate projections indicate warmer year-round temperatures, including more days with extreme heat and ice, longer growing seasons, and an increased demand for energy required for cooling and heating homes and buildings. Without intervention, climate change threatens the social, environmental, and economic well-being of current and future generations of Dufferin County.

### Key climate impacts that Dufferin County will experience include:

- Heat and droughts
- Loss of native biodiversity
- Illness and disease
- More ice days
- Mental health challenges
- Infrastructure damage
- Disruptions to the economy
- Soil erosion and nutrient loss
- Lengthened growing seasons

**In 2016, 438,264 tonnes of CO<sub>2</sub>e were emitted within Dufferin County.** The three largest sectors of greenhouse gas emissions in Dufferin are the transportation, residential, and agriculture, forestry and land use sectors.

**Dufferin County Greenhouse Gas Emissions by Sector**



**Without climate action, local greenhouse gas emissions will rise 66% by 2050.** This is a world in which the worst impacts of climate change may be felt.



## PLANNING FOR CHANGE

**The Dufferin Climate Action Plan is a strategy** for the County, local municipalities, and community members to reduce greenhouse gas emissions and build climate resiliency over the next 30 years.

**Taking action on climate change has a variety of co-benefits for the community.** Community climate action planning can create healthy and connected neighbourhoods, protect the local environment, drive the local economy, and address systems of inequality in the community.

**The Dufferin Climate Action Plan was created through intensive research and community engagement.** Input from the public and the Dufferin County Climate Change Collaborative (DC4) helped shape the vision statement for Dufferin's climate future:

### TO CREATE A NET-ZERO AND RESILIENT COMMUNITY FOR CURRENT AND FUTURE GENERATIONS IN DUFFERIN COUNTY, WHILE:

ENHANCING THE HEALTH AND WELL-BEING OF COMMUNITY MEMBERS

BUILDING EQUITABLE AND VIBRANT NEIGHBOURHOODS

PRESERVING AND ENHANCING LOCAL BIODIVERSITY AND NATURAL SYSTEMS

FOSTERING A PROSPEROUS AND INNOVATIVE LOCAL ECONOMY

**Dufferin County is setting a target of net-zero by 2050.** Recognizing that different actions require varying levels of time, resources, and support, the County will adopt a three-phase emission reduction timeline to reach the 2050 target, with a target of a 10% reduction below 2016 levels by 2030 and 40% reduction below 2016 levels by 2040.

**The Plan is built upon two core frameworks: low-carbon resilience and equity and justice.** Low-carbon resilience is the strategic alignment of mitigation and adaptation actions to enhance the effectiveness of both strategies and avoid risks. Through an equity and justice framework Dufferin County will strive to ensure that the burdens of climate change and the benefits of climate action are not experienced disproportionately throughout the community.

## TAKING ACTION

The Dufferin Climate Action Plan will undertake 34 climate action initiatives within the following 6 areas:

<b>On the Move</b>	Actions to reduce vehicle trips, promote active and public transportation, and accelerate low-GHG transportation options
<b>In Our Buildings</b>	Actions to improve energy efficiency, increase the uptake of renewable energy technologies, and build climate resilience in new and existing buildings
<b>For Our Land</b>	Actions to protect, restore, and enhance natural systems, reduce agricultural emissions, protect people and property from natural hazards, and promote climate resilient agricultural practices
<b>Planning Our County</b>	Actions to manage energy design and plan vibrant communities focused on high-density, walkability, and connectivity
<b>In Our Bins</b>	Actions to increase community diversion of organics and reduce waste
<b>Empowering Our Community</b>	Actions to increase community capacity to take climate action, respond to emergencies, and build a community culture around climate action

## IMPLEMENTING THE PLAN

Dufferin County will adopt 7 key implementation strategies to maximize the positive environmental, social, and economic impacts of climate action:

- **Building Community Relationships**
- **Leveraging Funding**
- **Increasing Staff Capacity**
- **Institutionalizing Climate Action**
- **Strategic Prioritization**
- **Centering Equity**
- **Mobilizing a Culture of Climate Action**

Monitoring and evaluating the implementation of the Plan is critical to reaching our greenhouse gas (GHG) reduction targets. Dufferin County will establish an annual report card on the progress of the Dufferin Climate Action Plan. Further, the plan will be reviewed and updated every 5 years to provide an updated GHG inventory, report on progress, set next steps, and ensure that climate planning continues to align with community priorities.

## THE NEXT 5 YEARS

Dufferin County will focus on 5 priority actions. This will allow the County to shift away from business as usual and build a solid foundation from which to continue to respond quickly and effectively to the climate crisis.

- 1 Develop a municipally led financing program for home energy retrofits to encourage and make the uptake of deep energy retrofitting and energy efficiency measures more accessible for residents.
- 2 Accelerate the transition to low-GHG transportation by developing an electric vehicle charging network across Dufferin and neighbouring municipalities.
- 3 Empower the community to take climate action by institutionalizing climate action in municipal planning and supporting community awareness, education, and knowledge sharing initiatives.
- 4 Support climate-resiliency initiatives in agricultural and natural systems to enhance food security, support local farmers, and protect natural systems.
- 5 Create green development standards to ensure new development is environmentally, socially, and economically sustainable.

It is imperative to identify and address limitations and future considerations to ensure the continued success of the Dufferin Climate Action Plan. First, increasing capacity to accurately track and monitor greenhouse gas sources and sinks within Dufferin will allow the County to develop a deeper quantitative understanding of the how the actions outlined in this plan will impact community GHG levels at the sector level. It will also allow for strategic implementation to maximize the reduction potential of each action. Secondly, the unprecedented times brought by COVID-19 provided a challenge for community engagement on the Dufferin Climate Action Plan. Moving forward, Dufferin County will begin to connect with community partners and compile best practices from emerging research on engagement during COVID-19 to design a new strategy with the goal of including all voices in engagement and outreach opportunities.

**The solution to climate change is community.** With meaningful action from local municipalities, businesses, organizations, schools, and individuals we can create a prosperous future for the current and future generations of Dufferin County.

Moving towards a net-zero future is a monumental task, but it is also an enormous opportunity to tap into the numerous co-benefits of climate action. A dynamic community that embraces low-GHG transportation options, supports and enhances local agriculture, grows sustainable and vibrant urban centers, and protects land, water, and air, stimulates local economies, creates healthy and equitable neighbourhoods, and is resilient in the face of climate change.





# WELCOME TO THE DUFFERIN CLIMATE ACTION PLAN

## THE CLIMATE IS CHANGING. SO MUST WE.

The climate crisis requires urgent action. The social, cultural, environmental, and economic well-being of current and future generations of Dufferin County depend on the actions we take now to confront climate change.

Around the world the climate crisis is intensifying: 2019 was the second hottest year on record, just behind 2016, capping off the hottest decade ever recorded (2010–2019).<sup>1</sup> Global average temperatures continue to rise, worsening extreme weather events and endangering vital ecosystems. This means the things we value and depend upon – human health, water, agriculture, energy, transportation, and the environment – are at great risk.

Home in Dufferin County, the impacts of climate change are already being felt. Rising temperatures, changing weather patterns, and more extreme weather events, such as the historic 2017 flooding event, are being experienced in Dufferin. Without intervention, these impacts will continue to increase in likelihood and severity in the future.

Urgent action is necessary to reduce greenhouse gas emissions and adapt to the impacts of climate change at both the global and local level. In 2015, a landmark environmental accord, the Paris Agreement, was adopted by 197 nations, including Canada, to address climate change. The Paris Agreement aims to strengthen the global response to the threat of climate change by keep a global temperature rise this century “well below 2 degrees Celsius above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5 degrees Celsius”.<sup>2</sup>

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<sup>1</sup> National Oceanic and Atmospheric Administration (NOAA), 2019. *Global Climate Report – Annual 2019*  
<https://www.ncdc.noaa.gov/sotc/global/201913>

<sup>2</sup> United Nation Framework Convention on Climate Change, 2015. *The Paris Agreement*  
<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

## WELCOME

Limiting warming to 1.5°C requires a rapid and far reaching transition from all levels of government and civil society.<sup>3</sup> As a country, Canada has committed to a goal of net-zero emissions by 2050. In alignment with national efforts, Dufferin County has also set a target of net-zero by 2050.

The Dufferin Climate Action Plan lays out a pathway to reach our 2050 climate goal, while also increasing community resilience to the impacts of climate change. Under 6 focus areas, The Dufferin Climate Action Plan outlines 34 actions the County can take to build a net-zero and resilient communities:



On the Move



In Our Buildings



For Our Land



Planning Our  
Community



In Our Bins



Empowering Our  
Community

The implementation of this plan will shift the community towards climate-friendly transportation modes, grow vibrant urban and rural communities, protect water and ecosystems, and create empowered communities that are ready to respond to a changing climate. Taking action on climate change can also create many other social, cultural, environmental, and economic benefits in the County.

Taking action on climate change is an opportunity to re-imagine our community and build a safe, healthy, and equitable future for citizens and the environment. Our collective success requires action from everybody, including residents, businesses, community organizations, institutions, neighbouring local governments, and senior levels of government.

<sup>3</sup> Intergovernmental Panel on Climate Change, 2018. *Global Warming of 1.5°C*  
[https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15\\_Full\\_Report\\_High\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf)

## OUR PLACE

Dufferin County is an upper-tier municipality which is comprised of eight local municipalities:

Township of Amaranth  
Township of East Garafraxa  
Town of Grand Valley  
Township of Melancthon

Town of Mono  
Township of Mulmur  
Town of Orangeville  
Town of Shelburne

Dufferin County has a population of 61,735<sup>4</sup> and is located in the north-western portion of the Greater Golden Horseshoe (GGH) Area, within the traditional territory and ancestral lands of the Tionontati (Petun), Attawandaron (Neutral), Haudenosaunee (Six Nations), and Anishinaabe peoples. The beautiful Niagara Escarpment forms a dividing ridge through Dufferin County and it is easily accessed via the Bruce Trail or the Mono Cliffs Provincial Park. Dufferin County is commonly referred to as 'the Headwaters'; as the Saugeen, Nottawasaga, Credit, Grand, and Humber River all have headwaters in Dufferin. Dufferin County's urban areas have a small-town feel and a balance with natural beauty, making the County an attractive place to base a business and to live, work, retire, and raise a family.

Known for its rivers, rolling hills, and outdoor recreation opportunities, Dufferin County is a largely rural region. Land in Dufferin County is classified as 70% prime agricultural land, boasting 690 farms covering 156,593 acres. Dufferin County's agricultural sector benefits from high quality agricultural land well-suited to potatoes and to cattle, dairy and mixed farming. The entrepreneurship of the farm community is evident in growing on-farm and farm-related ventures.



<sup>4</sup> Statistics Canada, 2016. *Dufferin County Statistics Profile*  
<https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/index.cfm?Lang=E>

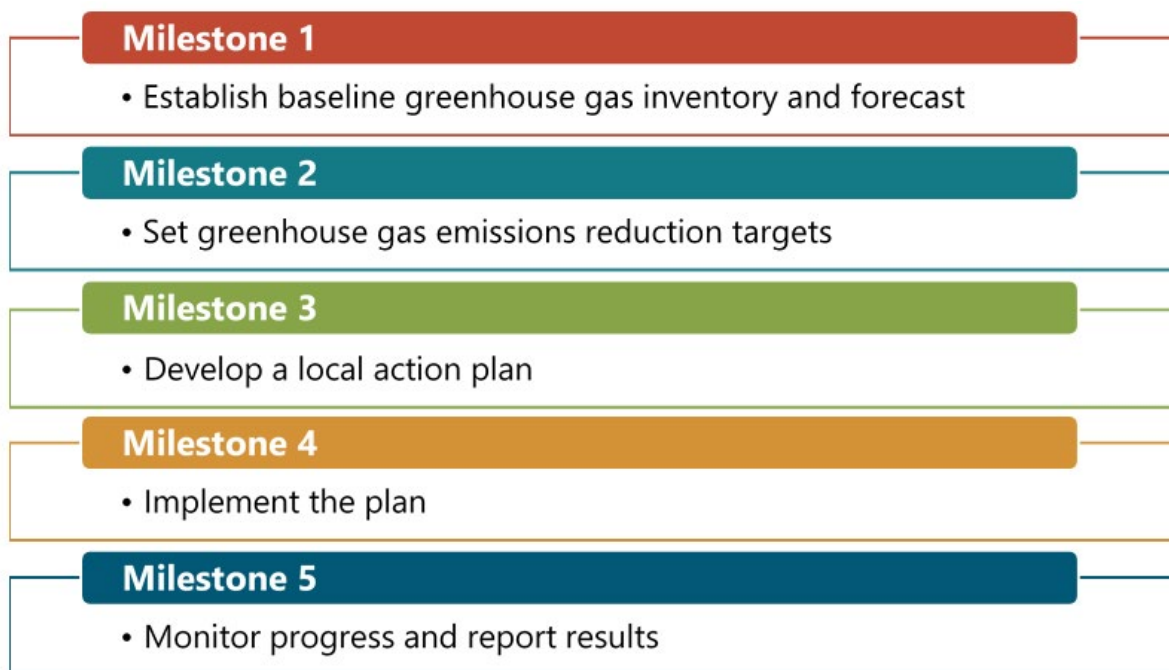


# DUFFERIN COUNTY'S CLIMATE COMMITMENT

In May 2018, Dufferin County became part of the Partners for Climate Protection (PCP) program, joining a national network of over 350 municipalities across Canada in a commitment to reducing local greenhouse gas (GHG) emissions at both the corporate and community level.

The PCP program consists of a five-step Milestone Framework to support local GHG reductions while also creating jobs, improving air quality, resident health, and financial savings.<sup>5</sup> By working through the PCP Milestone Framework, Dufferin County will save money in municipal operations, lower energy costs for residents and businesses, and increase investment in the local economy. Through the publication of the Dufferin Climate Action Plan, Dufferin County will mark the completion of Milestone 3 on the community side of the PCP Program.

**Figure 1. Partners for Climate Protection Milestone Framework**



## LEADING THE WAY

Dufferin County will be developing a Corporate Climate Action Plan in 2021 to reduce greenhouse gas emissions and adapt to climate impacts at the corporate level. The Corporate Climate Action Plan will support and be aligned with the community Dufferin Climate Action Plan to maximize impact and find efficiencies. Through the development and implementation of the corporate plan, Dufferin County will position itself as an example leader of climate action in the community.

<sup>5</sup> Partners for Climate Protection, 2020. <https://fcm.ca/en/programs/partners-climate-protection>

# THE CLIMATE CHALLENGE

## CLIMATE BASICS

**Climate change is the shift in long-term weather conditions** measured by changes in temperature, precipitation, wind, and snow cover, among other indicators, over a period of 30 years or more.<sup>6</sup> Climate change also refers to changes in the frequency and severity of extreme events such as floods, droughts, fires, heat waves, and storms.

**The climate is changing at an alarming rate.** Global temperatures have risen by an average of 1.1°C since pre-industrial times.<sup>7</sup> Weather records from across Canada show that every year since 1998 has been warmer than the 20th century average,<sup>8</sup> meaning an entire generation of Canadians has never experienced what most of modern history considered a “normal” Canadian climate.

**In 2020, atmospheric carbon dioxide reached 409.8 parts per million,** a concentration higher than any point in the past 800,000 years.<sup>9</sup> Unless action is taken now, globally, at least another 2°C of warming is expected, which climate scientists warn can result in serious and catastrophic impacts.

**Climate scientists agree that climate change over the past century is due to human activity:** Our energy use, waste management practices, land-use decisions, and agricultural practices produce greenhouse gases linked to current climate change.



## The Greenhouse Effect

In the atmosphere greenhouse gases act like an insulator, keeping the Earth’s surface warm and providing a life-supporting average temperature of approximately 14°C.<sup>10</sup>

As human activities increase the concentration of greenhouse gases, particularly carbon dioxide, methane, and nitrous oxide, more heat is trapped in the atmosphere, causing climate change. The rate at which humans emit greenhouse gases in the atmosphere is so rapid that it threatens to warm the global climate at a speed at which humans nor the environment can adapt to.

<sup>6</sup> Government of Canada, 2020.

<https://www.canada.ca/en/environment-climate-change/services/climate-change/causes.html>

<sup>7</sup> Government of Canada, 2020.

<https://www.canada.ca/en/environment-climate-change/services/climate-change/causes.html>

<sup>8</sup> Prairie Climate Centre, 2020. <http://prairieclimatecentre.ca/>

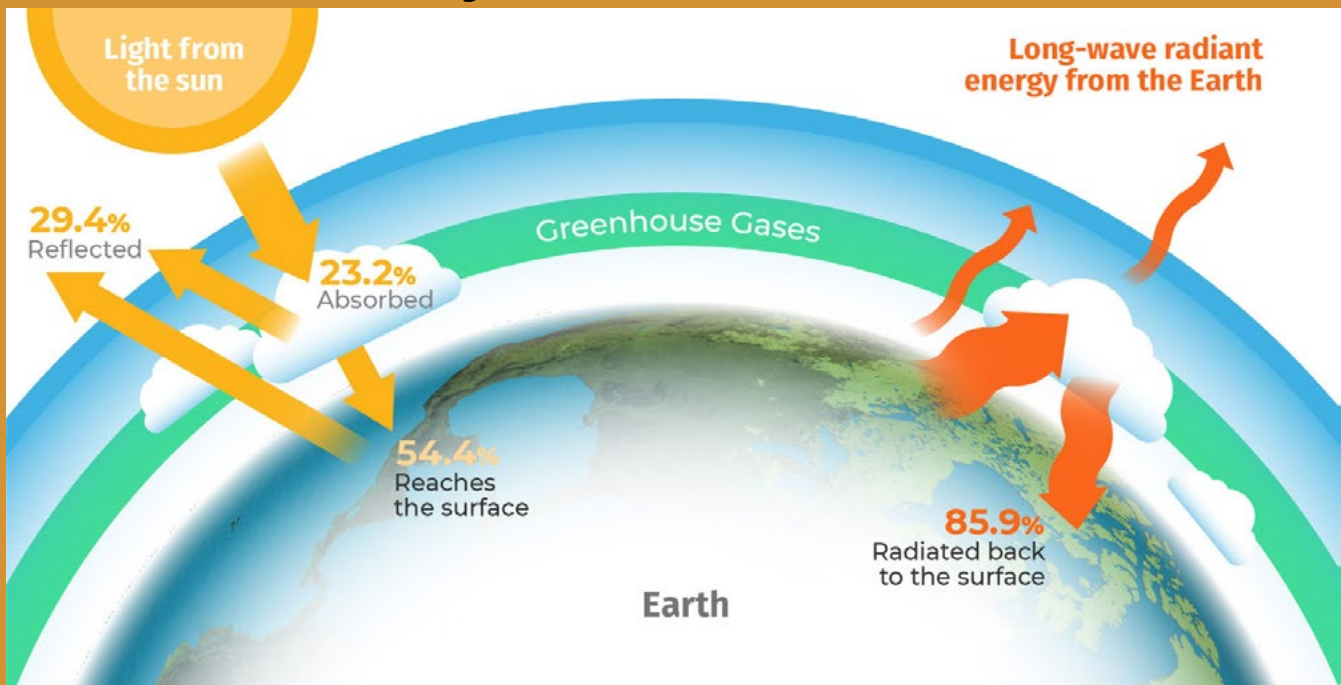
<sup>9</sup> National Oceanic and Atmospheric Administration (NOAA), 2020.

<https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>

<sup>10</sup> Environment and Climate Change Canada, 2015. *The Science of Climate*

[http://publications.gc.ca/collections/collection\\_2017/eccc/En4-303-2015-eng.pdf](http://publications.gc.ca/collections/collection_2017/eccc/En4-303-2015-eng.pdf)

**Figure 2. Greenhouse Gas Effect**



Source: Prairie Climate Centre, 2018.

**Why is a Few Degrees of Change so Significant?**

Warming of just a few degrees can cause widespread changes in regional and local temperature and precipitation patterns, as well as increase the severity and frequency of extreme weather events. These changes are associated with a variety of impacts to our society at the local, national, and global scale.

**What is the Difference Between Global Warming and Climate Change?**

Global warming is the increase in global average surface temperatures due to human activities. Climate change encompasses global warming, but also refers to long-term changes in other climatic conditions such as wind and precipitation, lengthening of seasons, and the increased strength and frequency of extreme weather.

**What are Greenhouse Gases (GHGs)?**

GHGs are gases in the atmosphere that absorb heat radiated from the earth, producing a greenhouse effect. The greenhouse effect is a natural process that creates the warm conditions on Earth that make life possible. However, human activity has increased the concentrations of GHGs in the atmosphere to dangerous levels that amplify the GHG effect.

**Hasn't Earth's Climate Always Been Changing? Why Worry Now?**

Although Earth's climate has always fluctuated, human activity has dramatically increased the rate of climate change. It is important to note that all major climatic changes, even natural ones, have been highly disruptive. The speed at which our climate is changing makes it difficult for both human societies and the natural world to adapt.

# BY 2050...

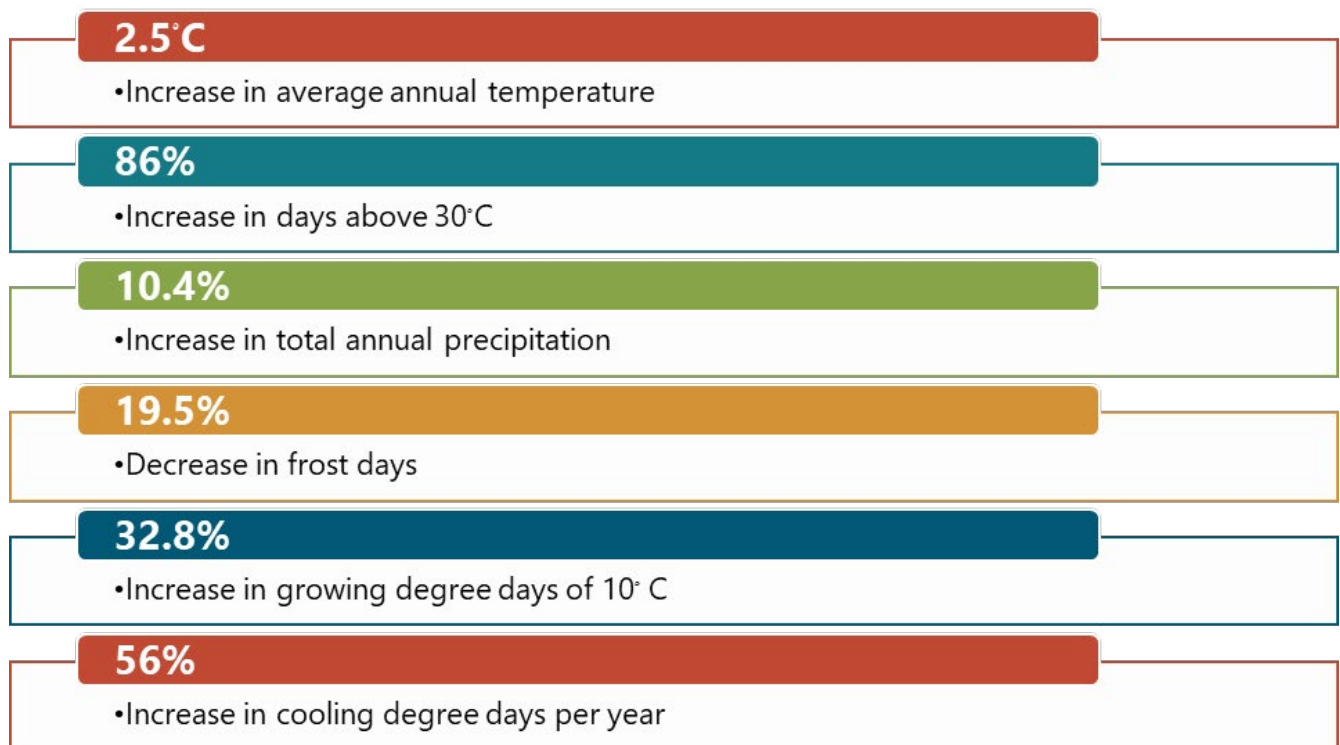
Climate projections capture the relationships between human choices, our emissions, and climate change to help us plan and prepare to adapt to future climate conditions. A detailed overview of climate projections for Dufferin County is available in Appendix A of this report.

To summarize, climate projections for Dufferin County indicate warmer year-round temperatures, including more days with extreme heat and ice, longer growing seasons, and an increased demand for energy required for cooling our homes and buildings.

Dufferin County is expected to see a **10.4% increase** in total annual precipitation by 2050; however, while this increase may seem small, this projection does not capture seasonal changes, extreme precipitation, and the potential for shorter but highly intensive storms, which can increase flooding risk and pose threats to people, property, and ecosystems.

## By the Numbers

By 2050 Dufferin County will experience:<sup>11</sup>

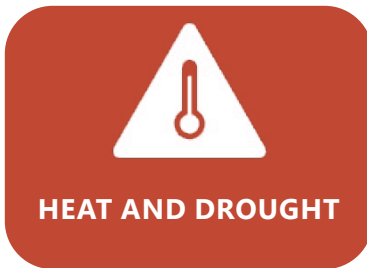


<sup>11</sup> Climate Data, 2020. <https://climatedata.ca/>



## THE IMPACTS

Without intervention, climate change has the potential to impact every aspect of life in Dufferin County. In identifying these potential vulnerabilities, it is also essential to acknowledge that these impacts are often felt disproportionately within a community due to a variety of inequalities. This is why climate justice is central to the Dufferin Climate Action Plan. The following list, though non-exhaustive, summarizes the key climate vulnerabilities and impacts that may be experienced in Dufferin County:<sup>12</sup>



Impacting water supply, regional vegetation, crops, and livestock



Threatening safety and damaging natural and built infrastructure



Jeopardizing critical water, sanitary, and power systems



And the introduction of invasive species, pests, and disease



Caused by climate change stressors



Resulting from increased heat stress and poor air quality



As infrastructure and business assets are put at risk



Impacting local agriculture and ecosystems



Caused by rising temperatures and increasing frost-free days

<sup>12</sup> Environment and Climate Change Canada, 2019. *Canada in a Changing Climate Report*  
<https://changingclimate.ca/CCCR2019/>

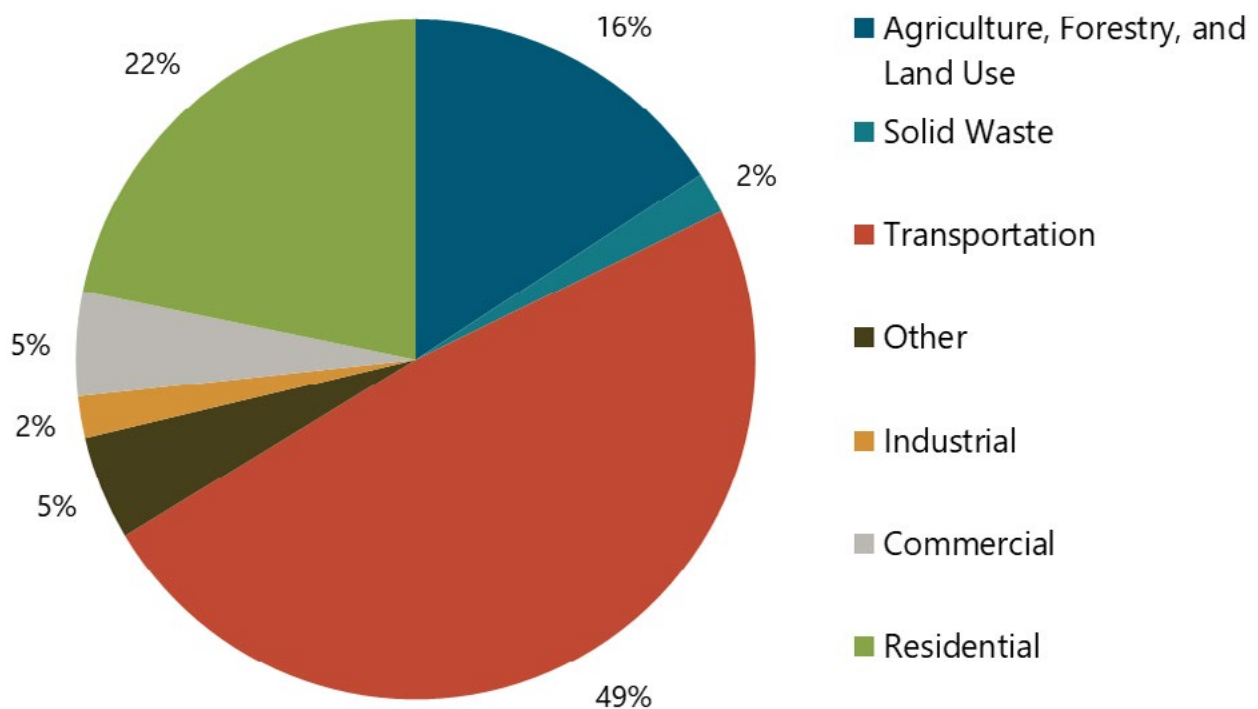
# DUFFERIN COUNTY'S GREENHOUSE GAS EMISSIONS

As part of the commitment under the Partners for Climate Protection Program, Dufferin County has completed a community greenhouse gas inventory, prepared by the Clean Air Partnership.

The GHG inventory records where emissions come from within the geographical boundaries of the region, revealing what types of energy are used within the County, and which sectors use the most energy and emit the most GHG emissions. This information is used to focus emission reduction strategies on the highest emitting areas. The GHG inventory also provides an important benchmark from which to measure the success of the Dufferin Climate Action Plan over time.

**In 2016, 438,264 tonnes of CO<sub>2</sub>e were emitted within Dufferin County.**<sup>13</sup> Figure 3 summarizes the total community GHG emissions by sector and Figure 4 summarizes the emissions by energy source.

**Figure 3. Dufferin County Greenhouse Gas Emissions by Sector**



<sup>13</sup> Clean Air Partnership, 2020. *Dufferin County Greenhouse Gas Inventory*.

[https://www.cleanairpartnership.org/wp-content/uploads/2020/11/Report-3\\_Dufferin\\_Low-Resolution.pdf](https://www.cleanairpartnership.org/wp-content/uploads/2020/11/Report-3_Dufferin_Low-Resolution.pdf)

## A Farmer's Connection to Climate

"A farmer's connection to climate is inextricable. We rely on being able to work with the weather. This used to be a more reasonable expectation, but in recent years extreme weather scenarios mean at every farm conference the topic of Climate Change Adaptation is being talked about."

- Shannon, Local Farmer

## A Natural Landscapers Perspective on Climate Change

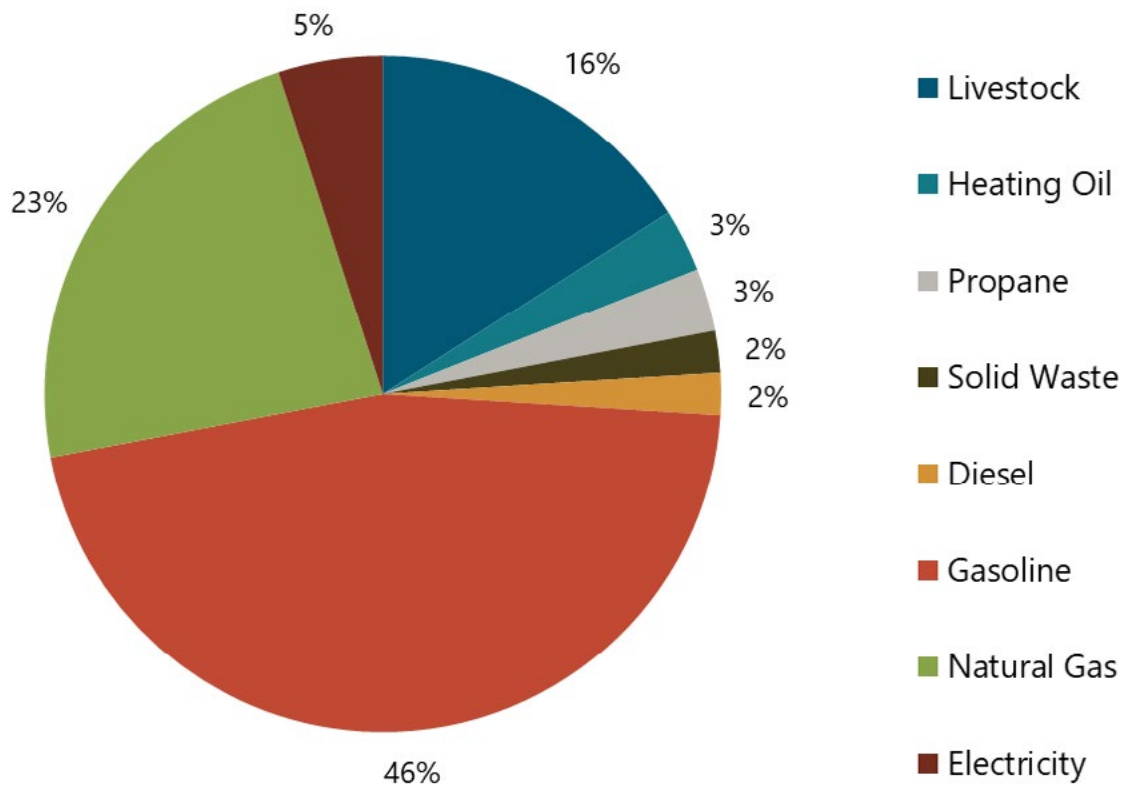
"When we lose biodiversity and native ecosystems from our landscapes, we lose the ability for them to mitigate the effects of climate change such as droughts, heatwaves or pollinator decline. To address local biodiversity loss, I would like to see more public and private landowners turn un-used lawn into native wildflower meadows. The deep roots of native plants sequester more carbon than lawn grass while also soaking up more water which mitigates flooding"

- Shaun Booth, Owner, In Our Nature



The highest source of greenhouse gas emissions in Dufferin County is the transportation sector, which accounts for 49% of total emissions. The residential sector and the agricultural and land use sector, are also significant sources of emissions, representing 22% and 16% of local emissions respectively.

**Figure 4. Dufferin County Greenhouse Gas Emissions by Energy Source**



Three energy sources – gasoline, natural gas, and livestock – are responsible for the majority of GHGs in Dufferin County. Due to the limitations of data availability, the estimations done in this inventory regarding propane and heating oil greenhouse gas emissions are assumptions and may not capture the full extent of what has been released in each municipality. Further, for future inventories, the inclusion of local fuel data from farm vehicles and equipment will help form a deeper understanding of how the community’s GHG emissions are distributed.

Emission profiles for each of the local municipalities including, Amaranth, East Garafraxa, Grand Valley, Melancthon, Mono, Mulmur, Orangeville, and Shelburne are available in the “Dufferin County Greenhouse Gas Inventory”.

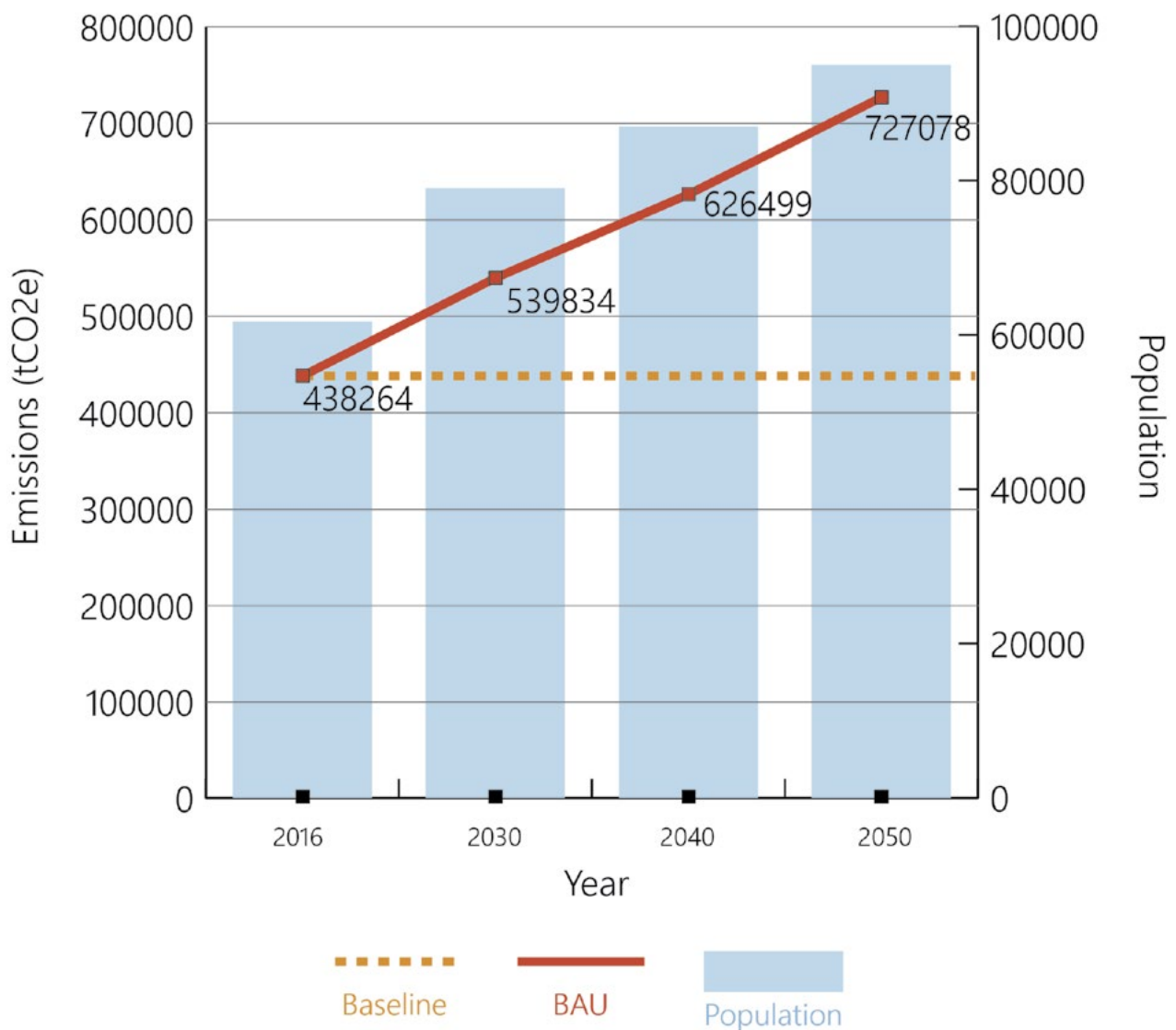


## EMISSIONS FORECAST – A BUSINESS AS USUAL SCENARIO

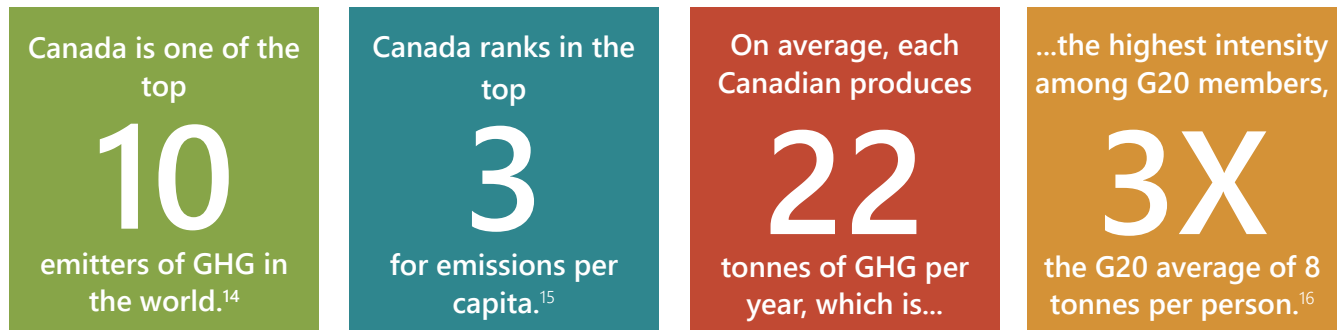
Without climate action, models project that local greenhouse gas emissions will rise by 66% by 2050. It is projected that 727,078 tonnes of CO<sub>2</sub>e will be emitted per year by 2050 with an annual population growth rate of 1.5%.

As illustrated in Figure 6, the business as usual scenario results in a significant increase in local GHG emissions, incompatible with a net-zero future. This high emissions scenario represents a world in which Dufferin County may experience the worst impacts of climate change – heatwaves, droughts, storms, floods, and widespread loss of natural ecosystems and biodiversity. This business as usual forecast illustrates the urgency and necessity of taking action to reduce local GHG emissions.

**Figure 5. Dufferin County Emissions Forecast: Business As Usual (BAU) Scenario**



## In Perspective...

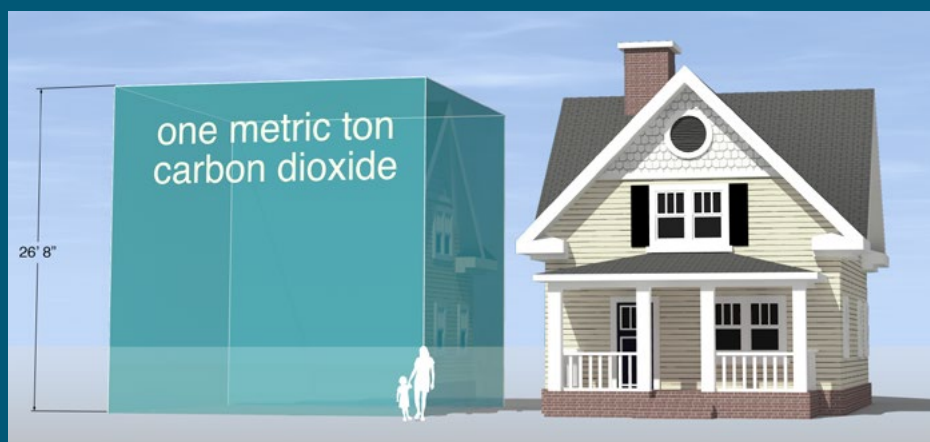


As part of the United Nations Framework Convention on Climate Change, Canada has agreed to the principle of “common but differentiated responsibility and respective capabilities”.<sup>17</sup> This principle strives for global equity and acknowledges the greatest impacts of climate change are felt by developing countries, while the greatest emissions intensities are concentrated in developed countries. This means that developed countries, such as Canada, have the greatest capacities to reduce their emissions, and, as such, they are responsible for taking the lead on mitigation and mobilizing climate finance.

## Visualizing Emissions

If an average sized two-story home (Figure 5) is roughly the same size as one metric tonne of carbon dioxide, we can begin to imagine what Dufferin’s 438,264 tonnes of CO<sub>2</sub>e emitted looks like. Now imagine 46,141 million tonnes of CO<sub>2</sub>e – the emissions produced globally in 2016 – and we can begin to understand the scale of the emissions problem.

**Figure 6. One Metric Ton Carbon Dioxide Visualized**



<sup>14</sup> Lawrence National Centre for Policy and Management, 2016. *By the Numbers: Canada’s GHG Emissions*. <https://www.ivey.uwo.ca/news/news-ivey/2016/1/by-the-numbers-canadian-ghg-emissions/>

<sup>15</sup> Lawrence National Centre for Policy and Management, 2016.

<sup>16</sup> Climate Transparency, 2020. *Climate Transparency Report*. <https://www.climate-transparency.org/wp-content/uploads/2020/11/Canada-CT-2020.pdf>

<sup>17</sup> UNFCC, 1992. United Nations Framework Convention on Climate Change

# PLANNING FOR CHANGE

## CLIMATE ACTION AT ALL LEVELS

### Global Action

In 2015, Canada signed the Paris Agreement, a global commitment to keep global average temperature rise below 2°C, and as close to 1.5°C as possible.

### National Action

In 2020, the Government of Canada released a strengthened climate plan. "A Healthy Environment and a Healthy Economy" is a federal strategy to achieve net-zero emissions by 2050 and exceed the 2030 GHG reduction target of 30% below 2005 levels.

The plan includes 64 new measures that build on the 2016 "Pan-Canadian Framework on Clean Growth and Climate Change".

Actions and levers available to the Federal government include vehicle fuel-efficiency standards, model national building codes, energy ratings, and carbon pricing.

### Provincial Action

In 2018, the Provincial government released "A Made-in-Ontario Environment Plan" committing to reduce emissions by 30% from 2005 levels by 2030, in alignment with the Federal government's Paris commitment.

Actions and levers available to the Provincial government include codes (i.e. building code), data, green infrastructure, provincial roads and transit funding, carbon tax, and zero emissions vehicle standards.

## THE ROLE OF LOCAL MUNICIPALITIES

Municipalities are on the frontline of the climate crisis and influence 50% of GHG emissions in Canada.<sup>18</sup> When extreme weather events occur, the impacts are felt directly in the communities that local governments serve. Municipal governments are tasked with, and committed to, the reduction of GHGs through the effective management of risks, protection of community safety and the promotion of economic sustainability. Municipalities can utilize their regulatory powers through land use planning, community energy planning, zoning, by-laws or regulatory permits to effectively address the effects of climate change. Municipalities are also positioned to react quickly to build local community-led solutions and long-term strategies while seizing the economic opportunities that come with effective climate action.

<sup>18</sup> FCM website, 2020.

<https://fcm.ca/en/programs/municipalities-climate-innovation-program/greenhouse-gas-reductions>



Municipalities cannot shoulder the cost of responding to climate change alone. Climate action is a shared responsibility among all orders of government, and will require a long-term commitment to action. Partnerships between all levels of government and the leveraging of opportunities for investments in the private sector is crucial in financing the robust system change required to address the impacts of climate change and to reduce risk.

However, the future cost of inaction is greater than the investments required today. Avoiding the worst impacts of climate change at the municipal level will cost an estimated \$5.3 billion per year in municipal infrastructure and local adaptation, or equivalent to 0.26% of Canada’s GDP. Studies have shown that investments in resilient infrastructure have a return on investment of \$6 in future averted losses for every \$1 spent proactively.<sup>19</sup>

Those investments are critical to helping local communities adapt to the changing climate and to reduce risks to residents from acute shocks such as extreme weather as well as chronic stresses.

It is important to note that municipal actions are necessary, but insufficient on their own to address the climate crisis. The actions and strategies put forward in the Dufferin Climate Action Plan are in focus areas that Dufferin County has direct and indirect influence. However, reaching our climate goals requires action from everyone, including residents, businesses, local farmers and food providers, community organizations, industry stakeholders, utility service providers, and institutions.

<sup>19</sup> FCM & IBC, 2020. *Investing in Canada’s Future: The Cost of Climate Adaptation at the Local Level.*

<https://data.fcm.ca/documents/focus/investing-in-canadas-future-the-cost-of-climate-adaptation-summary.pdf>



# THE DUFFERIN CLIMATE ACTION PLAN

**“Scientific evidence for warming of the climate system is unequivocal.”**

- Intergovernmental Panel on Climate Change

## **The Dufferin Climate Action Plan has two core objectives:**

**Mitigation** – Taking action to reduce local greenhouse gas emissions and/or sequester greenhouse gases from the atmosphere

**Adaptation** – Taking action to adapt to the impacts of climate change such as the increasing frequency and severity of storms, floods, heatwaves, or droughts. This is especially important to protect community members who are most vulnerable to climate change.

Both adaptation and mitigation are necessary in responding to climate change. This is because, even if the emission of GHGs were to end tomorrow, the climate will continue to change. This is a consequence of the inherent lag in the climate system.

This means it is necessary for Dufferin County to take measures to adapt to climate change to reduce future risks.

As members of a global community, municipalities have an important role to play in contributing to the global reduction of greenhouse gas emissions to reduce the effects of future climactic changes. A 2009 report published by the Federation of Canadian Municipalities estimated that municipal governments have direct or indirect control over 50% of Canada’s GHG emissions.<sup>20</sup>

The Dufferin Climate Action Plan is a strategy for the County, local municipalities, and community members to reduce greenhouse gases and build climate resiliency over the next 30 years.

The Dufferin Climate Action Plan was created through intensive research and meaningful engagement with community members and considers climate action in a local context, to capture the needs, desires, and priorities of both rural and urban communities. At the core of both planning and implementation, the Dufferin Climate Action Plan strives towards climate justice.

This plan includes a GHG inventory, reduction targets, and 34 practical actions to be taken by local municipalities and community members to achieve the set targets. It also outlines measures to prepare Dufferin County for the impacts of climate change and to build community resilience. While resilience is often thought of as the ability to “bounce back” from disruption, Dufferin County wants to bounce forward, creating new systems and pathways to build a vibrant community in a changing climate.

<sup>20</sup> FCM, 2020

<https://fcm.ca/en/programs/municipalities-climate-innovation-program/greenhouse-gas-reductions>

## PLANNING FOR CHANGE

Taking action on climate change also has a variety of co-benefits for the community. Co-benefits are the potentially large and diverse range of benefits associated climate action initiatives that go beyond direct contributions to climate change mitigation or adaptation. Community climate action planning can create healthy and connected neighbourhoods, protect the local environment, drive the local economy, and address systems of inequality in the community.

The following chart provides a (non-exhaustive) list of co-benefits associated with climate action.

CO-BENEFITS			
Public Health & Safety <sup>21</sup>	Community Building <sup>22</sup>	Environment <sup>23</sup>	Economic <sup>24</sup>
Improves air quality, reducing risk of illness and disease	Improves accessibility and equity	Improves biodiversity	Improves energy security and reduces energy poverty
Addresses land-use based health inequities	Increases residents' access to recreational parks and greenspace	Improves water retention/absorption	Reduces waste/ optimizes resources
Supportive infrastructure encourages active lifestyles	Supports local healthy food systems and food security	Improves air quality and enhances natural sinks	Improves cost savings for businesses and residences
Reduces risks of injury and illness from extreme weather exposure	Reduces congestion	Creates/protects habitat	Creates jobs
Reduces risks to critical water, sanitization, and power infrastructure	Generates place connection	Improves water quality	Enhances local economy

<sup>21</sup> Wellington-Dufferin-Guelph Public Health, 2015. *Dufferin County: Planning Review Through a Public Health Lens*. <https://www.wdgppublichealth.ca/reports/dufferin-county-planning-review-through-public-health-lens>

<sup>22</sup> Wellington-Dufferin-Guelph Public Health, 2015.

<sup>23</sup> Karlsson, Mikael; Alfredsson, Eva; & Westling, Nils, 2020. *Climate policy co-benefits: a review*. <https://doi.org/10.1080/14693062.2020.1724070>

<sup>24</sup> Karlsson et al. 2020.

## VISION

Throughout 2020, Climate Action in Dufferin engaged with the public, as well as with the Dufferin County Climate Change Collaborative (DC4) to collect visions for the future of the municipality. The following vision statement was developed from these community responses, encompassing the goals of the Dufferin Climate Action Plan:

# TO CREATE A NET-ZERO AND RESILIENT COMMUNITY FOR CURRENT AND FUTURE GENERATIONS IN DUFFERIN COUNTY, WHILE:

ENHANCING THE HEALTH AND WELL-BEING OF COMMUNITY MEMBERS

BUILDING EQUITABLE AND VIBRANT NEIGHBOURHOODS

PRESERVING AND ENHANCING LOCAL BIODIVERSITY AND NATURAL SYSTEMS

FOSTERING A PROSPEROUS AND INNOVATIVE LOCAL ECONOMY

## Pillars

Recognizing the importance of aligning and integrating climate planning with the larger development goals of Dufferin County, the Dufferin Climate Action Plan is guided by the following pillars, encompassing the goals articulated in the Dufferin County Official Plan:

### Community Vitality

Dufferin County will foster equitable, complete, healthy, and sustainable communities and enhance the quality of life for all residents.

### Environmental Sustainability

Dufferin County will protect, restore, or where possible, enhance natural resources, groundwater resources, natural heritage features, and the environment to foster an enhanced and connected natural heritage system.

### Smart Communities

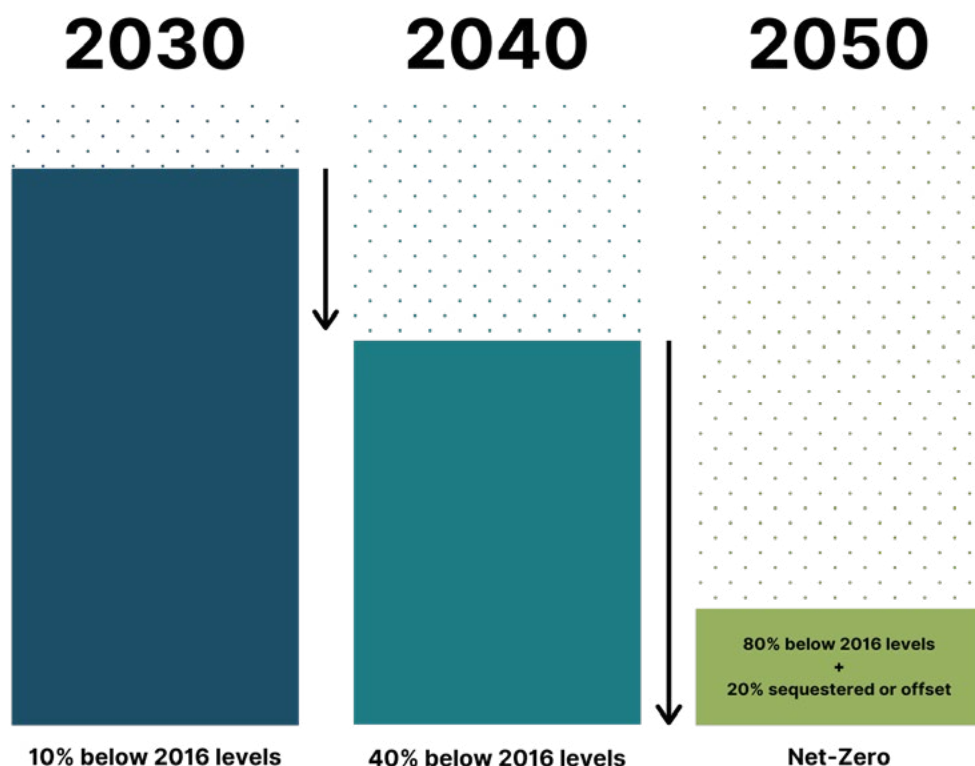
Dufferin County will promote economic development and diversification in established settlement areas, while preserving and protecting agricultural areas and the rural and natural character of the County.

## DUFFERIN’S GHG REDUCTION TARGETS

Dufferin County’s 2016 GHG Inventory will serve as the baseline for community reduction targets. Recognizing that different mitigation actions require varying levels of time, resources, and support, Dufferin County will adopt a three-phase emissions reduction timeline to reach the 2050 target. The County strives to mitigate emissions by 80% by 2050, while striving to become emission net-zero through sequestering and offsetting the remaining 20% emissions to align with federal and international targets. Soil carbon sequestration and the conservation of existing soil carbon stocks, given its multiple benefits including improved food production, is an important mitigation pathway to achieve net-zero emissions in Dufferin County. Currently, there is general agreement globally that the technical potential for sequestration of carbon in soil is significant, and some consensus on the magnitude of that potential.<sup>25</sup> It is expected that future technical advances will help to measure the ability of the soil to capture carbon locally. Tree planting will also be an important sequestration strategy in Dufferin, as it has the dual benefit of both capturing carbon and enhancing the health and sequestration abilities of the soil.

The Dufferin Climate Action Plan will be implemented to achieve targets on short, medium, and long-term scales with the assumption that as each deadline passes, an opportunity is presented to review the progress made and determine whether implementation strategies need to change to meet future goals. The implementation of deep decarbonization projects and the rapid technological advances anticipated after 2030 serve as the rationale for increasingly ambitious reduction targets over time.

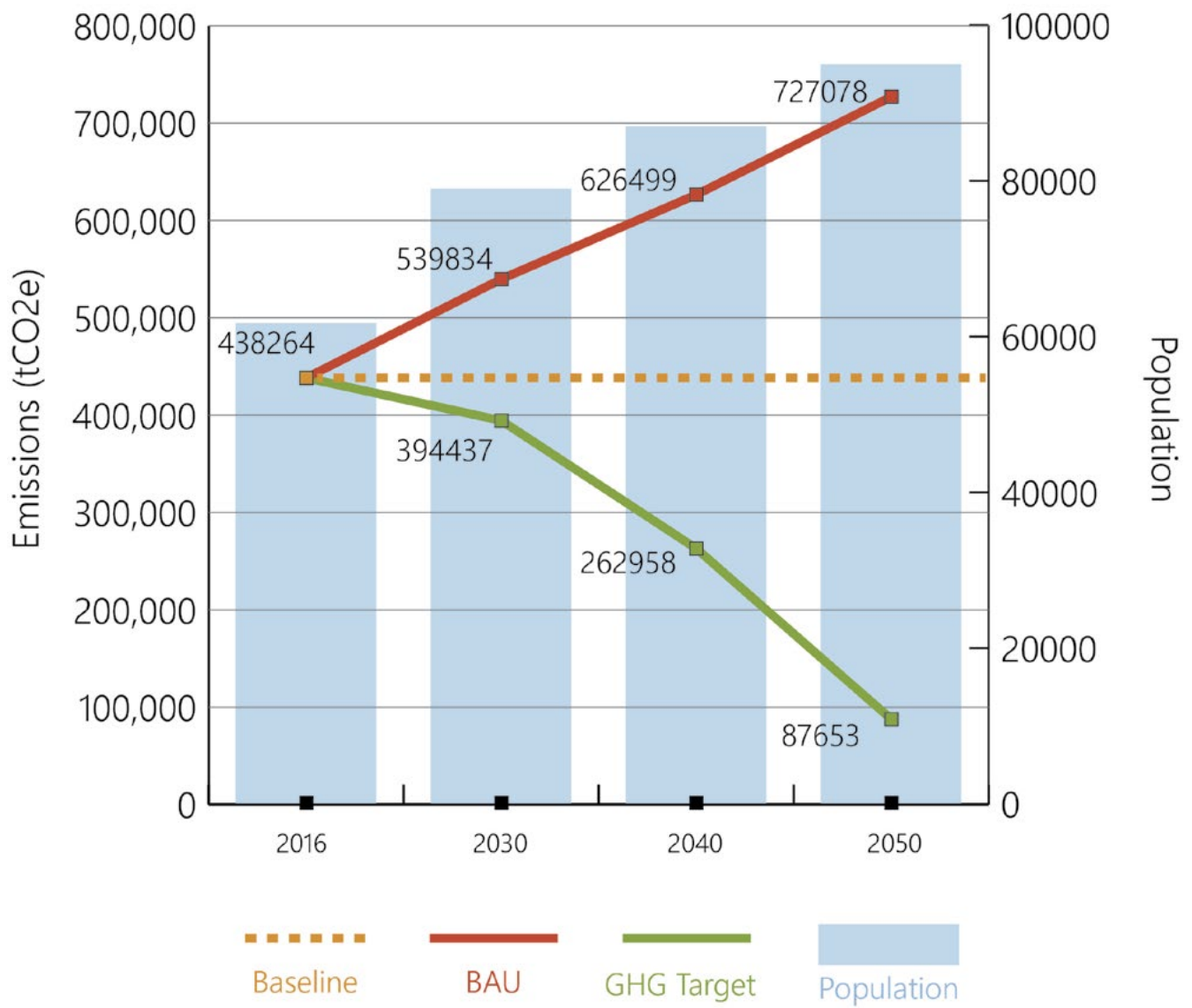
**Figure 7. Dufferin’s Greenhouse Gas Reduction Targets**



<sup>25</sup> Zomer, R., Bossio, D., Sommer, R., Verchot, L. 2017. *Global Sequestration Potential of Increased Organic Carbon in Cropland Soils*, Nature, Scientific Reports. DOI: 10.1038/s41598-017-15794-8



**Figure 8. GHG Scenarios: GHG Reduction Targets vs. Business As Usual (BAU)**



## GUIDING FRAMEWORKS

The Dufferin Climate Action Plan is built upon two core frameworks to support the realization of the plan's vision: **low-carbon resilience** and **justice and equity**. These frameworks were applied in the process of plan development and community engagement, and will also be used to guide the implementation of the recommended actions outlined in the Dufferin Climate Action Plan.

### Low-Carbon Resilience (LCR)

Low-carbon resilience is “the strategic alignment of climate adaptation and emission reduction to enhance the effectiveness of both strategies, avoid risks, and general economic, ecological, and social benefits.”<sup>26</sup>

Adopting a low-carbon resilience framework ensures that mitigation and adaptation strategies are integrated to achieve co-benefits while simultaneously reducing GHG emissions and community vulnerability to climate change. The LCR approach also holds the potential to drive more effective outcomes, while reducing required resources.

Throughout plan development process, the low-carbon resilience lens was adopted by County staff and the DC4 advisory committee to refine climate actions to maximize both the mitigation and adaptation potential of each action to achieve the greatest amount of co-benefits to the community as possible.

#### Adopting LCR measures can:

- Achieve multiple co-benefits for health, social and economic contexts, and biodiversity
- Expand access to funding sources, as multiple benefits translate to more potential funders and investors
- Increase return on investments in infrastructure
- Save time and resources. Integrated planning can prevent the duplication of efforts and avoid missed GHG reduction opportunities and risk of building in future vulnerability
- Accelerate implementation and scale up

<sup>26</sup> Harford and Raftis, 2020. *Low Carbon Resilience: Transformative Climate Change Planning for Canada*.

<https://act-adapt.org/lcr-report/>



## Equity and Justice

While climate change poses unique physical, technical, and economic challenges, sufficient attention must also focus on the social and cultural dimensions. The impacts of climate change are often felt the most by those who are socially, economically, culturally, racially, politically, or otherwise excluded or marginalized in our community.

Without proper planning, the benefits of climate action will not be distributed equally. Research shows that equity seeking communities are least likely to benefit from or have access to climate solutions.



Dufferin County has focused on justice and equity considerations for each action in the Dufferin Climate Action Plan to strive towards climate justice. Climate justice means creating solutions to the climate crisis that are fair for everyone. To do that, the impacts of and the solutions to climate change must be considered through political, social, cultural, racial, environmental, and economic lenses. This also involves connecting with a wide array of community members and organizations to better understand how we might adjust and refine climate actions to support justice and equity goals.

Equity and justice considerations will also be at the core of implementation. This intentional consideration seeks to ensure that the Dufferin Climate Action Plan is accountable for inclusive implementation. A formal evaluation process, aimed at identifying equity and justice concerns, as well as amplifying benefits for equity seeking groups, will be undertaken in the planning and implementation of each action item identified in the plan. Moving forward, it is important that Dufferin County connect with equity and sovereignty seeking groups to co-create metrics to measure impact and progress.

The pursuit of equity and justice is an evolving and ongoing process that will require continuous self-reflection and collaboration with community partners. This work will require time and patience, but Dufferin County is committed to this process.

### Equity:

The fair and respectful treatment of all people. This involves the creation of opportunities and reduction of disparities in opportunities and outcomes for diverse communities.

### Justice:

Addressing the root cause of inequalities to remove systemic barriers.



## ENGAGEMENT

Dufferin County engaged with the public and key stakeholders to gather their perspectives and input on the Dufferin Climate Action Plan through all phases of development. The County of Dufferin strove to create opportunities for community members to contribute to climate change planning in order to identify the needs, vulnerabilities, resources, and opportunities that should be prioritized in climate change planning.

Build collective knowledge and awareness of climate change and its community impacts.

Generate a culture of sustainability and climate action in Dufferin County.

### CORE COMMUNITY ENGAGEMENT OBJECTIVES

Collaborate with community members to co-create a shared vision for the Dufferin Climate Action Plan.

Develop GHG reduction and adaptation measures that reflect the diverse needs of the community.



Three phases of engagement provided a transparent process, captured ideas, and refined recommendations:

**Figure 9. Climate Action in Dufferin Engagement Phases**





## Acknowledging Limitations: Engagement During COVID-19

In the interest of public safety, Dufferin County elected to adopt a primarily digital engagement strategy during the COVID-19 pandemic. However, some community members face barriers that inhibit their participation in digital spaces. While efforts were made to connect with community members and organizations beyond digital platforms, it is important to acknowledge that, from an equity and justice perspective, this approach will have limited who gets to participate in the climate conversation.

Committing to addressing this concern moving forward, Dufferin County will strive to make community engagement opportunities accessible to all and overcome participatory barriers for equity and sovereignty seeking groups. The County looks forward to connecting with community partners and compiling and applying best practices from emerging research on engagement during COVID-19 to design a new strategy.

## Public Engagement

Due to the COVID-19 pandemic, Dufferin County adopted a largely digital engagement strategy to help flatten the curve and protect public health. Online conversations gave community members the opportunity to learn about climate change, their local impacts, and share ideas for and feedback on the Dufferin Climate Action Plan.

Public engagement activities included:

- Hosting online surveys and engagement forums on Join in Dufferin, which received **868 visits** and **114 active contributors** in total
- Promoting climate initiatives, education, and engagement opportunities through the Climate Action in Dufferin website, Facebook, and Instagram, reaching a following audience of over **239 community members**
- Building community awareness through a digital climate change exhibit hosted with the Museum of Dufferin in October 2020, hosting **1176 visitors**
- Hosting 2 virtual Open House events with a combined audience of **67 attendees/viewers**
- Holding discussions with community members from local organizations, non-profits, and community groups

## Dufferin County Climate Change Collaborative (DC4)

The Dufferin County Climate Change Collaborative (DC4) was comprised of 18 local representatives from various communities and sectors. The DC4 formally met 4 times in 2020 to provide support to County of Dufferin staff on the development of the Dufferin Climate Action Plan. The purpose of these meetings was to increase collective knowledge on climate change related risks, learn from current efforts and best practices, exchange resources, and create a shared space for dialogue, collaboration, and planning.

The DC4 represented various communities and sectors, including:

- Local youth
- Member municipalities
- Local capacity-building organization
- Conservation Authorities
- Insurance
- Utilities
- Climate research and capacity organization
- Public Health
- Agricultural community
- Academia



As a foundation of the Collaborative, principles of justice and equity were integrated throughout all processes undertaken. The DC4 fostered an inclusive environment for collaboration by:

- Focusing on the co-definition of community challenges and solutions, by providing space for diverse voices and perspectives to be integrated in climate planning
- Closing equity gaps by actively building capacity for participation
- Ensuring accessible communication by providing information in alternate formats as required

### **The DC4 was consulted on items related to:**

- Ensuring alignment with community programs and activities
- Providing insights on community culture and behaviour change
- Providing comments on deliverables and outcomes



## What We Heard

Over the course of the public engagement period, the public shared their visions for Dufferin County's climate future. Below is a snapshot of some of the submitted visions:

"A climate-friendly Dufferin County looks like a cohesive, inclusive community that has been educated on environmental impacts and has systems in place to promote a circular economy, reduce consumption, promote local sustainable businesses, and has flourishing natural spaces."

"I hope a climate-friendly future in Dufferin is composed of innovative, cohesive communities, where everyone has access to the care, services, work, and opportunities they need to live a fulfilling life; it is a productive, hard-working society, but these aspects are checked by equal measures of well-being supportive activities. The axis of well-being should not be economic growth, but stability and justice for all."

### "Dufferin County is Relentless | Prolific | Transcendent

In 2050, on the cloud servers of consultancy firms and municipal governments, in the university library archives, and on the laptops of planning, policy, economic, engineering, and environment students across the globe, there will be stout folder with a title that's something like "Dufferin County Case Studies," "Awesome Stuff They Did in Dufferin County," or for the more laconic folks, "Duff Stuff". Whether it's sustainability, electric vehicle-friendly infrastructure and design, IoT-based smart city technology, autonomous/accessible transportation, protecting its natural water sources, conserving nature, or that time in 2035 when Orangeville became the most tree-covered town in the Country, people will come to Dufferin County to find out how it's done."

Natural spaces are available for families and individuals to enjoy Food security for all income levels  
Package-free and refill options for daily needs Local farmers grow what we consume  
A vibrant and inclusive community that prioritizes active and public transportation  
Walking and biking friendly communities From the Anthropocene to the Ecozoic era Car-free streets  
Food grown at every house and park A cohesive, inclusive community Wildlife diversity  
Protected natural heritage systems Climate action integrated into school curriculum  
Collaborating with Indigenous groups to incorporate Indigenous knowledge Flourishing natural spaces  
Ecological protection for farms and people A biodiverse community that values our natural assets  
Protected green spaces, wetlands, and watersheds Natural landscapes to encourage wildlife to visit

# TAKING ACTION

## UNDERSTANDING THE RECOMMENDED ACTIONS

During the Dufferin Climate Action Plan development process, a variety of actions were identified to reduce Dufferin's greenhouse gas emissions and build resilience to the impacts of climate change. Through a deliberative process with the Dufferin County Climate Change Collaborative (DC4), these actions were refined and prioritized to guide climate action in the municipality.

The deliberative process of the DC4 was steered by several criteria which guided decision making and the identification of actions that:

- Have the potential to contribute to significant reductions of local GHG emissions
- Are both financially and logistically feasible
- Support justice and equity in the community
- Complement existing plans and priorities
- Can be implemented through the leveraging of available funds and resources
- Can be implemented in collaboration with one or more community partners
- Benefit both urban and rural communities
- Create co-benefits within the community for public safety, health and well-being, environment, community building, economic development

### The Dufferin Climate Action Plan will undertake climate action initiatives in the following 6 areas:

<b>On the Move</b>	Actions to reduce vehicle trips, promote active and public transportation, and accelerate low-GHG transportation options
<b>In Our Buildings</b>	Actions to improve energy efficiency, increase the uptake of renewable energy technologies, and build climate resilience in new and existing buildings
<b>For Our Land</b>	Actions to protect, restore, and enhance natural systems, reduce agricultural emissions, protect people and property from natural hazards, and promote climate resilient agricultural practices
<b>Planning Our County</b>	Actions to manage energy design, and plan vibrant communities focused on high-density, walkability, and connectivity
<b>In Our Bins</b>	Actions to increase community diversion of organics and reduce waste
<b>Empowering Our Community</b>	Actions to increase community capacity to take climate action, respond to emergencies and build a community culture around climate action

## KEY

In addition to presenting recommended actions for each focus area, the Dufferin Climate Action Plan identifies a variety of other elements central to each action item, the implementation timeframe, supporting partners, and a list of potential co-benefits associated with each action. Further implementation details for each action item can be found in Appendix B of this plan. The schematic below provides an overview of elements present in the action tables.

- OBJECTIVE** These are “big picture” goals that will contribute to a significant reduction of community GHG emissions and/or build community capacity and resilience.
- ACTION:** These are the initiatives that will be undertaken to achieve each objective.
- WHAT THIS WILL LOOK LIKE** These are the detailed activities required to support the core actions and objectives.
- TIME FRAME** Time frame refers to the year and quarter during which Dufferin County will initiate an action. Due to the varied nature of the actions, some actions will take place on an ongoing nature and as funding or partnership opportunities arise.
- SUPPORTING PARTNERS** Community partners such as organizations, businesses, institutions, utilities, or conservation authorities who can collaborate with the County on the planning and implementation of climate action items.
- CO-BENEFITS** Co-benefits are the potentially large and diverse range of benefits associated climate action initiatives that go beyond direct contributions to climate change mitigation or adaptation.



### Public health and safety

This action fosters positive improvements to public safety, health, mental, or physical well-being.



### Economic

This action results in cost savings, job creation, or stimulus to the local economy.



### Community

This action fosters community connection, network building, and social cohesion.



### Environment

This action supports the protection, restoration, or enhancement of natural systems.





## INVESTMENT REQUIRED

\$ = Low Cost (Less than \$500,000)

\$\$ = Medium Cost (Between \$501,000 and \$2 million)

\$\$\$ = High Cost (Over \$2 million)

**Estimated investments refer to anticipated costs incurred over the next 10 years. It is important to note that the financial impact to the County will be dependent upon external funding and partnership opportunities and will be at the discretion of County Council at the time of project initiation. Investments made have the potential to generate return over time.**

Estimated required investments consider:

**Capital Cost:** The amount required to purchase or enter into a long-term lease for land, equipment or other capital assets. (not including lifetime capital maintenance which is captured under ongoing costs).

**Ongoing Cost:** Amounts required to support the annual operations and capital maintenance. These costs may include staffing, outsourced operating and maintenance contracts, technology support, insurance, promotions, etc.

**Capacity Requirements:** Capacity considers the ability of the current staffing compliment to implement an item taking into account the expected level of expertise required along with the additional workload both directly and indirectly.





# ON THE MOVE

*Embracing climate-friendly transportation modes*

# ON THE MOVE

Embracing diverse and low-emission transportation options is essential, as transportation represents 49% of Dufferin’s total emissions. Transportation accounts for a large proportion of local emissions because Dufferin County encompasses a large geographic area, making residents, particularly commuters and those living in rural areas, are heavily reliant upon personal vehicles.

Data from Dufferin County’s Commuting and Work Report<sup>27</sup>, as well as a 2016 transportation study conducted by researchers at the University of Toronto, indicate two trip types that contribute most to vehicle kilometers travelled by Dufferin residents.

1. Personal vehicle trips 5km and under
2. Personal vehicle trips 15km and greater, largely for commuting purposes







To address these two priority areas, actions put forth in this section aim to shift transportation from single-occupancy vehicle use towards active and public transportation modes, particularly in urban settlements, Carpooling and a transition to electric vehicles will play a key role in reducing emissions for rural residents and commuters..



This means making climate-friendly transportation options convenient, accessible and maintainable for community members. Dufferin County can support this by designing urban areas to reduce vehicle use through expanding and coordinating trails, expanding public transit options, and building a network of electric vehicle charging stations throughout the County.




These initiatives also present an opportunity to achieve a variety of other co-benefits for communities.

<b>Reduced congestion</b>	<b>Better air quality</b>	<b>Healthy lifestyles</b>
<b>Affordability</b>	<b>Business and tourism opportunities</b>	<b>Community accessibility</b>











<sup>27</sup> Dufferin County, 2020. "Commuting and Work Report"  
[https://www.dufferincounty.ca/sites/default/files/economic%20development/Commuting%20Report%20\(1\).pdf](https://www.dufferincounty.ca/sites/default/files/economic%20development/Commuting%20Report%20(1).pdf)

Objective: Increase trips within and between communities using active, shared, and public modes of transportation					
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>T1</b>   	Expand public transit options and support fleet electrification (See T5)	Review bus routes and optimize connectivity and service within and between local and regional municipalities	Ongoing	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Regional municipalities</li> <li>Local transit service providers</li> <li>Developers</li> <li>Metrolinx</li> <li>Other transit service providers</li> </ul>	\$\$
		Advocate for increased GO transit service	Ongoing	<ul style="list-style-type: none"> <li>Metrolinx</li> <li>Local municipalities</li> </ul>	\$
<b>T2</b>   	Increase public awareness of and education on climate friendly travel modes	Develop an accessible educational campaign to prioritize active transportation and public transit, particularly for trips under 5km	2021 Q2 (reoccurring)	<ul style="list-style-type: none"> <li>Metrolinx</li> <li>Local municipalities</li> <li>Local employers</li> <li>BIAs</li> <li>Schools</li> <li>Public health</li> <li>Dufferin County Active Transportation Team</li> </ul>	\$
		Develop an accessible educational campaign for trips over 10km to prioritize carpooling options (particularly for commuters) and telecommuting when possible	2021 Q3 (reoccurring)	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local employers</li> <li>BIAs</li> </ul>	\$

Objective: Promote climate-friendly driving habits					
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>T3</b>  	Promote climate friendly driving habits to reduce GHG emissions associated with passenger vehicles	Develop anti-idling campaigns to improve compliance with local anti-idling by-law	2021 Q3 (reoccurring)	<ul style="list-style-type: none"> <li>Local schools &amp; bus companies</li> <li>Business fleets</li> <li>Public health</li> <li>Local businesses</li> <li>Dufferin Board of Trade</li> <li>BIAs</li> </ul>	\$
		Work with businesses and organizations to create anti-idling policies	2022 Q2	<ul style="list-style-type: none"> <li>Business fleets</li> <li>Public health</li> <li>Local businesses</li> <li>Dufferin Board of Trade</li> <li>BIAs</li> </ul>	\$
		Promote and increase awareness of existing eco-driving courses and insurance programs	2021 Q3	<ul style="list-style-type: none"> <li>Banks &amp; credit unions</li> <li>Insurance companies</li> <li>Ministry of Transportation</li> </ul>	\$

Objective: Shift towards electric vehicles and alternative fuels					
<b>T4</b>   	Work with regional and municipal partners to expand low and zero-emission vehicle uptake and charging networks	Partner with municipalities to develop a regional Electric Vehicle Strategy to achieve network connectivity	2021 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Regional municipalities</li> <li>MTO</li> </ul>	\$
		Develop EV policy at the County level to ensure consistency throughout the development of a County-wide charging network	2021 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Utilities</li> <li>Electric vehicle supply equipment (EVSE) vendors</li> </ul>	\$
		Leverage funding opportunities to install charging stations throughout County	Ongoing	<ul style="list-style-type: none"> <li>NRCan</li> <li>Local municipalities</li> <li>Other funders</li> </ul>	\$\$
		Work with local businesses and organizations to encourage low-emission and electric vehicles to be included in fleets	2021 Q3 (reoccurring)	<ul style="list-style-type: none"> <li>Plug N' Drive</li> <li>Local businesses</li> <li>Board of Trade</li> <li>BIAs</li> </ul>	\$
		Educate and raise awareness of the benefits of electric vehicles among residents and local businesses	2021 Q4 (reoccurring)	<ul style="list-style-type: none"> <li>Plug N' Drive</li> <li>Local businesses</li> <li>Board of Trade</li> <li>BIAs</li> <li>Environmental organizations</li> </ul>	\$



#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>T5</b>   	Encourage the electrification of public transit vehicles and fleet vehicles	Work with local municipalities to develop strategy to transition to electric public transit fleets	2021 Q4	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Regional municipalities</li> <li>Local transit service providers</li> <li>Developers</li> <li>Metrolinx</li> <li>Other transit service providers</li> </ul>	\$
		Investigate options to electrify school bus fleets	As funding & partnership opportunities arise	<ul style="list-style-type: none"> <li>School boards</li> <li>School bus operators</li> <li>Third party partner</li> <li>Academic partners</li> </ul>	\$
<b>Objective: Design urban areas to reduce vehicle use</b>					
<b>T6</b>   	Create accessible and walkable communities	Improve pedestrian crossing, comfortable walking route, and maps/signage	Ongoing	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Public health</li> <li>Headwaters Communities in Action</li> <li>Dufferin County Active Transportation Team</li> <li>Tourism stakeholders</li> <li></li> </ul>	\$\$
		Coordinate and expand accessible trails, walking, and cycling infrastructure throughout the County	2021 Q2	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Dufferin County Active Transportation Team</li> <li>Tourism stakeholders</li> </ul>	\$\$\$
<b>Objective: Create a Transportation Demand Management (TDM) Plan</b>					
<b>T7</b>    	Develop a TDM Plan and marketing strategy	Create a TDM Plan in partnership with local employers and neighbouring municipalities	2021 - 2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local employers</li> <li>Regional municipalities</li> <li>Third party consultant</li> <li>Local transit service providers</li> </ul>	\$\$
		Develop an engagement process to include community members in the TDM planning process	2021 - 2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local employers</li> <li>Local businesses</li> <li>BIAs</li> </ul>	\$

# IN OUR BUILDINGS

*Creating sustainable,  
efficient, and resilient  
buildings*



# IN OUR BUILDINGS

Residential, commercial, and industrial buildings account for 29% of Dufferin’s total GHG emissions. Of the greatest significance, emissions from the residential sector represent 22% of these emissions, largely due to the use of natural gas.

The County can provide capacity building, financing, and educational opportunities to empower residents, businesses, and industry stakeholders to undertake retrofit measures to make Dufferin’s buildings climate-friendly and climate-resilient. Particularly in rural areas, without access to natural gas, the County can support fuel switching initiatives to transition away from GHG intensive sources like propane and heating oil. The creation of green development standards at the County level can also play a key role in reducing building emissions.

To reduce emissions Dufferin County is setting a 2050 target of net-zero emissions buildings. Net-zero emissions buildings can also increase the resiliency of the buildings through reliable on-site backup power generation.

Dufferin County will support this target through the development of a municipally led financing program for residential deep energy and resilience retrofits for existing building stock. Net-zero buildings typically require:



- The implementation of high-performance building envelopes and highly efficient low emissions heating systems
- The onsite production or obtainment of emissions-free renewable energy

The County will also establish net-zero emissions requirements for new buildings. This effort will be phased so that net-zero emissions ready buildings can be built in anticipation of renewable energy and battery storage deployment in the future.






These initiatives also present an opportunity to achieve a variety of other co-benefits for communities.

Addresses energy poverty	Savings on annual energy costs	Creation of local jobs
Improved health and safety	Business and tourism opportunities	Higher asset values








**Objective: Improve energy efficiency and climate resilience in all existing residences to achieve net-zero emissions in residential buildings by 2050**

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>B1</b>  	Promote deep energy retrofit programs and provide information on resources and financing programs	Complete a feasibility study undertaking a baseline assessment of Dufferin County's housing stock and energy upgrade potential, including the cost/benefit of different types of retrofits to maximize dollars spent	2021 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Federation of Canadian Municipalities</li> <li>Clean Air Partnership</li> </ul>	\$
		Investigate options to develop municipally-led financing program (e.g. PACE program) for residential deep energy and resiliency retrofits	2021 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Federation of Canadian Municipalities</li> <li>Utilities</li> <li>Clean Air Partnership</li> <li>Association of Municipalities Ontario (AMO)</li> </ul>	\$
		Implement selected municipally-led financing program (e.g. PACE program) for residential deep energy and resiliency retrofits with a strategic lens to address energy poverty	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Federation of Canadian Municipalities</li> <li>Clean Air Partnership</li> <li>Association of Municipalities Ontario (AMO)</li> </ul>	\$\$\$ (with potential for return)
		Support existing training programs for contractors to complete home energy work	2022	<ul style="list-style-type: none"> <li>Post-secondary institutions</li> <li>Trade partners</li> <li>Construction or contractor unions</li> <li></li> </ul>	\$
		Educational campaign on home energy efficiency and fuel switching	2021 Q3	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Utilities</li> <li>Local non-for-profits</li> <li>Local schools</li> </ul>	\$
		Explore options for customer utility data comparison	2023	<ul style="list-style-type: none"> <li>Utilities</li> </ul>	\$



## TAKING ACTION

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>B2</b>   	Promote home resilience programs and provide information on resources and financing program	Create resilience check-list for residences	2022 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Home Flood Protection Program</li> <li>Conservation Authorities</li> <li></li> </ul>	\$
		Improve homes and businesses capacity to manage stormwater on-site through education campaigns, trainings, programs, and on-site consultations	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local businesses</li> <li>BIAs</li> <li>Home Flood Protection Program</li> <li>Conservation Authorities</li> <li>Post-secondary institutions</li> <li>Trade partners</li> </ul>	\$\$
		Support training programs for contractors to complete resilience work	2022	<ul style="list-style-type: none"> <li>Post-secondary institutions</li> <li>Utilities</li> <li>Trade partners</li> <li>Contractors</li> </ul>	\$
<b>B3</b>  	Support retrofit, energy, and resilience upgrades for rental homes and apartments	Educate building occupants and landlords on available energy retrofit programs and encourage participation in future financing options led by the County	2022 Q3	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local building owners</li> </ul>	\$
		Explore feasibility to require property standards by-law for maximum temperature in rented residences	2021 Q4	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local building owners</li> </ul>	\$



Objective: Improve energy efficiency and climate resilience in all new residential buildings and neighbourhoods to achieve net-zero emissions in residential buildings by 2050					
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>B4</b>   	Ensure all new buildings are net-zero emissions ready through the implementation of green development standards (See Action P2)	Prioritize building designs that reduce energy demand and increase efficiency (passive cooling, air source heat pump, ground source heat pump, triple pane windows, light coloured roofs, etc.)	2023	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Clean Air Partnership</li> <li>Developers</li> <li>Utilities</li> <li>Relators</li> </ul>	\$\$
		Prioritize climate resilient building designs (e.g. flood prevention strategies, passive cooling designs, expansion of hurricane clip program)	2023	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Clean Air Partnership</li> <li>Developers</li> <li>Utilities</li> <li>Canadian Mortgage and Housing Corporation</li> <li>Relators</li> <li>Conservation Authorities</li> </ul>	\$\$
Objective: Improve energy and resource efficiency in industrial, commercial, and institutional buildings					
<b>B5</b>    	Develop Eco-industrial park/ business zone that is a low-GHG development zone	Investigate the potential for district energy systems to maximize energy efficiency	2024	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local ICI sectors</li> <li>Developers</li> <li>Utilities</li> <li>Conservation Authorities</li> <li>Partners in Project Green</li> </ul>	\$\$
		Work with local municipalities to review and enhance local Community Improvement Plans (CIP) to enable retrofits to commercial buildings	2024	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local ICI sectors</li> <li>Utilities</li> </ul>	\$

## TAKING ACTION

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>B6</b>  	Increase capacity of ICI stakeholders to achieve energy efficiency and GHG reduction goals	Encourage ICI stakeholders to take advantage of energy efficiency programs and incentives for new and remodeled buildings	2022	<ul style="list-style-type: none"> <li>• Third party partners</li> <li>• ICI sector</li> <li>• Utilities</li> <li>• Conservation Authorities</li> <li>• Partners in Project Green</li> <li>• AMO</li> </ul>	\$
		Support educational campaigns and training for owners and employees to maximize energy efficiency and options for retrofits	2021 (reoccurring)	<ul style="list-style-type: none"> <li>• Third party partners</li> <li>• ICI sector</li> <li>• Utilities</li> <li>• Conservation Authorities</li> <li>• Partners in Project Green</li> <li>• Association of Municipalities Ontario</li> </ul>	\$

# FOR OUR LAND

*Creating healthy and  
resilient agricultural  
and natural systems*



# FOR OUR LAND

Dufferin County has a rich natural heritage and vibrant agricultural community. Land in Dufferin County is classified as 70% prime agricultural land and the County boasts 690 farms covering 156,593 acres.<sup>28</sup> Dufferin is also an important headwater area, as it offers the source of five major river systems in the Province: The Credit, Humber, Grand, Saugeen and Nottawasaga.

While agriculture accounts for 16% of Dufferin’s GHG emissions, both natural and agricultural lands serve as carbon sinks and provide important services to the community, although methodologically difficult to quantify. Dufferin’s natural systems will also play an important role in adapting to climate change by providing essential stormwater management and purification services, mitigating extreme heat, and supporting biodiversity. The actions put forth in this section aim to effectively manage, rehabilitate, and enhance natural systems to realize the full potential of their adaptive and carbon sink capacities.

The actions in “For Our Land” are also aimed at cultivating climate-friendly and climate resilient agricultural practices. The County will provide support by working with community partners to facilitate co-learning and knowledge sharing opportunities on sustainable agriculture energy efficiency, crop diversification, new technologies, and water conservation. This will ensure that the agricultural sector continues to thrive under changing climatic conditions.






These initiatives also present an opportunity to achieve a variety of other co-benefits for communities.




Environmental protection and enhancement	Savings on annual energy costs	Water protection
Improved health	Business and tourism opportunities	Local food production and food security

<sup>28</sup> Dufferin County, 2017. Official Plan










<https://www.dufferincounty.ca/sites/default/files/planning/officialplanconsolidated.pdf>



Objective: Implement best practices within agricultural management systems to improve efficiency and resilience					
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>L1</b>  	Promote and incentivize the adoption of climate-friendly practices in agriculture sector	Complete a study detailing the barriers preventing the adoption of climate-friendly and resilient practices in agriculture and the values that facilitate adoption	2021 Q1	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local agricultural producers</li> <li>Academic partners</li> <li>Conservation authorities</li> <li>Sector experts</li> <li>Local agricultural organizations</li> </ul>	\$
		Support evolving research opportunities investigating the carbon sequestration potential of agriculture sector)	Ongoing as opportunities arise	<ul style="list-style-type: none"> <li>Academic partners</li> <li>Sector experts</li> </ul>	\$
		Encourage regenerative and ecological agriculture practices where applicable such as no-till and cover crops to control run off, tile, or controlled drainage systems	2021 Q2	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local agricultural producers</li> <li>Sector experts</li> <li>Local agricultural organizations</li> </ul>	\$
		Encourage mapping of existing crop varieties against future climate projections	2021 Q3	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local agricultural producers</li> <li>Sector experts</li> <li>Local agricultural organizations</li> <li>ClimateData</li> </ul>	\$
<b>L2</b>   	Develop education partnership with agricultural community and partners to support long-term climate friendly practices and knowledge sharing	Promote co-learning and networking opportunities for sustainable and resilient agriculture, energy efficiency, crop diversification, new technologies, and water conservation	2021 Q2	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local agricultural producers</li> <li>Academic partners</li> <li>Conservation authorities</li> <li>Sector experts</li> <li>Local agricultural organizations</li> </ul>	\$
		Support a variety of educational opportunities tailored to diverse producers and their unique needs	2021 Q2		\$

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>L3</b> 	Encourage low-GHG energy alternatives on farms	Explore on-site renewable energy production options	2022	<ul style="list-style-type: none"> <li>Local agricultural producers</li> <li>Local agricultural organizations</li> <li>Energy sector experts</li> <li>Utilities</li> </ul>	\$
		Explore options to incentivize manure management and biogas recovery as an alternative fuel source	2022		\$
<b>Objective: Support the protection, rehabilitation, and enhancement of natural systems to foster climate resiliency</b>					
<b>L4</b> 	Protect and enhance local natural assets	Complete a natural asset inventory for the County including a risk assessment	2021 Q1	<ul style="list-style-type: none"> <li>Third party partner</li> <li>Local municipalities</li> <li>Conservation authorities</li> </ul>	\$
		Develop municipal natural asset management plans based on inventory	2022		\$
<b>L5</b> 	Increase tree coverage and protection in Dufferin County	Create an urban forest/ reforest strategy with climate resilient tree species	2023 (or as opportunities arise)	<ul style="list-style-type: none"> <li>Local environmental organizations</li> <li>Local municipalities</li> <li>Conservation authorities</li> </ul>	\$
		Explore feasibility of developing a "Grown in Dufferin" tree supply program and or partner with conservation authorities to leverage existing nursery programs	2022 (or as opportunities arise)		\$
		Amend the landscape regulations in both Zoning and Subdivision by-laws to increase tree protection and replacement requirement	2021	<ul style="list-style-type: none"> <li>Local environmental organizations</li> <li>Local municipalities</li> </ul>	\$
		Explore adoption of both a private and heritage tree protection by-law in local municipalities	2021		\$
		Ensure tree planting requirements are executed through new construction	2023		\$

## TAKING ACTION

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>L6</b>    	Encourage green infrastructure and low-impact development initiatives to support resiliency goals	Promote educational campaigns on options for and benefits of green infrastructure and low-impact development	2022	<ul style="list-style-type: none"> <li>Local environmental and conservation organizations</li> <li>Builders Associations</li> <li>Landscaping businesses</li> <li>Conservation Authorities</li> </ul>	\$
		Support backyard habitat creation initiatives to protect native biodiversity	2022 or as opportunities arise		\$
		Encourage uptake of natural stormwater management solutions such as raingardens, soak-away pits, bioswales, or permeable groundcovers (See P2)	2022		\$
<b>L7</b>  	Support conservation and rehabilitation of ecological systems in rural areas	Support restoration of degraded lands (e.g. erosion control, organic and nutrient amendments)	Ongoing as opportunities arise	<ul style="list-style-type: none"> <li>Local environmental and conservation organizations</li> <li>Conservation authorities</li> <li>Local agricultural organizations</li> <li>Local agricultural producers</li> <li>Sector experts</li> </ul>	\$\$\$
		Support conservation of marginal farmland to perennial grasses or trees	Ongoing		\$\$
<b>L8</b>   	Support water protection initiatives	Support restoration of wetlands (See L7, P5)	Ongoing as opportunities arise	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local environmental and conservation organizations</li> <li>Conservation authorities</li> <li>Source Water Protection Committees</li> </ul>	\$\$\$
		Work with local municipalities to provide a climate lens to water quality and quantity protection initiatives	Ongoing		
		Work with local municipalities to develop and/or update stormwater management plans	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Conservation authorities</li> </ul>	



# PLANNING OUR COUNTY

*Building efficient,  
resilient, and connected  
communities*

# PLANNING OUR COUNTY

Dufferin County and local municipalities are planning to accommodate a population of 95,000 and 39,000 jobs to 2051.<sup>29</sup> The County intends to welcome this growth with smart development that promotes healthy, vibrant, connected, and environmentally responsible communities.

Planning policies and processes will play a significant role in reducing local GHG emissions in both new and existing communities, by addressing urban sprawl to create efficient systems for infrastructure, energy, transportation, and land use.









The actions outlined in this section aim to ensure communities are both low-GHG and resilient to the impacts of climate change. This can be achieved through the prioritization of walkability, green space, compact development, and the integration of renewable energy generation and storage.

These initiatives also present an opportunity to achieve a variety of other co-benefits for communities.










Better air quality	Improved mental and physical health	Access to community amenities and green space
Affordable housing	Transit access	Social connectivity

<sup>29</sup> Province of Ontario, 2020. A Place to Grow: A Growth Plan for the Greater Golden Horseshoe. <https://files.ontario.ca/mmah-place-to-grow-office-consolidation-en-2020-08-28.pdf>





Objective: Design low-GHG and resilient communities					
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>P1</b>    	Plan complete communities	Prioritize the design of urban areas to reduce personal vehicle use, vehicle kilometers travelled, and to encourage active transportation. This can be achieved through the development of compact, accessible, and walkable neighbourhoods that integrate residential office and retail developments	Ongoing, but needs expansion	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local municipal planners</li> <li>Developers</li> <li>Local businesses</li> </ul>	\$\$
		Prioritize infill and high-density housing in the downtown core, commercial zones, and along transit routes through policies	Ongoing	<ul style="list-style-type: none"> <li>Local municipal planners</li> <li>Developers</li> <li>Local businesses</li> <li>BIAs</li> </ul>	\$\$
<b>P2</b>    	Create green development standards (GDS) and practices	Create GDS that align with existing or upcoming policy goals and plans related to community energy, climate change, growth and intensification, resilience, and asset management	2021 Q2	<ul style="list-style-type: none"> <li>Local municipal planners</li> <li>Developers</li> <li>Utilities</li> <li>Planners</li> <li>Third party consultant</li> </ul>	\$
		Engage the building and development community to integrate experiences and leading practices into a GDS	2021 Q2 – Q3	<ul style="list-style-type: none"> <li>Local municipal planners</li> <li>Local municipalities</li> <li>Developers</li> </ul>	\$
		Create requirement for a ‘climate impacts’ section in all development applications and explore options to incentivize application of GDS by local developers	2021 Q2		\$
		Work with member municipalities to integrate GDS into development standards with a focus on regional alignment	2022		\$
		Embed GDS in the Official Plan, especially as an implementation tool to achieve goals concerning sustainability, health, growth, and infrastructure management	2022	<ul style="list-style-type: none"> <li>Local municipal planners</li> <li>Local municipalities</li> </ul>	\$




## TAKING ACTION

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	
<b>P3</b>   	Reduce extreme heat risks across public and private properties	Conduct a study to identify priority areas to mitigate extreme heat across private and public properties	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Academic partners</li> <li>Conservation authorities</li> </ul>	\$	
		Implement potential recommendations from extreme heat study such as installation of reflective white roofs, urban street tree planting, shading park structures, and the conversion of streets to light colours	2023		\$	
<b>P4</b>   	Minimize flood risks in communities through built infrastructure	Increase capacity to apply climate lens to infrastructure planning for stormwater management	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Conservation Authorities</li> </ul>	\$	
		Update floodplain mapping and develop/update natural stormwater management plans to ensure no increase in vulnerability	2022		\$	
<b>P5</b>   	Minimize flood risks in communities through enhancement of green infrastructure	Enhance the amount of green space/permeable surface incorporated into all communities	Ongoing	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local environmental organizations</li> <li>Contractors</li> <li>Developers</li> </ul>	\$\$\$	
		Support an increase in tree coverage through planning policy (See L5)	2023		<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local environmental organizations</li> <li>Conservation Authorities</li> </ul>	\$
		Strategically manage natural assets through the directives of the natural asset management plan (See L4)	2023			\$\$\$
		Increase uptake of low impact development technologies on private and public properties (See L6)	2022			\$
		Support wetland restoration and creation initiatives (See L8)	Ongoing as opportunities arise		<ul style="list-style-type: none"> <li>Local environmental organizations</li> <li>Conservation Authorities</li> <li>Third party partner</li> </ul>	\$\$\$

**Objective: Diversify Dufferin’s energy supply through renewable or low-GHG energy and ensure resilient energy systems**

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>P6</b> 	Explore opportunities to implement low GHG fuels and/or renewable energy generation and storage	Determine renewable energy potential in Dufferin, including potential sites for wind and solar installations	2022	<ul style="list-style-type: none"> <li>Industry experts</li> <li>Academic partners</li> <li>Local agricultural organizations</li> <li>Local agricultural producers</li> <li>FCM</li> <li>Provincial government</li> <li>IESO</li> </ul>	\$\$
		Identify options for local energy generation and storage options, such as microgrids that can also serve as back-up power supply during emergencies	2022	<ul style="list-style-type: none"> <li>Industry experts</li> <li>Utilities</li> <li>Local municipalities</li> <li>FCM</li> <li>Provincial government</li> <li>IESO</li> </ul>	\$\$
		Collaborate with the agricultural community and energy specialists to identify local options for on-farm renewable energy (See L3)	2022	<ul style="list-style-type: none"> <li>Industry experts</li> <li>Academic partners</li> <li>Local agricultural organizations</li> <li>Local agricultural producers</li> <li>FCM</li> <li>Provincial government</li> </ul>	\$\$
		Identify opportunities for low GHG fuel use in the community such as hydrogen and renewable natural gas	2022	<ul style="list-style-type: none"> <li>Industry experts</li> <li>Utilities</li> <li>Local municipalities</li> <li>Provincial government</li> <li>FCM</li> <li>Third party consultant</li> </ul>	\$
<b>P7</b> 	Explore opportunities to develop a district energy and cogeneration system to decentralize energy production	Explore potential sites for a district energy system	2024	<ul style="list-style-type: none"> <li>Utilities</li> <li>Developers</li> <li>Sector experts</li> <li>Local municipalities</li> </ul>	\$\$
		Create a municipal energy map	2022	<ul style="list-style-type: none"> <li>Sector experts</li> <li>Local municipalities</li> <li>Utilities</li> <li>Conservation authorities</li> <li>Academic partners</li> </ul>	\$\$
		Conduct an initial assessment to identify local fuel sources such as biomass or biogas products (See L3)	2023	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Headwaters Communities in Action</li> <li>Local environmental organizations</li> </ul>	\$\$

## TAKING ACTION

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>P8</b>   	Enable the uptake of renewable and low GHG energy within the community through education	Provide learning and training opportunities for residents, developers, building owners, and businesses on renewable energy options such as ground mount solar, rooftop PV, geothermal, and renewable natural gas	2022	<ul style="list-style-type: none"> <li>Local businesses</li> <li>BIAs</li> <li>Developers</li> <li>Sector experts</li> <li>Local environmental and conservation organization</li> </ul>	\$
		Promote financing opportunities for neighbourhood level energy generation and ownership, such as solar installations	2023	<ul style="list-style-type: none"> <li>Developers</li> <li>Sector experts</li> <li>Third party partners</li> <li>Provincial government</li> <li>Utilities</li> <li>Residents</li> <li>Neighbourhood associations</li> </ul>	\$



# IN OUR BINS

*Taking action to reduce  
waste and support the  
circular economy*





# IN OUR BINS

Although waste only accounts for 2% of Dufferin’s total GHG emissions, the County can continue to improve upon existing waste initiatives to increase the reduction of organic waste and support local circular economy initiatives. The circular economy shifts away from linear “take-make-waste” behaviors and instead:

- Promotes sharing repairing, and seeing value in spent materials
- Increases access to reused, repaired, and/or sustainably sourced items
- Increases people’s capacity to advance the circular economy themselves – for example, by teaching repair skills.

These initiatives also present an opportunity to achieve a variety of other co-benefits for communities.

Better air quality	Pollution reduction	Environmental protection
Economic development	Consumer savings	Business and industry savings

Objective: Increase waste diversion and support circular economy initiatives					
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>W1</b> 	Increase diversion of organic waste	Work with Waste Services to increase rates of, and participation in, composting through educational campaigns	Ongoing	<ul style="list-style-type: none"> <li>Public health</li> <li>School board</li> <li>Business Improvement Areas</li> </ul>	\$
		Work with Waste Services to support food waste reduction efforts	Ongoing		\$
		Develop organic waste diversion educational opportunities for ICI stakeholders	2022	<ul style="list-style-type: none"> <li>ICI Stakeholders</li> </ul>	\$
<b>W2</b> 	Support local circular economy initiatives	Support individuals, businesses, and industry efforts to reduce waste through circular economy initiatives	2022	<ul style="list-style-type: none"> <li>ICI stakeholders</li> <li>Local businesses</li> <li>Local environmental organizations</li> <li>Conservation authorities</li> </ul>	\$
		Work with community stakeholders to increase knowledge of and participation in circular economy initiatives	2022	<ul style="list-style-type: none"> <li>ICI stakeholders</li> <li>Local businesses</li> <li>Local environmental organizations</li> </ul>	\$

# EMPOWERING OUR COMMUNITY

*Empowering our  
community to take  
action on climate  
change*



# EMPOWERING OUR COMMUNITY

To achieve Dufferin’s GHG reduction targets climate action must be a community priority and undertaken by a variety of actors from local municipalities to residents, businesses, organizations, and industry stakeholders.


Recognizing that the burdens of climate change and the benefits of its solutions are not distributed equally across communities, the County is committed to building community capacity, addressing systems of inequality, and, ultimately, empowering all community members to participate in and benefit from climate action.

This section outlines a variety of actions to empower Dufferin residents by providing education and co-learning opportunities, financial support for climate and social justice initiatives, as well as fostering a culture of climate action within the community.

These initiatives also present an opportunity to achieve a variety of other benefits for communities.





Social connectivity	Work towards justice and equity goals	Support arts and culture
Support initiatives of local organizations	Supporting local businesses	Create leadership opportunities for youth

**Objective: Increase community capacity to participate in climate action initiatives**

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>C1</b> 	Provide capacity building opportunities for residents, businesses, and institutions	Provide resources and learning opportunities for residents with detailed information on tools, resources, and supports to reduce GHG emissions	2021 Q2	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Equity and sovereignty seeking groups</li> <li>Local businesses and organizations</li> <li>Headwaters Communities in Action</li> <li>Business Improvement Areas</li> <li>Dufferin Board of Trade</li> <li>Schools</li> </ul>	\$
		Create a "Community Climate Fund" to support existing programs in the community for organizations undertaking environmental or social justice work	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Equity and sovereignty seeking groups</li> <li>Local businesses and organizations</li> <li>Headwaters Communities in Action</li> <li>Local environmental and conservation organizations</li> </ul>	\$\$
		Develop a climate change toolkit for businesses to assist with climate change impact analysis and continuity planning for extreme weather	2022 Q1	<ul style="list-style-type: none"> <li>Local businesses and organizations</li> <li>Headwaters Communities in Action</li> <li>Business Improvement Areas</li> <li>Dufferin Board of Trade</li> </ul>	\$
		Develop a green procurement guide for ICI stakeholders	2022 Q1	<ul style="list-style-type: none"> <li>ICI sector</li> <li>Sector experts</li> </ul>	\$



## TAKING ACTION

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required
<b>C2</b>    	Create a community culture around climate action	Create a "Climate Engagement and Cultural Plan" with diverse community groups, particularly with equity and sovereignty seeking groups	2021 Q2	<ul style="list-style-type: none"> <li>• Museum of Dufferin</li> <li>• Equity and sovereignty seeking groups</li> <li>• Arts based groups</li> <li>• Headwaters Communities in Action</li> <li>• Local environmental and conservation organizations</li> <li>• Schools and youth</li> </ul>	\$\$
		Conduct market research to identify barriers and motivations for desired sustainable behaviours	2021 Q3	<ul style="list-style-type: none"> <li>• Academic partners</li> <li>• Equity and sovereignty seeking groups</li> </ul>	\$
		Promote educational campaigns to encourage sustainable behaviours, such as supporting local food and farming	2021 Q3	<ul style="list-style-type: none"> <li>• Headwaters Communities in Action</li> <li>• Local environmental and conservation organizations</li> <li>• Equity and sovereignty seeking groups</li> <li>• Schools</li> </ul>	\$
		Promote local stories and highlight success in the community	2021 Q3	<ul style="list-style-type: none"> <li>• Headwaters Communities in Action</li> <li>• Local environmental and conservation organizations</li> <li>• BIAs</li> <li>• Local businesses</li> <li>• Schools</li> </ul>	\$
		Establish a multi-level Climate Ambassadors Program to facilitate the inclusion of all community members in climate action initiatives	2022 Q3	<ul style="list-style-type: none"> <li>• Headwaters Communities in Action</li> <li>• Local environmental and conservation organizations</li> <li>• BIAs</li> <li>• Local businesses</li> <li>• Equity and sovereignty seeking groups</li> <li>• Schools</li> </ul>	\$
		Support community initiatives such as composting, sewing repair, bicycle repair hubs	Ongoing	<ul style="list-style-type: none"> <li>• Equity and sovereignty seeking groups</li> <li>• Headwaters Communities in Action</li> <li>• Local environmental and conservation organizations</li> <li>• BIAs</li> <li>• Local businesses</li> <li>• Local repair café group</li> </ul>	\$

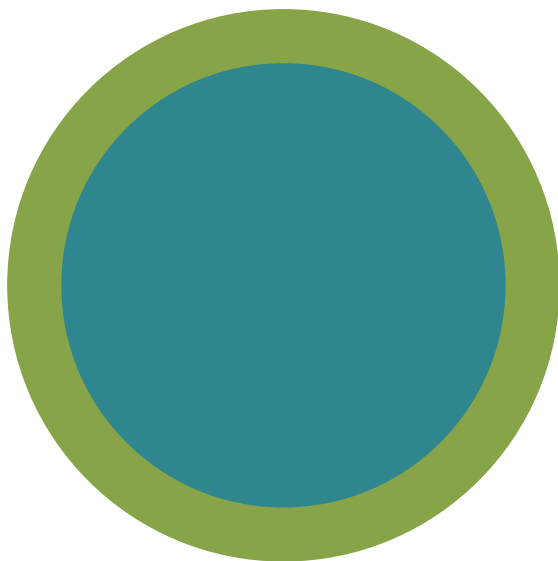
# IMPLEMENTING THE PLAN

## A STRATEGIC APPROACH

Dufferin County is moving forward to develop and implement the actions outlined in the Dufferin Climate Action Plan. This requires a strategic approach to maximize the drivers for and overcome barriers to successful climate action implementation.

According to a 2019 report developed by the Clean Air Partnership, examining climate action implementation in other Ontario municipalities, there are five key cross-sectorial drivers of climate action: funding, community partnerships, staff capacity, mainstreaming climate action, and strategic prioritization.<sup>30</sup> The report also identified that a common barrier to successful implementation within Ontario municipalities is low-climate literacy – a barrier Dufferin County will also strive to overcome.

Dufferin County will adopt seven key implementation strategies to maximize the positive environmental, social, and economic impacts of climate action. Five of the implementation strategies align with the capacity building drivers identified by the Clean Air Partnership and two additional strategies will be adopted, focused on engagement and equity, to ensure the Dufferin Climate Action Plan is truly community-centered:



1. Building Community Relationships
2. Leveraging Funding
3. Increasing Staff Capacity
4. Institutionalizing Climate Action
5. Strategic Prioritization
6. Centering Equity
7. Mobilizing a Culture of Climate Action

<sup>30</sup> Clean Air Partnership, 2019. "Assessing the State of Climate Action in Ontario Municipalities: Drivers and Barriers to Implementation Report".

<https://www.cleanairpartnership.org/wp-content/uploads/2019/04/Drivers-and-Barriers-to-Implementation-Report-V4.pdf>

### Building Community Partnerships

Climate action is most effective and widespread when implementation is a shared responsibility between local governments and community delivery partners. Dufferin County can mobilize community delivery agents and partnerships during implementation to maximize the efficiency, reach, cost-effectiveness, and credibility of climate action initiatives. Another advantage of the partnership approach is the reduction of municipal risk and the ability to build community capacity through the leveraging of municipal funding.

As each action in the Dufferin Climate Action Plan is developed, community partners and delivery agents will be sought and confirmed. Potential partners on climate initiatives could include:

- Utilities
- Community groups
- Non-profit organizations
- Local schools
- Conservation Authorities
- Local businesses and associations
- Academic institutions
- Other municipalities

### Leveraging Funding

Dufferin County can effectively and efficiently implement the actions outlined in this plan by leveraging a range of funding programs from the Federal and Provincial Governments, as well as third-party organizations.

Dufferin can capitalize on current funding programs to support climate projects such as:

- [Natural Resources Canada - Electric Vehicle and Alternative Fuel Infrastructure Deployment Initiative](#)
- [Natural Resources Canada - Zero Emission Vehicle Infrastructure Program](#)
- [Natural Resources Canada - Zero Emission Vehicle Awareness Initiative](#)
- [Government of Canada - Climate Action and Awareness Fund](#)
- [FCM - Green Municipal Fund](#)
- [FCM - Municipalities for Climate Innovation Program](#)
- [Public Safety Canada – National Disaster Mitigation Program](#)
- [Government of Ontario – Ontario Builds](#)
- [Government of Ontario – Southwestern Ontario Development Fund](#)

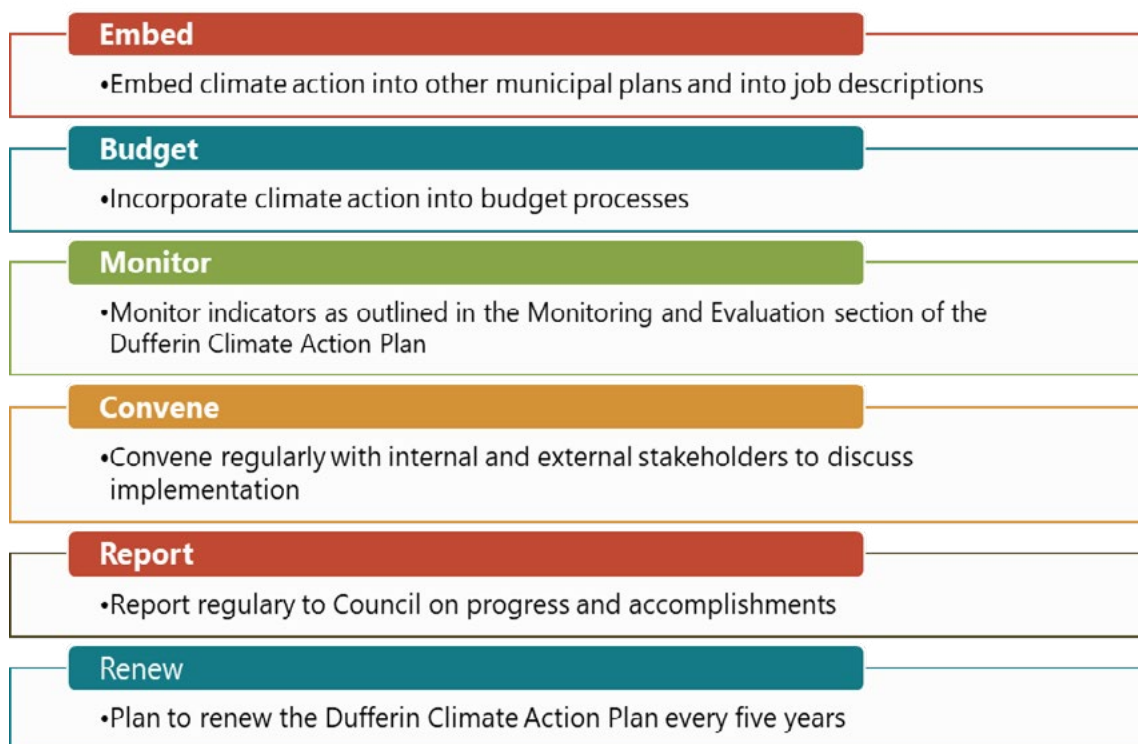
Dufferin County can also support climate action by connecting community residents, businesses, and organizations with eligible funding and incentive opportunities available through Federal and Provincial Governments, as well as other organizations such as Enbridge Gas, Hydro One, or local conservation authorities for undertaking climate actions such as building retrofits, energy efficiency, or environmental protection measures. A list of active funding programs is available in Appendix C of the plan.

## Increasing Staff Capacity

The Clean Air Partnership identifies sufficient staff capacity as a key driver of successful climate action implementation, and, conversely, the lack thereof as a key barrier to implementation.<sup>31</sup> Climate action can be advanced by having staff capacity to coordinate climate actions internally across multiple departments, manage technical projects, apply to and administer grants, and to integrate a greater number of municipal policies, plans, and programs with greenhouse gas reduction and resiliency objectives. In addition, staff capacity is also necessary to directly liaise with community partners, coordinate outreach, and raise awareness for climate programs. It is recommended that Council continue to support the securement of funding for climate staff to ensure the successful implementation of the Dufferin Climate Action Plan.

## Institutionalizing Climate Action

To ensure long-term accountability and continuity, it is essential that climate action planning is embedded into the plans, policies, and process of Dufferin County and the local municipalities. For example, in August 2020 Dufferin County Council unanimously agreed to adopt a climate lens into municipal decision-making processes. Incorporating a climate lens functions to mainstream climate change as a municipal priority into programming and decisions, facilitate interdepartmental engagement, and increase transparency of municipal decision-making. Moving forward, Dufferin County can institutionalize climate planning by including local climate goals into Official Plans, secondary plans, budgets, by-laws, and communication and reporting processes.



<sup>31</sup> Clean Air Partnership, 2019. "Assessing the State of Climate Action in Ontario Municipalities: Drivers and Barriers to Implementation Report"  
<https://www.cleanairpartnership.org/wp-content/uploads/2019/04/Drivers-and-Barriers-to-Implementation-Report-V4.pdf>



### Centering Equity

For climate action initiatives to achieve and support equity goals within the Dufferin County, equity must be a core consideration in the planning and implementation phases of each individual action.

A next step for Dufferin County will be the co-creation of evaluation criterion, in collaboration with equity seeking communities, to ensure that all community members benefit from climate action initiatives. Criteria should consider elements such as disproportionate impacts, shared benefits, accessibility, engagement, capacity building, economic opportunity, and accountability.

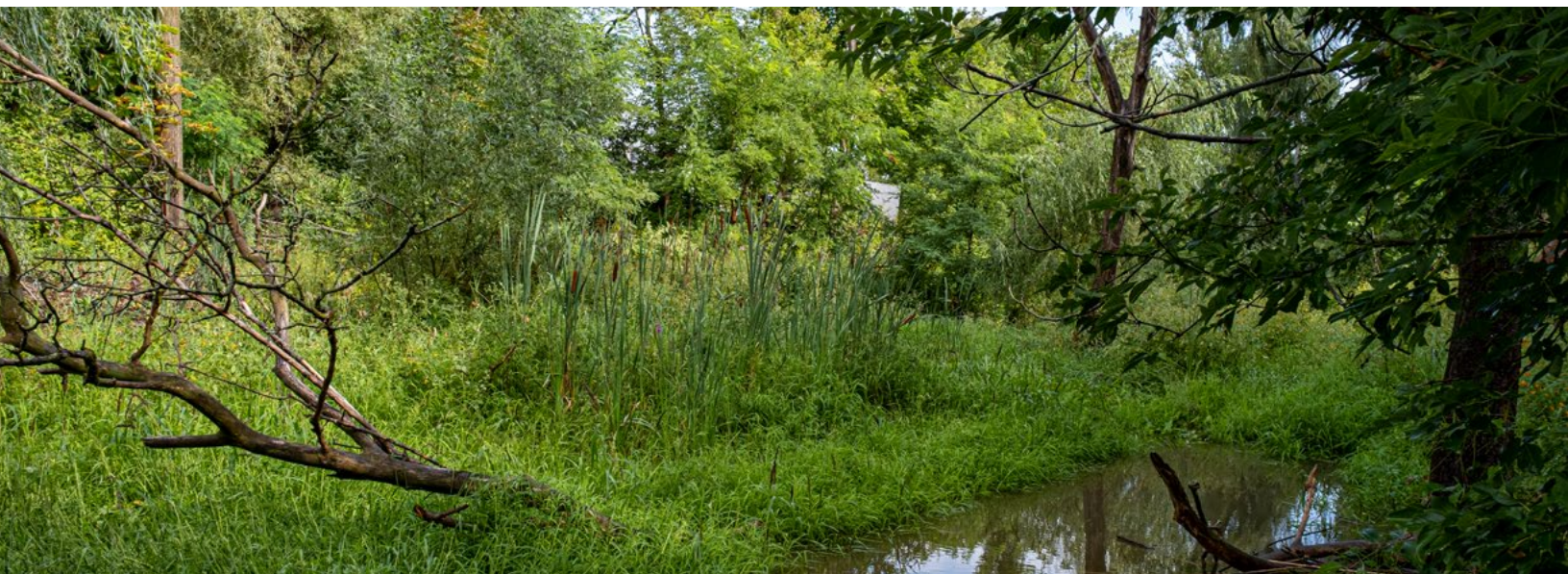
These criteria will be used to complete an equity evaluation for each climate action initiative as it is developed. This will be done with the goal of ensuring that equity seeking groups and individuals equitably benefit from climate action, are not disproportionately harmed by the impacts of climate change, and that the co-benefits of actions can support the reduction of historical or current disparities.

### Mobilizing a Culture of Climate Action

This is a community plan. Dufferin County is committed to facilitating ongoing conversations about climate action in the community. Communication, education, and outreach efforts will work to continually raise awareness of climate change impacts, facilitate knowledge sharing among community members, encourage action, develop community partnerships, and celebrate successes. Facilitating collaborations with local artists and cultural groups will foster a culture of climate awareness and climate action in the Dufferin community.

Components of community mobilization could include:

- Market research to identify barriers and motivations to climate action
- A branding strategy to promote climate messages within the community and build trust
- Engage youth on climate action and provide leadership opportunities
- Work with community members to develop a Community Climate Ambassador program
- Support cultural events and artistic works in the community with climate messaging





# Paving the Way: City of Portland Climate Equity Working Group

“Climate Action through Equity: The Integration of Equity in the Portland and Multnomah County 2015 Climate Action Plan”<sup>32</sup> will be a key case study for Dufferin County in the development of equity criteria, tailored to the local context, that will be used to guide the implementation of each action outlined in the Dufferin Climate Action Plan.

Since 1993, the City of Portland has been a global leader in climate change; however, historically climate goals were set strictly in terms of carbon reduction, without considering which communities and demographics were benefiting from such actions. This resulted in communities of colour and low-income populations experiencing a variety of inequities such as lack of access to low-carbon transportation, efficient housing, and healthy food.

In 2013, to address these inequities, an Equity Working Group was formed to consider social equity in the vision, commitments, implementation, and metrics for the 2015 Climate Action Plan update. Through sustained discussions, the Equity Working Group identified 9 equity considerations, outlined in the box to the right, to be included in the Climate Action Plan to avoid unintended consequences and maximize the co-benefits associated with climate action.

As a result of these efforts, the 2015 Climate Action Plan focused on increasing public transit access, reduce exposure to pollution and extreme heat, increase access to greenspace, and reduce both housing and energy costs to support equity goals.

<sup>32</sup> City of Portland and Multnomah County, 2015. *Climate Action through Equity*  
<https://www.portland.gov/sites/default/files/2019-07/cap-equity-case-study-web29jul.pdf>

## PORTLAND'S EQUITY CONSIDERATIONS

### 1. Disproportionate impacts

Does the proposed action generate burdens (including costs) either directly or indirectly, to communities of colour or low-income populations? If yes, are there opportunities to mitigate these impacts?

### 2. Shared benefits

Can the benefits of the proposed action be targeted in progressive ways to reduce historical or current disparities?

### 3. Accessibility

Are the benefits of the proposed action broadly accessible to households and businesses throughout the community - particularly communities of colour, low-income populations, and minority, women and emerging small businesses?

### 4. Engagement

Does the proposed action engage and empower communities of colour and low-income populations in a meaningful, authentic and culturally appropriate manner?

### 5. Capacity building

Does the proposed action help build community capacity through funding, an expanded knowledge base or other resources?

### 6. Alignment and partnership

Does the proposed action align with and support existing communities of colour and low-income population priorities, creating opportunity to leverage resources and build collaborative partnerships?

### 7. Relationship Building

Does the proposed action help foster the building of effective, long-term relationships and trust between diverse communities and local government?

### 8. Economic opportunity and staff diversity

Does the proposed action support communities of colour and low-income populations through the workforce development, contracting opportunities or the increased diversity of city council and staff?

### 9. Accountability

Does the proposed action have appropriate accountability mechanisms to ensure that communities of colour, low-income populations or other vulnerable communities will equitably benefit and not be disproportionately harmed?

# THE NEXT 5 YEARS

## First Priorities

In order to shift away from business as usual and respond quickly and effectively to the climate crisis, the following table outlines the first priority initiatives for Dufferin County.



FIRST PRIORITY INITIATIVES	2021				2022				2023				2024				2025			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
<b>1. Develop a municipally led financing program for home energy retrofits</b> to encourage and make the uptake of deep energy retrofitting and efficiency measures in residences more accessible for residents.																				
<b>2. Accelerate the transition to low-GHG transportation</b> by developing an electric vehicle charging network across Dufferin and neighbouring municipalities																				
<b>3. Empower the community</b> to take climate action by institutionalizing climate action in municipal planning and supporting community awareness, education, and knowledge sharing initiatives.																				
<b>4. Support climate-resiliency initiatives</b> in agricultural and natural systems to enhance food security, support local farmers, and protect natural systems.																				
<b>5. Create green development standards</b> to ensure new development is environmentally, socially, and economically sustainable.																				

## 5 Year Implementation Schedule

The following implementation strategy provides a timeline for the planning and implementation for the actions outlined in the Dufferin Climate Action Plan that are to be initiated over the next 5 years. Further details on implementation, including leading and supporting partners, required resources, greenhouse gas reduction potentials, and KPIs can be found in Appendix B of the plan.

As each action is developed, County staff will prepare and submit a financial request to Council, through the annual budgeting process, and as projects arise, identify the required resources for implementation. Staff will also identify synergies with other County priorities and initiatives, as well as seek external sources of funding.



SECTION	ACTION	2021				2022				2023				2024				2025			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
For Our Land	Support water protection initiatives																				
In Our Bins	Increase diversion of organic waste																				
For Our Land	Support conservation and rehabilitation of ecological systems in rural areas																				
Community Empowerment	Provide capacity building opportunities for residents, businesses, and institutions																				
Community Empowerment	Create a community culture around climate action																				
On the Move	Increase public awareness of and education on climate friendly travel modes																				
On the Move	Promote climate friendly driving habits to reduce GHG emissions associated with passenger vehicles																				

# IMPLEMENTING THE PLAN

SECTION	ACTION	2021				2022				2023				2024				2025			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
For Our Land	Promote and incentivize the adoption of climate-friendly practices in agriculture sector	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
For Our Land	Develop education partnership with agricultural community/partners to support long-term climate friendly practices and knowledge sharing	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
On the Move	Create accessible and walkable communities	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
On the Move	Work with regional and municipal partners to expand low and zero-emission vehicle uptake and charging networks	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
In Our Buildings	Promote deep energy retrofit programs/ options and provide information on resources and financing programs	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
In Our Buildings	Promote home resilience programs and provide information on resources and financing programs	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█
On the Move	Expand public transit options	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█

# IMPLEMENTING THE PLAN

SECTION	ACTION	2021				2022				2023				2024				2025			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Planning Our Community	Conduct a study to identify priority areas to mitigate extreme heat across private and public properties																				
On the Move	Develop land use policies that encourage high-density, infill, accessible, and walkable communities																				
In Our Buildings	Establish green development standards																				
Planning Our Community	Establish green development standards																				
Planning Our Community	Plan complete communities																				
For Our Land	Protect and enhance local natural assets																				
For Our Land	Increase tree coverage and protection in Dufferin County																				
For Our Land	Encourage green infrastructure and low-impact development initiatives to support resiliency goals																				



## MEASURING PROGRESS

Monitoring and evaluating the implementation of the Plan is critical to reaching our greenhouse gas (GHG) reduction targets. Progress can be measured broadly through energy and GHG data, in addition to key performance indicators (KPIs) for each action item.

Specific KPIs will be identified during the planning phase for each action item. The monitoring of KPIs on a regular basis will allow Dufferin County to determine how to best allocate resources to support implementation and measure the success of action items, particularly in between GHG inventory updates. Dufferin County will establish an annual report card on the progress of the Dufferin Climate Action Plan. Report cards should include the status of the actions in the plan, and a brief commentary on required next steps, as well as amendments made to action items, if any.

The Dufferin Climate Action Plan is intended to function as a living document to facilitate climate action in the municipality over the next 30 years. As such, the plan will be reviewed and updated every 5 years to report on progress, set next steps, and ensure that climate planning continues to align with community priorities.

The annual report card and 5-year plan updates will also provide the County with an opportunity to review implementation success from an equity and justice perspective, reflecting on lessons learned, and further opportunities to work towards climate justice in the community.

## OVERSIGHT AND GOVERNANCE

County Council will be responsible for adopting the plan, while local municipal councils will be encouraged to adopt or create their own community climate action plans to align with the County's direction. The benefits of this model is that it enables the County to play a leadership role by planning for long-term financial and resource support, while sharing the responsibility for plan implementation, and leveraging the capital of the community, the private sector and other levels of government for those strategies that are beyond municipal responsibility.

**Municipally-led,  
community  
supported**

The Dufferin County Climate Change Collaborative (DC4) was instrumental in the creation of this plan and will be encouraged to continue to support both the broad implementation of the Dufferin Climate Action Plan and participate in focused task forces to provide technical expertise in projects where appropriate.



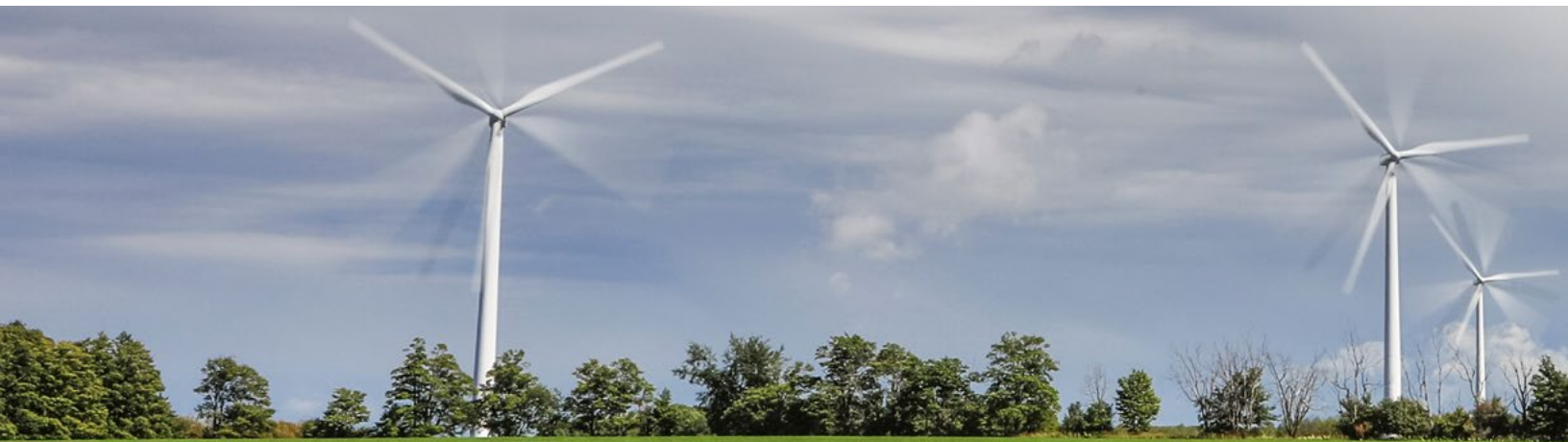
# ORGANIZATIONAL CAPACITY RECOMMENDATIONS

The implementation of the Dufferin Climate Action Plan will require resources, leadership, and partnerships to achieve local climate targets.

These required resources must be understood in the context of the cost of inaction – that is, the scale of funds and efforts necessary to advance climate action today is far less than the costs associated with delayed action and damages from climate change impacts down the road.

**In order to facilitate and advance climate action, the County's Climate and Energy Division requests that Council help ensure implementation success by supporting:**

- Securement of necessary staff capacity to implement the plan (e.g. Energy Manager, Transportation Coordinator)
- Support the continuation of the Dufferin County Climate Change Collaborative to collaborate on and provide expertise in projects where appropriate
- Incorporation of the outlined actions in the Dufferin Climate Action Plan within County and local municipal plans and initiatives such as economic development strategies, sustainability, and transportation plans
- Identification and support of local municipal champions for municipal climate group
- Development of new climate action financing mechanisms
- Educational initiatives for County and local municipal staff, and relevant committees on the Dufferin Climate Action Plan and how they can support it
- An increase in technical capacity as necessary
- Application of a climate lens to municipal decision-making and financial planning
- Collaboration with local municipalities in plan implementation
- Regular progress reports and plan updates to track performance, celebrate successes, and adjust course when necessary



# LIMITATIONS AND FUTURE CONSIDERATIONS

It is imperative to identify and address limitations and future considerations to ensure the continued success of the Dufferin Climate Action Plan. The development of the plan was completed with the best resources available at the time; however, there is always room for improvement.

## GHG ACCOUNTING CAPACITY

The current greenhouse gas inventory for Dufferin County is based on the latest available local data at the time the process began and provides a strong baseline for Dufferin's first Climate Action Plan.

Ongoing partnerships with local utilities and institutions will be critical in accessing the most recent and complete data sets. Increasing capacity to accurately track and monitor greenhouse gas sources and sinks within Dufferin will allow the County to develop a deeper quantitative understanding of the how the actions outlined in this plan will impact community GHG levels at the sector level. It will also allow for strategic implementation to maximize the reduction potential of each action. For example, by completing a housing stock assessment and market analysis, staff can then assess the potential GHG reductions a Property Assessed Clean Energy (PACE) program could achieve and target older residences first. Data is at the core of measuring success over time, and will be a priority in the implementation of the plan. For future GHG inventories, a GHG budgeting and consumption-based approach will be explored to provide a deeper understanding of GHG limits and local behaviours.

## COMMUNITY ENGAGEMENT

The unprecedented times brought by COVID-19 provided a challenge for community engagement on the Dufferin Climate Action Plan. A primarily digital approach to engagement may leave those community members without access to or time to participate in digital spaces out of the climate conversation. Moving forward, Dufferin County will begin to connect with community partners and compile best practices from emerging research on engagement during COVID-19 to design a new strategy with the goal of including all voices in engagement and outreach opportunities.





# THE PATH FORWARD

**The solution to climate change is community. With meaningful action from local municipalities, businesses, organizations, schools, and individuals we can create a prosperous future for the current and future generations of Dufferin County.**

Moving towards a GHG net-zero future is a monumental task, but it is also an enormous opportunity to tap into the numerous co-benefits of climate action. A dynamic community that embraces low-GHG transportation options, supports and enhances local agriculture, grows sustainable and vibrant urban centers, and protects land, water, and air, stimulates local economies, creates healthy and equitable neighbourhoods, and is resilient in the face of climate change.

Through the implementation of this plan, the County, alongside the Dufferin community, can meet 2030, 2040, and 2050 climate targets, while enjoying the benefits of climate action. Becoming a net-zero community requires that everyone takes action. This is a community effort. Climate change effects everyone and everyone has a role to play – if we work together, we can accelerate climate action and transform our community vision into reality.



# APPENDICES

## APPENDIX A. LOCAL CLIMATE PROJECTIONS

### Data Sourcing

Projections for Dufferin County are based on data obtained from ClimateData.ca, a climate information portal developed in collaboration between Environment and Climate Change Canada, the Computer Research Institute of Montréal, Ouranos, the Pacific Climate Impacts Consortium, the Prairie Climate Centre, and Habitat Seven. ClimateData.ca is part of a continuum of existing climate data portals and platforms developed in Canada, which collaboratively disseminate climate information targeting different audiences. ClimateData.ca provides high-resolution climate data to help decision makers build a more resilient Canada.

Projection values for Dufferin County summarize the results from 24 climate models used to simulate global climate in response to changing atmospheric concentrations of greenhouse gases. Each of these climate models simulates a possible climate based on observed atmospheric composition during the historical period (1850-2005) and in response to projected changes in atmospheric composition, by considering a number of emissions scenarios, in the future (2006-2100). These climate model results, originally simulated at coarse spatial resolution (generally between 100 and 250km), have been downscaled to a spatial scale (10km x 10km) which is useful for decision-making.

### Emission Scenarios

Emission scenarios are plausible projections of future emissions including greenhouse gases and aerosols. Scenarios consider a variety of factors that may influence emission levels in the future including demographic and socioeconomic development, or technological changes (Climate Data).

#### **Low Emission Scenario (RCP 2.6)**

This scenario assumes that GHG emissions will continue to increase until mid-century and then decline significantly. The IPCC refers to this scenario as a “peak and decline” scenarios. A low emissions scenario results in the lowest level of climate change and is the only scenario that can ensure the success of the Paris Agreement to limit global temperature rise this century to well below 2 degrees Celsius above pre-industrial levels.

#### **Moderate Emissions Scenario (RCP 4.5)**

This scenario assumes that greenhouse gas emissions will continue to increase (but more slowly than they are today) until mid-century and then stabilize until the end of the century. However, GHG concentrations will still end up being much higher than they are today. The IPCC describes this scenario as a “stabilization pathway”.

#### **High Emissions Scenario (RCP 8.5)**

This scenario assumes that greenhouse gas concentrations will continue to increase at approximately the same rate as they are increasing today. This scenario results in the most severe global warming and climate change.



## Climate Projections for Dufferin County

The data provided in the following tables present the range for each RCP scenario in order to account for the full spectrum of possible climatic conditions.









Climate Projections: Temperature								
			RCP 2.6		RCP 4.5		RCP 8.5	
	ClimateData.ca Definition	2000 Modelled Historical	2050 Range	2100 Range	2050 Range	2100 Range	2050 Range	2100 Range
Mean Temperature (°C)	Mean temperature is the average temperature on a given day and is usually obtained by averaging the daily maximum and minimum temperatures.	6.2	6.8 – 8.7	6.6 - 8.7	6.1 - 9.4	7.5 – 10.1	7.8 - 10.1	10.6 - 13.9
Minimum Temperature (°C)	The average minimum temperature for a given time period and is derived by averaging all the daily minimum temperatures in that time period	1.4	1.9 - 3.8	1.6 - 4.1	1.4 - 4.5	2.6 - 5.2	3.1 - 5.1	5.9 - 9.2
Days with Tmin < -15°C (days per year)	The number of days with minimum temperatures less than 15°C gives an indication of the number of very cold days in a given time period.	29	5 – 35	5 – 31	5 – 26	4 – 29	0 – 20	0 - 5
Days with Tmax > 30°C (days per year)	This is the number of days when daily maximum temperature is greater than 30°C and gives an indication of the number of very hot days.	3	3 – 22	5 – 18	5 – 35	5 – 45	11 – 41	47 – 97
Climate Projections: Precipitation								
Maximum 1-Day Total Precipitation (mm)	This is the largest precipitation total on a single day.	40	33 – 59	31 – 61	27 – 65	27 – 50	33 – 52	33 – 67
Wet Days > 20mm (Days)	Number of days with daily precipitation totals greater than 20mm	6	5 – 10	4 – 9	3 – 10	2 – 10	4 – 12	4 – 13
Total Precipitation (mm)	Totals precipitation (rain and snow) for a given time period	930	889 – 1115	830 – 1051	801 – 1156	775 – 1087	849 – 1182	752 – 1171










Climate Projections: Other Variables								
			RCP 2.6		RCP 4.5		RCP 8.5	
	ClimateData.ca Definition	2000 Modelled Historical	2050 Range	2100 Range	2050 Range	2100 Range	2050 Range	2100 Range
Frost Days	This is the number days when daily minimum temperature is less than 0°C and indicates when conditions are below freezing, usually overnight.	159	129 – 154	122 – 159	119 – 162	120 – 146	107 – 147	61 – 127
Heating Degree Days (Degree Days)	Heating degree days give an indication of the amount of space heating that may be required to maintain comfortable conditions in a building during cooler months. A threshold temperature of 17°C is used and for any day when the mean temperature is below this value, heating degree days are accrued. So, if the daily mean temperature on a given day is 10°C, then 7 HDDs are accrued for this day. HDD values are totaled over the year; the larger the HDD value the greater the requirement for space heating.	4175	3426 – 4025	3345 – 4100	3328 – 4216	3189 – 3905	3053 – 3804	2107 – 3199
Culminative Degree Days Above 0° (Degree days)	Culminative degree-days above 0°C are calculated by adding average daily temperature over a defined time period for those days when the mean temperature exceeds 0°C. This index can be used as an indicator for plant and insect growth. The warmer the weather, the more quickly these species develop	3023	3293 – 3655	3171 – 3635	3020 – 3842	3370 – 4123	3463 – 4000	4170 – 5268

Climate Projections: Other Variables								
			RCP 2.6		RCP 4.5		RCP 8.5	
	ClimateData.ca Definition	2000 Modelled Historical	2050 Range	2100 Range	2050 Range	2100 Range	2050 Range	2100 Range
Culminative Degree Days Above 0° (Degree days)	Culminative degree-days above 0°C are calculated by adding average daily temperature over a defined time period for those days when the mean temperature exceeds 0°C. This index can be used as an indicator for plant and insect growth. The warmer the weather, the more quickly these species develop	3023	3293 – 3655	3171 – 3635	3020 – 3842	3370 – 4123	3463 – 4000	4170 – 5268
Growing Degree Days > 10°C (Degree Days)	Growing degree days are a measure of whether climate conditions are warm enough to support plant growth. When the daily mean temperature exceeds the threshold temperature, growing degree days are accrued. A threshold temperature of 10°C is generally used for crops such as corn and beans that require warmer temperatures to reach maturity.	1041	1161 – 1430	1103 – 1445	1069 – 1557	1269 – 1807	1246 – 1692	1790 – 2511
Growing Degree Days > 5°C (Degree Days)	Growing degree days are a measure of whether climate conditions are warm enough to support plant growth. When the daily mean temperature exceeds the threshold temperature, growing degree days are accrued. A threshold temperature of 5°C is generally used for forage crops and canola.	1878	2076 – 2402	2028 – 2424	1944 – 2567	2404 – 2819	2225 – 2705	2836 – 3698


# APPENDIX B. EXPANDED IMPLEMENTATION TABLES

## On the Move


Objective: Increase trips within and between communities using active, shared, and public modes of transportation								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>T1</b>   	Expand public transit options and support fleet electrification (See T5)	Review bus routes and optimize connectivity and service within and between local and regional municipalities	Ongoing	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Regional municipalities</li> <li>Local transit service providers</li> <li>Developers</li> <li>Metrolinx</li> <li>Other transit service providers</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Transportation Master Plan</li> </ul>	<ul style="list-style-type: none"> <li># of routes</li> <li>Service frequency</li> <li>Ridership #s</li> </ul>	<ul style="list-style-type: none"> <li>Consultant and staff time to create the Transportation Master Plan</li> </ul>
		Advocate for increased GO transit service	Ongoing	<ul style="list-style-type: none"> <li>Metrolinx</li> <li>Local municipalities</li> </ul>	\$	<ul style="list-style-type: none"> <li>Council advocacy</li> </ul>	<ul style="list-style-type: none"> <li>Additional service</li> <li>Service frequency</li> </ul>	<ul style="list-style-type: none"> <li>Staff time</li> </ul>
<b>T2</b>   	Increase public awareness of and education on climate friendly travel modes	Develop an accessible educational campaign to prioritize active transportation and public transit, particularly for trips under 5km	2021 Q2 (reoccurring)	<ul style="list-style-type: none"> <li>Metrolinx</li> <li>Local municipalities</li> <li>Local employers</li> <li>BIAs</li> <li>Schools</li> <li>Public health</li> <li>Dufferin County Active Transportation Team</li> </ul>	\$	<ul style="list-style-type: none"> <li>Education campaign</li> </ul>	<ul style="list-style-type: none"> <li>Ridership #s</li> <li>Service frequency</li> <li>Infrastructure investment dollars</li> <li>Vehicle kilometers travelled</li> </ul>	<ul style="list-style-type: none"> <li>Staff time to create and promote educational materials</li> </ul>
		Develop an accessible educational campaign for trips over 10km to prioritize carpooling options (particularly for commuters) and telecommuting when possible	2021 Q3 (reoccurring)	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local employers</li> <li>BIAs</li> </ul>	\$	<ul style="list-style-type: none"> <li>Rideshare apps</li> <li>Education campaign</li> </ul>	<ul style="list-style-type: none"> <li>Vehicle kilometers travelled</li> <li>Rideshare app data</li> </ul>	<ul style="list-style-type: none"> <li>Staff time to create and promote educational materials</li> </ul>
Objective: Increase trips within and between communities using active, shared, and public modes of transportation								
<b>T3</b>  	Promote climate friendly driving habits to reduce GHG emissions associated with passenger vehicles	Develop anti-idling campaigns to improve compliance with local anti-idling by-law	2021 Q3 (reoccurring)	<ul style="list-style-type: none"> <li>Local schools &amp; bus companies</li> <li>Business fleets</li> <li>Public health</li> <li>Local businesses</li> <li>Dufferin Board of Trade</li> <li>BIAs</li> </ul>	\$	<ul style="list-style-type: none"> <li>By-law enforcement</li> <li>Educational campaign</li> <li>Anti-idling toolkits</li> </ul>	<ul style="list-style-type: none"> <li>By-law enforcement</li> <li>Educational campaign</li> <li>Anti-idling toolkits</li> </ul>	<ul style="list-style-type: none"> <li>Staff time to create and promote educational materials</li> <li>Staff time for local by-law officers to enforce</li> </ul>
		Work with businesses and organizations to create anti-idling policies	2022 Q2	<ul style="list-style-type: none"> <li>Business fleets</li> <li>Public health</li> <li>Local businesses</li> <li>Dufferin Board of Trade</li> <li>BIAs</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> <li>Anti-idling toolkits</li> </ul>	<ul style="list-style-type: none"> <li># of policies developed</li> <li># of businesses committed</li> </ul>	<ul style="list-style-type: none"> <li>Staff time to work with local businesses and organizations to create and promote policies</li> </ul>
		Promote and increase awareness of existing eco-driving courses and insurance programs	2021 Q3	<ul style="list-style-type: none"> <li>Banks &amp; credit unions</li> <li>Insurance companies</li> <li>Ministry of Transportation</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> </ul>	<ul style="list-style-type: none"> <li># of courses completed</li> </ul>	<ul style="list-style-type: none"> <li>Staff time to create and promote educational materials</li> </ul>









Objective: Shift towards electric vehicles and alternative fuels								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>T4</b>   	Work with regional and municipal partners to expand low and zero-emission vehicle uptake and charging networks	Partner with municipalities to develop a regional Electric Vehicle Strategy to achieve network connectivity	2021 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Regional municipalities</li> <li>MTO</li> </ul>	\$	<ul style="list-style-type: none"> <li>Regional EV Strategy</li> <li>Supporting documents: Rural Transportation Assessment</li> </ul>	<ul style="list-style-type: none"> <li>Use of regional EV stations</li> <li># of participating partners</li> </ul>	<ul style="list-style-type: none"> <li>County staff</li> <li>External funding to conduct feasibility study</li> </ul>
		Develop EV policy at the County level to ensure consistency throughout the development of a County charging network	2021 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Utilities</li> <li>Electric vehicle supply equipment (EVSE) vendors</li> </ul>	\$	<ul style="list-style-type: none"> <li>EV policy</li> <li>Design standards</li> </ul>	<ul style="list-style-type: none"> <li># of policies developed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> <li>Potential consultant fees</li> </ul>
		Leverage funding opportunities to install charging stations throughout County	Ongoing	<ul style="list-style-type: none"> <li>NRCan</li> <li>Local municipalities</li> <li>Other funders</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Provincial and federal funding programs</li> </ul>	<ul style="list-style-type: none"> <li># of stations installed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> </ul>
		Work with local businesses and organizations to encourage low-emission and electric vehicles to be included in fleets	2021 Q3 (reoccurring)	<ul style="list-style-type: none"> <li>Plug N' Drive</li> <li>Local businesses</li> <li>Board of Trade</li> <li>BIAs</li> </ul>	\$	<ul style="list-style-type: none"> <li>EV Toolkit for local businesses and organizations</li> </ul>	<ul style="list-style-type: none"> <li># of businesses committed</li> <li># of low-GHG fleet plans developed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> </ul>
		Educate and raise awareness of the benefits of electric vehicles among residents and local businesses	2021 Q4 (reoccurring)	<ul style="list-style-type: none"> <li>Plug N' Drive</li> <li>Local businesses</li> <li>Board of Trade</li> <li>BIAs</li> <li>Environmental organizations</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaigns</li> </ul>	<ul style="list-style-type: none"> <li>Engagement data</li> <li>EV sales data</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create educational materials and engagement opportunities</li> </ul>
<b>T5</b>   	Encourage the electrification of public transit vehicles and fleet vehicles	Work with local municipalities to develop strategy to transition to electric public transit fleets	2021 Q4	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Regional municipalities</li> <li>Local transit service providers</li> <li>Developers</li> <li>Metrolinx</li> <li>Other transit service providers</li> </ul>	\$	<ul style="list-style-type: none"> <li>Official Plan &amp; PPS</li> <li>Green development standards</li> <li>Climate lens applied to planning</li> <li>Incentives and rebates</li> <li>By-laws</li> </ul>	<ul style="list-style-type: none"> <li>Walkability score</li> <li>Density</li> <li>GHG intensity per capital</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to review and update existing policies and development processes</li> <li>Capital costs to support consultant</li> </ul>
		Investigate options to electrify school bus fleets	As funding & partnership opportunities arise	<ul style="list-style-type: none"> <li>School boards</li> <li>School bus operators</li> <li>Third party partner</li> <li>Academic partners</li> </ul>	\$	<ul style="list-style-type: none"> <li>Academic-public partnership study</li> </ul>	<ul style="list-style-type: none"> <li>Completion of study</li> <li># of electric school buses incorporated in fleet</li> </ul>	<ul style="list-style-type: none"> <li>Staff time</li> </ul>
Objective: Design urban areas to reduce vehicle use								
<b>T6</b>   	Create accessible and walkable communities	Improve pedestrian crossing, comfortable walking route, and maps/signage	Ongoing	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Public health</li> <li>Headwaters Communities in Action</li> <li>Dufferin County Active Transportation Team</li> <li>Tourism stakeholders</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Design standards</li> <li>Updated Active Transportation Plan</li> <li>Maps/signage</li> </ul>	<ul style="list-style-type: none"> <li># of trails connected</li> <li>Kilometers of trails</li> </ul>	<ul style="list-style-type: none"> <li>Consultant time to update Active Transportation Plan</li> <li>County staff time to coordinate with local partners</li> <li>Capital costs to create, restore, and maintain trails throughout County</li> </ul>
		Coordinate and expand of accessible trails, walking, and cycling infrastructure throughout the County	2021 Q2	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Dufferin County Active Transportation Team</li> <li>Tourism stakeholders</li> </ul>	\$\$\$	<ul style="list-style-type: none"> <li>Design standards</li> <li>Updated Active Transportation Plan</li> </ul>	<ul style="list-style-type: none"> <li># of trails connected</li> <li>Kilometers of trails</li> <li>Trail usage data</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to coordinate with local partners</li> <li>Capital costs to create, restore, and maintain trails throughout County</li> </ul>









Objective: Shift towards electric vehicles and alternative fuels								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>T7</b> 	Develop a TDM Plan and marketing strategy	Create a TDM Plan in partnership with local employers and neighbouring municipalities	2021 - 2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local employers</li> <li>Regional municipalities</li> <li>Third party consultant</li> <li>Local transit service providers</li> </ul>	\$\$	• TBD	• TBD	• Staff time and capital to create TDM plan with consultant
		Develop an engagement process to include community members in the TDM planning process	2021 - 2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local employers</li> <li>Local businesses</li> <li>BIAs</li> </ul>	\$	• TBD	• TBD	• Staff time to develop and implement an engagement strategy




## In Our Buildings




Objective: Improve energy efficiency and climate resilience in all existing residences to achieve net-zero emissions in residential buildings by 2050								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>B1</b> 	Promote deep energy retrofit programs and provide information on resources and financing programs	Complete a feasibility study undertaking a baseline assessment of Dufferin County's housing stock and energy upgrade potential, including the cost benefit of different types of retrofits to maximize dollars spent	2021 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Federation of Canadian Municipalities</li> <li>Clean Air Partnership</li> </ul>	\$	• Feasibility study	• Completed study with market analysis on potential for program uptake	<ul style="list-style-type: none"> <li>Capital costs to conduct feasibility study</li> <li>County staff time to establish strategic partnerships</li> </ul>
		Investigate options to develop municipally led financing program for residential deep energy and resiliency retrofits	2021 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Federation of Canadian Municipalities</li> <li>Utilities</li> <li>Clean Air Partnership</li> <li>Association of Municipalities of Ontario (AMO)</li> </ul>	\$	• Feasibility study	• Partnerships created to support program development	<ul style="list-style-type: none"> <li>County staff time</li> <li>County staff time to coordinate across financial systems</li> </ul>
		Implement selected municipally led financing program for residential deep energy and resiliency retrofits with a strategic lens to address energy poverty	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Federation of Canadian Municipalities</li> <li>Clean Air Partnership</li> <li>Association of Municipalities of Ontario (AMO)</li> </ul>	\$\$\$ (with potential for return)	• PACE program	<ul style="list-style-type: none"> <li>Policies updated or amended</li> <li># of retrofitted homes (uptake)</li> <li>Building energy performance</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to develop PACE program and by laws</li> <li>County staff time to coordinate across financial systems</li> </ul>
		Support existing training programs for contractors to complete home energy work	2022	<ul style="list-style-type: none"> <li>Post-secondary institutions</li> <li>Trade partners</li> <li>Construction or contractor unions</li> </ul>	\$	• Educational campaign and marketing	• # of trainings supported	• County staff time
		Educational campaign on home energy efficiency and fuel switching	2021 Q3	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Utilities</li> <li>Local non-for-profits</li> <li>Local schools</li> </ul>	\$	• Educational campaign	<ul style="list-style-type: none"> <li>Building energy consumption</li> <li># of retrofitted homes</li> </ul>	• County staff time to create and promote educational campaign
		Explore options for customer utility data comparison	2023	<ul style="list-style-type: none"> <li>Utilities</li> </ul>	\$	• Utility bills	<ul style="list-style-type: none"> <li>Building energy consumption</li> <li># of participants</li> </ul>	• County staff time to work with Utilities

Objective: Improve energy efficiency and climate resilience in all existing residences to achieve net-zero emissions in residential buildings by 2050								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>B2</b>   	Promote home resilience programs and provide information on resources and financing program	Create resilience check-list for residences	2022 Q1	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Home Flood Protection Program</li> <li>Conservation Authorities</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> </ul>	<ul style="list-style-type: none"> <li># of residents engaged</li> <li># of engaged businesses</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> </ul>
		Improve homes and businesses capacity to manage stormwater on-site through education campaigns, trainings, programs, and on-site consultations	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local businesses</li> <li>Home Flood Protection Program</li> <li>Conservation Authorities</li> <li>Post-secondary institutions</li> <li>Trade partners</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Educational campaign</li> <li>Home Flood Protection Program</li> </ul>	<ul style="list-style-type: none"> <li># of residents engaged</li> <li># of engaged businesses</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to establish strategic partnerships</li> <li>County staff time to create and promote educational campaign</li> </ul>
		Support training programs for contractors to complete resilience work	2022	<ul style="list-style-type: none"> <li>Post-secondary institutions</li> <li>Utilities</li> <li>Trade partners</li> <li>Contractors</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> </ul>	<ul style="list-style-type: none"> <li># of trainings supported</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create and promote educational campaign</li> <li>Knowledgeable partners to deliver effective trainings</li> </ul>
<b>B3</b>  	Support retrofit, energy, and resilience upgrades for rental homes and apartments	Educate building occupants and landlords on available energy retrofit programs and encourage participation in future financing options led by the County	2022 Q3	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local building owners</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> </ul>	<ul style="list-style-type: none"> <li># of retrofitted units</li> <li># of engaged residents</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to establish strategic partnerships</li> <li>County staff time to create and promote educational campaign</li> </ul>
		Explore feasibility to require property standards by-law for maximum temperature in rented residences	2021 Q4	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local building owners</li> </ul>	\$	<ul style="list-style-type: none"> <li>By-law</li> </ul>	<ul style="list-style-type: none"> <li># of by-laws created</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to research available programs and funding opportunities</li> </ul>
Objective: Improve energy efficiency and climate resilience in all new residential buildings and neighbourhoods to achieve net-zero emissions in residential buildings by 2050								
<b>B4</b>   	Ensure all new buildings are net-zero emissions ready through the implementation of green development standards (See Action P2)	Prioritize building designs that reduce energy demand and increase efficiency (passive cooling, air source heat pump, ground source heat pump, triple pane windows, light coloured roofs, etc.)	2023	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Clean Air Partnership</li> <li>Developers</li> <li>Utilities</li> <li>Relators</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Green development standards</li> <li>Municipal by-laws</li> <li>Development charges and incentives</li> </ul>	<ul style="list-style-type: none"> <li>Climate targets and by-laws adopted</li> <li>Policies updated or amended</li> <li>Building energy performance</li> <li>Instances of building standard certification</li> <li>GHG emissions (tonnes/year)</li> <li>Total building energy consumption</li> <li># of secondary plans or new developments built to green development standards</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to review and update existing policies and development charge structure</li> <li>County staff time to develop green development standards</li> <li>Capital costs to support consultant</li> <li>County staff time to engage with public and developers</li> </ul>
		Prioritize climate resilient building designs (e.g. flood prevention strategies, passive cooling designs, expansion of hurricane clip program)	2023	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Clean Air Partnership</li> <li>Developers</li> <li>Utilities</li> <li>Canadian Mortgage and Housing Corporation</li> <li>Relators</li> <li>Conservation Authorities</li> </ul>	\$\$	<ul style="list-style-type: none"> <li># of houses built to resiliency design standard</li> <li>Policies updated or amended</li> <li>Building energy performance</li> <li>Instances of building standard certification</li> </ul>		

Objective: Improve energy and resource efficiency in industrial, commercial, and institutional buildings								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>B5</b>    	Develop Eco-industrial park/business zone that is a low-GHG development zone	Investigate the potential for district energy systems to maximize energy efficiency	2024	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local ICI sectors</li> <li>Developers</li> <li>Utilities</li> <li>Conservation Authorities</li> <li>Partners in Project Green</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Feasibility study</li> </ul>	<ul style="list-style-type: none"> <li>Policies updated/amended</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs to support consultant</li> <li>County staff time to engage with ICI stakeholders</li> </ul>
		Work with local municipalities and planners to review and enhance local Community Improvement Plans (CIP) to enable retrofits to commercial buildings	2024	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local ICI sectors</li> <li>Utilities</li> </ul>	\$	<ul style="list-style-type: none"> <li>Local Community Improvement Plans</li> <li>Educational campaign</li> <li>Training programs</li> <li>By-laws</li> </ul>	<ul style="list-style-type: none"> <li># of buildings retrofitted</li> <li>Energy use</li> <li># of trainings delivered</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to update local Community Improvement Plans</li> <li>County staff time to review and update relevant by laws</li> </ul>
<b>B6</b>  	Increase capacity of ICI stakeholders to achieve energy efficiency and GHG reduction goals	Encourage ICI stakeholders to take advantage of energy efficiency programs and incentives for new and remodeled buildings	2022	<ul style="list-style-type: none"> <li>Third party partners</li> <li>ICI sector</li> <li>Utilities</li> <li>Conservation Authorities</li> <li>Partners in Project Green</li> <li>AMO</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> </ul>	<ul style="list-style-type: none"> <li>GHG targets set</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create and promote educational materials</li> </ul>
		Support educational campaigns and training for owners and employees to maximize energy efficiency and options for retrofits	2021 (reoccurring)	<ul style="list-style-type: none"> <li>Third party partners</li> <li>ICI sector</li> <li>Utilities</li> <li>Conservation Authorities</li> <li>Partners in Project Green</li> <li>Association of Municipalities Ontario</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> <li>Training program</li> </ul>	<ul style="list-style-type: none"> <li># of trainings delivered</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create and promote educational materials</li> </ul>



# For Our Land

Objective: Implement best practices within agricultural management systems to improve efficiency and resilience								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>L1</b> 	Promote and incentivize the adoption of climate-friendly practices in agriculture sector	Complete a study detailing the barriers preventing the adoption of climate-friendly and resilient practices in agriculture and the values that facilitate adoption	2021 Q1	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local agricultural producers</li> <li>Academic partners</li> <li>Conservation authorities</li> <li>Sector experts</li> <li>Local agricultural organizations</li> </ul>	\$	<ul style="list-style-type: none"> <li>Market research study</li> </ul>	<ul style="list-style-type: none"> <li># of new practices adopted</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs to complete market research study by academic and sector experts</li> </ul>
		Support evolving research opportunities investigating the carbon sequestration potential of agriculture sector)	Ongoing as opportunities arise	<ul style="list-style-type: none"> <li>Academic partners</li> <li>Sector experts</li> </ul>	\$	<ul style="list-style-type: none"> <li>Academic studies</li> </ul>	<ul style="list-style-type: none"> <li># of research studies completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> </ul>
		Encourage regenerative and ecological agriculture practices where applicable such as no-till and cover crops to control run off, tile, or controlled drainage systems	2021 Q2	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local agricultural producers</li> <li>Sector experts</li> <li>Local agricultural organizations</li> </ul>	\$	<ul style="list-style-type: none"> <li>Online and in-person learning forums</li> </ul>	<ul style="list-style-type: none"> <li># of people engaged in events</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs to provide incentives to local agricultural producers</li> <li>Capital costs to develop and host educational events</li> </ul>
		Encourage mapping of existing crop varieties against future climate projections	2021 Q3	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local agricultural producers</li> <li>Sector experts</li> <li>Local agricultural organizations</li> <li>ClimateData</li> </ul>	\$	<ul style="list-style-type: none"> <li>Academic studies</li> </ul>	<ul style="list-style-type: none"> <li># of research studies completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> </ul>
<b>L2</b> 	Develop education partnership with agricultural community and partners to support long-term climate friendly practices and knowledge sharing	Promote co-learning and networking opportunities for sustainable and resilient agriculture, energy efficiency, crop diversification, new technologies, and water conservation	2021 Q2	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local agricultural producers</li> <li>Academic partners</li> <li>Conservation authorities</li> <li>Sector experts</li> <li>Local agricultural organizations</li> </ul>	\$	<ul style="list-style-type: none"> <li>Online and in-person learning forums</li> </ul>	<ul style="list-style-type: none"> <li># of people engaged in events</li> <li># of new practices adopted</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to develop strategic partnerships</li> <li>Capital costs and County staff time to develop and implement knowledge sharing and networking program</li> </ul>
		Support a variety of educational opportunities tailored to diverse producers and their unique needs	2021 Q2		\$			
<b>L3</b> 	Encourage low-GHG energy alternatives on farms	Explore on-site renewable energy production options	2022	<ul style="list-style-type: none"> <li>Local agricultural producers</li> <li>Local agricultural organizations</li> <li>Energy sector experts</li> <li>Utilities</li> <li>Conservation Authorities</li> </ul>	\$	<ul style="list-style-type: none"> <li>Feasibility study</li> </ul>	<ul style="list-style-type: none"> <li># of partners engaged</li> <li># of projects initiated</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs to complete feasibility study</li> </ul>
		Explore options to incentivize manure management and biogas recovery as an alternative fuel source	2022		\$			




Objective: Support the protection, rehabilitation, and enhancement of natural systems to foster climate resiliency											
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required			
<b>L4</b> 	Protect and enhance local natural assets	Complete a natural asset inventory for the County including a risk assessment	2021 Q1	<ul style="list-style-type: none"> <li>Third party partner</li> <li>Local municipalities</li> <li>Conservation authorities</li> </ul>	\$	<ul style="list-style-type: none"> <li>GIS/Mapping</li> </ul>	<ul style="list-style-type: none"> <li># of assets inventoried</li> <li>completion of an online dashboard</li> <li>processes created to update on an ongoing basis</li> </ul>	<ul style="list-style-type: none"> <li>GIS/Mapping data</li> <li>Capital costs to develop Natural Asset Inventory</li> <li>County staff time</li> </ul>			
		Develop municipal natural asset management plans based on inventory	2022		\$				<ul style="list-style-type: none"> <li>Natural Heritage Strategy</li> <li>Municipal Asset Management Plan</li> </ul>	<ul style="list-style-type: none"> <li>Hectares protected and/or enhanced</li> </ul>	<ul style="list-style-type: none"> <li>County staff time or consultant to create Natural Asset Management Plan</li> <li>County staff time or consultant to review and update Natural Heritage Strategy</li> </ul>
<b>L5</b> 	Increase tree coverage and protection in Dufferin County	Create an urban forest/reforest strategy with climate resilient tree species	2023 or as opportunities arise	<ul style="list-style-type: none"> <li>Local environmental organizations</li> <li>Local municipalities</li> <li>Conservation authorities</li> </ul>	\$	<ul style="list-style-type: none"> <li>Tree planting programs</li> </ul>	<ul style="list-style-type: none"> <li># of trees planted</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> </ul>			
		Explore feasibility of developing a "Grown in Dufferin" tree supply program and or partner with conservation authorities to leverage existing nursery programs	2022 or as opportunities arise		\$				<ul style="list-style-type: none"> <li>Feasibility study</li> </ul>	<ul style="list-style-type: none"> <li>Feasibility study completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to explore potential for County tree supply program</li> <li>Capital costs for feasibility study</li> </ul>
		Amend the landscape regulations in both Zoning and Subdivision by-laws to increase tree protection and replacement requirement	2021	<ul style="list-style-type: none"> <li>Local environmental organizations</li> <li>Local municipalities</li> </ul>	\$	<ul style="list-style-type: none"> <li>By-laws</li> </ul>	<ul style="list-style-type: none"> <li># of revised by-laws</li> <li># of trees protected/replaced</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to review by-laws, engage the community and consult with local municipalities</li> </ul>			
		Explore adoption of both a private and heritage tree protection by-law in local municipalities	2021		\$						
		Ensure tree planting requirements are executed through new construction			\$						
<b>L6</b> 	Encourage green infrastructure and low-impact development initiatives to support resiliency goals	Promote educational campaigns on options for and benefits of green infrastructure and low-impact development	2022	<ul style="list-style-type: none"> <li>Local environmental and conservation organizations</li> <li>Builders Associations</li> <li>Landscaping businesses</li> <li>Conservation Authorities</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaigns</li> </ul>	<ul style="list-style-type: none"> <li># of engaged residents</li> <li># of projects completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to develop and promote educational campaigns</li> <li>County staff time to develop strategic partnerships</li> </ul>			
		Support backyard habitat creation initiatives to protect native biodiversity	2022 or as opportunities arise		\$				<ul style="list-style-type: none"> <li>Green infrastructure and low-impact development programs</li> <li>Natural Heritage Strategy</li> </ul>	<ul style="list-style-type: none"> <li># of engaged residents</li> <li># of projects completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to develop and promote educational campaigns</li> <li>County staff time to develop strategic partnerships</li> </ul>
		Encourage uptake of natural stormwater management solutions such as raingardens, soak-away pits, bioswales, or permeable groundcovers (See P2)	2022		\$				<ul style="list-style-type: none"> <li>Stormwater Management Guidelines</li> </ul>	<ul style="list-style-type: none"> <li># of engaged residents</li> <li># of projects completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to develop and promote educational campaigns</li> <li>County staff time to develop strategic partnerships</li> </ul>












APPENDIX C. EXPANDED IMPLEMENTATION TABLES




#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>L7</b> 	Support conservation and rehabilitation of ecological systems in rural areas	Support restoration of degraded lands using erosion control, organic and nutrient amendments	Ongoing as opportunities arise	<ul style="list-style-type: none"> <li>Local environmental and conservation organizations</li> <li>Conservation authorities</li> <li>Local agricultural organizations</li> <li>Local agricultural producers</li> <li>Sector experts</li> </ul>	\$\$\$	<ul style="list-style-type: none"> <li>Natural Heritage Strategy</li> <li>By-laws</li> <li>Restoration projects</li> </ul>	# of projects completed	<ul style="list-style-type: none"> <li>County staff time to develop strategic partnership</li> <li>County staff time to secure external funding</li> <li>County staff time to develop, promote, and implement projects</li> </ul>
		Support conservation of marginal farmland to perennial grasses or trees	Ongoing		\$		<ul style="list-style-type: none"> <li># of bylaws updated or completed</li> <li># of projects completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to develop strategic partnership</li> <li>County staff time to secure external funding</li> <li>County staff time to develop, promote, and implement projects</li> </ul>
<b>L8</b> 	Support water protection initiatives	Support restoration of wetlands (See L7, P5)	Ongoing as opportunities arise	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local environmental and conservation organizations</li> <li>Conservation authorities</li> <li>Source Water Protection Committees</li> </ul>	\$\$\$	<ul style="list-style-type: none"> <li>By-laws and stormwater management guidelines updated</li> <li>Water conservation and management</li> </ul>	# of projects completed	<ul style="list-style-type: none"> <li>County staff time to develop strategic partnership</li> <li>County staff time to secure external funding</li> <li>County staff time to develop, promote, and implement projects</li> </ul>
		Work with local municipalities to provide a climate lens to water quality and quantity protection initiatives	Ongoing		\$		<ul style="list-style-type: none"> <li>Amount of water conserved</li> <li># of audits completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> <li>Local municipal staff time</li> </ul>
		Work with local municipalities to develop and/or update stormwater management plans	2022		\$		<ul style="list-style-type: none"> <li># of stormwater management plans updated</li> </ul>	<ul style="list-style-type: none"> <li>Staff time to compile data and analyze</li> <li>Staff time to develop partnerships</li> </ul>

# Planning Our Community

Objective: Design low-GHG and resilient communities								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>P1</b> 	Plan complete communities	Prioritize the design of urban areas to reduce personal vehicle use, vehicle kilometers travelled, and to encourage active transportation. This can be achieved through the development of compact, accessible, and walkable neighbourhoods that integrate residential office and retail developments	Ongoing, but needs expansion	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local municipal planners</li> <li>Developers</li> <li>Local businesses</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Official Plan</li> <li>Local Secondary Plans</li> </ul>	<ul style="list-style-type: none"> <li># of policies created and/or updated</li> <li>Density metrics</li> <li># of complete communities within urban settlement boundaries</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to review and update Official Plan</li> <li>County staff time to work with local municipal planners</li> <li>County staff time to engage with developers</li> </ul>
		Prioritize infill and high-density housing in the downtown core, commercial zones, and along transit routes through policies	Ongoing	<ul style="list-style-type: none"> <li>Local municipal planners</li> <li>Developers</li> <li>Local businesses</li> <li>BIAs</li> </ul>	\$\$	<ul style="list-style-type: none"> <li># of policies created and/or updated</li> <li>Density metrics</li> </ul>		
<b>P2</b> 	Create green development standards (GDS) and practices	Create GDS that align with existing or upcoming policy goals and plans related to community energy, climate change, growth and intensification, resilience, and asset management	2021 Q2	<ul style="list-style-type: none"> <li>Local municipal planners</li> <li>Developers</li> <li>Utilities</li> <li>Planners</li> <li>Third party consultant</li> </ul>	\$	Green development standards	# of communities planned according to green development standards	Municipal staff time and capital costs to support consultant in the creation of green development standards
		Engage the building and development community to integrate experiences and leading practices into a GDS	2021 Q2 – Q3	<ul style="list-style-type: none"> <li>Local municipal planners</li> <li>Local municipalities</li> <li>Developers</li> </ul>	\$	Education campaigns	<ul style="list-style-type: none"> <li># of green building certifications</li> <li>Energy use per building</li> </ul>	County staff time to engage with developers
		Create requirement for a 'climate impacts' section in all development applications and explore options to incentivize application of GDS by local developers	2021 Q2		\$	Development charges and incentives	# buildings built to established green development standards	County staff time to explore incentive options for developers
		Work with member municipalities to integrate GDS into development standards with a focus on regional alignment	2022		\$	Official Plan	# of policies added or updated with climate lens	County staff time to review and update Official Plan
		Embed GDS in the Official Plan, especially as an implementation tool to achieve goals concerning sustainability, health, growth, and infrastructure management	2022	<ul style="list-style-type: none"> <li>Local municipal planners</li> <li>Local municipalities</li> </ul>	\$	Local Municipal and County Official Plans	# of policies added or updated with climate lens	County staff time to review and update Official Plans with municipal partners
<b>P3</b> 	Reduce extreme heat risks across public and private properties	Conduct a study to identify priority areas to mitigate extreme heat across private and public properties	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Academic partners</li> <li>Conservation authorities</li> </ul>	\$	Explore required technologies such as heat mapping, GIS software and data	Identified areas requiring heat mitigation	<ul style="list-style-type: none"> <li>Capital costs for consultant to complete a extreme heat study for the region</li> <li>Capital costs for required technical software</li> </ul>
		Implement potential recommendations from extreme heat study such as installation of reflective white roofs, urban street tree planting, shading park structures, and the conversion of streets to light colours	2023		\$	Planning tools	# of projects completed incorporating extreme heat reduction components	Staff time and capital costs to implement projects

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>P4</b>   	Minimize flood risks in communities through built infrastructure	Increase capacity to apply climate lens to infrastructure planning for stormwater management	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Conservation Authorities</li> </ul>	\$	<ul style="list-style-type: none"> <li>Education and training for homeowners and businesses</li> </ul>	<ul style="list-style-type: none"> <li># of consultations performed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time and funding for training</li> </ul>
		Update floodplain mapping and develop/update natural stormwater management plans to ensure no increase in vulnerability	2022		\$	<ul style="list-style-type: none"> <li>Updated floodplain maps</li> <li>Stormwater management plans</li> </ul>	<ul style="list-style-type: none"> <li># of stormwater management actions implemented</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to update stormwater management plans</li> </ul>
<b>P5</b>   	Minimize flood risks in communities through enhancement of green infrastructure	Enhance the amount of green space/permeable surface incorporated into all communities	Ongoing	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local environmental organizations</li> <li>Contractors</li> <li>Developers</li> </ul>	\$\$\$	<ul style="list-style-type: none"> <li>By-laws</li> <li>Planning tools</li> </ul>	<ul style="list-style-type: none"> <li>% increase in greenspace</li> <li>Permeable to non-permeable surface area ratio</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> <li>Capital costs to investigate new technologies</li> </ul>
		Support an increase in tree coverage through planning policy (See L5)	2023	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Local environmental organizations</li> </ul>	\$	<ul style="list-style-type: none"> <li>Tree planting programs</li> </ul>	<ul style="list-style-type: none"> <li># of trees planted</li> </ul>	<ul style="list-style-type: none"> <li>County staff time</li> </ul>
		Strategically manage natural assets through the directives of the natural asset management plan (See L4)	2023	<ul style="list-style-type: none"> <li>Conservation Authorities</li> </ul>	\$\$\$	<ul style="list-style-type: none"> <li>Natural Asset Management Plan</li> </ul>	<ul style="list-style-type: none"> <li># of natural assets effectivity managed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create natural asset inventory</li> <li>Consultant to create Natural Asset Management Plan</li> </ul>
		Increase uptake of low impact development technologies on private and public properties (See L6)	2022		\$	<ul style="list-style-type: none"> <li>Green infrastructure and low-impact development programs</li> <li>Natural Heritage Strategy</li> </ul>	<ul style="list-style-type: none"> <li># of engaged residents</li> <li># of projects completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to develop and promote educational campaigns</li> <li>County staff time to develop strategic partnerships</li> </ul>
		Support wetland restoration and creation initiatives (See L8)	Ongoing as opportunities arise	<ul style="list-style-type: none"> <li>Local environmental organizations</li> <li>Conservation Authorities</li> <li>Third party partner</li> </ul>	\$\$\$	<ul style="list-style-type: none"> <li>By-laws and stormwater management guidelines updated</li> <li>Water conservation and management</li> </ul>	<ul style="list-style-type: none"> <li># of projects completed</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to develop strategic partnership</li> <li>County staff time to secure external funding</li> <li>County staff time to develop, promote, and implement projects</li> </ul>
<b>Objective: Diversify Dufferin's energy supply through renewable or low-GHG energy and ensure resilient energy systems</b>								
<b>P6</b>   	Explore opportunities to implement low GHG fuels and/or renewable energy generation and storage  <i>(continued on next page)</i>	Determine renewable energy potential in Dufferin, including potential sites for wind and solar installations	2022	<ul style="list-style-type: none"> <li>Industry experts</li> <li>Academic partners</li> <li>Local agricultural organizations</li> <li>Local agricultural producers</li> <li>FCM</li> <li>Provincial government</li> <li>IESO</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Regional study</li> </ul>	<ul style="list-style-type: none"> <li>Scale of participation in renewable procurement purchases (E.g. mWh, as a percentage of total community electricity demand)</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs for feasibility study performed by consultant</li> </ul>
		Collaborate with the agricultural community and energy specialists to identify local options for on-farm renewable energy (See L3)	2022	<ul style="list-style-type: none"> <li>Industry experts</li> <li>Academic partners</li> <li>Local agricultural organizations</li> <li>Local agricultural producers</li> <li>FCM</li> <li>Provincial government</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Municipal energy maps</li> </ul>	<ul style="list-style-type: none"> <li>Scale of participation in renewable procurement purchases</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs for consultant or project partner to create municipal energy map</li> </ul>



APPENDIX C. EXPANDED IMPLEMENTATION TABLES

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>P6</b> 	(continued from previous page)	Identify options for local energy generation and storage options, such as microgrids that can also serve as back-up power supply during emergencies	2022	<ul style="list-style-type: none"> <li>Industry experts</li> <li>Utilities</li> <li>Local municipalities</li> <li>FCM</li> <li>Provincial government</li> <li>IESO</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Feasibility study</li> </ul>	<ul style="list-style-type: none"> <li>Scale of participation in renewable procurement purchases (Example: MWh, as a percentage of total community electricity demand)</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs for feasibility study performed by consultant</li> </ul>
		Identify opportunities for low GHG fuel use in the community such as hydrogen and renewable natural gas	2022	<ul style="list-style-type: none"> <li>Industry experts</li> <li>Utilities</li> <li>Local municipalities</li> <li>Provincial government</li> <li>FCM</li> <li>Third party consultant</li> </ul>	\$			
<b>P7</b> 	Explore opportunities to develop a district energy and cogeneration system to decentralize energy production	Create a municipal energy map	2022	<ul style="list-style-type: none"> <li>Sector experts</li> <li>Local municipalities</li> <li>Utilities</li> <li>Conservation authorities</li> <li>Academic partners</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Municipal energy map</li> </ul>		<ul style="list-style-type: none"> <li>Capital costs for consultant to create municipal energy map</li> <li>GIS/Mapping data</li> <li>Energy consumption data</li> </ul>
		Conduct an initial assessment to identify local fuel sources such as biomass or biogas products (See L3)	2023	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Headwaters Communities in Action</li> <li>Local environmental organizations</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Feasibility study</li> </ul>	<ul style="list-style-type: none"> <li>Feasibility study complete</li> <li># of partnerships created</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs to complete feasibility study</li> </ul>
		Explore potential sites for a district energy system	2024	<ul style="list-style-type: none"> <li>Utilities</li> <li>Developers</li> <li>Sector experts</li> <li>Local municipalities</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Regional study</li> </ul>	<ul style="list-style-type: none"> <li>Ratio of buildings serviced by district energy and cogeneration systems to buildings serviced by traditional energy distribution systems</li> </ul>	<ul style="list-style-type: none"> <li>Capital costs for feasibility study performed by consultant</li> </ul>
<b>P8</b> 	Enable the uptake of renewable and low GHG energy within the community through education	Provide learning and training opportunities for residents, developers, building owners, and businesses on renewable energy options such as ground mount solar, rooftop PV, geothermal, and renewable natural gas	2022	<ul style="list-style-type: none"> <li>Local businesses</li> <li>BIAs</li> <li>Developers</li> <li>Sector experts</li> <li>Local environmental and conservation organization</li> </ul>	\$	<ul style="list-style-type: none"> <li>Education campaigns and training programs</li> </ul>	<ul style="list-style-type: none"> <li># of renewable energy installations by residents, developers, building owners, and businesses</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create and promote educational opportunities</li> </ul>
		Promote financing opportunities for neighbourhood level energy generation and ownership, such as solar installations	2023	<ul style="list-style-type: none"> <li>Developers</li> <li>Sector experts</li> <li>Third party partners</li> <li>Provincial government</li> <li>Utilities</li> <li>Residents</li> <li>Neighbourhood associations</li> </ul>	\$	<ul style="list-style-type: none"> <li>Education campaigns and incentive programs</li> </ul>		<ul style="list-style-type: none"> <li>County staff time to create and promote resources educational opportunities</li> </ul>

## In Our Bins



Objective: Increase waste diversion and support circular economy initiatives								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>W1</b>  	Increase diversion of organic waste	Work with Waste Services to increase rates of, and participation in, composting through educational campaigns	Ongoing	<ul style="list-style-type: none"> <li>Public health</li> <li>School board</li> <li>Business Improvement Areas</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> </ul>	<ul style="list-style-type: none"> <li>Tonnes of organic waste diverted</li> <li>Reduced tonnes of avoidable food waste</li> <li># of engaged participants</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create and promote education campaigns</li> </ul>
		Work with Waste Services to support food waste reduction efforts	Ongoing		\$			
		Develop organic waste diversion educational opportunities for ICI stakeholders	2022	<ul style="list-style-type: none"> <li>ICI Stakeholders</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> <li>Trainings</li> </ul>	<ul style="list-style-type: none"> <li>Tonnes of organic waste diverted</li> <li>Reduced tonnes of avoidable food waste</li> <li># of trainings delivered</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create and promote education campaigns and trainings</li> </ul>
<b>W2</b>   	Support local circular economy initiatives	Support individuals, businesses, and industry efforts to reduce waste through circular economy initiatives	2022	<ul style="list-style-type: none"> <li>ICI stakeholders</li> <li>Local businesses</li> <li>Local environmental organizations</li> <li>Conservation authorities</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> <li>Trainings</li> </ul>	<ul style="list-style-type: none"> <li># of circular economy initiatives created and delivered</li> </ul>	<ul style="list-style-type: none"> <li>Staff time to develop strategic partnerships</li> <li>Staff time to develop and promote educational opportunities and trainings</li> </ul>
		Work with community stakeholders to increase knowledge of and participation in circular economy initiatives	2022	<ul style="list-style-type: none"> <li>ICI stakeholders</li> <li>Local businesses</li> <li>Local environmental organizations</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign</li> </ul>		

## Empowering Our Community

Objective: Increase community capacity to participate in climate action initiatives								
#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>C1</b>   <i>(continued on next page)</i>	Provide capacity building opportunities for residents, businesses, and institutions	Provide resources and learning opportunities for residents with detailed information on tools, resources, and supports to reduce GHG emissions	2021 Q2	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Equity and sovereignty seeking groups</li> <li>Local businesses and organizations</li> <li>Headwaters Communities in Action</li> <li>Business Improvement Areas</li> <li>Dufferin Board of Trade</li> <li>Schools</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign and learning forums</li> <li>Toolkits</li> </ul>	<ul style="list-style-type: none"> <li># of engaged residents</li> <li># of resources disseminated</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create and promote educational and engagement opportunities</li> </ul>
		Create a "Community Climate Fund" to support existing programs in the community for organizations undertaking environmental or social justice work	2022	<ul style="list-style-type: none"> <li>Local municipalities</li> <li>Equity and sovereignty seeking groups</li> <li>Local businesses and organizations</li> <li>Headwaters Communities in Action</li> <li>Local environmental and conservation organizations</li> </ul>	\$\$	<ul style="list-style-type: none"> <li>Community Climate Fund</li> </ul>	<ul style="list-style-type: none"> <li># of applications or grants awarded to community organizations</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to develop Community Climate Fund and secure funding</li> </ul>



APPENDIX C. EXPANDED IMPLEMENTATION TABLES

#	Action	What This Will Look Like	Time	Supporting Partners	Investment Required	Implementation Tools	KPIs	Resources Required
<b>C1</b> 	(continued from previous page)	Develop a climate change toolkit for businesses to assist with climate change impact analysis and continuity planning for extreme weather	2022 Q1	<ul style="list-style-type: none"> <li>Local businesses and organizations</li> <li>Headwaters Communities in Action</li> <li>Business Improvement Areas</li> <li>Dufferin Board of Trade</li> </ul>	\$	<ul style="list-style-type: none"> <li>Educational campaign and learning forums</li> <li>Toolkits</li> </ul>	<ul style="list-style-type: none"> <li># of engaged residents</li> <li># of resources disseminated</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create and promote educational and engagement opportunities</li> </ul>
		Develop a green procurement guide for ICI stakeholders	2021 Q1	<ul style="list-style-type: none"> <li>ICI sector</li> <li>Sector experts</li> </ul>	\$		<ul style="list-style-type: none"> <li># of resources disseminated</li> <li># of partnerships established</li> </ul>	
<b>C2</b> 	Create a community culture around climate action	Create a “Climate Engagement and Cultural Plan” with diverse community groups, particularly with equity and sovereignty seeking groups	2021 Q2	<ul style="list-style-type: none"> <li>Museum of Dufferin</li> <li>Equity and sovereignty seeking groups</li> <li>Arts based groups</li> <li>Headwaters Communities in Action</li> <li>Local environmental and conservation organizations</li> <li>Schools and youth</li> </ul>	\$\$	Climate Culture Plan	<ul style="list-style-type: none"> <li># of partners</li> <li># of engaged residents</li> <li># of local events and initiatives</li> </ul>	<ul style="list-style-type: none"> <li>County staff time to create a Climate Cultural Plan</li> <li>County staff time to create and oversee Climate Ambassadors program</li> </ul>
		Conduct market research to identify barriers and motivations for desired sustainable behaviours	2021 Q3	<ul style="list-style-type: none"> <li>Academic partners</li> <li>Equity and sovereignty seeking groups</li> </ul>	\$	Market research tools	Studies and action reports developed	<ul style="list-style-type: none"> <li>County staff time</li> <li>Capital costs for third party partner to conduct market research</li> </ul>
		Promote educational campaigns to encourage sustainable behaviours, such as supporting local food and farming	2021 Q3	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local environmental and conservation organizations</li> <li>Equity and sovereignty seeking groups</li> <li>Schools</li> </ul>	\$	Educational campaigns	# of campaigns	<ul style="list-style-type: none"> <li>County staff time to develop and promote engagement opportunities within the community</li> </ul>
		Promote local stories and highlight success in the community	2021 Q3	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local environmental and conservation organizations</li> <li>BIAs</li> <li>Local businesses</li> <li>Schools</li> </ul>	\$	Communications and media tools		
		Establish a multi-level Climate Ambassadors Program to facilitate the inclusion of all community members in climate action initiatives	2022 Q3	<ul style="list-style-type: none"> <li>Headwaters Communities in Action</li> <li>Local environmental and conservation organizations</li> <li>BIAs</li> <li>Local businesses</li> <li>Equity and sovereignty seeking groups</li> <li>Schools</li> </ul>	\$	Climate Ambassadors Program	# of climate ambassadors	
		Support initiatives such as composting, sewing repair, bicycle repair hubs	Ongoing	<ul style="list-style-type: none"> <li>Equity and sovereignty seeking groups</li> <li>Headwaters Communities in Action</li> <li>Local environmental and conservation organizations</li> <li>BIAs</li> <li>Local businesses</li> <li>Local repair café group</li> </ul>	\$	Community Climate Fund	# of supported initiatives	<ul style="list-style-type: none"> <li>County staff time</li> </ul>

## APPENDIX C. AVAILABLE FUNDING PROGRAMS

PROGRAM	PROGRAM FACILITATOR	DESCRIPTION
<b>Eligible Recipient: Residential Sector</b>		
<b>Home Assistance Program</b>	Save on Energy	The Save on Energy Home Assistance Program offers free energy-efficiency upgrades for income-eligible homeowners and tenants, and eligible social housing providers, as well as an in-home energy assessment to help uncover more ways to save.
<b>Home Efficiency Rebate</b>	Enbridge	Customers may be eligible for up to \$5,000 back by completing at least 2 of the following upgrades and heating home with a natural gas furnace or boiler.
<b>Local Energy Efficiency Partnerships (LEEP)</b>	Natural Resources Canada	NRCan's LEEP is designed to reduce builder time and risk in finding and trying innovations for building higher performance homes better, faster and more affordably. Builder groups use the LEEP process to work together to consider their opportunities and find innovations they believe are most feasible for the homes they build in their markets.
<b>Retrofit Program</b>	Save on Energy	Provides owners of a variety of buildings with retrofit incentives. Eligible building types include: <ul style="list-style-type: none"> <li>• Commercial spaces or buildings</li> <li>• Industrial facilities</li> <li>• Institutional buildings</li> <li>• Multi-family buildings, such as apartments (including low-income and social housing) or condominiums</li> <li>• Agricultural facilities</li> </ul>
<b>Savings by Design for Residential Builders</b>	Enbridge	Residential home builders can receive free access to green building experts and incentives to develop and build sustainable homes. This Program offers residential builders expert guidance worth up to \$25,000 and energy-saving rewards of up to \$100,000 to design and build homes that achieve 25 percent better energy performance than the 2012 Ontario Building Code.
<b>Smart Thermostats Program</b>	Enbridge	Eligible Enbridge Gas residential customers will receive a \$100 bill credit applied to their Enbridge Gas account upon the purchase and installation of a qualifying smart thermostat (including ENERGY STAR certified models).

APPENDIX C. AVAILABLE FUNDING PROGRAMS

PROGRAM	PROGRAM FACILITATOR	DESCRIPTION
<b>Eligible Recipient: Commercial Sector</b>		
<b>Commercial Custom Retrofit Program</b>	Enbridge	An Enbridge Gas Energy Solutions Advisor will work with customers, free of charge, to identify energy efficiency opportunities that save natural gas and in return save customers money. Enbridge gas will cover up to 50% of the project cost.
<b>Comprehensive Energy Management (CEM) Program</b>	Enbridge	A dedicated Enbridge Gas Energy Solutions Advisors (ESA) will work with customers to identify key energy drivers and identify areas of improvement and set targets to: reduce energy consumption and emissions; improve process efficiencies; save money across the organization; empower and engage employees to work together towards a common energy saving goal.
<b>Energy Manager Program</b>	Save on Energy	<p>If approved for the Energy Manager program, the IESO will provide an upfront payment of \$40,000 annually upon the hiring of an energy manager, with an annual total funding cap of \$150,000. The energy manager is required to meet certain pay-for-performance criteria, which includes achieving a minimum energy savings of 1,000 MWh per year, with \$40 paid for every megawatt hour saved above 1,000 MWh.</p> <p>Energy managers can reach targets through projects supported by other Save on Energy incentives, but a minimum of 10% of energy savings must come from projects that have not received any incentive.</p>
<b>Energy Performance Program</b>	Save on Energy	<p>The program is designed with a pay-for-performance model and encourages whole-building energy performance improvements. Incentives are provided at four cents per kilowatt hour (\$0.04/kWh) of savings per year, for up to two and a half years.</p> <p>In addition to the annual performance payments, customers are entitled to receive a Modelling Incentive of \$1,500 for each enrolled Facility.</p>
<b>Retrofit Program</b>	Save on Energy	<p>Provides owners of a variety of buildings with retrofit incentives. Eligible building types include:</p> <ul style="list-style-type: none"> <li>• Commercial spaces or buildings</li> <li>• Industrial facilities</li> <li>• Institutional buildings</li> <li>• Multi-family buildings, such as apartments (including low-income and social housing) or condominiums</li> <li>• Agricultural facilities</li> </ul>

APPENDIX C. AVAILABLE FUNDING PROGRAMS

PROGRAM	PROGRAM FACILITATOR	DESCRIPTION
RunitRight Program (Commercial/Industrial)	Enbridge	Enbridge Gas' RunitRight program helps customers to enhance existing building systems and operations to find energy efficiencies. RunitRight will analyze buildings energy performance in three simple steps to identify, implement and monitor low- and no-cost operational improvements that can lead up to five per cent energy savings.
Savings by Design for Commercial Builders	Enbridge	This Program supports commercial builders with expertise and performance incentives by designing sustainability into new commercial construction projects. It provides up to \$60,000 in incentives including an integrated design process.
Small Business Lighting Program	Save on Energy	Program provides up to \$2,000 in incentives towards eligible energy-efficient lighting upgrades.
Climate Action Initiative Fund (SME Project Stream)	Government of Canada	Provide support to small and medium-sized enterprises to undertake retrofit projects in sectors such as building, transportation, industry, waste, agriculture, and more.
Climate Action Initiative Fund: Rebate Stream	Government of Canada	Provides support to small and medium-sized enterprises and not-for-profit organizations in the purchase of ENERGY STAR certified equipment, such as commercial kitchen appliances, water heaters, etc.
<b>Eligible Recipient: Institutional Sector</b>		
Comprehensive Energy Management (CEM) Program	Enbridge	A dedicated Enbridge Gas Energy Solutions Advisors (ESA) will work with customers to identify key energy drivers and identify areas of improvement and set targets to: reduce energy consumption and emissions; improve process efficiencies; save money across the organization; empower and engage employees to work together towards a common energy saving goal.
Energy Manager Program	Save on Energy	<p>If approved for the Energy Manager program, the IESO will provide an upfront payment of \$40,000 annually upon the hiring of an energy manager, with an annual total funding cap of \$150,000. The energy manager is required to meet certain pay-for-performance criteria, which includes achieving a minimum energy savings of 1,000 MWh per year, with \$40 paid for every megawatt hour saved above 1,000 MWh.</p> <p>Energy managers can reach their targets through projects supported by other Save on Energy incentives, but a minimum of 10 per cent of energy savings must come from projects that have not received any incentive.</p>

## APPENDIX C. AVAILABLE FUNDING PROGRAMS

PROGRAM	PROGRAM FACILITATOR	DESCRIPTION
Retrofit Program	Save on Energy	<p>Provides owners of a variety of buildings with retrofit incentives. Eligible building types include:</p> <ul style="list-style-type: none"> <li>• Commercial spaces or buildings</li> <li>• Industrial facilities</li> <li>• Institutional buildings</li> <li>• Multi-family buildings, such as apartments (including low-income and social housing) or condominiums</li> <li>• Agricultural facilities</li> </ul>
Climate Action Initiative Fund: MUSH Retrofit Stream	Government of Canada	Provides support to municipalities, universities, colleges, schools, and hospitals to undertake energy saving and energy efficiency projects.
<b>Eligible Recipient: Industrial Sector</b>		
Comprehensive Energy Management (CEM) Program	Enbridge	A dedicated Enbridge Gas Energy Solutions Advisors (ESA) will work with customers to identify key energy drivers and identify areas of improvement and set targets to: reduce energy consumption and emissions; improve process efficiencies; save money across the organization; empower and engage employees to work together towards a common energy saving goal.
Energy Manager Program	Save on Energy	<p>If approved for the Energy Manager program, the IESO will provide an upfront payment of \$40,000 annually upon the hiring of an energy manager, with an annual total funding cap of \$150,000. The energy manager is required to meet certain pay-for-performance criteria, which includes achieving a minimum energy savings of 1,000 MWh per year, with \$40 paid for every megawatt hour saved above 1,000 MWh.</p> <p>Energy managers can reach their targets through projects supported by other Save on Energy incentives, but a minimum of 10 per cent of energy savings must come from projects that have not received any incentive.</p>
Greenhouse Program (Industrial)	Enbridge	The greenhouse program provides free services and financial incentives for the assessment and implementation of energy efficiency initiatives.



## APPENDIX C. AVAILABLE FUNDING PROGRAMS

<b>Industrial Custom Solutions and Incentives Program</b>	<b>Enbridge</b>	<p>A dedicated Enbridge Gas Energy Solutions Advisor (ESA) will work with customers to develop a solution that meets customers unique energy, budget and cost savings objectives. Customers can also qualify for a range of incentives for audits and implementing energy efficiency projects.</p> <p><b>Custom solutions focus on five core areas:</b></p> <ol style="list-style-type: none"> <li>1. Knowledge development</li> <li>2. Opportunity identification</li> <li>3. Measurement</li> <li>4. Engineering analysis</li> <li>5. Action &amp; implementation</li> </ol>
<b>Retrofit Program</b>	<b>Save on Energy</b>	<p>Provides owners of a variety of buildings with retrofit incentives. Eligible building types include:</p> <ul style="list-style-type: none"> <li>• Commercial spaces or buildings</li> <li>• Industrial facilities</li> <li>• Institutional buildings</li> <li>• Multi-family buildings, such as apartments (including low-income and social housing) or condominiums</li> <li>• Agricultural facilities</li> </ul>
<b>Process and Systems Upgrades Program</b>	<b>Save on Energy</b>	<p>Incentives for engineering feasibility studies are available once program participant identifies opportunities and determine energy savings and project costs. The study will determine the base case energy usage of current system, and will propose energy-saving opportunities or technologies to implement.</p> <p>Additionally, the study will identify project incentive opportunities that might exist for the system, help build a capital investment business case for the process efficiency improvements and support a Process &amp; Systems Project Incentive.</p>
<b>RunitRight Program (Commercial/Industrial)</b>	<b>Enbridge</b>	<p>Enbridge Gas' RunitRight program helps customers to enhance existing building systems and operations to find energy efficiencies. RunitRight will analyze buildings energy performance in three simple steps to identify, implement and monitor low- and no-cost operational improvements that can lead up to five per cent energy savings.</p>
<b>Climate Action Initiative Fund (SME Project Stream)</b>	<b>Government of Canada</b>	<p>Provide support to small and medium-sized enterprises to undertake retrofit projects in sectors such as building, transportation, industry, waste, agriculture, and more.</p>

## APPENDIX C. AVAILABLE FUNDING PROGRAMS

PROGRAM	PROGRAM FACILITATOR	DESCRIPTION
<b>Eligible Recipient: Agriculture</b>		
<b>Retrofit Program</b>	<b>Save on Energy</b>	<p>Provides owners of a variety of buildings with retrofit incentives. Eligible building types include:</p> <ul style="list-style-type: none"> <li>• Commercial spaces or buildings</li> <li>• Industrial facilities</li> <li>• Institutional buildings</li> <li>• Multi-family buildings, such as apartments (including low-income and social housing) or condominiums</li> <li>• Agricultural facilities</li> </ul>
<b>Climate Action Initiative Fund (SME Project Stream)</b>	<b>Government of Canada</b>	Provide support to small and medium-sized enterprises to undertake retrofit projects in sectors such as building, transportation, industry, waste, agriculture, and more.
<b>Eligible Recipient: Transportation Sector</b>		
<b>Climate Action Initiative Fund (SME Project Stream)</b>	<b>Government of Canada</b>	Provide support to small and medium-sized enterprises to undertake retrofit projects in sectors such as building, transportation, industry, waste, agriculture, and more.
<b>Used Electric Vehicle Incentive Program</b>	<b>Plug'n Drive and Clean Air Partnership</b>	Plug'n Drive, in collaboration with Clean Air Partnership, offers a \$1,000 incentive for used electric vehicle purchases.
<b>Electric Vehicle Incentive</b>	<b>Government of Canada</b>	<p>As of May 1, 2019, all Canadians qualify for an incentive of up to \$5,000 off the purchase of a new fully electric or plug-in hybrid electric vehicle.</p> <p>Business owners qualify for a 100% tax write off for zero-emission vehicles for eligible zero-emission vehicles</p>