



HALTON REGION

# Corporate Climate Action Plan





## Message from Halton Regional Chair Gary Carr

On behalf on Regional Council, I am proud to present our Corporate Climate Change Plan. This plan is a significant milestone in our climate response: it sets a clear target and outlines a path to accelerate our collective action.

Halton Region's commitment to addressing climate change has always been a top priority and integrated in our strategic planning and decision-making processes. In September 2019, Regional Council joined other municipalities in unanimously declaring a climate emergency and climate change is a central theme in our 2023-2026 Strategic Business Plan.

Reducing greenhouse gases and achieving measurable outcomes is most effective through collaboration and partnership with the community. This plan highlights the shared commitment across our entire organization, outlining how Regional departments can work together to implement impactful actions and achieve our goals.

We will monitor our progress together and report on a regular basis to make sure we are doing what we set out to do. I would like thank Halton's Climate Action Response Team and everyone who contributed their expertise and time to this plan. Your work will keep our community healthy, keep our infrastructure resilient and ensure future generations can enjoy this great place to live, work, raise a family and retire.

Sincerely,

*Gary Carr*  
*Halton Regional Chair*

## Indigenous Land Acknowledgment

Boozhoo, She:kon , Tanshi, Greetings!

Halton Region acknowledges the Treaty Lands of the Mississaugas of the Credit First Nation as well as the Traditional Territory of the Haudenosaunee, Huron-Wendat and Anishinabek on which we gather.

In stewardship with Mother Earth and the enduring Indigenous presence connected to these lands we acknowledge the Indigenous Nations of the past, present and future.

In the spirit of ally-ship and mutual respect, we will take the path of Truth and Reconciliation to create change, awareness and equity as we strive to elevate the collective consciousness of society.

Miigwetch, Nia:wen, Marsi, Thank you

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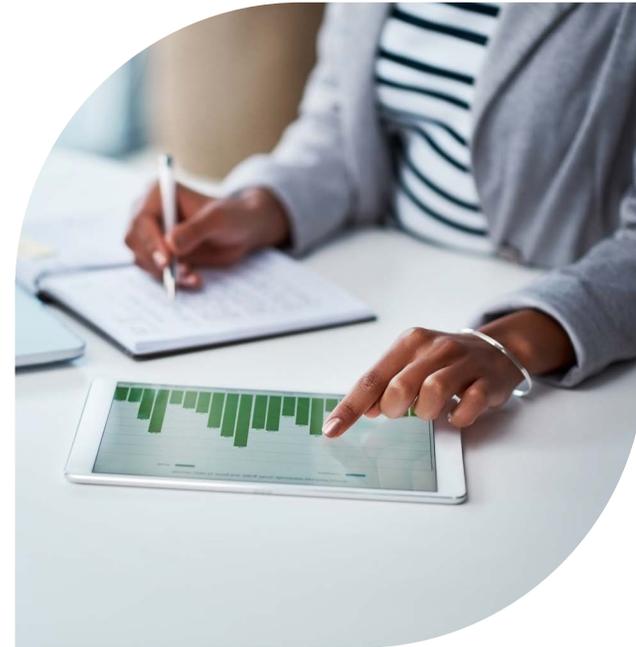


# Halton Region's Plan and its Purpose

On September 11, 2019, Halton Regional Council unanimously approved a motion to join municipalities across Canada in declaring a climate emergency, deepening Halton's commitment to protecting and improving the resilience of the economy, environment and community along with acknowledging the impact that climate change will have on the future.

The Corporate Climate Action Plan has been prepared to ensure Halton Region is responding to climate change and accompanies report number CA-16-23. Halton Region acknowledges its role to support the mitigation and adaptation required to address the climate emergency unanimously declared by Council. Halton Region understands the need to reduce its corporate greenhouse gas (GHG) emissions, to create resilient infrastructure and services to respond to the impacts of climate change and its role to support collective action with partners, stakeholders and community members.

Halton is not immune to the impacts of climate change. The region has already witnessed many severe weather events such as floods, high winds, tornadoes, ice storms and extreme heat and cold days. This will continue to pose serious risks to the Region's infrastructure and resources, and threaten the Halton communities' health, safety and prosperity. It has never been more clear that to limit global warming and prevent the most catastrophic impacts of climate change, we need to collectively do our part to accelerate the Region's climate transition.





To help achieve this, Halton's 2023-2026 Strategic Business Plan identifies climate change and the environment as one of its strategic themes. The goals, actions and measures under this theme align with the United Nations Sustainable Development Goals. The Sustainable Development Goals are a collection of 17 goals that aim to address global challenges and set an ambitious target to build a more sustainable, safe and prosperous future for all. The alignment of the Sustainable Development Goals to the actions in this plan are identified in Appendix A. The Corporate Climate Action Plan has four themes and recommended actions that provide additional direction to focus the efforts of the Region that align with the priorities in the 2023-2026 Strategic Business Plan.



The need for accelerated action is clear. Halton Region is committed to addressing climate change and transitioning to a resilient, low-carbon future. The Region has listened and heard the Halton community and its partners and is delivering an ambitious plan to achieve its commitments. Local solutions, supporting collective action, and deepening existing partnerships, and brokering new ones to advance its climate response will be critical. Significant achievements have already been accomplished with the help of all levels of government, First Nations, Indigenous communities, partners, local businesses, and educational institutions. The Region is optimistic as it faces the global challenge of climate change and this plan helps utilize resources and expertise to achieve its climate transition ensuring a strong, healthy, and resilient organization that is equitable, diverse, and inclusive.

## HALTON REGION'S CORPORATE VISION



A welcoming and inclusive community that is sustainable, economically strong, equitable and safe.

## HALTON REGION'S CORPORATE CLIMATE MISSION



A resilient corporation that achieves net zero by 2045 that provides a safe and healthy community for all Halton residents now and into the future.

## GOALS



- Achieve the Milestones of the Partners for Climate Protection (PCP) Program
- Reduce Greenhouse Gas (GHG) Emissions
- Increase Climate Resiliency and Preparedness

## THEMES



Climate Ready



Climate Lens



Climate Finance



Engagement and Advocacy

## ACTIONS



### Mitigation

- Buildings
- Transportation
- Energy Conservation and Sources
- Waste Management
- Water and Wastewater Treatment Plants and Facilities

### Both

- Finance
- Asset Management
- Climate Change Considerations
- Partnerships
- Climate Literacy
- Natural Environment
- Water Conservation

### Adaptation

- Emergency preparedness
- Safeguarding our Corporate Assets & Service Deliverables
- Human Health
- Flooding Protection
- Climate Migration

## IMPLEMENTATION



- Reporting and Transparency
- Capacity Building
- Brokering Partnerships
- Readiness and Timing

# Climate Change Impacts, Risks and Opportunities in Halton

Halton is experiencing the impacts of climate change firsthand. Extreme precipitation has caused an increase in flood events leading to significant damage to properties and infrastructure. Severe ice storms and wind events have also increased the risk of both infrastructure and property damage. Rising temperatures are directly affecting health through heat stress impacts and indirectly by increasing the risk of exposure to vector borne diseases such as Lyme disease and West Nile virus. Halton's local agricultural community has been sharing their challenges with drought and flooding, and we are seeing a mismatching of ecological timings affecting numerous native species including damages to urban forests.

These climate impacts have direct results on both risks and opportunities to Regional programs and services. It is important to effectively respond to the following potential impacts:

- changing policies and regulations, such as carbon pricing and increased regulations around greenhouse gas (GHG) emissions;
- impacts to the Region's infrastructure;
- escalating energy costs; and
- potential risks around litigation for failures to mitigate or adapt.

An effective and proactive response will help eliminate these risks and provide opportunities for increased efficiency, cost savings and additional access to funding.

## Climate Change Risks in Halton



Freezing Rain/  
Ice Storms



Flood – Riverine



Tornadoes



Extreme  
Temperatures –  
Cold Waves, Heat Waves



Flood – Urban



Human Health  
Epidemics



Critical Infrastructure  
Failure – Watermain  
Network, Pumping  
Stations



Windstorms



Energy Emergency  
(Supply) – Power  
Outages



Financial Risks



Air Quality

**Please see Appendix D**

Adapted from the Region's Hazard Identification and Risk Assessment (HIRA)

## Climate Change Opportunities in Halton Region



Align with [Moody's](#) best practice policies to maintain the Region's AAA Credit rating. This will allow the Region to access the best possible capital financing rates and minimize long-term infrastructure and capital financing costs.



Explore opportunities to optimize buildings and fleet operations.



Increased resiliency of corporate assets.



Cost savings through shifting to low emission energy sources.



Attracting businesses and investors through sustainable-finance opportunities and emerging climate-related markets.



Increased partnership opportunities between Regional departments, different levels of government, community groups, organizations and businesses.



Access to climate financing opportunities including grants and funding programs.



Advocate for a safe and healthy community for all Halton residents now and into the future.



Demonstrating climate leadership and advancing climate advocacy.



Integrate Indigenous knowledge and Equity, Diversity and Inclusion (EDI) practices to shape and advance climate solutions.



Advance renewable energy sources and improved methods of energy management to sustain reliable energy sources.



Increasing the adaptive capacity of those who may disproportionately feel the effects of climate change.

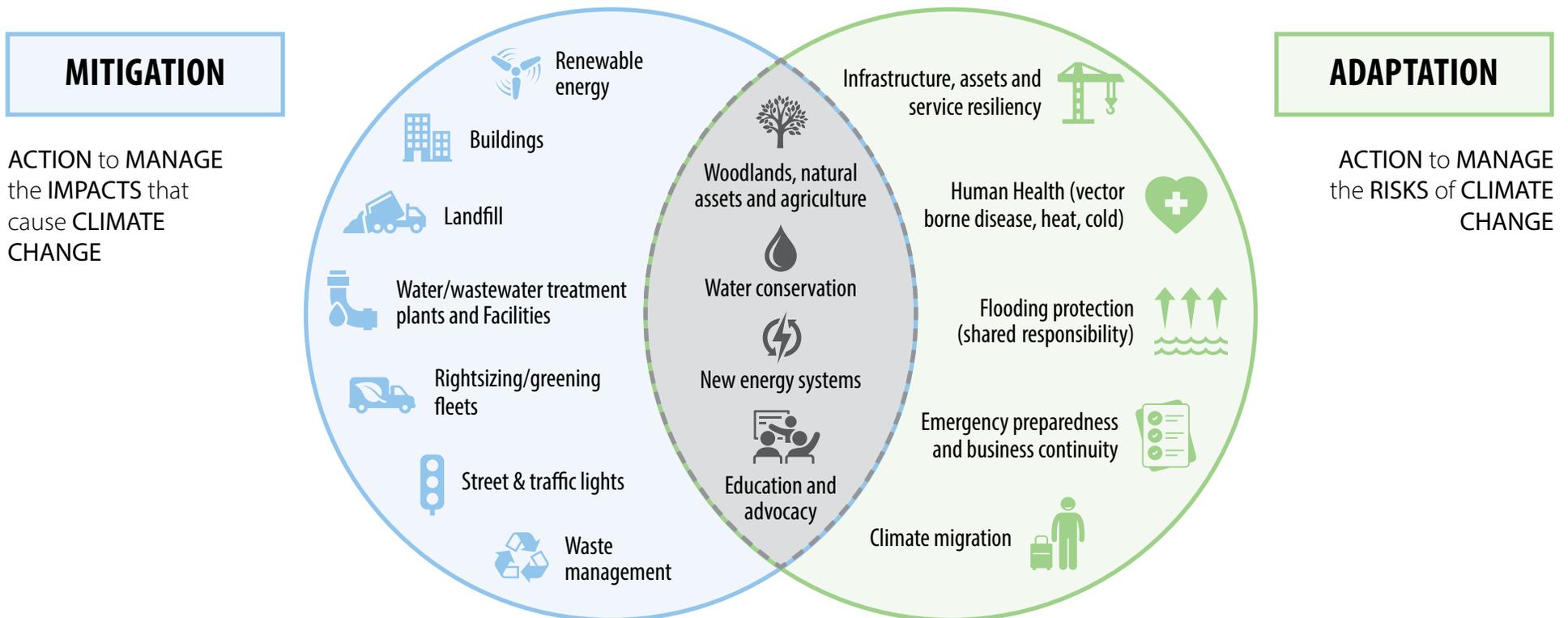
**Please see Appendix D**

# Mitigation and Adaptation

To manage the risk and to propel the opportunities outlined in the diagrams above, Halton Region must take a holistic approach when advancing its climate change response. It's important to address factors contributing to climate change as well as preparing for the impacts, minimizing risk and increasing resiliency. This plan addresses both. A primary cause of climate change is greenhouse gas (GHG) emissions, mainly from the burning of fossil fuels for electricity, heat, and transportation.

**Mitigation** refers to the efforts to reduce, prevent or absorb greenhouse gas (GHG) emissions while preventing further damage from occurring. Mitigation is critical to avoiding more catastrophic climate impacts. In the Halton Community, efforts need to focus on the highest sources of greenhouse gas (GHG) emissions: buildings and transportation ([Halton Region 2019 Community Greenhouse Gas Emissions Inventory](#)).

**Adaptation** refers to the preparation, management and ability to respond proactively to actual or expected climate events. In Halton, climate variability and extreme weather frequency have increased the number of climate risks for the region, including floods, droughts, high winds, and storms. Preparing the Region's services, programs and infrastructure to navigate these risks is vital.



# Halton Region's Response

## 2016–2019

- Member of Great Lakes St. Lawrence Cities Initiative (2016)
- Green Building Policy for New Construction and Renovation (2016)
- Conservation and Demand Management Energy Plan (2019–2023)
- Declaration of Climate Emergency (2019)

## 1995–2010

- First Regional Official Plan (1995) and State of the Environment Report (1996)
- Sustainable Halton (2006)
- Partners for Climate Protection (PCP) Program (2007)
- Halton Region Strategic Plan commits to environmental leadership (2007–2010)
- Inter-municipality Advisory Committee on Sustainability (2009)

## 2020–2023

- Climate Change Discussion Paper (2020)
- Halton Region Climate Change Response Update Report (2021)
- Partnership with Halton Environmental Network to advance Community Climate Plan (2021)
- Launched Climate Action Response Team (CART) to advance development of Corporate Climate Action Plan (2022)
- Completed Milestones 1 and 2 for the Partners for Climate Protection (PCP) Program
- Halton Region's Solid Waste Management Strategy (2022)

## 2011–2015

- Corporate Sustainability Plan (2010)
- Corporate Energy Management Plan (2014–2019)
- Basement Flooding Mitigation Program (2015)
- Halton Community Housing Energy Management Plan (2015)

## Partners for Climate Protection (PCP) Program

Since 2014, Halton Region has participated in the Partners for Climate Protection (PCP) Program, an initiative from the Federation of Canadian Municipalities (FCM). The Partners for Climate Protection Program is made up of more than 500 members from across Canada. The program guides municipalities through a Milestone Framework to help them take action on climate change.

In 2014, Halton Region achieved its first Milestone by establishing a baseline of its greenhouse gas (GHG) emissions. Since achieving this milestone, the Region has updated its emissions baseline year to 2019. Currently, Regional staff are advancing milestones 2 and 3—setting a corporate greenhouse gas (GHG) target and developing a corporate climate plan—which will be achieved with Regional Council endorsement of the corporate GHG emissions reduction target and this Corporate Climate Action Plan.



Source: [Partners for Climate Protection \(PCP\) program](#)

# Climate Action Response Team (CART)

In order to advance Milestones 2 and 3 and support the Region's climate response, Halton Region established the Climate Action Response Team in 2022. The Climate Action Response Team is comprised of departments and divisions within the Region that have a connection to mitigation or adaptation actions. To address this first phase of work, the Climate Action Response Team collectively determined four themes, recommended potential actions, and a target to propel Regional climate results as presented in this plan.

The Climate Action Response Team will continue to support advancing Milestones 4 and 5 (implementation and reporting on progress of the Corporate Climate Action Plan) of the Partners for Climate Protection (PCP) program through the ongoing review of Regional services, operations and greenhouse gas (GHG) emissions.

## Climate Change Response & Sustainability Team

The Climate Change Response and Sustainability Team will facilitate and coordinate the Climate Action Response Team. They will track, measure, and report on the progress of the Partners for Climate Protection (PCP) Program.

### Climate Action Response Team (CART)

- CAO's Office
- Finance
- Public Works
- Corporate Services
- Health
- Social & Community Services

Purpose: to develop and implement a strategy and processes for Regional staff to effectively engage in Climate Change and Sustainability response. This includes supporting the Corporate Greenhouse Gas (GHG) Emissions Target Setting and the development of the Corporate Climate Action Plan, allowing the Region to achieve Milestones 2 and 3 of the Partners for Climate Protection (PCP) program.

### Working Committee

Supports the design and development of the Corporate Target Setting, and the Corporate Climate Action Plan.

### Steering Committee

Reviews the work of the Working Committee confirming actions.

### Climate Action Response Team (CART) - Implementation Team

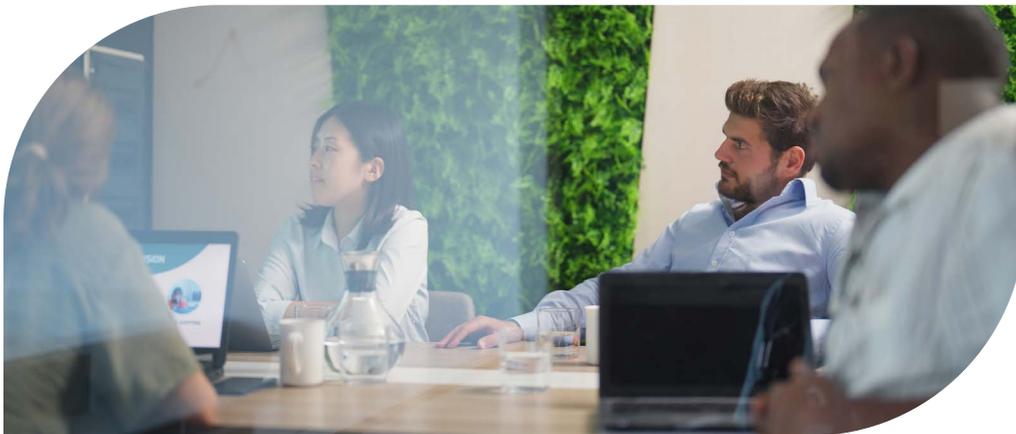
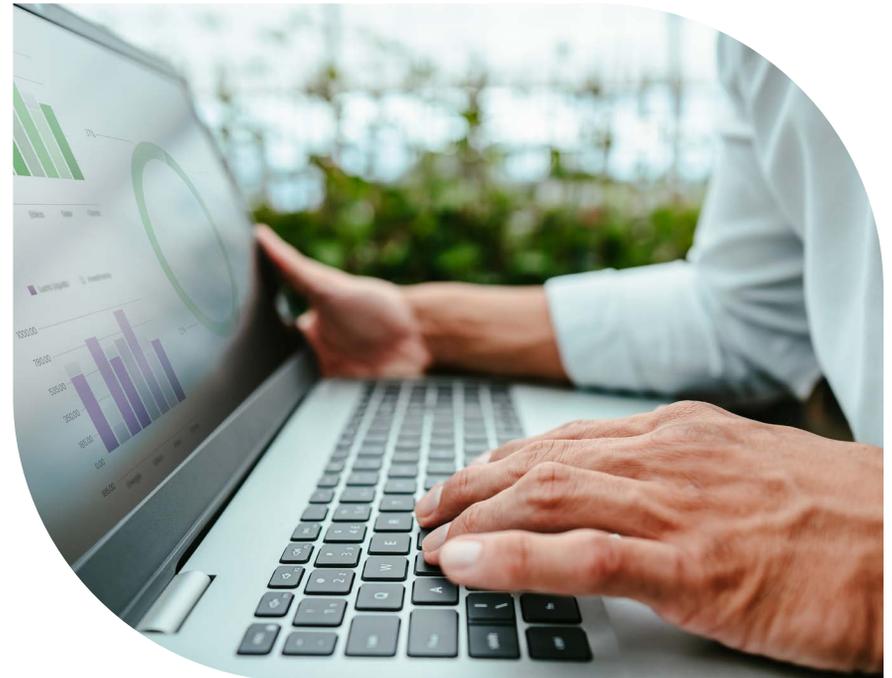


## GHG Emissions and Targets

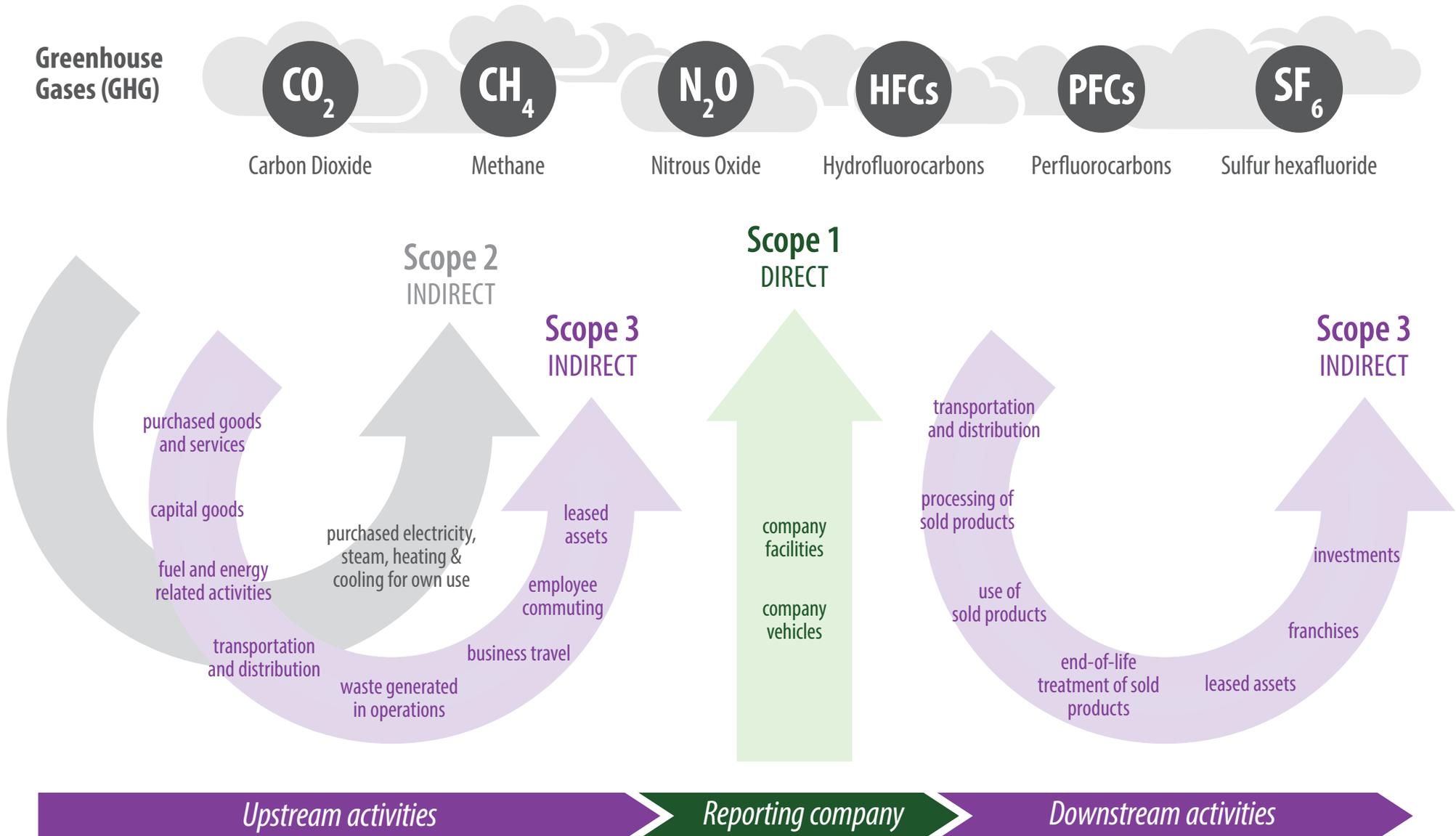
Establishing an emissions baseline is important in developing an approach to meet emissions reduction targets and monitoring progress. The year 2019 is used as the baseline reporting year and annual progress will be compared to the greenhouse gas (GHG) emissions data from this year. 2019 was chosen as the baseline year for the Region's emissions inventory due to several factors. In 2014, Ontario eliminated coal-fired plants from the provincial energy grid, significantly reducing the amount of greenhouse gas (GHG) emissions from electricity usage. Using a baseline date after this time ensures that reductions from this change are not included and corporate efforts are appropriately reflected. Data collection plays a primary role in the decision as well. Significant amounts of time are needed to collect the inputs needed to calculate emissions. Furthermore, the impacts of the COVID-19 pandemic would have impacted corporate greenhouse gas (GHG) emissions and would not truly represent the Region's operations and services.



An inventory of greenhouse gas (GHG) emissions produced by Halton Region in 2019 can be found on page 16, which illustrates the distribution among the utility, fuel and waste corporate sectors. The data from 2019 shows that the Region's total corporate greenhouse gas (GHG) emissions were 18,152 tonnes of carbon dioxide equivalent (CO<sub>2</sub>e). While the protocol outlined in the Partners for Climate Protection (PCP) was used to determine this inventory, the Region acknowledges that these emissions do not fully represent all the contributors of greenhouse gas (GHG) emissions. While it is known that there are other sources of emissions, at this time the Partners for Climate Protection (PCP) program does not include these in their protocols and the Region's capacity for measurement of these emissions is still under development. This Corporate Climate Action Plan and our current climate response will measure and track Scope 1 and 2 greenhouse gas (GHG) emissions only as they relate to waste, fuel and the use of natural gas and energy. However, emissions from corporate sectors such as wastewater treatment and embodied carbon were not considered, nor did the Region apply any offsets or sequestration measures. As the Region's work progresses, emissions reporting mechanisms will improve, and progress will be communicated through future iterations of climate action plans and reports.



# Overview of Greenhouse Gas (GHG) Protocol scopes and emissions across the value chain



Adapted from: [Corporate-Value-Chain-Accounting-Reporting-Standard\\_041613\\_2.pdf \(ghgprotocol.org\)](#), page 7

## 2019 Corporate Greenhouse Gas (GHG) Emissions Inventory

Corporate Sectors	Greenhouse Gas (GHG) Emissions (CO <sub>2</sub> e tonnes)
Buildings	4,751
Streetlights & Traffic Lights	214
Water & Wastewater	5,871
Vehicle (Fleet)	6,286
Waste	1,030
<b>Total Corporate Greenhouse Gas (GHG) Footprint</b>	<b>18,152</b>

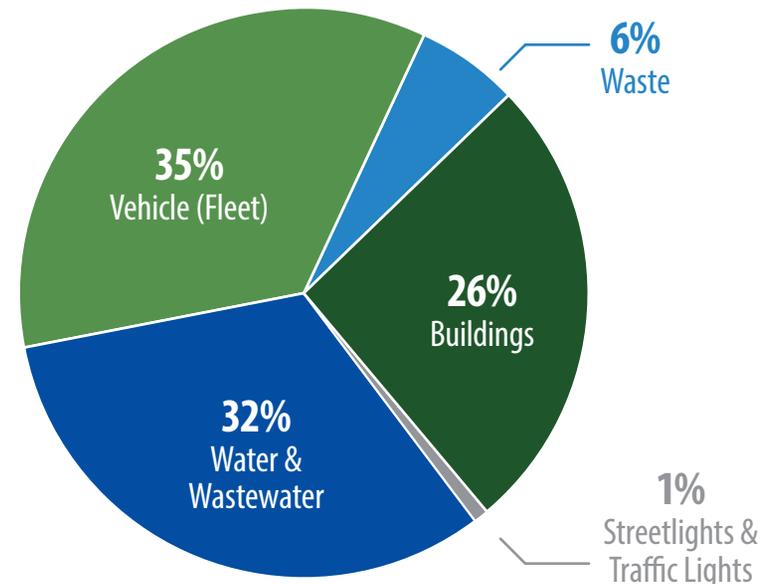
\* the data highlighted above only encompasses emissions for the sectors listed above. A detailed definition of the emissions associated with each sector listed can be found in the Appendix B. This data represents raw emissions data without the adjustment of certain variables, such as weather. These emissions may change overtime based on factors out of the Regions control, such as the carbon intensity of the electricity grid. Please note as information, technologies, and data becomes more available, the reporting of greenhouse gas (GHG) emissions will be represented in greater detail with the inclusion of additional sources.

The vehicle (fleet) sector was the largest source of greenhouse gas (GHG) emissions for Halton Region in 2019, accounting for approximately 35 per cent of total annual emissions. Fleet is followed by the water & wastewater, and buildings sector, which generate approximately 32 percent and 26 percent, respectively, from combined electricity and natural gas usage.

Based on the 2019 baseline data, background information assembled by the Climate Response and Sustainability Team (CCRST), and examples from other municipalities, the Climate Action Response Team (CART) recommended the Region should implement a target of achieving **net zero by 2045**. Senior Leadership has approved this target and it will be presented to Regional Council in fall 2023 for endorsement.

While this recommendation aligns with federal targets and current practice, there are many factors that may influence this work. Staff will continue to monitor progress, external advances, as well as new and emerging technologies to adapt this target as required to meet corporate climate ambitions.

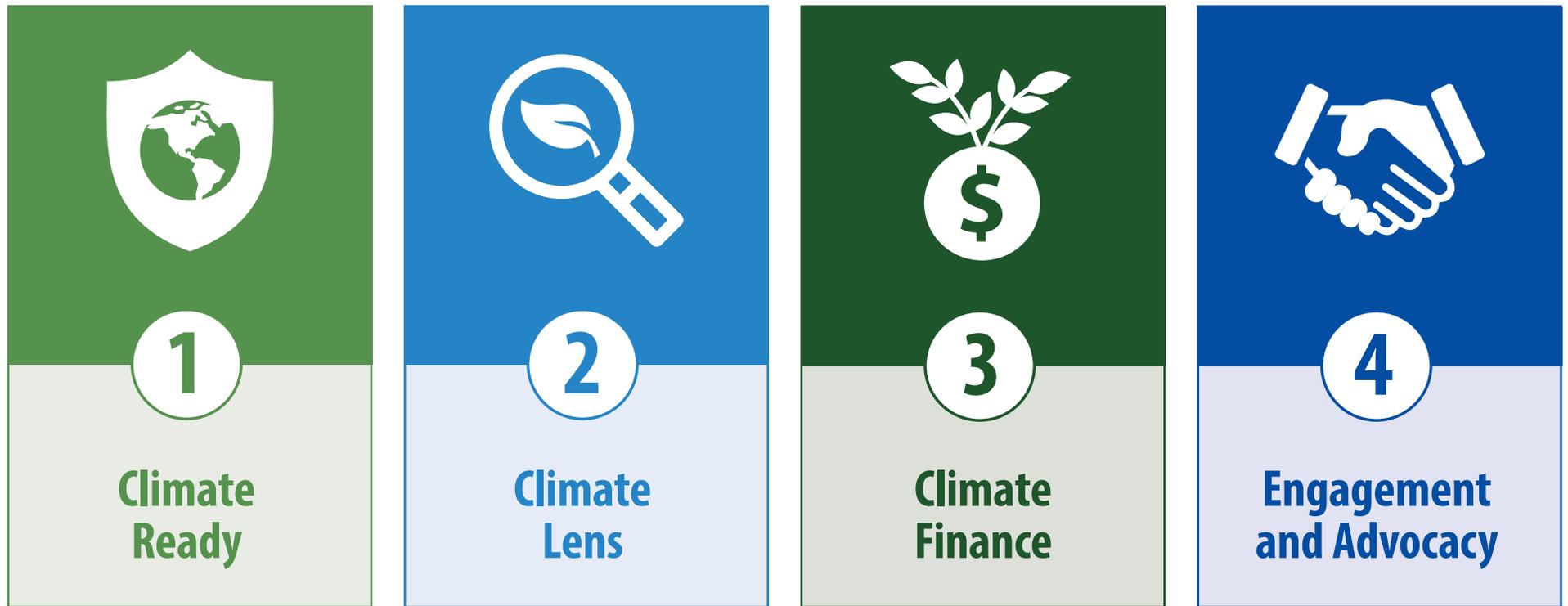
## Halton Region Corporate Emissions Breakdown



# Halton Region's Themes

The 2023-2026 Climate Action Plan is the foundation that guides Halton's work to accelerate its climate response. This Plan will act as a framework for climate action for the Region's corporate activities and is flexible to ensure it is responsive to technical advancements and a shifting regulatory environment. It allows the Region to adapt to the changing climate, establish a pathway for greenhouse gas (GHG) emissions reduction efforts, and will further support Regional partners and partnerships.

This Plan includes four themes to support the Region's climate change actions:



Each theme includes Halton Region's commitment to advance climate action. The breadth of the work required on climate change extends beyond the outlines of this plan. Currently, these themes and actions are identified as the most critical and necessary measures for success.



## Theme 1: Climate Ready

Climate Ready allows the Region to mitigate and adapt to the impacts of climate change, safeguarding corporate assets and service deliverables. This theme advances greenhouse gas (GHG) emissions reduction efforts and ensures that the Region is planning, preparing and poised to respond to future climate impacts. To ensure a holistic approach to address the complexity of climate change, both mitigation and adaptation have been integrated within this theme. This will ensure that the Region is ready to continue to serve the Halton community and support climate transitions.

### RECOMMENDED ACTIONS:



MITIGATION



ADAPTATION



BOTH

ACTIONS	PURPOSE	LEAD DEPARTMENT/ DIVISION	MITIGATION, ADAPTATION OR BOTH
Incorporate climate change considerations into asset management planning	Increase the resiliency of corporate assets	Public Works (PW)	
Optimize building efficiencies	Reduce energy usage across corporate facilities	Corporate Services	
Advance greenhouse gas (GHG) emissions inventory and reduction efforts	Move forward with Council direction, the Partners for Climate Protection (PCP) program, and Strategic Business Plan	Climate Change Response and Sustainability Team (CCRST)	
Explore opportunities for greater efficiencies of water & wastewater treatment plants, facilities, and landfill site buildings and processes	Explore opportunities for greater efficiencies of wastewater/ water treatment plants, facilities, and landfill site	Public Works (PW)	
Measuring, tracking, monitoring, and mitigating greenhouse gas (GHG) emissions	Ensure the Region is making progress with its greenhouse gas (GHG) emissions reduction efforts	Climate Change Response and Sustainability Team (CCRST)	
Electrify (rightsizing) corporate fleet	Reduce greenhouse gas (GHG) emissions as a result of fuel usage	Corporate Services	

ACTIONS	PURPOSE	LEAD DEPARTMENT/ DIVISION	MITIGATION, ADAPTATION OR BOTH
Increase internal electric vehicle (EV) Infrastructure	Support the switch to electric vehicles (EV) for the Region's corporate fleet	Corporate Services	
Advance a Regional electric vehicles (EV) strategy	Increase electric vehicles (EV) uptake across the Halton Community	Climate Change Response and Sustainability Team (CCRST)	
Conclude a renewable energy generation study	Explore reducing the Region's reliance on natural gas and electricity grids and ensure resiliency to climate impacts	Public Works (PW)	
Establish climate change and health vulnerability assessments	Identify the top climate risks for Halton Region and the Halton Community	Health	
Ensure Regional infrastructure and assets are resilient	Ensure that corporate services and assets can serve the Halton Community during extreme weather events	Public Works (PW)	
Update Regional Emergency Response Plan	Increase the Region's ability to respond to extreme weather events	Corporate Services	
Update Emergency Preparedness Actions	Maintain business continuity for Halton Region to ensure services and operations are functional during extreme weather events	Corporate Services	
Explore circular economy initiatives for applicability to the Region's services and operations	Increase efficiency and reduce waste	Public Works (PW)	
Fuel switching	Decrease greenhouse gas (GHG) emissions	Corporate Services	
Update Regional Community Emergency Notification System	Ensure Halton residents are notified of imminent or ongoing extreme weather events	Corporate Services	

## TO ASSESS PROGRESS THE REGION WILL:

- Work to advance asset management planning to ensure climate change considerations are tracked and measured.
- Utilize its baseline and continuously measure emissions, working together to advance solutions to reduce these emissions in a fiscal and prudent manner. The Region is positioned to take advantage of new opportunities presented by decarbonization technologies and advancements and the Region supports a managed transition that can be tracked, measured and reported. This will be done using the potential pathways to reduce greenhouse gas (GHG) emissions as determined by staff.
- Explore the rightsizing of the corporate fleet, working with partner agencies to determine the best next steps.
- Share outcomes from studies and strategies and, when appropriate, work with partners to advance shared measurements, common agendas and communicate outcomes.
- Share outcomes and learnings from our health vulnerability assessments. The Region will work with its partners to advance this work in a cohesive and collective manner.
- Report on our updated Emergency Response Plan and Emergency Preparedness Actions.



## THE REGION'S COMMITMENT:

The Region acknowledges that Regional municipal assets and service deliverables must be prepared to deal with the impacts of climate change. The Region will be responsive and reduce corporate emissions as per Council direction, the Partners for Climate Protection (PCP) program and the Strategic Business Plan. The Region will measure what matters and reduce emissions in the most efficient and effective way. The Region will strive to learn, adopt best practices and share results with the Halton community. Significantly decarbonizing Regional services is essential to meeting corporate targets. This work will support the Halton community to be prepared for the changing climate and highlight regional leadership that advances collective synergies and opportunities.



## Theme 2: Climate Lens

A climate lens provides a pathway to integrate climate change considerations, impacts, risks, and vulnerabilities into all decisions, reports, policies, and initiatives. By operationalizing climate change into processes, the Region will be poised to create better climate solutions and encourage behavioral change across the organization. The Region's interpretation of a climate lens builds upon this definition by recognizing that inequalities exist in climate action. The inclusion of Equity, Diversity, and Inclusion (EDI) efforts and the incorporation of Indigenous Knowledge will elevate a deeper understanding of climate change across Regional staff, departments and divisions.

### RECOMMENDED ACTIONS:

**M** MITIGATION    **A** ADAPTATION    **B** BOTH

ACTIONS	PURPOSE	LEAD DEPARTMENT/ DIVISION	MITIGATION, ADAPTATION OR BOTH
Explore establishing Climate Considerations into all Council Reports	Currently, many other municipalities and Regions include a climate considerations component in their Council reports, including Burlington, Halton Hills and Oakville. It is recommended Halton aligns with current practice and ensures that climate impacts, risks, and vulnerabilities are considered as part of the decision making process	Corporate Services	<b>B</b>
Explore Climate considerations to be incorporated into internal policies and reports		Climate Change Response and Sustainability Team (CCRST)	<b>B</b>
Explore the use of a project tracker to measure, track, report and communicate Regional climate change work	Mechanism for the Region to monitor progress and effectively communicate its climate change work	Climate Change Response and Sustainability Team (CCRST)	<b>B</b>
Integrate Equity, Diversity, and Inclusion (EDI) into climate change efforts	Ensure equity across the Region's climate change initiatives	Equity, Diversity, and Inclusion (EDI) Team	<b>B</b>
Incorporate Indigenous Knowledge into climate change efforts	Elevate a deeper understanding of climate change	Government Relations	<b>B</b>

## TO ASSESS PROGRESS THE REGION WILL:

- Explore a mechanism to quantify and qualify climate considerations in council reports.
- Explore a mechanism to quantify and qualify climate considerations in internal policies and reports.
- Ensure a method of measurement is in place for the integration of Equity, Diversity, and Inclusion (EDI) within the Corporate Climate Change Plan.
- Deepen relationships with First Nations and communities to ensure authentic Indigenous knowledge is embedded within climate change efforts.

## THE REGION'S COMMITMENT:

The Region acknowledges that behavioral changes will advance climate work, and will work to support this evolution. The Region will ensure that it continues to create synergies between departments and divisions, elevating a deeper understanding of climate change. The Region will ensure that policies and initiatives consider the potential impacts of climate change. The Region will strive to support its partners, sharing work, and supporting the application of a climate lens on a larger system that supports the common good.





## Theme 3: Climate Finance

According to the United Nations, there is an estimated return of \$4 USD for every dollar invested in the climate transition. Respected organizations such as the [Chartered Professional Accountants of Canada](#) note the importance of involving finance professionals in preparing for climate change. Additionally, [Moody's](#), a major financial risk assessment agency, supports the critical role of climate finance in making better, faster decisions to support an organization's bottom line. Responding to the climate crisis is not about whether we do it, it's about how we do it. We know the costs will be significant but as noted earlier, the risks and opportunities can be navigated effectively with a robust plan. Halton Region has a long standing commitment to financial stability and a reputation for prudent management. A focus on climate finance supports the means to ensure credible forecasting and incremental preparation and sets the Region up to benefit from partnerships, external funding sources and investments.

### RECOMMENDED ACTIONS:

M MITIGATION
 A ADAPTATION
 B BOTH

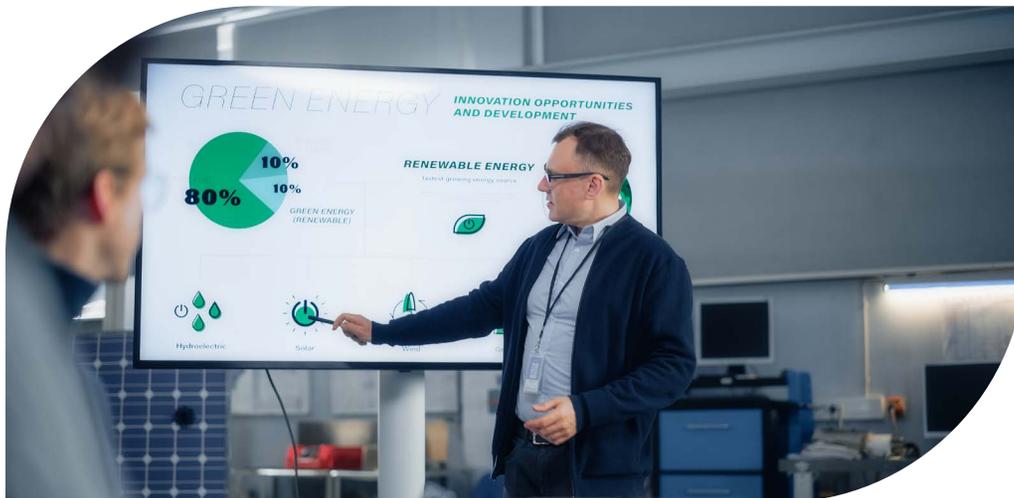
ACTIONS	PURPOSE	LEAD DEPARTMENT/ DIVISION	MITIGATION, ADAPTATION OR BOTH
Explore the advancement of a carbon budget, offering a data driven approach to understanding our greenhouse gas (GHG) emissions based on recognized accounting principles	Supports Halton Region advance climate change initiatives and targets	Climate Change Response and Sustainability Team (CCRST)	<span style="border: 1px solid gray; border-radius: 50%; padding: 2px 6px;">B</span>
Explore the use of the Task Force on Climate Related Financial Disclosures (TCFD)	Provides Halton Region with a standardized and transparent framework to assess and communicate the impacts of climate related risks and opportunities. It proactively sets the Region up for potential regulatory disclosure requirements as well as access to significant funding opportunities that require Task Force on Climate Related Financial Disclosures (TCFD)	Climate Change Response and Sustainability Team (CCRST)	<span style="border: 1px solid gray; border-radius: 50%; padding: 2px 6px;">B</span>
Explore alignment with Moody's climate change recommendations	Supports the Region in ensuring that the Region's credit rating accounts for climate change risks Supports Halton Region to determine financial quantification of climate risks and their impact on the Region's credit rating	Finance	<span style="border: 1px solid gray; border-radius: 50%; padding: 2px 6px;">B</span>
Establish a green procurement policy	To reduce Halton's greenhouse gas (GHG) emissions, support climate friendly options for products and services, and encourage innovation	Corporate Services	<span style="border: 1px solid gray; border-radius: 50%; padding: 2px 6px;">B</span>

## TO ASSESS PROGRESS THE REGION WILL:

- Undertake a feasibility assessment of instituting a carbon budget.
- Undertake an assessment and review of the recommendation to establish the use of the Task Force on Climate Related Financial Disclosures (TCFD) as an annual report to assess progress on climate related governance, risks and opportunities, strategy and metrics/targets using the maturity index that is provided as part of this framework.

## THE REGION'S COMMITMENT:

The Region will explore tools and processes to support the financial aspects of the climate transition to ensure continued financial excellence and open pathways to expand corporate prosperity. This will be done in a manner that addresses both risks and opportunities with a focus on stability and transparency.



## Theme 4: Engagement and Advocacy

Engagement and Advocacy builds Regional capacity to increase climate literacy, broker partnerships, reinforce mutually beneficial activities, and strengthen corporate climate action. Adopting a common language will support the uptake of Regional programs and services that advance community preparedness, resilience, and response.

### RECOMMENDED ACTIONS:

 MITIGATION  ADAPTATION  BOTH

ACTIONS	PURPOSE	LEAD DEPARTMENT/ DIVISION	MITIGATION, ADAPTATION OR BOTH
Advance partnerships that align with Regional climate change initiatives	Advance collective synergies and opportunities that will reinforce mutually beneficial work	Climate Change Response and Sustainability Team (CCRST)	
Work with local municipalities to ensure alignment and mutually reinforcing activities	Ensure there is no duplication of work and elevate the work already being done	Climate Change Response and Sustainability Team (CCRST)	
Work with diverse stakeholders to deepen climate action	Collaboration will help advance climate change work across the region	Climate Change Response and Sustainability Team (CCRST)	
Develop a corporate climate change communication strategy	Clearly communicate work to Regional staff and the Halton Community	Corporate Services	

ACTIONS	PURPOSE	LEAD DEPARTMENT/ DIVISION	MITIGATION, ADAPTATION OR BOTH
Provide climate change training opportunities	Increasing climate change literacy will create climate change leaders to advance climate change work	Climate Change Response and Sustainability Team (CCRST)	B
Outreach and engagement to foster climate knowledge		Climate Change Response and Sustainability Team (CCRST)	B
Create experiential opportunities to deepen learning		Climate Change Response and Sustainability Team (CCRST)	B
Knowledge mobilization to increase climate literacy		Climate Change Response and Sustainability Team (CCRST)	B
Emergency preparedness actions	Help the Halton Community understand measures they can take to protect themselves from climate change risks and impacts	Corporate Services	A

## TO ASSESS PROGRESS THE REGION WILL:

- Track the number of partnerships established.
- Track the number of individuals utilizing services and programs.
- Track the number of events and engagement sessions.

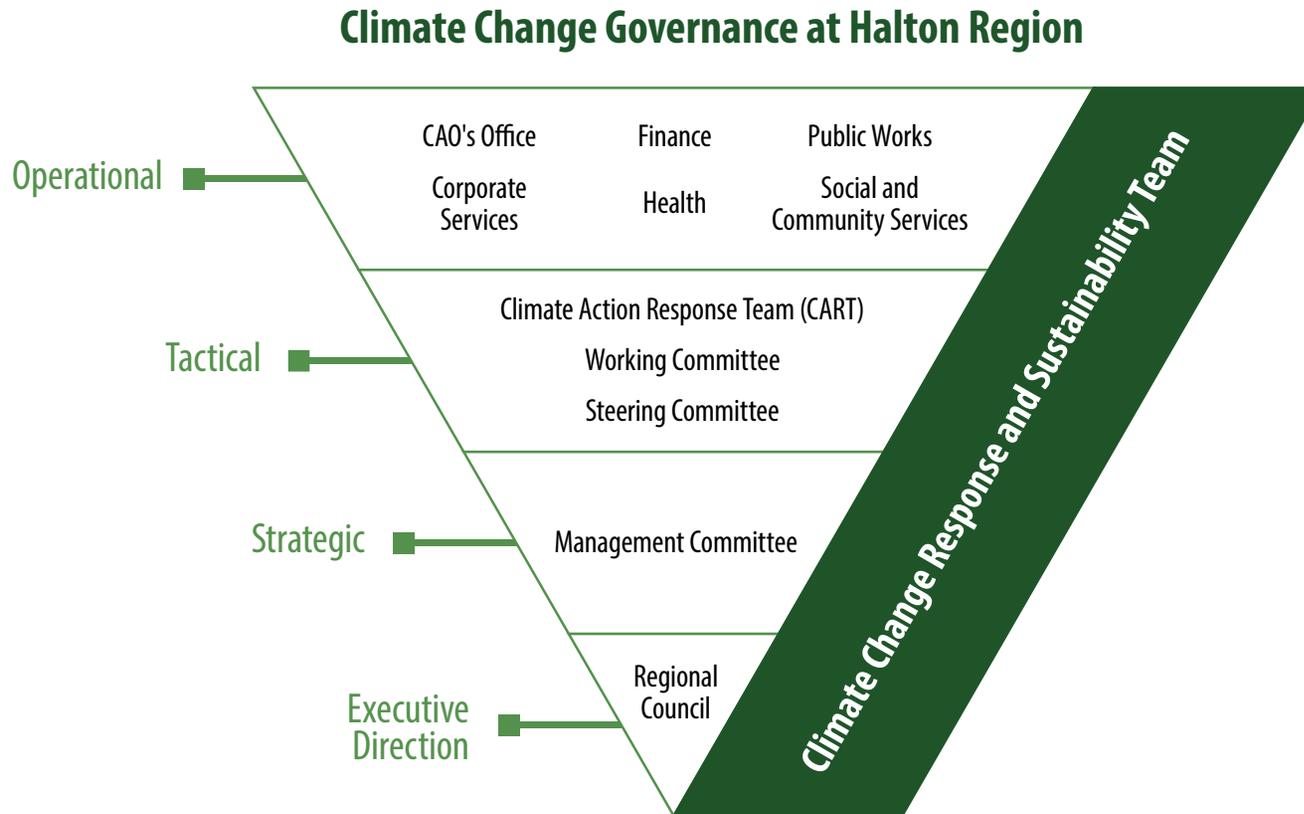
## THE REGION'S COMMITMENT:

Knowledge mobilization will advance Regional climate work and the Region will work to support this transition. The Region will continue to create synergies between partners and the community to deepen an understanding of climate change. The Region will strive to support its partners, sharing work and supporting mutually beneficial activities to support the common good. The Region will establish clear communications that strengthen the coordination and facilitation of climate action by the Region and its partners.



# Governance, Monitoring & Reporting

The Climate Action Response Team will act as the advisory body for this work, acting as an interface between the plan and their respective departments. The Climate Action Response Team is comprised of representatives from different departments and divisions that through their service deliverables and operations, intersect and align with the Region's climate change response. The Climate Action Response Team will support the tactics related to the greenhouse gas (GHG) emissions target and the Corporate Climate Action Plan. The Climate Change Response and Sustainability Team will coordinate and facilitate this effort, ensuring due diligence, oversight, reporting and a collective spirit and intent. Halton Region's Management Committee will ensure the plan and this work have strategic direction, and align with other corporate initiatives and operations. Halton Regional Council will provide executive direction and endorse and approve the greenhouse gas (GHG) emissions targets and the Corporate Climate Action Plan. This governance structure will drive action and results that will support implementation of the Plan and demonstrate Regional leadership.



Relevant metrics and a consistent reporting framework are essential to support accountability and transparency. This plan consolidates the efforts for the Region's climate transition, allowing us to roll up these metrics on a corporate wide basis and report on progress. It is important to ensure that the metrics used are able to truly reflect action. Where feasible, specific Key Performance Indicators (KPIs) have been outlined for the themes and actions set out in the plan, as well as alignment with the Sustainable Development Goals (SDGs). Some actions will require a more adaptive approach to metrics. For those, the Climate Change Response and Sustainability Team have provided higher level indications of progress and will develop more detailed Key Performance Indicators (KPIs) as they move forward.

Updates on the implementation of the Corporate Plan will be provided through an annual report to Council and communicated to the community. The Climate Change Response and Sustainability Team, with the support of the of the Climate Action Response Team, will be responsible for coordinating this effort including collating the metrics and reporting.

Every level of government from national to local is shifting rapidly to introduce legislation, policies, programs and initiatives to address climate. This is the first iteration of a corporate climate plan for Halton Region. It is anticipated that a review will be undertaken no later than 2026 to ensure alignment with the timeframe of the 2023-2026 Strategic Business plan, evolving technologies and the rapidly shifting landscape around climate change. Regional staff will remain attentive to these factors to ensure corporate climate ambition continues to move forward.





## Moving Forward

While the Region recognizes its role in addressing climate, it is only through collective action that progress can be advanced at the level required to effect real change. Efforts are being made across all sectors to advance actions to mitigate and adapt to the changing climate, including a number of robust programs through the federal government. The Region supports a collective action approach and looks forward to working collaboratively with all of its partners from local to global to tackle this challenge.

The need for accelerated action is clear. Halton Region remains committed to combating climate change and transitioning to a resilient, low-carbon future. The Region has listened and heard the Halton community and its partners. The Region has listened and heard from its partners and the community and in response, an ambitious corporate climate plan is being delivered to achieve its commitments. As a member of the community, the Region acknowledges its role in being a part of local solutions and supports working collectively to deepen existing partnerships and broker new ones to support its climate response. Significant achievements have already been accomplished through this collective approach, and the Region is optimistic as it faces the global challenge of climate change. This plan helps the Region use its resources and expertise to achieve its climate transition setting the path forward for a strong, healthy, and resilient corporation that is equitable, diverse, and inclusive.



## THE REGION'S COMMITMENT:

The Region will establish the Climate Action Response Team Implementation Body. This entity will have members from departments across the corporation and will be driving the implementation of this plan. This team will identify and advance initiatives with a focus on those that are both pragmatic and fiscally responsible. The Climate Action Response Team Implementation Body will be coordinated and facilitated by the Climate Change Response and Sustainability Team, who will track, measure and support this work. The Climate Change Response and Sustainability Team will bring results to Management Committee for their review and endorsement. The Climate Change Response and Sustainability Team will provide a yearly review of this work to Regional Council to ensure transparency and results.

Brokering and advancing partnerships is central to prudently implement the climate change initiatives outlined in this plan. The Climate Change Response and Sustainability Team will facilitate and coordinate established and new partnerships. This will support collective climate action that will be mutually beneficial for Halton Region and the community.



# Appendix A: Summary of Actions with Lead Departments or Divisions and Related Sustainable Development Goals

The United Nations Sustainable Development Goals (SDGs) are a collection of 17 goals that aim to address global challenges. The goals set an ambitious target to build a more sustainable, safe and prosperous future for all. The final 2023-2026 Halton Corporate Climate Action Plan will outline the Region's support for these universal goals and demonstrate the alignment between the Sustainable Development Goals (SDGs) and the Region's climate change initiatives.



## THEME 1: CLIMATE READY

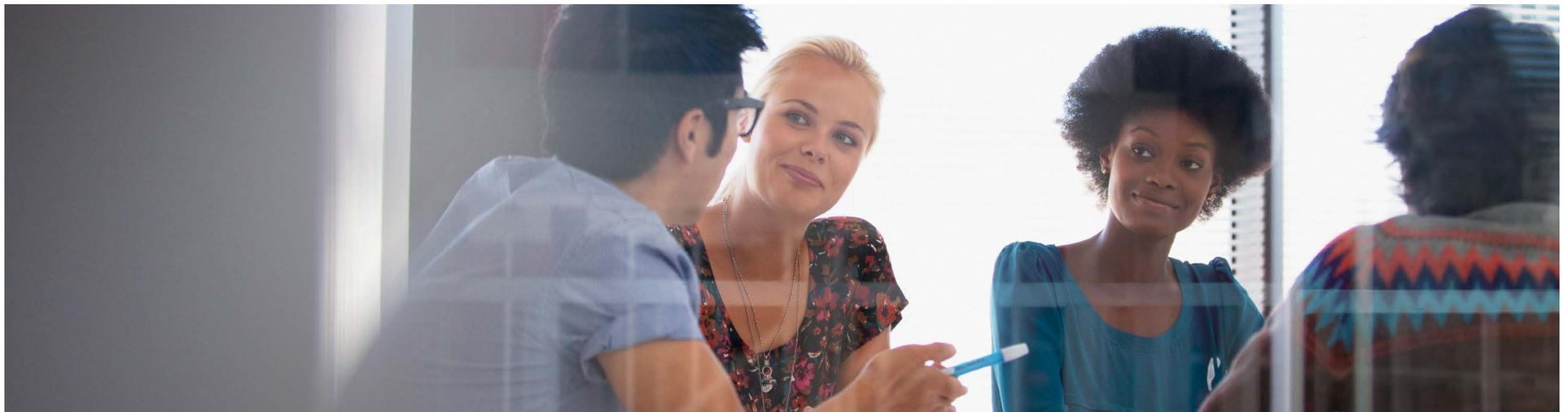
ACTION	LEAD DEPARTMENT/DIVISION	RELATED SUSTAINABLE DEVELOPMENT GOALS (SDGS)
Incorporate climate change considerations into asset management planning	Public Works (PW)	  
Optimize building efficiencies	Corporate Services	 
Advance greenhouse gas (GHG) emissions inventory and reduction efforts	Climate Change Response and Sustainability Team (CCRST)	 
Explore opportunities for greater efficiencies of water & wastewater treatment plants, facilities, and landfill site buildings and processes	Public Works (PW)	  
Measuring, tracking, monitoring, and mitigating greenhouse gas (GHG) emissions	Climate Change Response and Sustainability Team (CCRST)	 
Electrify (rightsizing) corporate fleet	Corporate Services	
Increase internal electric vehicle (EV) infrastructure	Corporate Services	
Advance a Regional electric vehicles (EV) strategy	Climate Change Response and Sustainability Team (CCRST)	 
Conclude a renewable energy generation study	Public Works (PW)	    

ACTION	LEAD DEPARTMENT/DIVISION	RELATED SUSTAINABLE DEVELOPMENT GOALS (SDGS)
Establish climate change and health vulnerability assessments	Health	  
Ensure Regional infrastructure and assets are resilient	Public Works (PW)	  
Update Regional Emergency Response plan	Corporate Services	  
Update Emergency Preparedness Actions	Legislative and Planning Services (LPS)	  
Explore circular economy initiatives for applicability to the Region's services and operations	Public Works (PW)	 
Fuel Switching	Corporate Services	
Update Regional Community Emergency Notification System	Corporate Services	   



## THEME 2: CLIMATE LENS

ACTIONS	LEAD DEPARTMENT/DIVISION	RELATED SUSTAINABLE DEVELOPMENT GOALS (SDGS)
Establish Climate Considerations into all Council Reports	Corporate Services	 
Explore climate considerations to be incorporated into internal policies and reports	Climate Change Response and Sustainability Team (CCRST)	  
Explore a project tracker to measure, track, report and communicate Regional climate change work	Climate Change Response and Sustainability Team (CCRST)	
Integrate Equity, Diversity, and Inclusion (EDI) into climate change efforts	Equity, Diversity, and Inclusion (EDI) Team	  
Incorporate Indigenous Knowledge into climate change efforts	Government Relations	  



## THEME 3: CLIMATE FINANCE

ACTION	LEAD DEPARTMENT/DIVISION	RELATED SUSTAINABLE DEVELOPMENT GOALS (SDGS)
Explore the advancement of a carbon budget, offering a data driven approach to understanding our greenhouse gas (GHG) emissions based on recognized accounting principles	Finance	
Explore the use of the Task Force on Climate Related Financial Disclosures (TCFD)	Finance	
In addition to the Task Force on Climate Related Financial Disclosures (TCFD) explore alignment with Moody's climate change recommendations.	Finance	
Establish a green procurement policy	Corporate Services	  



## THEME 4: ENGAGEMENT AND ADVOCACY

ACTION	LEAD DEPARTMENT/DIVISION	RELATED SUSTAINABLE DEVELOPMENT GOALS (SDGS)
Advance partnerships that align with Regional climate change initiatives	Climate Change Response and Sustainability Team (CCRST)	
Work with local municipalities to ensure alignment and mutually reinforcing activities	Climate Change Response and Sustainability Team (CCRST)	
Work with diverse stakeholders to deepen climate action	Climate Change Response and Sustainability Team (CCRST)	
Develop a corporate climate change communication strategy	Corporate Services	
Climate change training to increase climate literacy	Climate Change Response and Sustainability Team (CCRST)	
Outreach and engagement to foster climate knowledge	Climate Change Response and Sustainability Team (CCRST)	
Create experiential opportunities to deepen learning	Climate Change Response and Sustainability Team (CCRST)	
Knowledge mobilization to increase climate literacy	Climate Change Response and Sustainability Team (CCRST)	
Emergency preparedness actions	Corporate Services	

# Appendix B: Additional Information on Corporate Greenhouse Gas (GHG) Emissions Inventory

## Definitions of Corporate Sectors:

**Buildings:** All corporate buildings owned & operated by Halton Region, including HRPS and HWMS; excluding HCHC and leased facilities that the Region does not pay utilities for

**Streetlights and Traffic Lights:** All inter-related street and traffic lights along the Regional road network, excluding Boundary Roads and other agency municipal infrastructure (e.g.- MTO, 407, Lower-tier etc.)

**Water and Wastewater:** All water and waste water facilities including pumping stations, treatment plants, buildings and water reservoirs

**Vehicle (Fleet):** All Regional Fleet (PW, HRPS and EMS) and equipment that fuel at the Regional Operational Centers and/or at retail

**Corporate Waste Management:** Waste that is collected from our corporate sites but is not managed through Regional landfill operations. This waste is not managed by commercial waste service providers and is not accounted for in the Community GHG Inventory

**Methodology:** Halton Region's corporate greenhouse gas (GHG) emissions inventory was developed by the Region's Energy, Fleet, and Facilities Team. Utilizing the Energy and Environmental Management System (EEMS) and best practice methods from the Partners for Climate Protection (PCP) protocol and the Greenhouse Gas Protocol for Cities (GPC), the team determined the raw emissions data for the corporate sectors listed above, focusing specifically on energy, natural gas, fuel, and waste. Currently, the data highlighted only encompasses emissions for the sectors listed. This data represents raw emissions data without the adjustment of certain variables, such as weather. These emissions may change over time based on factors out of the Region's control, such as the carbon intensity of the electricity grid. Please note as information, technologies, and data becomes more available, the reporting of greenhouse gas (GHG) emissions will be represented in greater detail with the inclusion of additional sources.

# Appendix C: Glossary

**Adaptation:** Preparation and adjustment in natural or human systems to reduce the negative impacts of a changing climate, which moderates, harms, or takes advantage of beneficial opportunities.

**Adaptive Capacity:** The ability of a system to adjust to the effects or impacts of climate change while mitigating potential damages, taking advantage of opportunities, or coping/responding to consequences. <sup>1</sup>

**Carbon Budget:** The cumulative amount of carbon dioxide (CO<sub>2</sub>) emissions allowed over a period of time while remaining within a certain temperature threshold. Exceeding this limit will result in higher temperatures. <sup>2</sup>

**Carbon Dioxide (CO<sub>2</sub>):** A naturally occurring, heat-trapping gas that is a by-product of burning fossil fuels and biomass, and is released from other human activities such as land-use changes, deforestation, and other industrial processes. <sup>1</sup>

**Carbon Footprint:** The total greenhouse gas (GHG) emissions that are released into the atmosphere each year caused by an individual, family, organization, company, event, or service. <sup>1</sup>

**Carbon Pricing:** A fee placed on emitting carbon and/or an incentive that is offered for emitting less carbon. <sup>3</sup>

**Carbon Sequestration:** The process of capturing and removing carbon from the atmosphere and storing it in a reservoir. Terrestrial or biological carbon sequestration is where plants and trees absorb carbon dioxide, release the oxygen, and store the carbon. <sup>1</sup>

<sup>1</sup> [Glossary of Climate Change Terms | Climate Change | US EPA](#)

<sup>2</sup> [Carbon Budget Explained - Carbon Tracker Initiative](#)

**Climate:** The long term and average weather conditions for a specific area. <sup>1</sup>

**Climate Action Response Team (CART):** Established in September 2022, this was the initial cross departmental team whose function was to support and drive the development of the Region's Corporate Climate Action Plan.

**Climate Action Response Team (CART) Implementation Body:** Established as part of the 2023-2026 Halton Corporate Climate Action Plan, this entity is comprised of members from across the corporation and will be responsible for driving the implementation of the Corporate Climate Action Plan.

**Climate Equity:** Ensures everyone, regardless of income, race and other characteristics receives a just distribution of environmental benefits and climate protection while simultaneously removing unequal burdens. <sup>4</sup>

**Climate Change:** The long term changes in current climatic conditions such as temperature, wind patterns and/or precipitation. <sup>1</sup>

**Climate Change Response and Sustainability Team (CCRST):** Regional staff team under Strategic Initiatives and Government Relations responsible for coordinating the metrics and annual reporting of the 2023-2026 Halton Corporate Climate Plan to Council and the public, with the support of CART.

<sup>3</sup> [About Carbon Pricing – United Nations Climate Change](#)

<sup>4</sup> [Defining Climate Equity | Louisiana Government; Climate Equity | UCLA Luskin Center for Innovation](#)

**Climate Justice:** Acknowledges that the impacts of climate change are greater on low-income communities, communities of colour and immigrant communities who are the least responsible for climate change emissions around the world.<sup>5</sup>

**Climate Literacy:** An understanding of human influence on climate and the influence of climate on human systems and society.<sup>6</sup>

**Climate Ready:** Actions under this theme will allow Halton Region to mitigate and adapt to the impacts of climate change, safeguarding corporate assets and service deliverables.

**Decarbonization:** The process of reducing carbon dioxide emissions to achieve a lower output of greenhouse gases into the atmosphere.<sup>7</sup>

**Ecological Mismatch:** Ecological mismatch is a concept that refers to the consequences of climate change to the natural environment. It occurs when the timing of natural events, such as the blooming of plants or the migration of animals, is disrupted by changes in the environment. This can cause problems for species that rely on these events to survive and reproduce.<sup>8</sup>

**Electric Vehicle (EV):** Contain a battery instead of a gasoline tank, and have an electric motor instead of an internal combustion engine.<sup>9</sup>

**Electric Vehicle (EV) Infrastructure:** Charging equipment for electric vehicles including public and private charging stations.<sup>10</sup>

**Emissions:** The release of greenhouse gases (GHG) into the Earth's atmosphere.<sup>1</sup>

**Emissions Baseline Year:** A reference point in time against which future emission reductions are calculated.<sup>11</sup>

**Federation of Canadian Municipalities (FCM):** An advocacy group bringing together around 2,000 municipalities across Canada.<sup>12</sup>

**Fleet Rightsizing:** A management practice used to build and maintain a vehicle inventory that reduces emissions without compromising fleet activities.<sup>13</sup>

**Fossil Fuel:** Comes from decomposing plants and animals that have been turned into crude oil, coal, natural gas, or heavy oils. This occurs from the exposure to heat and pressure in the earth's crust over hundreds of millions of years.<sup>1</sup>

**Fuel Switching:** Changing from one type of fuel source to another.<sup>1</sup>

**Global Average Temperature:** The Earth's mean surface air temperature averaged over the entire planet.<sup>1</sup>

**Global Warming:** The global average increase in the Earth's surface temperature.<sup>1</sup>

**Greenhouse Effect:** The trapping of the sun's heat by gases in the Earth's atmosphere near the surface.<sup>1</sup>

<sup>5</sup> [What is Climate Justice? | University of California Center for Climate Justice; Climate Justice | MIT Climate Portal](#)

<sup>6</sup> [What is Climate Literacy? – Georgia State University](#)

<sup>7</sup> [What is Decarbonisation? - TWI](#)

<sup>8</sup> <https://naturalresources.anthro-seminars.net/concepts/ecological-concept-ecological-mismatch/>

<sup>9</sup> [Explaining Electric & Plug-In Hybrid Electric Vehicles - EPA](#)

<sup>10</sup> [Developing Infrastructure to Charge Electric Vehicles – U.S. Department of Energy](#)

<sup>11</sup> [What is a Baseline Year and Why Does it Matter? – Climate Council](#)

<sup>12</sup> [About FCM - FCM](#)

<sup>13</sup> [Rightizing Your Vehicle Fleet to Conserve Fuel – U.S. Department of Energy](#)

**Greenhouse Gas (GHG):** The atmospheric gases responsible for causing climate change. The major greenhouse gases (GHG) are carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>) and nitrous oxide (N<sub>2</sub>O). Less prevalent, but very powerful greenhouse gases (GHG) include hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>).<sup>1</sup>

**Greenhouse Gas (GHG) Inventory:** An estimate of greenhouse gas (GHG) emissions within a defined boundary in a given year. Sources of greenhouse gas (GHG) emissions can include transportation, residential and commercial energy, wastewater treatment, and the decomposition of solid waste.<sup>14</sup>

**Halton Climate Collective (HCC):** Comprised of environmental leaders from the greater Halton area, the Halton Climate Collective looks to lead the effort of transforming to a more climate resilient, low carbon communities.<sup>15</sup>

**Halton Environmental Network (HEN):** A non-profit organization that educates and builds awareness in the community in the hopes of propelling climate action and sustainability.<sup>16</sup>

**Heat Waves:** Lengthy time periods in which excessive heat and high humidity values are seen.<sup>1</sup>

**Indigenous Knowledge:** Refers to the unique cultures, languages, values, histories, governance and legal systems of Indigenous Peoples.<sup>17</sup>

**Key Performance Indicators (KPIs):** Quantifiable indicators used to set targets and track progress towards an intended result.<sup>18</sup>

<sup>14</sup> [Greenhouse gas inventories | Indiana University](#)

<sup>15</sup> [Our Mission – Halton Climate Collective](#)

<sup>16</sup> [About Us | Halton Environmental Network | Quality of Life for all Living Things \(haltonenvironet.ca\)](#)

**Knowledge Mobilization:** Knowledge Mobilization occurs when research knowledge is applied to help facilitate real-world impact on policy and society. It is the process of adapting knowledge to increase research uptake and inform decisions.<sup>19</sup>

**Mitigation:** Relates to strategies and programs that aim to reduce greenhouse gas (GHG) emissions and the impact that humans have on the environment.<sup>1</sup>

**Natural Gas:** Underground deposits of gas mainly consisting of methane that is used as fuel.<sup>1</sup>

**Partners for Climate Protection (PCP):** A joint venture of ICLEI and the Federation of Canadian Municipalities, the Partners for Climate Protection program helps municipalities reduce emissions by providing a five step framework to plan the journey.<sup>20</sup>

**Renewable Energy:** Sources of energy that replenish naturally such as solar, wind, geothermal, hydro, and biomass.<sup>1</sup>

**Resilience:** The capability to have minimum damage to the environment, social wellbeing, and the economy from multi hazard threats. This is achieved through anticipation, preparation, and recovery planning.<sup>1</sup>

**Strategic Business Plan (SBP):** Halton Region's Strategic Business Plan sets the strategic direction and priorities for Council's four-year term of office. Through Halton's Strategic Business Plan (2023-2026), Climate is identified as a key pillar.<sup>21</sup>

<sup>17</sup> [Indigenous Knowledge – Canada.ca](#)

<sup>18</sup> [What is a Key Performance Indicator \(KPI\)? \(kpi.org\)](#)

<sup>19</sup> <https://www.torontomu.ca/research/resources/km/>

<sup>20</sup> [About - Partners for Climate Protection \(pcp-ppc.ca\)](#)

<sup>21</sup> [Strategic Planning for 2023-2026 – Halton Region](#)

**Sustainable Development Goals (SDGs):** An integrated set of 17 goals adopted by the United Nations in 2015 recognizing that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability.<sup>22</sup>

**Task Force on Climate-Related Financial Disclosures (TCFD):** The TCFD reports on the impact that an organization has on the global climate by streamlining information to make it easier to compare with. This clearer information will help organizations incorporate climate risks into decision making processes.<sup>23</sup>

**Vector-borne disease:** Vector-borne diseases are human illnesses caused by parasites, viruses and bacteria that are transmitted by vectors. Vectors are living organisms that can transmit infectious pathogens between humans, or from animals to humans.<sup>24</sup>

**Vulnerability:** Vulnerability is dependent on magnitude, sensitivity, and adaptive capacity and relates to a system's susceptibility and ability to cope with climate events/variability.<sup>1</sup>



<sup>22</sup> [Sustainable Development Goals | United Nations Development Programme \(undp.org\)](https://www.un.org/sustainabledevelopment/)

<sup>23</sup> [What is the TCFD and why does it matter? \(deloitte.com\)](https://www.deloitte.com/what-is-the-tcfd-and-why-does-it-matter/)

<sup>24</sup> <https://www.who.int/news-room/fact-sheets/detail/vector-borne-diseases>

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