

The Corporation
of the County of Huron

Corporate Climate Change Adaptation Plan

2020-2025



COUNTY OF HURON
www.HuronCounty.ca

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CAO's Message

The effects of climate change are being felt around the world and are certainly already visible in Huron County. In recent years, we've seen devastating and extreme weather events, localized flooding in our crops and communities, and variable weather patterns throughout all seasons. And these are only a few of the events that are expected to increase with global warming.

Given that municipalities are often at the forefront of responding to these events, it's important that we, as a corporation, prepare for future changes and ensure that we have the strategies and resources in place to reduce, respond to and recover from whatever may come our way.

The creation of this Corporate Climate Change Adaptation Plan will help us implement these strategies to improve the resiliency of our services, operations, and assets to the impacts of climate change.

The County of Huron is committed to taking action. By taking steps to prepare for the future, we will become stronger as a corporation. Together, let's take action for our community and for our future generations. We owe it to our planet.



Meighan Wark
County of Huron, CAO



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Acknowledgments

The Climate Change Committee would like to acknowledge all the staff and stakeholders that participated in the development of the County's Corporate Climate Change Adaptation Plan (CCCAP). We would like to thank all those involved for contributing their time, efforts, and expertise to this project.

Climate Change Committee

Meighan Wark,
Chief Administrative Officer

Sandra Weber,
Director of Planning & Development

Barbara Hall,
Director of Social & Property Services

Steven Lund,
Director of Operations & County Engineer

Lily Morrow,
Climate Change & Energy Specialist

Leadership Group

The County's Leadership Group was integral to the development of this plan. This group includes approximately 80 staff from across the corporation who worked collaboratively to incorporate their expertise into the CCCAP.

Additional Staff & Stakeholders

The Climate Change Committee would also like to thank the additional County staff and community stakeholders that participated in this project. This includes ongoing support from staff in several departments, including Planning and Development, Social and Property Services, and Public Works. We would also like to thank the members of Sustainable Huron for acting as an advisory committee for this plan and providing their input on behalf of the community.

Project Support

This project was made possible with funding from the Federation of Canadian Municipalities (FCM) through the Municipalities for Climate Innovation Program (MCIP). We would like to thank FCM for their ongoing support and guidance, as well as the many municipalities that have worked collaboratively throughout this process.

Executive Summary

The effects of climate change are already being felt by communities around the world and in Canada. Warming temperatures are influencing global cycles, resulting in floods and droughts, reduced snow and ice cover, and more extreme weather events. As greenhouse gas (GHG) emissions continue to rise, the impacts of climate change are projected to worsen.

In order to prepare for future changes, climate adaptation is needed. Adaptation refers to taking action to reduce the effects of climate change by putting in place strategies to cope with future events. Adaptation is especially important for municipalities, as they are often at the forefront of responding to the impacts of climate change. It's important that municipalities are proactive by ensuring that they have the resources and strategies needed to respond and recover from climatic events.

The County of Huron is committed to being a leader by taking action to reduce, respond to, and recover from the impacts of climate change on the corporation and local communities. The purpose of the Corporate Climate Change Adaptation Plan (CCCAP), is to implement strategies to improve the resiliency of the County's services, operations, and assets to the impacts of climate change.

While the primary goal of this plan is adaptation, the County also recognizes the importance of mitigation. Mitigation involves taking action to reduce the GHG emissions that are contributing to climate change. While adaptation and mitigation refer to different strategies, the two approaches are not exclusive and both are needed in order to build a more resilient and low carbon future. The County sees the CCCAP as an opportunity to take action towards both goals, by implementing strategies that help prepare for future changes, while also reducing GHG emissions.

Through corporate consultation and community feedback, the County developed 14 goals for the CCCAP. These goals will be achieved through supporting actions that the County will work to implement over the next 5 years. These goals focus efforts in 5 priority areas, including Infrastructure and Assets, Health and Safety, Engagement and Partnerships, Resiliency and Continuity, and Innovation and Growth. By taking action in these areas, the County will be better prepared to lessen the effects of future changes, as well as respond to and recover from climate-related events.

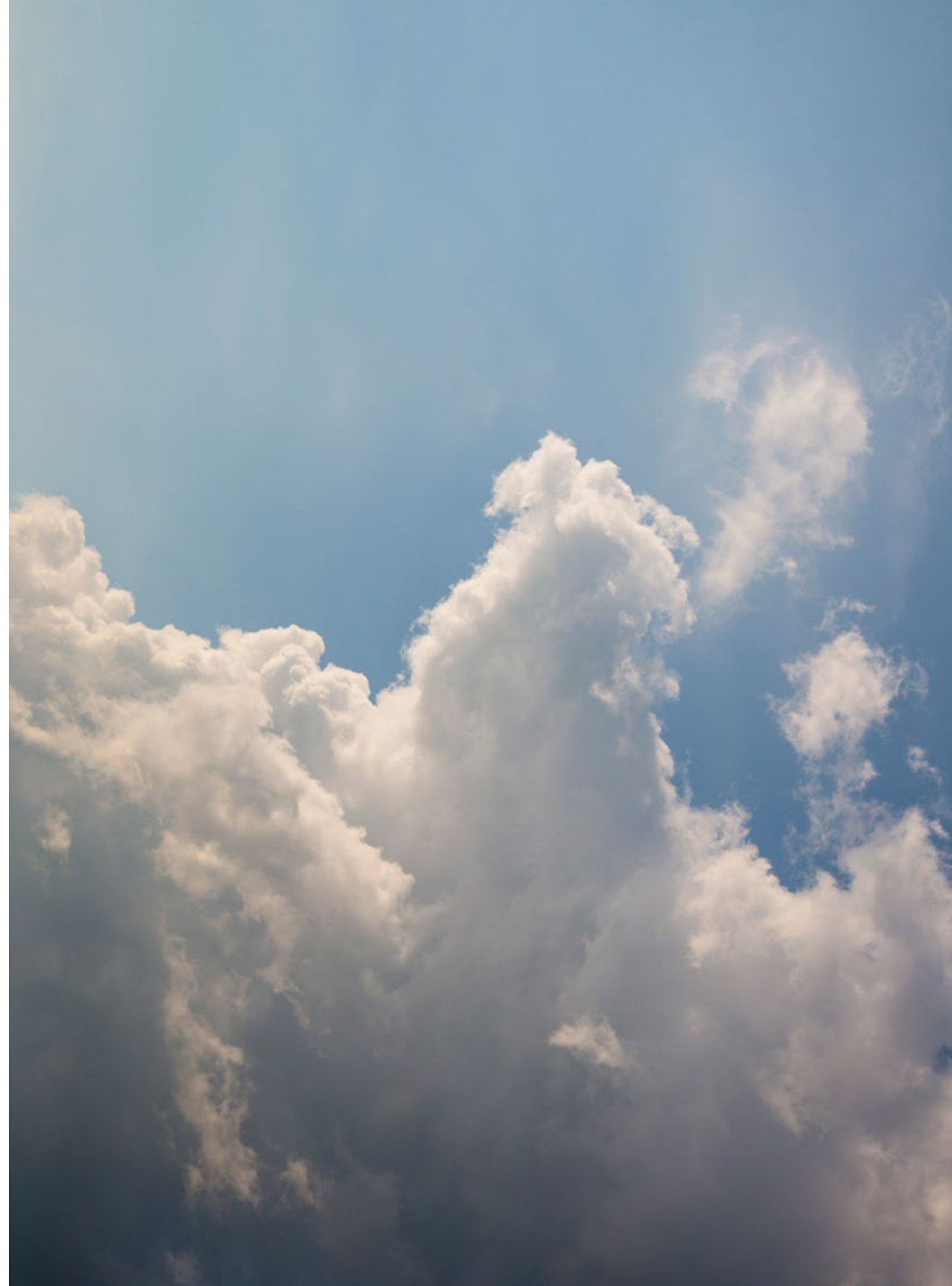
It is important to recognize that adapting to climate change is a dynamic and ongoing process that involves uncertainty. As new data arises, the County will review and update the CCCAP to ensure that the corporation is continuing to take effective action towards a more resilient and low carbon future.

Introduction

The Changing Climate

Climate change is a global concern. Around the world, the effects of climate change are already being observed. Warming temperatures are influencing global cycles resulting in changing precipitation patterns, floods and droughts, reduced snow and ice cover, and more extreme weather events. These changes have significant impacts to humans and the environment, and are expected to intensify as greenhouse gas (GHG) emissions continue to rise.

In Canada, the impacts of climate change are being recognized. From 1948 to 2016, Canada's annual temperature increased by 1.7°C, which is approximately twice the global rate of warming (Bush & Lemmen, 2019). Many communities across Canada have begun to experience the effects of this, including agricultural impacts, localized flooding, forest fires, impacts to critical infrastructure, and an increase in natural disasters (Council of Canadian Academies, 2019).





The Need for Adaptation

In order to adapt to these changes, collective action across all levels of government is needed. Action is especially important at the local level, as municipal governments play a vital role in supporting communities. As climate change progresses, many of the physical and natural systems municipalities are responsible for will be impacted (Council of Canadian Academies, 2019; McMillan et al., 2019). Municipal governments need to plan ahead in order to protect humans and the environment. It is also important to be proactive as the effects of climate change are costly.

The impacts from extreme weather events are estimated to cost over \$43 billion annually in Canada by 2050. The Federation of Canadian Municipalities (FCM) Big City's Mayor's Caucus has also estimated that "for every dollar invested in adaptation, between \$9 and \$38 can be saved in future damage" (McMillan et al., 2019). Given that municipalities are often at the forefront of responding to these events, it's important that they prepare for future changes. This will ensure that local governments have the strategies and resources they need to respond and recover from climate-related events.



***“ To show
leadership by
taking action to
prepare for future
changes.***

The County's Role

For the County of Huron, the purpose of the Corporate Climate Change Adaptation Plan (CCCAP) is to show leadership by taking action to prepare for future changes. For the corporation, climate adaptation involves determining the vulnerability of the County's services, operations, and assets to the impacts of climate change. From this, the County is able to identify strategies to improve resiliency. These strategies include ways that the corporation can take action to reduce, respond to, and recover from the impacts of climate change, as they affect the corporation and local communities.

Within the CCCAP, the County is also considering climate mitigation. This is important, as municipalities influence over 50% of Canada's GHG emissions (McMillan et al., 2019). In 2019, the County of Huron recognized the need to take action on this and joined the Partners for Climate Protection (PCP) program. Through the participation in this program the County developed a Corporate Greenhouse Gas Inventory to understand how emissions are being generated at the corporate level (see Appendix 1). Future steps for the County will involve setting an emissions reduction target for the corporation.

While the focus of this plan is primarily adaptation, both adaptation and mitigation are needed in order to take effective action against climate change and build a more resilient and low carbon future. The County sees this as an opportunity to begin taking action towards both goals by implementing strategies that help prepare for future changes while also reducing GHG emissions. This principle was used to guide the development of the CCCAP and will continue to be considered throughout the implementation of this plan.

Climate Change in Huron County

The effects of climate change are already visible in Huron County. In recent years changing conditions have led to more extreme weather events, localized flooding, and variable weather patterns. These are just a few examples of events that are expected to increase with global warming.

In order to prepare for the future, it's important to understand how climate trends are expected to change overtime. This includes looking at temperature and precipitation patterns, as well as the frequency and intensity of extreme weather events, such as floods and storms. By comparing historic trends with scientific data used to model future scenarios, the corporation can begin to understand the long-term effects climate change could have on Huron County.

It is important to note that there is uncertainty in predicting how climate change will affect the local area. Climate models are useful to anticipate future trends, which allows for planning and adaptation. These models use scientific data of historic climate records to project future conditions based on global emissions. Due to the number of variables involved and the possibility for emissions levels to change overtime, there is some uncertainty. With that said, these models provide the best available tool for future planning.

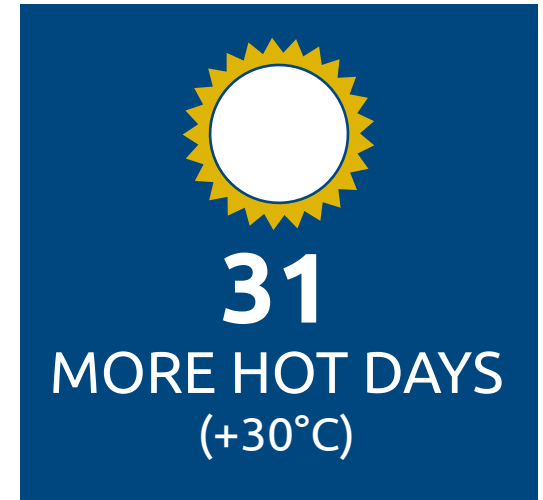
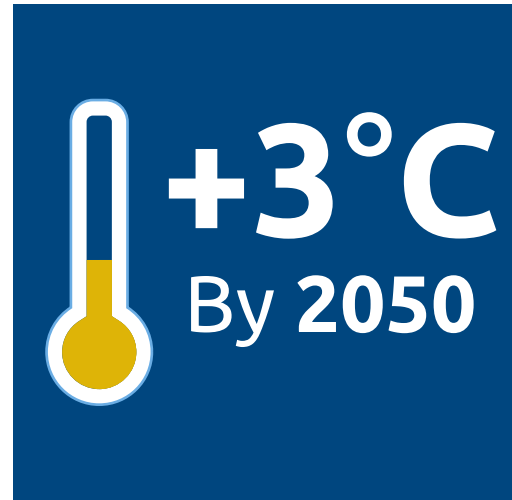


Photo credit: Maitland Valley Conservation Authority

Projected Climate Trends for Huron County

By 2050, the County of Huron is projected to see an increase in annual average temperatures, more hot days (+30°), increased precipitation, and more extreme weather events.

If you are interested in learning more about these trends, see Appendix 2 for further information. There is also a more detailed report on the *Historic Climate Trends & Future Projections in Huron County* available on the County's website.



Developing the Plan

The County used ICLEI's Building Adaptive and Resilient Communities (BARC) framework (see Appendix 3) to guide the development of the CCCAP. This 5-milestone framework provides a step-by-step approach that has been used by various municipalities as a guide for creating climate action plans.

For the County as a corporation, this process involved working through the milestones of this framework to identify local climate trends, determine impacts, vulnerabilities, and risks, identify adaptive actions, and develop a plan to ensure adaptation is prioritized and implemented.



As part of Milestone 1 of this project, the County established a Climate Change Committee, involving members of the Senior Management Team and the County's Climate Change and Energy Specialist. The role of this committee was to oversee the development of the CCCAP, specifically in regards to providing strategic and financial direction. This group worked to incorporate the input and expertise from other staff and stakeholders to ensure that the priorities identified for adaption aligned with the corporation.

Corporate Consultation

Corporate consultation was integral to the development of the County's CCCAP. This process involved working with staff across all departments to examine projected climate trends, and work to understand how these trends could impact the County's services, operations, and assets.

To identify how the County's corporate operations could be impacted by climate change, staff examined the projected climate trends for Huron County and used this information to develop impact statements. Through this process, staff identified 247 impacts for the corporation.

Staff then assessed each impact based on the anticipated vulnerability, which involves understanding how the corporation would cope with each impact if it occurred today. Higher ranked impacts indicate areas that the corporation is more vulnerable to and therefore should prioritize through adaptation.

Some of the highest ranked impacts included:

- More snow and ice storms requiring increased road maintenance,
- Higher temperatures and more freeze-thaw cycles resulting in more salt and sand usage,
- Higher winds speeds and more blowing snow impacting staff's ability to get to work, and
- More extreme weather events resulting in structural impacts to County buildings, increased maintenance costs, and operational disruptions for County departments.

The highest ranked impacts were then put through a risk assessment. Risk takes into account the probability that an impact will occur (likelihood), as well as the damage it may cause (consequence). Staff used their knowledge of local climate trends and their own operational expertise to rank the likelihood of each impact. To determine the consequence, staff considered how the impact might affect the corporation and local community.

Through the risk assessment, the County identified 13 priority impacts for the corporation.

Many of the identified risks related to:

- The health and safety of County staff and the community,
- Physical infrastructure and assets, including damage to roads, bridges, and County facilities, and
- The County's ability to maintain operations and services in the event of more extreme weather conditions.

Based on the identified priorities and input from staff, 14 goals were developed for the CCCAP.

Community Engagement

The County recognized the importance of engaging the community in the development of the CCCAP. The purpose of this was to understand the community's concerns regarding climate adaptation, to ensure that they aligned with the priorities identified by the corporation. This was also an opportunity to raise awareness about the need for climate adaptation at the local level.

The County gathered community feedback through a facilitated session with Sustainable Huron. Sustainable Huron represents a group of local stakeholders that meets regularly to address economic, environmental, and social issues. This group was presented with the goals for the CCCAP and asked to identify any gaps, as well as highlight the goals they felt were most important for adaptation. The results of this session were consistent with the goals County staff had identified, and included:

- Investing in modifications to improve the resiliency of County infrastructure,
- Developing strategies to support vulnerable populations,
- Increasing the ability for remote work,
- Developing communication strategies and enhancing community partnerships, and
- Investing in innovative, low carbon, and resilient solutions.

Additionally, the County intended to complete community surveys to gather further input for the CCCAP. The uncertainties and delays with COVID-19 presented challenges that prevented this. The County intends to continue to prioritize community engagement through the implementation of this plan in order to support local residents and encourage adaptation.

For a more detailed explanation of the County's development process, see the full [*Framework for Consultation & Engagement*](#) on the County's website.

The County's Vision

As a corporation, the County of Huron is committed to showing leadership by taking action against climate change. By taking steps to prepare for the future impacts of climate change, the County will become more resilient as a corporation. This means that the County will be prepared to lessen the effects of future changes, as well as respond to and recover from climate-related events.

The County also recognizes the importance of helping mitigate climate change by reducing GHG emissions. Both climate change adaptation and mitigation are needed in order to build a more resilient and low carbon future. This principle was used to guide the development of the CCCAP to ensure that the County continues to consider corporate GHG emissions while adapting to future changes.

Images:

A Furnace Upgrade – The County Housing Corporation owns 84 family units, each with a gas-fired furnace for heating. Over the past 5 years, the County has upgraded 35 furnaces with more energy efficient models.

B Facility Insulation Upgrade: Insulation upgrade at one of the County's apartment buildings. The new insulation will improve the building envelope and help reduce energy use.

C Forest: Individuals walking a trail through one of the many conservation areas in Huron County. Photo Credit: Ausable Bayfield Conservation Authority

D Huron Clean Water Project: Lake Huron tributary restoration project funded by the Huron Clean Water Project. Fences and trees were installed to keep cattle away from the water source and help reduce downstream pollution and sedimentation.



VISION

The County of Huron is committed to being a leader in taking action to reduce, respond to, and recover from the impacts of climate change on the corporation and our communities.

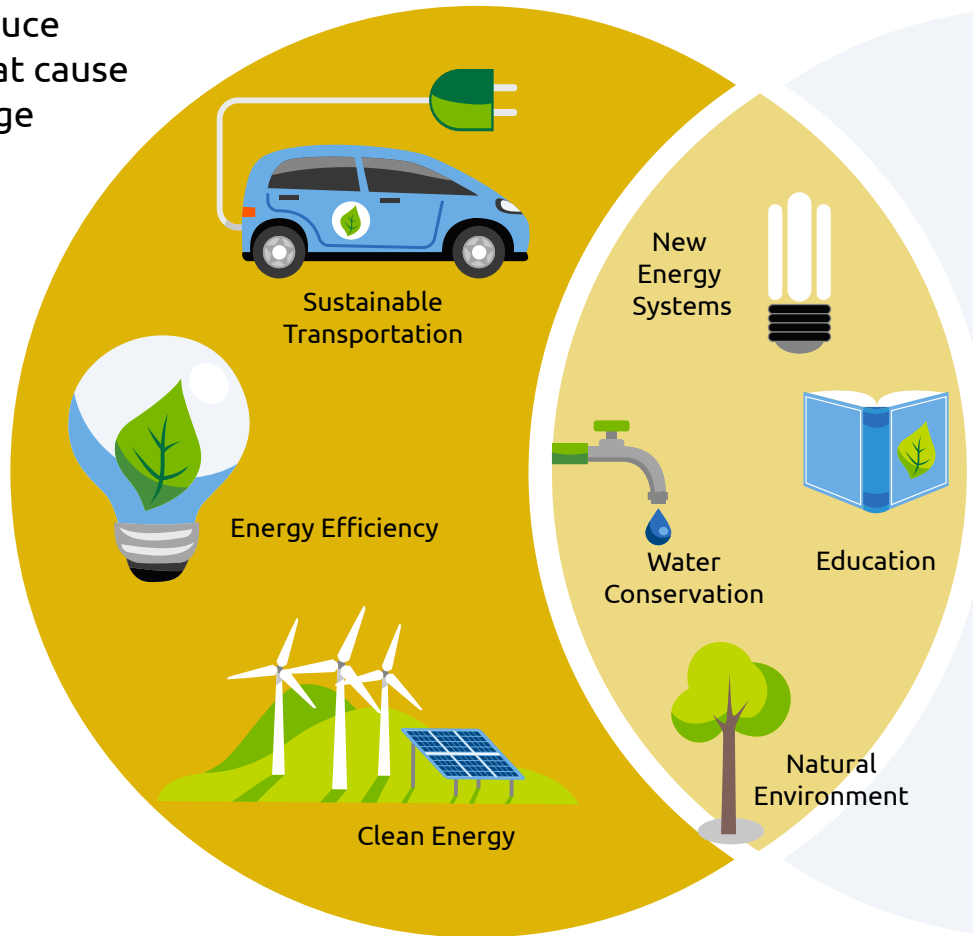


Overarching Goals

There are two overarching goals guiding the vision for the CCCAP and the development of a resilient and low carbon future for the corporation. These goals include adaptation and mitigation.

Mitigation

Action to reduce emissions that cause climate change



Adaptation

Action to manage the risks of climate change impacts

Objectives

There are several objectives that were developed to help guide the purpose and ongoing implementation of the CCCAP. These objectives include:

- Applying a climate lens to all corporate decision making,
- Developing metrics and standards to integrate climate change into procedures and operations,
- Recognizing the opportunities for adaptation in existing corporate policies and programs,
- Committing to prioritizing climate action across the corporation, and
- Continuing to engage County staff and community stakeholders to advance efforts.

Priority Areas for Action

The goals and actions of the CCCAP have been organized into priority areas. The priority areas reflect common themes among the impacts that were identified for the corporation. By taking action to improve resiliency in these areas, the County of Huron will be better prepared for the future impacts of climate change.

In order to ensure that the actions of the CCCAP are prioritized and implemented, the County also assigned a timeline, cost, responsibility, and goal to each action.



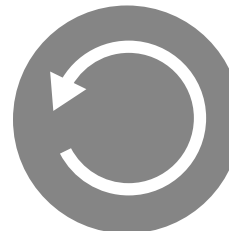
Infrastructure
& Assets



Health & Safety



Engagement &
Partnerships



Resiliency &
Continuity



Innovation &
Growth

Timeline

The actions outlined in the CCCAP are intended to guide adaptation efforts over a 5-year period. The timeline associated with these actions allows the County to prioritize initiatives and monitor success over time.

- Now (2020-2021): actions that will be initiated/implemented immediately
- Next (2022-2023): actions that will be initiated/implemented in the near future
- Later (2024-2025): actions that will be initiated/implemented at a later date
- Ongoing: actions that have already been initiated and will continue through the CCCAP

Cost

The cost of implementing each action has been estimated to assist with incorporating the CCCAP into annual budgets, as well as to help identify external funding opportunities.

- Low cost: \$0 to \$25,000
- Medium cost: \$25,000 to \$75,000
- High cost: over \$75,000
- N/A: cost is accounted for within existing operating budgets

Responsibility

Responsibility refers to the department that has been identified to take the lead in initiating and/or implementing an action. Identifying the responsible department will help to incorporate the actions into annual strategic plans. This will ensure that the CCCAP is prioritized and implemented across the corporation.

Goals

Each action has a role in supporting the County's climate change goals by advancing efforts for adaptation and/or mitigation. Identifying which goal(s) the action supports helps highlight the purpose of each initiative and ensures that the corporation is supporting progress towards both goals.

Priority Area 1: Infrastructure & Assets

Goal 1: Determine the impacts of climate change on the County's built infrastructure.

Goal 2: Invest in modifications to improve the resiliency of County infrastructure and buildings to the impacts of climate change.

Goal 3: Continue to identify and mitigate risks associated with stormwater management and flooding.

Goal 4: Improve the capacity of the County's natural environment to adapt to future changes.

Priority Area 2: Health & Safety

Goal 5: Continue to support community-level resiliency and preparedness.

Goal 6: Minimize climate-related risks for County employees, especially those working outdoors.

Goal 7: Ensure that proactive procedures are in place to respond and recover from climate-related emergencies.

Priority Area 3: Engagement & Partnerships

Goals 8: Develop and implement communication strategies to promote leadership and preparedness.

Goal 9: Enhance community partnerships to strengthen the County's capacity to respond to climate events.

Goal 10: Continue to encourage climate awareness at the corporate level.

Priority Area 4: Resiliency & Continuity

Goal 11: Integrate climate change considerations into County policies and procedures.

Goal 12: Minimize disruptions to County operations and services to ensure resiliency and continuity.

Priority Area 5: Innovation & Growth

Goal 13: Invest in innovative solutions that promote resiliency and carbon reduction.

Goal 14: Continue to identify and take advantage of climate-related opportunities.

Priority Area 1: Infrastructure & Assets

The impacts of climate change can damage physical and natural systems. In Canada, both physical infrastructure and ecosystems have been identified among the top 6 areas at risk of damage and disruption from climate change over the next 2 decades (Council of Canadian Academies, 2019).

For the County of Huron, taking action in this area involves ensuring that the County's built infrastructure, including roads, bridges, and facilities, are able to withstand future impacts from extreme weather events. Making the County's physical infrastructure more resilient will minimize disruptions to County services, while protecting critical infrastructure.

Adapting to climate change in this area also involves improving the resiliency of natural assets, including the County Forests. This is important as ecosystems provide several benefits, including reducing local flooding, improving biodiversity, and helping mitigate GHG emissions.

Goal #1: Determine the impacts of climate change on the County's built infrastructure.

Actions					
1.1	Complete an assessment to determine the impacts of climate change on County infrastructure	Next	High	Public Works	Adaptation
1.2	Conduct energy audits on County facilities to assess future needs and plan for projected increases in energy demands	Next	Medium	Social and Property Services	Adaptation
1.3	Ensure that climate change is considered in the maintenance and inspection of County infrastructure and facilities	Now	N/A	Public Works / Property Services	Adaptation
1.4	Develop evaluation metrics to assess infrastructure projects with a climate lens, including new construction and upgrades/retrofits to existing assets	Now	N/A	Planning & Development / Property Services / Public Works	Adaptation

Goal #2: Invest in modifications to improve the resiliency of County infrastructure and buildings to the impacts of climate change.

Actions		Timeline	Cost	Responsibility	Goals
2.1	Prioritize retrofits for County facilities, including upgrading interior and exterior features to account for energy demands (ie. HVAC systems) and anticipated weather damage (ie. flood proofing)	Later	High	Social & Property Services	Adaptation
2.2	Identify best practices (ie. cost-benefit analyses) to prioritize infrastructure upgrades that account for future climate impacts and improve resiliency	Later	High	Treasury	Adaptation
2.3	Complete and implement the Enriching the Rural Roadside strategy to enhance the aesthetics of rural towns/hamlets, increase traffic calming, and expand green infrastructure for climate adaptation and mitigation	Later	High	Public Works/ Planning & Development (Forestry)	Adaptation & Mitigation
2.4	Continue to use localized weather data to inform the maintenance of County roads and plan for long-term resiliency	Ongoing	Low	Public Works	Adaptation
2.5	Continue to identify low-carbon resilient opportunities for County infrastructure, including trialing a recycled asphalt method to rehabilitate County roads	Ongoing	High	Public Works	Adaptation & Mitigation

Goal #3: Continue to identify and mitigate risks associated with stormwater management and flooding.

Actions		Timeline	Cost	Responsibility	Goals
3.1	Increase the use of green infrastructure to improve the management of stormwater on County-owned property	Next	High	Social & Property Services/ Public Works	Adaptation
3.2	Ensure that climate projection data (ie. precipitation variables and Intensity-Duration-Frequency curves) is used to inform upgrades to the County's drainage infrastructure	Ongoing	N/A	Public Works	Adaptation
3.3	Incorporate all road crossings, including existing municipal drains, into the Asset Management Plan to plan for anticipated upgrades	Ongoing	High	Public Works	Adaptation
3.4	Identify and establish an erosion protection plan around County culverts, bridges, road shoulders, and ditches to improve resilience from rain/melt events	Later	High	Public Works	Adaptation
3.5	Continue to use floodplain mapping, stormwater requirements, and development setbacks to mitigate flood and erosion risks on private property	Ongoing	N/A	Planning and Development	Adaptation
3.6	Explore the development of a corporate stormwater management strategy	Later	Low	Planning & Development/ Social & Property Services	Adaptation

Goal #4: Improve the capacity of the County's natural environment to adapt to future changes.

Actions		Timeline	Cost	Responsibility	Goals
4.1	Allocate resources to the development of an invasive species management plan and biodiverse tree planting strategy for County-owned property	Now	Low	Planning & Development (Stewardship & Forestry)	Adaptation
4.2	Continue to support the naturalization of private land through the Huron County Clean Water Project	Ongoing	High	Planning & Development (Stewardship)	Adaptation
4.3	Continue to improve the management of rural roadsides by incorporating Integrated Pest Management practices	Ongoing	N/A	Public Works	Adaptation
4.4	Continue to manage the County Forests using good forestry practices to maximize forest health and carbon sequestration	Ongoing	N/A	Planning & Development (Forestry)	Adaptation
4.5	Develop a strategy to determine the value of the County's natural assets	Next	Low	Planning & Development (Forestry)	Adaptation
4.6	Explore the feasibility of incorporating County-owned green infrastructure into the Asset Management Plan	Later	Low	Treasury	Adaptation

Priority Area 2: Health & Safety

Climate change has the potential to impact human health. Along with physical infrastructure and ecosystems, human health and wellness was identified as one of the top at risk areas for climate change in Canada (Council of Canadian Academies, 2019).

With more extreme weather events, higher temperatures, and heatwaves, the physical and mental wellbeing of individuals may suffer. In order to adapt to future changes, it is important that the County takes action to preserve the wellbeing of County staff and the local community. Improving resiliency in this area involves supporting emergency preparedness at the community-level, minimizing health risks for County employees, and ensuring that County staff are prepared to respond to and recover from climate-related emergencies.

Goal #5: Continue to support community-level resiliency and preparedness.

Actions		Timeline	Cost	Responsibility	Goals
5.1	Complete an assessment to identify the County's vulnerable populations, including the risks and barriers individuals may face as a result of climate change	Next	Low	Social & Property Services	Adaptation
5.2	Define the County's boundaries of responsibility to provide support to vulnerable populations, and use this as guidance when planning climate-related programs and services	Now	N/A	Social and Property Services	Adaptation
5.3	Continue to support community warming programs, including Huron Out of the Cold	Ongoing	High	Social & Property Services	Adaptation
5.4	Explore the feasibility of initiating a community cooling program in partnership with local municipalities to support vulnerable populations during extreme heat events	Later	High	Social & Property Services	Adaptation
5.5	Initiate an education and awareness campaign to encourage personal preparedness, including the development of a 72-hour emergency response plan	Later	Low	Emergency Management	Adaptation

Goal #6: Minimize climate-related risks for County employees, especially those working outdoors.

Actions		Timeline	Cost	Responsibility	Goals
6.1	Update health and safety policies to incorporate climate change considerations, including procedures to protect staff during extreme weather events	Now	N/A	Human Resources	Adaptation
6.2	Assess staffing requirements in critical service areas (ie. EMS, Public Works) to accommodate expected increases in demands as a result of climate change	Later	Low	Human Resources	Adaptation
6.3	Continue to encourage the use of the County's Employee and Family Assistant Program to ensure staff have access to resources and support	Ongoing	N/A	Human Resources	Adaptation

Goal #7: Ensure that proactive procedures are in place to respond and recover from climate-related emergencies.

Actions		Timeline	Cost	Responsibility	Goals
7.1	Explore the feasibility of posting severe weather alerts on the County's website	Now	Low	Business Technology Solutions	Adaptation
7.2	Incorporate climate change considerations into Continuity of Operations Plans (COOP), Hazard Identification and Risk Assessments, Emergency Response Plans and annual training exercises	Now	Low	Emergency Management	Adaptation
7.3	Assess training needs for staff, especially those in critical service areas, to ensure an informed response to and recovery from climate-related emergencies	Next	Low	Emergency Management	Adaptation

Priority Area 3: Engagement & Partnerships

Climate change is a complex and interconnected issue. The impacts of climate change will affect residents, businesses, organizations, and other levels of government. It's important that collaborative action is taken in order to prepare for the future and minimize the impacts of climate change to Huron County.

Through the CCCAP the County will take action in this area by encouraging community-level adaptation, working with partner organizations to initiate local action, and raising awareness about the need for adaptation across the corporation.

Goal #8: Develop and implement communication strategies to promote leadership and preparedness.

Actions		Timeline	Cost	Responsibility	Goals
8.1	Examine existing communication procedures to identify and resolve gaps related to climate change and extreme weather events	Next	Low	Communications	Adaptation
8.2	Diversify communication strategies to ensure community members across all demographic groups are informed	Now	Low	Communications	Adaptation
8.3	Work proactively with local media to promote the County's climate change efforts	Now	Now	Communications	Adaptation & Mitigation

Goal #9: Enhance community partnerships to strengthen the County's capacity to respond to climate events.

Actions		Timeline	Cost	Responsibility	Goals
9.1	Work with local municipalities to support climate initiatives, including sharing best practices and encouraging community-based adaptation	Next	Low	Planning & Development	Adaptation
9.2	Continue to work with local Conservation Authorities and Huron Perth Public Health to support climate initiatives related to flood mitigation and community wellbeing	Ongoing	N/A	Planning & Development	Adaptation
9.3	Enhance community partnerships between service organizations through Sustainable Huron and the Water Protection Steering Committee to advance local efforts for climate change	Now	Low	Planning & Development	Adaptation
9.4	Explore the feasibility of initiating a program to encourage and support climate action among key stakeholders, including local businesses and youth groups	Later	Low	Communications/ Economic Development	Adaptation

Goal #10: Continue to encourage climate awareness at the corporate level.

Actions		Timeline	Cost	Responsibility	Goals
10.1	Develop a corporate climate change engagement strategy to encourage climate action, and improve corporate culture around environmental sustainability	Now	Low	Planning & Development/ Communications	Adaptation & Mitigation
10.2	Engage and inform staff through online awareness, training, and information sessions	Now	N/A	Planning & Development/ Communications	Adaptation & Mitigation
10.3	Showcase and promote climate actions and successes across County departments	Now	N/A	Planning & Development/ Communications	Adaptation & Mitigation

Priority Area 4: Resiliency & Continuity

In order to reduce, respond to, and recover from the impacts of climate change, the County must be resilient. In the face of extreme weather events and future changes, the County as a corporation needs to have the resources and strategies in place to be able to continue operating, providing services, and supporting the community.

Through the CCCAP the County will take action to integrate climate change into County policies and procedures. This will ensure that climate change is considered when making decisions at the corporate-level. Action will also be taken to minimize disruptions to services and operations by ensuring that the County has the financial resources and staff capacity to deal with future events.

Goal #11: Integrate climate change considerations into County policies and procedures.

Actions		Timeline	Cost	Responsibility	Goals
11.1	Develop and apply a climate lens to decision-making	Now	N/A	Planning & Development	Adaptation
11.2	Establish an internal climate change committee to oversee the implementation of adaptation initiatives	Now	N/A	Planning & Development	Adaptation
11.3	Include a climate change impact section on reports to County Council	Now	N/A	Corporate Services/ Business Technology Solutions	Adaptation
11.4	Incorporate climate change considerations into the County's Asset Management Plan and Procurement Policy to prioritize proactive investments, sustainable sourcing, and low carbon resiliency	Later	Low	Treasury	Adaptation
11.5	When applicable, apply a climate lens to the review and update of existing County plans, policies, and procedures (ie. Official Plans, Zoning By-laws, budgets, strategic plans, etc.)	Next	N/A	All Departments	Adaptation
11.6	Develop a database to keep track of all corporate plans, policies, and procedures that have been reviewed with a climate lens	Next	N/A	Human Resources/ Clerk	Adaptation
11.7	Explore the feasibility of hiring a permanent climate change staff person to advance action	Now	Medium	Planning & Development	Adaptation

Goal #12: Minimize disruptions to County operations and services to ensure resiliency and continuity.

Actions		Timeline	Cost	Responsibility	Goals
12.1	Implement a tracking system to ensure mandatory review of policies by County staff, including Continuity of Operations Plans (COOP) and Emergency Response Plans	Now	N/A	Human Resources	Adaptation
12.2	Assess the financial implications of climate change and adjust budgets and reserve funds to account for contingencies associated with extreme weather events	Next	High	Treasury	Adaptation
12.3	Continue to increase access to solutions that enable remote work, including expanding the use of cloud-based software, developing work from home policies, and implementing procedures to reduce commuting during hazardous conditions	Ongoing	Medium	Business Technology Solutions/ Human Resources	Adaptation
12.4	Examine the use of back-up power generators across the County to ensure that critical service areas are accounted for (ie. EMS bases, and Libraries)	Ongoing	High	Property Services	Adaptation
12.5	Create procedures to improve the sharing of human and physical resources to minimize disruptions to services in the event of a climate-related emergency (ie. redeployment)	Next	Low	Corporate Services	Adaptation

Priority Area 5: Innovation & Growth

As climate change continues to evolve, there are opportunities for the County to be innovative in adapting to future changes. New technologies and funding programs will allow the County of Huron to be a leader by taking action to become a more resilient and low carbon corporation.

Action in this area also involves taking advantage of the potential opportunities that may arise from climate change. Although the impacts from climate change are anticipated to be largely negative, there are possible benefits that future changes could bring for Huron County, including a longer tourism season.

Goal #13: Invest in innovative solutions that promote resiliency and carbon reduction.

Actions		Timeline	Cost	Responsibility	Goals
13.1	Develop high-performance building standards to improve the efficiency and resiliency of new facilities and retrofits	Now	N/A	Planning & Development/ Social & Property Services/ Homes for the Aged	Adaptation & Mitigation
13.2	Explore the development of a policy to prioritize electrification of the County's fleet	Next	N/A	Planning & Development/ Treasury/Public Works/EMS	Adaptation
13.3	Advance renewable energy generation at County facilities by exploring investment opportunities and initiating a pilot project	Next	Medium	Social & Property Services/ Planning & Development	Adaptation

Goal #14: Continue to identify and take advantage of climate-related opportunities.

Actions		Timeline	Cost	Responsibility	Goals
14.1	Apply for funding to install electric vehicle chargers across the County in partnership with local municipalities	Ongoing	N/A	Planning & Development	Mitigation
14.2	Continue to make improvements to the County's trail networks	Ongoing	N/A	Planning & Development (Forestry)	Adaptation
14.3	Continue to support the expansion and promote the use of active transportation routes in Huron County	Ongoing	N/A	Planning & Development/ Public Works/ Economic Development	Adaptation & Mitigation
14.4	Incorporate climate change considerations into the County's Tourism Plan to account for future opportunities	Next	N/A	Economic Development	Adaptation
14.5	Explore the feasibility of incentivizing energy efficiency or renewable energy generation in Huron County	Later	High	Planning & Development	Mitigation
14.6	Continue to identify and take advantage of external funding opportunities	Ongoing	N/A	Corporate Services/ All Departments	Adaptation & Mitigation

Implementation, Monitoring, & Review

Implementing the Plan

Implementation is critical to the success of the County's CCCAP. In order to achieve the vision of being a leader in reducing, responding to, and recovering from the impacts of climate change, the County must ensure that the actions of the CCCAP are prioritized and implemented across the corporation.

To ensure this, the County assigned a department and timeline to each action. This will help departments integrate the actions of the CCCAP into their annual strategic plans. As a corporation, this will ensure that adaptation is being prioritized and integrated overtime.

Through the CCCAP the County will also take steps to increase the internal staff capacity for climate change projects. Through a permanent climate change staff person and/or the development of a standing committee, departments will have ongoing support to initiate and implement the actions outlined in this plan.

Monitoring Progress

Monitoring progress is important to the success of the CCCAP. By keeping track of the actions that are being implemented, the County will know that the corporation is progressing towards a more resilient and low carbon future.

The County intends to monitor progress by taking an annual report to County Council. This report will highlight the actions that have been initiated and implemented across the corporation, as well as provide an opportunity to discuss any challenges or future improvements.

Departments will also report on individual progress in their annual updates to County Council. This will give departments an opportunity to share their successes and achievements, as they work to reduce climate-related vulnerabilities in their own service areas.

Review & Update

Climate adaptation planning is a dynamic process. Given the uncertainties with future changes, climate adaptation plans are often flexible strategies that are subject to regular review and update. This allows for new information to be integrated and risks to be reassessed, based on the best available data.

For the County of Huron, the CCCAP will be reviewed and updated every 5 years. This will give the County the opportunity to reevaluate future climate trends, and the vulnerabilities and risks to the corporation. The update will take into account any adjustments to the goals and actions initiated in this plan, as well as put forth further actions to guide the County's continued efforts. This will ensure that the County continues to be a leader in taking action to prepare for future changes.

Acronyms & Glossary

BARC

Building Adaptive and Resilient Communities Framework

CCCAP

Corporate Climate Change Adaptation Plan

FCM

Federation of Canadian Municipalities

GHG

Greenhouse gas

ICLEI

Local Governments for Sustainability

MCIP

Municipalities for Climate Innovation Program

PCP

Partners for Climate Protection

Adaptation: Actions that are taken to reduce or respond to the negative impacts of climate change, while taking advantage of potential new opportunities.

Adaptive Capacity: The ability of natural, physical, and human systems to adjust, moderate, and cope with the consequences of climate change.

Climate: The long-term weather conditions, including temperature and precipitation patterns, for a given location. Climate variables are often averaged over a period of time, such as 30 years.

Climate Change: Changes in long-term weather patterns caused by natural variability and human activity. Changes in climate since the early 20th century are primarily driven by human activities, which have increased greenhouse gas emissions causing surface temperatures to rise.

Climate-Related Event: See definition for extreme weather event.

Extreme Weather Event: A meteorological event that is rare for a particular place and/or time. Examples of extreme weather events include severe storms, tornadoes, heat waves, droughts, floods, and ice storms.

Global Warming: An increase in the Earth's average surface temperature, primarily attributed to a rise in heat-trapping greenhouse gas emissions from fossil fuel burning.

Greenhouse Gas Emissions: Gases emit from a natural or anthropogenic source that absorb heat in the atmosphere. Carbon dioxide, methane, and water vapour are examples of greenhouse gases.

Mitigation: Measures that are taken to reduce or avoid the greenhouse gas emissions that are contributing to climate change.

Resilience: The ability of a system or community to anticipate, cope with, and recover from the impacts of climate change.

Risk: A metric that combines the likelihood of an event occurring with the consequences that may result in danger, harm, or loss.

Weather: The day-to-day state of the atmosphere at a given location. Weather includes short-term variations in temperature, precipitation, wind, and other variables.

Vulnerability: The degree to which a system is susceptible to, and unable to cope with, the adverse effects of climate change.

References

Bush, E. and Lemmen, D.S., editors (2019): Canada's Changing Climate Report; Government of Canada, Ottawa, ON. 444 p.

Council of Canadian Academies, 2019. Canada's Top Climate Change Risks, Ottawa (ON): The Expert Panel on Climate Change Risks and Adaptation Potential, Council of Canadian Academies.

McMillan, T., Causley, D., Hanna, K., Lulham, N., Seasons, M., and Boddy, S. (2019). Local Adaptation in Canada: Survey Report. Retrieved from <http://ok-ccar.sites.olt.ubc.ca/files/2019/06/Local-Adaptation-in-Canada-Full-web.-1.pdf>.

Appendices

Appendix 1: Summary of Corporate Greenhouse Gas Emissions

A 2017/18 Corporate Greenhouse Gas Inventory was developed as part of the County's participation in the Partners for Climate Protection (PCP) program. The PCP program is a 5-milestone framework that helps municipalities reduce GHG emissions through the development of an emissions inventory, reduction target, and an action plan.

Completing a corporate inventory provides the County with an emissions baseline, which allows reduction progress to be tracked overtime. This is important for climate mitigation efforts, as well as the County's Corporate Climate Change Adaptation Plan (CCCAP). The County sees the CCCAP as an opportunity to implement strategies that prepare for future changes, while reducing GHG emissions.

The figures below reflect a summary of the County's 2017 and 2018 corporate GHG emissions. In 2017, the County emit a total of 3,500 tonnes of carbon dioxide equivalents (tCO₂e), of which the County's facilities accounted for over 50% of total emissions (Figure 1). When examined by the type of energy, almost half of the County's emissions were from natural gas, followed by electricity (Figure 2). In 2018, the County's corporate emissions rose by 5%, to a total of 3,678 tCO₂e (Figure 3). If emissions continued to rise at the current rate, the County could see a 63% increase in GHG emissions by 2027 (Figure 4).

For more information, see the complete [*2017/18 Corporate Greenhouse Gas Inventory*](#), posted on the County's website.

Figure 1. 2017 GHG emissions by sector.

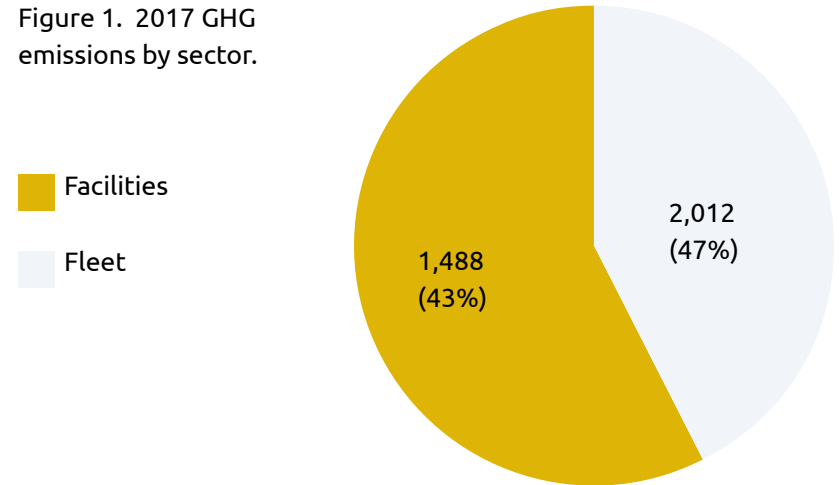
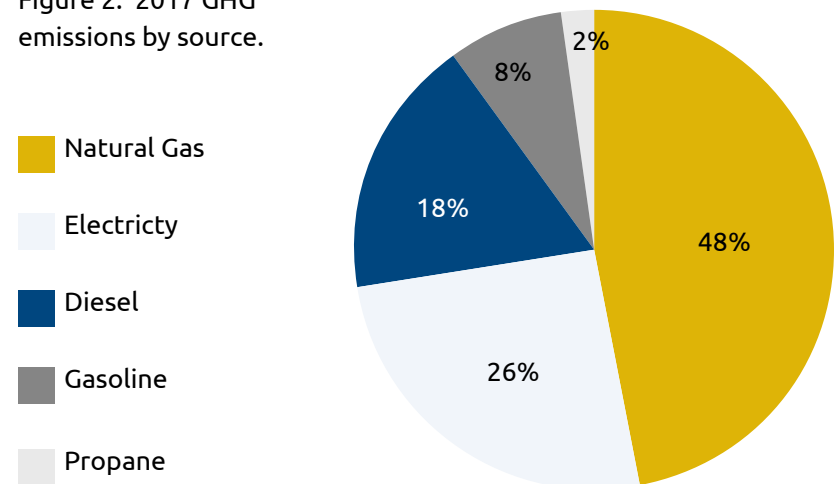


Figure 2. 2017 GHG emissions by source.



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Figure 3. Comparison of GHG emissions by sector for 2017 and 2018.

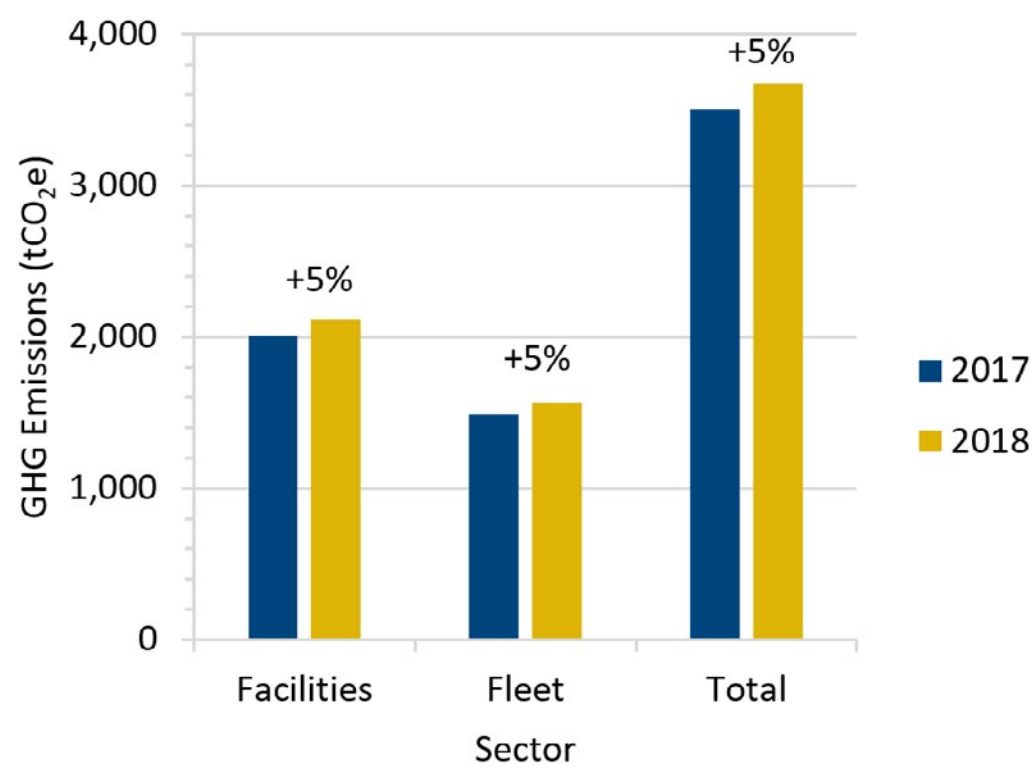
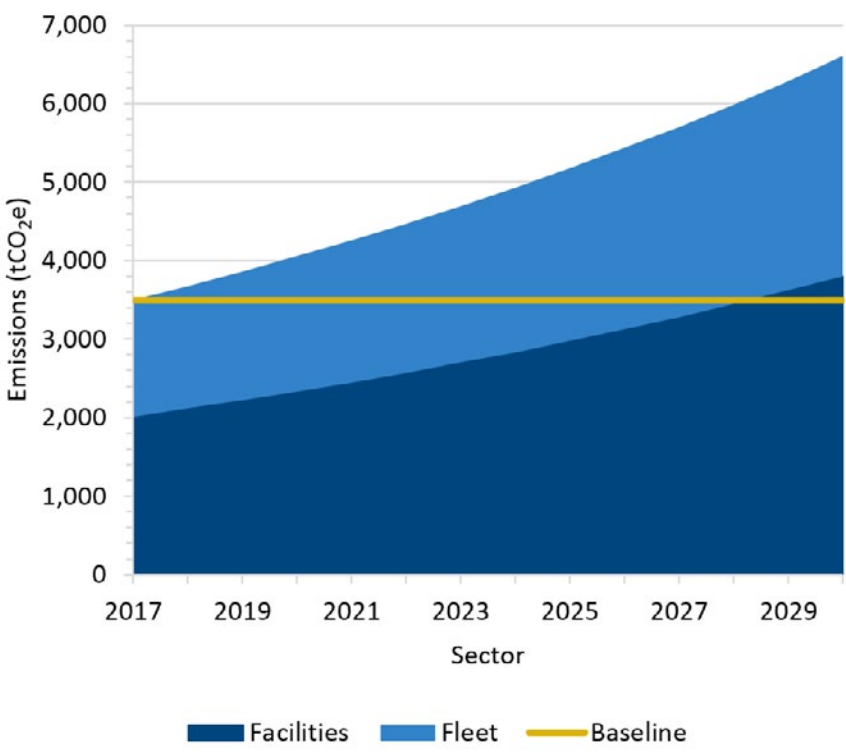


Figure 4. GHG emissions forecast compared to 2017 baseline.



Appendices

Appendix 2: Climate Projections for Huron County

As a result of rising greenhouse gas emissions, the global climate is changing. These changes will have an effect on temperature and precipitation patterns at local levels. This graphic provides a summary of future climate projections for Huron County. This information will be used to anticipate climate events, which will allow us to be better prepared for climate change.

The following projections are the anticipated changes that would occur if emissions continue to rise at the current rate. To understand the climate projections for Huron County, the information has been divided by different years of reference. This includes a baseline period: 1990s (1981-2010), and three projection periods: 2020s (2011-2040), 2050s (2041-2070), and 2080s (2071-2100).

TEMPERATURE

Annual Average Temperatures

Temperatures are projected to increase significantly in Huron County, and could double by the end of the century.

Historic	2020s	2050s	2080s
8°C	8°C	11°C	13°C

Warmer Winters

Temperatures are rising across all seasons, however they are expected to increase most significantly in winter months.

Frost Days Per Year

Winters are becoming shorter in Huron County.

Historic	2020s	2050s	2080s
139	124	97	74

Heat Waves Per Year

Heat waves occur when high temperatures (+30°C) last for 3 or more days. The number of heat waves in a year, is projected to increase in Huron County.

Historic	2020s	2050s	2080s
1	3	5	7

Very Hot Days (+30°C)

The number of very hot days is projected to increase. This will contribute to more extreme heat events in Huron County.

Historic	2020s	2050s	2080s
10	20	41	68

Appendices

LAKE HURON

Lake Levels

Water levels could decline by half a metre by mid-century, due to rising temperatures.

Lake Ice

Seasonal lake ice has declined by 71% from 1973 to 2010. The extent and duration of lake ice will continue to decline with rising temperatures.

Water Temperatures

Water temperatures are projected to increase by 2-4 degrees by the end of the century, compared to a historic maximum temperature of 19.7°

EXTREME WEATHER

Extreme Rainfall Events

Rain events are projected to become more intense and frequent in Huron County. This could result in more floods.

Ice Storms

Ice storms are projected to worsen in Huron County as winter temperatures become warmer and snow turns to rain.

Snow Storms

A reduction in lake ice in combination with rising temperatures is projected to increase lake-effect snow storms in Huron County.

Wind Gust Events

Wind gust events are projected to become stronger by the end of the century.

PRECIPITATION

Wettest Day of the Year

The amount of precipitation on a single day is projected to increase. This will contribute to more extreme rainfall events.

Historic	2020s	2050s	2080s
38 mm	+3%	+8%	+18%

Annual Total Precipitation

Precipitation is projected to rise in Huron County.

Historic	2020s	2050s	2080s
978 mm	+4%	+7%	+11%

Appendices

Appendix 3: ICLEI's Building Adaptive & Resilient Communities Framework

