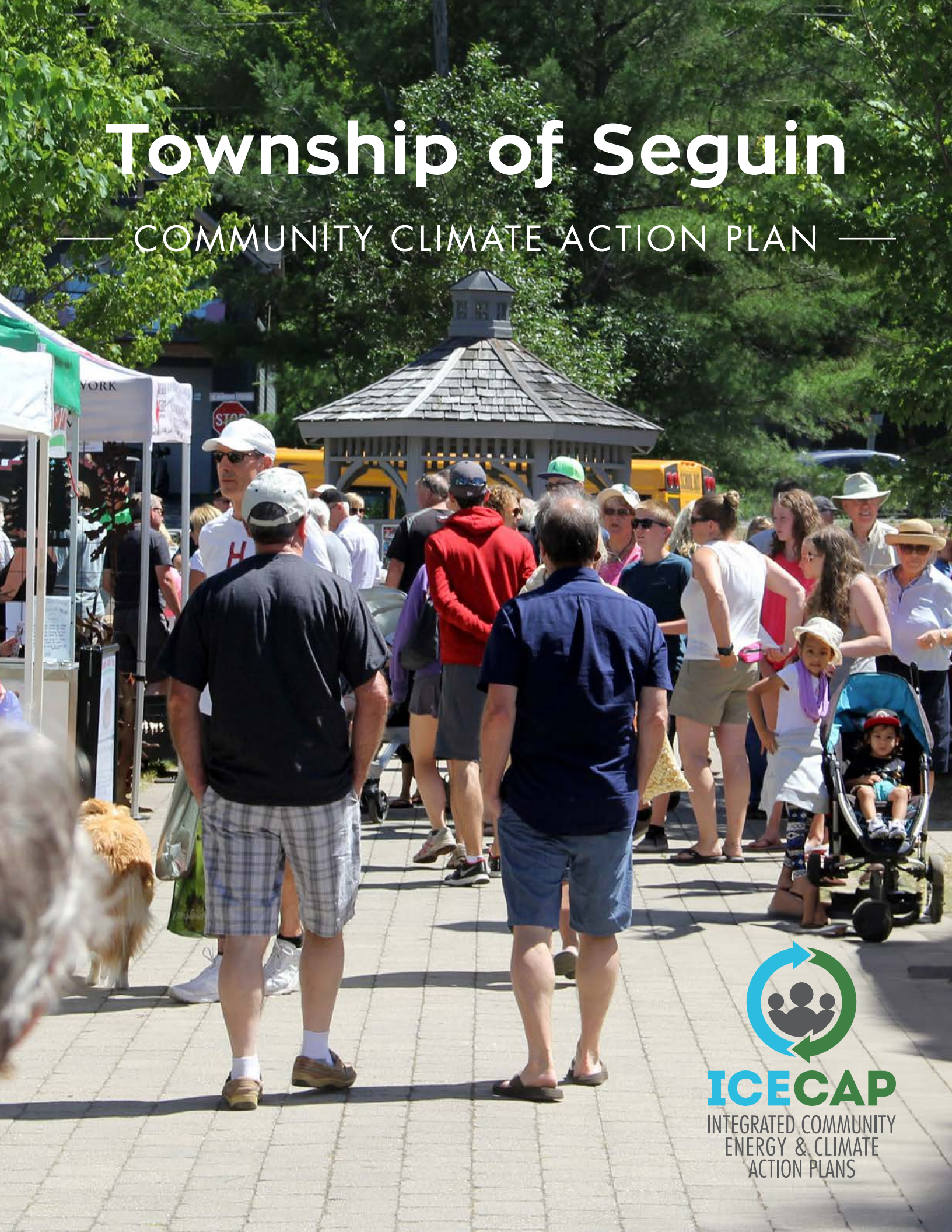
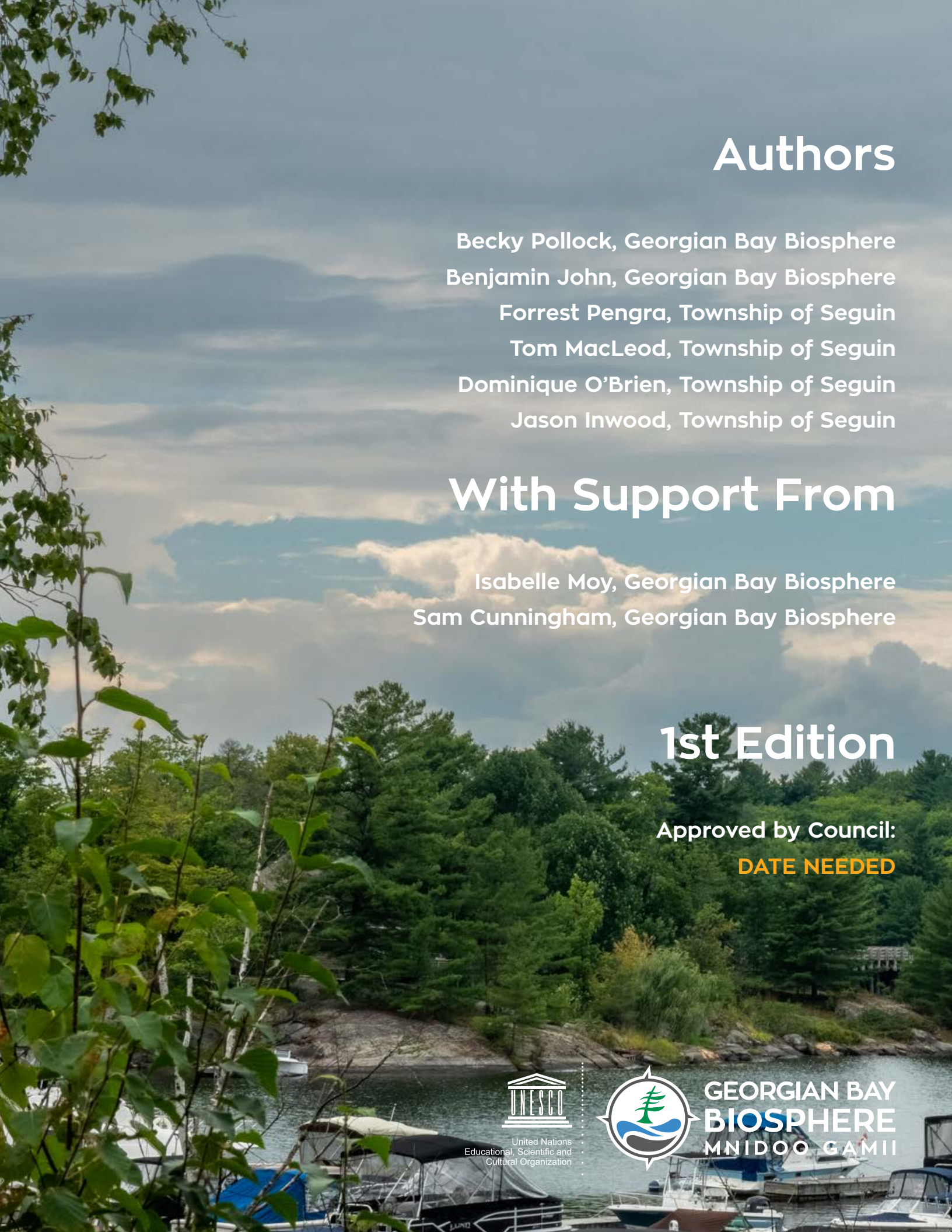
Township of Seguin

COMMUNITY CLIMATE ACTION PLAN



ICECAP
INTEGRATED COMMUNITY ENERGY & CLIMATE ACTION PLANS



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1st Edition

Approved by Council:

DATE NEEDED

United Nations
Educational, Scientific and
Cultural Organization

GEORGIAN BAY
BIOSPHERE
MNIDOO GAMII

Land Acknowledgment

Seguin Township acknowledges that we are on the traditional territory of the Anishinaabe peoples in the Williams and Huron Robinson treaty areas. We recognize and respect the long history of First Nations and Metis peoples on this land. We also recognize and honour that this region continues to be home to many thriving First Nations communities – the Wahta Mohawks, the First Nations of Moose Deer, Shawanaga, Wasauksing, Magnetawan, Henvey Inlet, Nipissing, the Dokis and others that have lived on Turtle Island for time immemorial.

In acknowledging ourselves as new-commers, Seguin Township also recognizes our role in building relationships and deepening our understanding of the lasting, devastating impact that colonization has had on Indigenous people and this land. Seguin Township recognizes that we
have much to learn about how to build a better future that includes the responsible stewardship of our planet to ensure that the decisions we make today will take into consideration the future of our children and that of their children's children.

It is important that Seguin Township is dedicated to the commitments identified in this climate action plan. This document is one example of action we can take to move forward in the spirit of partnership and collaboration, as new-commers and stewards of this land.

Miigwech,
Thank you.

Note to Reader

This Community Climate Action Plan (CCAP) is a document that will guide greenhouse gas (GHG) emission reductions in the Township of Seguin's community. It is a plan that is to be used by municipal staff and contains dozens of specific and achievable actions. Through the actions outlined in this plan, the Township of Seguin will strive to reduce its community GHG emissions by 6% below 2016 levels by 2030. As technology advancements allow, the Township of Seguin will also strive to achieve net-zero community GHG emissions by 2050. By implementing this plan, the Township of Seguin will also contribute to the regional climate action objectives of the ICECAP partnership.

As a member of the Integrated Community Energy and Climate Action Plan (ICECAP) partnership, the Township of Seguin has adopted the following goals for this plan:

1. Reduce greenhouse gas emissions
2. Improve energy efficiency
3. Reduce the use of fossil fuels
4. Adapt to a changing climate by building greater resilience

In addition to working towards these goals, the publication of this plan achieves community milestone 2 and 3 of the Partners for Climate Protection Program, administered by the Federation of Canadian Municipalities. Implementing this plan works towards Milestone 4 and the evaluation framework that has been developed in this plan will contribute to Milestone 5.

This CCAP is a long-term initiative that will require engagement and support throughout the Township of Seguin's organizational departments and its community. To be successful, individuals and business must be engaged and support the plan's objectives with their own actions. Ongoing support from Council will be essential to ensure that the implementation of this plan maintains momentum. Some actions contained in this plan will require capital investments. These funding requirements will be integrated into the annual municipal budget cycle. Staff will also work to capitalize on external funding opportunities as they become available, and continue to seek strategic partnerships that support the efficient use of resources in the implementation of this plan.

The knowledge contained within this plan will enable the Township of Seguin to make informed decisions to prioritize actions that limit GHG emissions that are contributing to climate change. These efforts will chart a course to a healthier, greener, and more livable future now and for generations to come.

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Glossary of Terms

Adaptation	Actions that reduce the observed or expected negative impacts of climate change.
Business as Usual	The continued use of standard practices without any changes.
Clean Energy	Energy produced from sources like solar, hydro, nuclear, etc.
Community Emissions	Greenhouse gas emissions produced by residents & businesses within a jurisdiction.
Corporate Emissions	Greenhouse gas emissions produced by a local government's (Municipalities or First Nations) operations.
Energy Conservation	Reducing wasteful energy use by using fewer energy services.
Energy Efficiency	The ability to complete a task using less energy than before.
Energy Poverty	Defined by a household which spends 6% or more of their after-tax household income on home energy.
Greenhouse Gas	Gases that absorb and trap heat in the Earth's atmosphere, causing global warming.
ICECAP Members	First Nations and Municipalities who have joined the ICECAP partnership by signing a Memorandum of Understanding.
ICECAP Partners	Those who participate in ICECAP without having signed the partnership's Memorandum of Understanding. They include public, private, and community organizations, and members of the public.
Mitigation	Actions to limit climate change and its effects by reducing or stopping the emission of excess greenhouse gases.
Net Zero	A state in which the greenhouse gases going into the atmosphere are balanced by removal of them out of the atmosphere.
Retrofit	Adding or replacing technologies or features to a building to improve its energy performance.
Zero Emission Vehicle	A vehicle that produces no tailpipe emissions.

Glossary of Abbreviations

EV	Electric Vehicle.
FCM	Federation of Canadian Municipalities.
GBB	Georgian Bay Biosphere.
GHG	Greenhouse gas.
ICE	Internal Combustion Engine
ICECAP	Integrated Community Energy & Climate Action Plans.
ICEP	Indigenous Community Energy Plan.
ICLEI	International Council for Local Environmental Initiatives.
IPCC	Intergovernmental Panel on Climate Change.
PCP	Partners for Climate Protection.
PHEV	Plug-in Hybrid Electric Vehicle.
tCO2e	Tonnes of carbon dioxide equivalents. This is a standard unit of measurement for GHG emissions that considers multiple different GHGs at once (i.e. carbon dioxide, methane).
ZEV	Zero-emission vehicle.

Introduction

Introduction

Community Profile

The Township of Seguin (Township) contains thousands of kilometres of shoreline between its inland lakes, rivers, and access to Georgian Bay. As part of the Georgian Bay Biosphere region, and in the heart of Ontario's cottage country, its natural beauty makes it a prominent tourist destination. The Township thus experiences a massive increase in population during the warmer months to include several thousand seasonal residents.

Georgian Bay Biosphere Region

Designated by UNESCO in 2004, the Georgian Bay Mnidoo Gamii Biosphere (GBB) is situated within the Robinson-Huron Treaty of 1850 and Williams Treaty of 1923, and located on Anishinabek territory. Mnidoo Gamii is an Anishinaabek name for 'Spirit of the Great Lake' or Georgian Bay.

Renowned for its natural beauty, the GBB is one of over 700 UNESCO biosphere reserves throughout the world, and one of 19 currently in Canada. Stretching from the Severn River to the French River along the eastern shoreline of Georgian Bay, the GBB region covers 347,000 hectares of shoreline ecosystem and contains over 50 species of animals and plants that are at risk in Canada and Ontario. Climate change is one of many pressures on these species' populations.

As an organization, the GBB seeks to build capacity for regional sustainability in eastern Georgian Bay by inspiring highly collaborative partnerships for learning and action. As such, GBB facilitates numerous partnerships in the region to nurture a balance between humans and nature, including the ICECAP partnership.

ICECAP

Across the GBB region, communities are taking climate action. Originating out of a shared desire to address climate change together, communities have joined to create the Integrated Communities Energy and Climate Action Plans (ICECAP) partnership. ICECAP is a partnership between the First Nations and municipalities in the GBB region for the purpose of a collaborative, more cost-effective approach to energy management and the reduction of greenhouse gas emissions for the operations of each member, their communities, and for the broader region. Figure 1 contains a list of official ICECAP members as of 2023.

Figure 1: ICECAP Membership Map

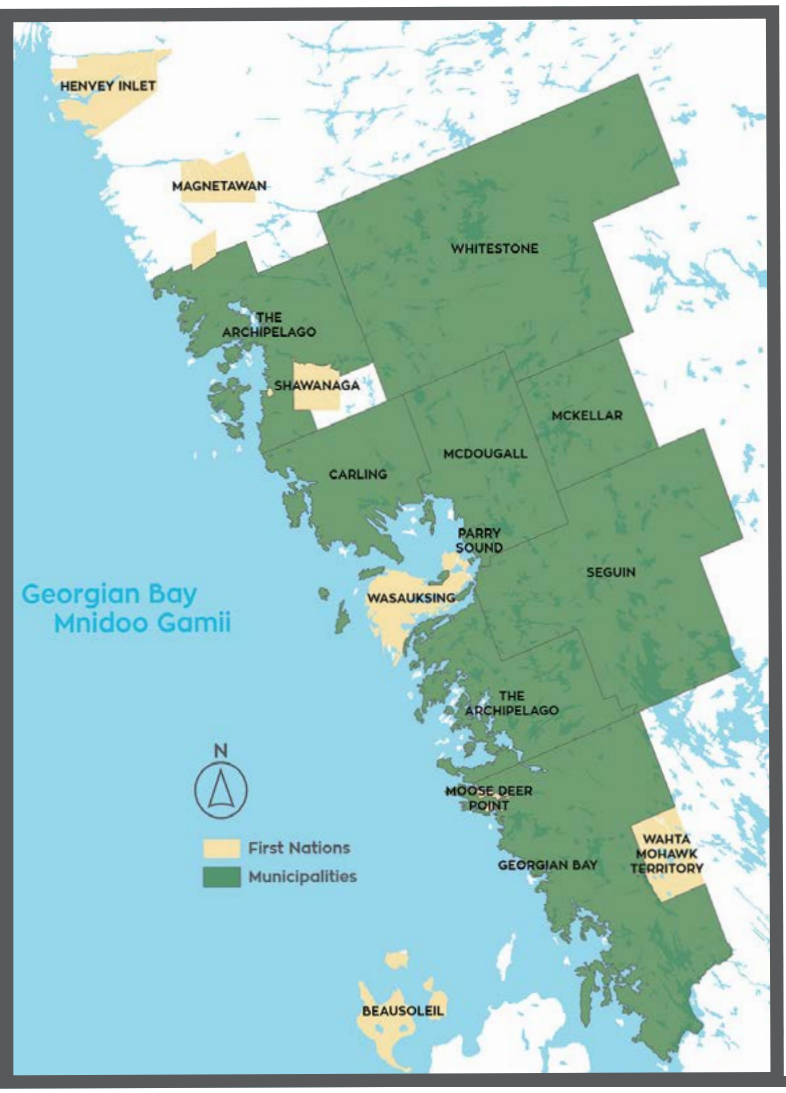
Member	Joined
Township of The Archipelago	2019
Township of Carling	2019
Township of Georgian Bay	2019
Town of Parry Sound	2019
Township of Seguin	2019
Municipality of McDougall	2021
Municipality of Whitestone	2021
Shawanaga First Nation	2022
Moose Deer Point First Nation	2022

The 4 main objectives of ICECAP are to:

- Encourage the reduction of GHG emissions
- Improve energy efficiency
- Reduce the use of, and reliance on, fossil fuels
- Adapt to a changing climate by building greater resilience

Members of ICECAP are participating in one of two programs designed to help First Nations or Municipalities reduce their GHG emissions by improving energy efficiency, energy conservation, and fuel-switching. These programs are the Indigenous Community Energy Plans Program for First Nations, and the Federation of Canadian Municipalities Partners for Climate Protection Program for Municipalities.

As seen in Figure 2, these two programs mirror each other closely. ICECAP brings these two processes together and creates synergies between them, bolstering communities' efforts to reduce emissions across the GBB region.



All First Nations and municipalities in the GBB region have been invited to participate in the ICECAP partnership, and new members are always welcomed. By sharing knowledge, experience, and resources where applicable, ICECAP has the transformative potential to be a catalyst for further advancing sustainable development in the region.

Figure 2: ICECAP Program Model

What is the Federation of Canadian Municipalities?

The Federation of Canadian Municipalities (FCM) is the national voice for municipal governments in Canada. With nearly 2000 municipal members across the country, FCM advocates for municipalities to ensure their citizen's needs are reflected in federal policies and programs Through this advocacy the FCM is able to provide funding and programming to help municipalities tackle local challenges, such as climate change, asset management, and more.

What is the Partners for Climate Protection Program?

The Partners for Climate Protection (PCP) program is designed to guide municipalities through the process of reducing greenhouse gas emissions through climate change and energy planning. In partnership with the International Council for Local Environmental Initiatives (ICLEI), the PCP program is administered by the FCM. Since the program's establishment in 1997, over 500 municipalities across Canada have joined. The PCP program consists of a five-milestone framework that guides municipalities in their efforts to reduce greenhouse gas emissions. The milestones can be found in Figure 3.

Figure 3: Five-Milestone Framework of the Partners for Climate Protection Program

The Partners for Climate Protection program looks at these milestones from both a corporate and community perspective. Corporate refers to the GHG emissions produced as a result of a local government's operations and services. Its purpose is to identify the GHG emissions within a local government's direct control or influence, and for which the local government is accountable as a corporate entity. Community refers to the greenhouse gas emissions generated by the residents and businesses of the community in which the local government serves and represents. This Community Climate Action Plan (CCAP) will focus on reducing community GHG emissions in the Township.

Developing the Plan

A series of engagement initiatives were undertaken to ensure strong community representation in the development of this plan. Community engagement undertaken to inform this plan was supported and directed by the ICECAP partnership. The engagement process involved working directly with community volunteers and youth in thematic climate action groups, and collecting community feedback through anonymous surveys.

Climate Action Groups

Consisting of local citizens and technical experts, a diverse range of individuals throughout the region volunteered to join one of three thematic Climate Action Groups (CAGs) to support in the development of this Plan. The thematic CAGs were responsible from exploring, researching, and recommending key actions in the buildings, transportation, and waste sectors that could be taken to reduce regional GHG emissions. In total over 30 volunteers participated in the CAGs and proposed over 240 actions for consideration, refining them to the 64 actions presented in this plan.

Moving forward, the CAGs will continue their participation by leading the implementation of actions throughout the region. As inspiration and a source of knowledge for others, the CAGs will be critical to the success of the CCAP. The CAGs are always welcoming of new volunteers, and those interested in volunteering are encouraged to contact the Georgian Bay Biosphere for more information.

Buildings Transportation Waste

Youth Engagement

An additional CAG was created to specifically collect feedback from youth. This group provided additional input into the proposed actions developed by the CAGs. The group has since continued their participation and is now undertaking youth-led community initiatives throughout the region. Now called the Georgian Bay Youth Climate Collective, the group welcomes all youth who may be interested in climate action to join them.

Key Community Survey Results:

- Lack of energy efficiency information available.
- Lack of active transportation infrastructure.
- Lack of information about electric vehicles available.
- Concerns about affordability of climate action.
- Lack of electric vehicle infrastructure.
- Desire for retrofit subsidies.
- Desire for leadership from local governments.
- Strong desire to achieve net-zero by 2050.

Community Survey

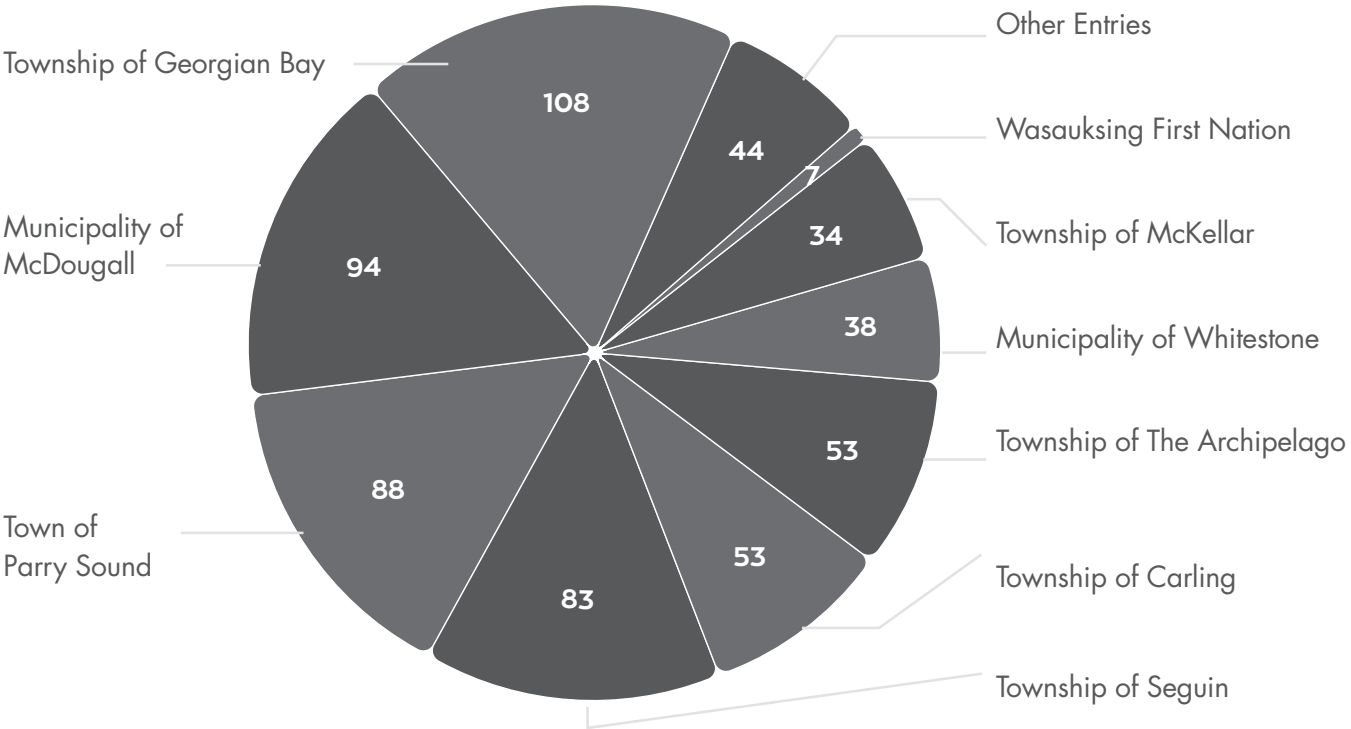
With the support of the CAGs, a community climate action survey was launched to collect community feedback across the region. The survey consisted of 40 questions and collected anonymous information on the CAGs proposed transportation, buildings, and waste actions, desired emission reduction targets for 2030 and 2050, and expectations on local government engagement and leadership in implementing community climate action. As seen in Figure 4, the survey was completed by over 600 individuals, with responses coming from each ICECAP members' respective community.

Although the survey received a large volume of responses, the GBB recognizes that the thoughts, opinions, and values expressed by survey respondents are not reflective of everyone throughout the region. As an inclusive and dynamic organization, the GBB is committed to continuous learning and will update this Plan regularly to ensure that it incorporates future community survey data.

Survey results were further analyzed along with feedback from the CAGs to evaluate and prioritize actions for this Plans. Actions were evaluated based on the following criteria:

- GHG emissions reduction potential
- Benefits and trade-offs
- Feasibility
- Public acceptability
- Funding availability
- Partnership opportunities

Figure 4: Climate Action Survey Participation by Geography



The Climate Change Challenge

Climate change is the result of excess greenhouse gas (GHG) emissions being emitted into the atmosphere as a result of human activity. The burning of fossil fuels such as oil, gas, and coal to power industry, vehicles and buildings are the primary contributors to this issue. These human activities are causing unprecedented rates of warming. As of 2021, the previous six years have included all of the warmest years on record. **The Intergovernmental Panel on Climate Change (IPCC) has underscored that global temperatures must stay below 1.5°C by drastically reducing GHG emissions and balancing remaining emissions through carbon sinks to achieve net-zero emissions by 2050.**

Addressing climate change is especially important for Canada and its residents, which because of its northern latitude, is experiencing a rate of warming approximately twice the global average. The GBB region, along with the rest of the world must act now to avoid the worst impacts of climate change. By actively managing, monitoring, and taking measures to limit the production of GHG emissions, the impacts of climate change will reduce in severity.

Climate Change in the Georgian Bay Biosphere Region

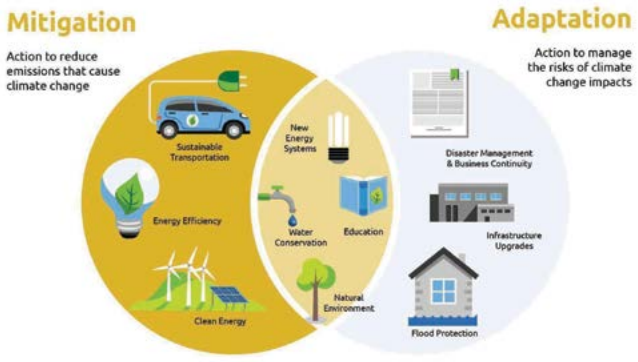
The GBB Region is already experiencing the effects of climate change. Both air and water temperatures are warming, which correspond to increased incidences of heatwaves, reduced ice cover and thickness, and a shorter winter season. Climate change is also increasing the frequency and chances of catastrophic flooding, extreme weather, and wildfires.

The increased frequency and intensity of these climate impacts will impose added stress on the built environment, shortening the effective life of community infrastructure and causing additional infrastructure failures. Moreover, these climate impacts will further compromise the integrity of important ecological services provided by biodiversity and natural infrastructure, such as shoreline stabilization and water filtration. In summary, these impacts change how we interact with the landscape, affect mental and physical health, and the local economy.

Mitigation & Adaptation

Climate change can be addressed through mitigation and adaptation. Mitigating climate change means taking actions that reduce GHG emissions being released into the atmosphere. Climate change adaptation refers to actions that help cope with the impacts of climate change when they happen. Sometimes, mitigation measures are a form of climate adaptation. Similarly, climate adaptation measures can be a form of climate mitigation (Figure 5). Both types of action are essential to addressing climate change.

Figure 5: Climate Change Mitigation & Adaptation Strategies



Local governments have a unique interest and opportunity in planning for a changing climate. As front-line responders to severe weather events and other climate change impacts, local governments often experience and witness the financial, environmental, and social repercussions of climate change within their communities.

Therefore, they have the ability to be leaders in addressing climate change, as their knowledge of community needs and considerations can guide the successful implementation of initiatives designed to tackle climate change. In turn, these efforts can have profound financial, environmental, and social benefits in their communities.

Why Does This Matter to Communities?

In Canada, local governments can influence or control nearly half of the nation's GHG emissions. As seen in Figure 6, there are many ways in which local governments can influence and control GHG emissions.

Efforts to conserve energy or switch energy sources can have numerous financial and social benefits to communities. Households in rural areas of Ontario, for example, have higher energy costs due to less access to natural gas and the high cost of distributing electricity and other fuels to rural regions. In fact, approximately 55% of households in the GBB region live in energy poverty, placing significant financial pressures on many residents. By conserving energy, communities can therefore save on energy costs, retaining money within the community that can spur local economic activity and growth.

DID YOU KNOW?

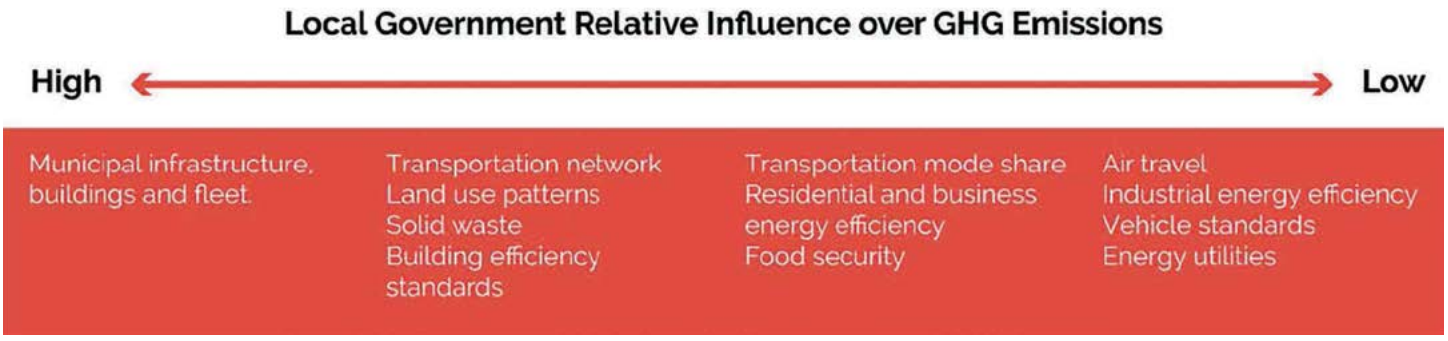
Climate change is causing more frequent and severe weather events which damages local community infrastructure. Investments in resilient infrastructure can have a return on investment of $6 in future averted losses for every $1 spent.

Insurance Bureau of Canada, 2020

Investing into actions that reduce energy consumption and switch fuel sources also supports new forms of local employment and innovation. These investments create opportunities for new and emerging sectors, such as those focused on renewable energy, energy efficiency, green buildings, water and waste management, food production, transportation, land use planning, design, and technology.

Actions to reduce GHG emissions can also have social and environmental benefits as well. For example, utilizing natural infrastructure aids in carbon sequestration and provides other ecosystem services, such as pollination and pest management, water purification, preservation of cultural and natural history, and improved mental, physical, and spiritual health for residents. Strengthening these ecosystem services can also increase the adaptive capacity of communities, offering residents and businesses protection against climate change impacts when they happen.

Figure 6: Local Government Influence Over GHG Emissions



Community GHG Emissions

To effectively manage GHG emissions, a baseline assessment of GHG emissions must first be measured. Establishing a baseline is a useful tool to identify areas for improvement, inform the development of an action plan for reducing GHG emissions, and serve as a reference point to track improvements. A baseline year of 2016 was selected as it was the year in which the most recent census data was available from Statistics Canada1 during the baseline's development.

The Township of Seguin's community GHG inventory identifies and quantifies the sources of GHG emissions from community activities. The quantity of GHG emissions produced by each community sector in the baseline year can be found in Table 1.

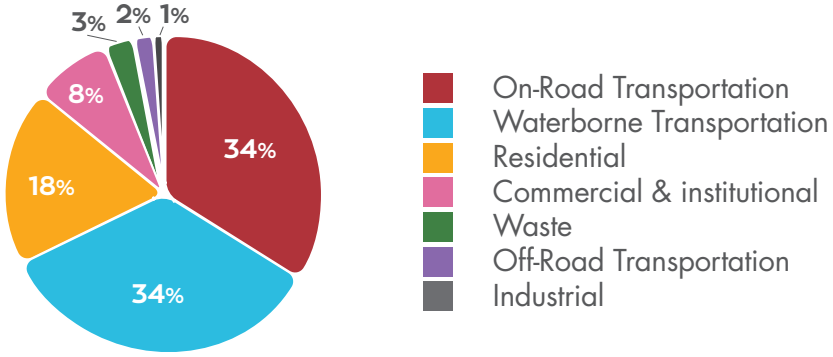
Table 1:
Township of Seguin Community GHG Emissions Baseline

GHG Emissions Sector	tCO2e
Residential	10,586
Commercial & Institutional	2023
Industrial	185
On-Road Transportation	15,355
Off-Road Transportation	1354
Waterborne Transportation	20,880
Waste	2293
TOTAL	52,676

The transportation sector is the largest contributor to GHG emissions in the Township of Seguin, accounting for over 71% of GHG emissions collectively. This is followed by the residential and waste sector, which produce approximately 20% and 4.3% of the community's GHG emissions respectively. Figure 7 provides a breakdown of each emission sector expressed as a percentage.
Where possible, emissions were calculated using actual energy data provided by local utilities and partners. In the case that actual energy data could not be acquired, energy consumption models were develop using available and reputable government and industry data.

To model waterborne transportation emissions, regional data was collected on recreational watercraft ownership, average engine size, fuel type, average annual operating hours, and average fuel consumption. The model does not capture well the transient watercraft travelling through the Township, nor commercial barges/fleet. It should be noted that innovation in representing the impact of this sector was required as no standard yet exists, and that as models are refined, fuel sales within the Township are disclosed, and other data becomes available, the model will become stronger and more robust.

Seguin Township 2016 Community Emissions by Sector



[1] Statistics Canada's 2021 census has indicated that population is increasing at a much faster rate. This means that community GHG emissions are expected to increase at a faster rate than anticipated.

Business as Usual Forecast

A business as usual (BAU) forecast is used to estimate future GHG emission levels if no actions are taken to reduce them. Using population and residential property growth data, it is estimated that GHG emissions in the Township will continue to grow by 2030 if no actions are taken to reduce them. This is because as population increases, so too does the amount of energy consumed by a community. As a result, interventions and solutions are needed to decouple emissions growth from population and development growth.

GHG Emissions Reductions Target

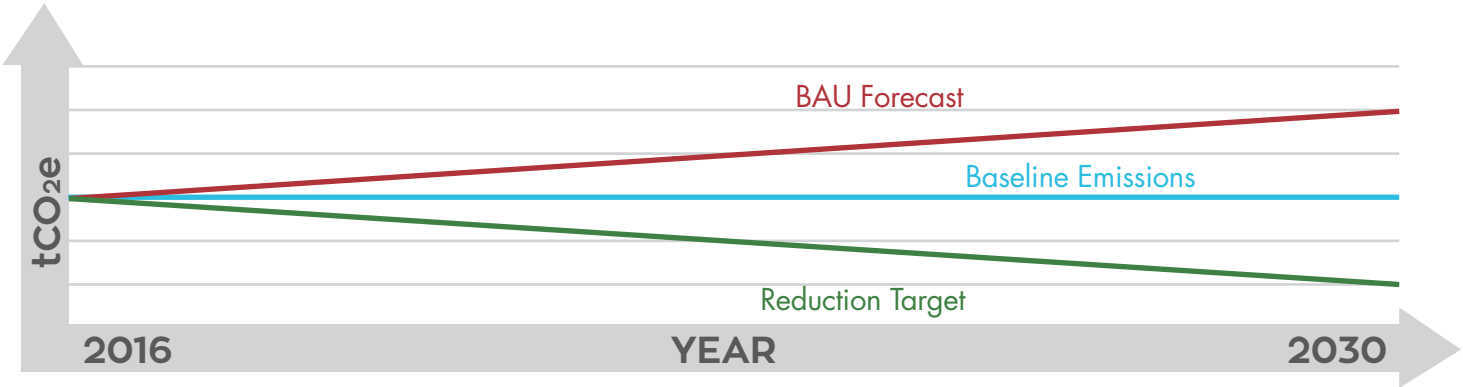
The Township will strive to reduce community GHG emissions by 6% below 2016 levels by 2030. A conceptual image of this target can be found in Figure 8. The Township will also strive to reach net-zero emissions by 2050, in line with other municipalities and levels of government across Canada. The CCAP will be revised after 2030 to provide a more distinct pathway for achieving this target. Unanticipated factors may inevitably affect the Townships ability to achieve this target. As these factors expose this CCAP to a level of uncertainty, it should be considered a living document and the actions should be regularly reviewed and revised based on current technologies, market conditions, and/or changes to policy in senior levels of government.

DID YOU KNOW?

Roughly 91% of Ontario's electricity was produced from emission-free sources in 2021. This makes electricity a clean and effective means for reducing GHG emissions through fuel-switching initiatives, where feasible.

Independent Electricity System Operator, 2021

Figure 8: GBB Region BAU Forecast and Emissions Reduction Target



Approaches for Reducing GHGs

There are three main approaches that can be taken to reduce the region's GHG emissions. These approaches include, but are not limited to:

1. Energy Conservation and Energy Efficiency
2. Fuel Switching
3. Local Renewable Energy Generation

Energy Conservation and Energy Efficiency

Energy efficiency and energy conservation are related and complementary strategies, and both result in reduced energy consumption. In many cases, energy efficiency and energy conservation are the easiest and most cost-effective ways to reduce GHG emissions.
Energy efficiency is achieved when less energy is used to complete a task or result. This can be done through active and conscious efforts to manage energy consumption when completing tasks, or passively by upgrading or retrofitting equipment and assets to energy efficient models.

Energy conservation can be achieved when the use of energy can be avoided altogether. These efforts can be completed at no cost, but require conscious and active commitments to approaching daily activities alternative ways. A common example of energy conservation is putting on a sweater when it is cold outside, rather than turning on the building's heating system.

Fuel Switching

Fuel switching means transitioning from fossil fuels to low or zero carbon energy sources. In most cases, this means using electricity to heat, cool, or move things.

Electricity is the most versatile form of energy available, as it can be used to power a variety of different mechanisms and equipment, from heating buildings to powering vehicles. Currently in Ontario, electricity is considered a very low carbon energy source because it is primarily produced using emission free sources, such as nuclear, hydro, wind, and solar. As a result, most fuel switching efforts focus on electrification given the GHG emission reduction benefits that can be achieved.

Fuel switching can often lead to cost-savings over the lifetime of equipment as well. This is because the use of fossil fuels is inefficient, as much of the energy produced when they are consumed escapes as heat. Electricity, on the other hand, is much more efficient, meaning that equipment and processes can operate to their desired performance level using less energy. Since energy is directly related to fuel expenditures, using less energy can thus lead to cost-savings. In most cases, the cumulative cost-savings will exceed any additional costs associated with purchasing these technologies, making a strong business case for electrification where it is feasible to do so.

Compared to fossil fuels, the market for electricity is more stable and can improve resilience. The globalized supply chain of fossil fuels means that political unrest, catastrophes, and macroeconomic market conditions can cause volatile prices of these commodities. As a price-taker in this market, this means the region's fuel expenditures are influenced by these global realities. On the other hand, electricity has greater price stability since it is both generated and heavily regulated in Ontario. This improved price stability can offer the region greater confidence in budgeting energy expenditures annually.

Local Renewable Energy Generation

To address emissions at their source, processes that generate energy without emitting any GHG emissions at all, such as solar power systems, wind turbines, geo-exchange, and biofuels are needed. These are often referred to renewable energy sources, which are created by natural processes that replenish at a rate equal to or faster than the rate at which they are consumed. Producing renewable energy locally has many benefits, and has been shown to:

- Provide affordable, reliable, clean energy
- Improve systems that transport, store, and use energy
- Increase local job opportunities
- Keep more energy dollars within the community
- Make energy systems more resilient to external supply and fuel prices.

Through community energy planning, non-fossil fuel consuming micro-grids and district energy systems, energy efficient and low-GHG communities can be achieved. This often looks for new opportunities to store clean energy, so that it can be used on demand. While community energy planning is out of scope of this CCAP, the region can still experience the benefit by integrating its operations with these systems.

Achieving Synergies Between Emission Reduction Approaches

These three approaches to reducing GHG emissions work best when used together, and can be applied individually or collectively across emissions sectors. Energy conservation and efficiency supports fuel switching, as using less energy supports its affordability. It also opens additional capacity on the electrical grid to support the electrification transition. Using locally generated electricity can then further reduce GHG emissions, while also achieving the co-benefits that comes with it.

With the help of the CAGs and ICECAP members and partners, GBB has identified a series of actions that can taken in each emissions sector to guide emissions reductions. These actions focus on applying the three approaches to reducing emissions through education, policy, and technology upgrades and replacements.

As changes to policy and legislation, technology, climate, and other changes occur, the actions outlined in this CCAP will evolve. With these actions, the Township hopes to inspire, encourage, and mobilize individuals, communities, and businesses to join in taking climate action and support the CCAP's regional vision.

Taking Climate Action

Buildings

Buildings are a large contributor of GHG emissions in the Township, accounting for approximately 24% of GHG emissions. Of the emission sectors outlined in Figure 9, residential buildings contribute the most. These emissions come from the propane, fuel oil, natural gas, wood, and electricity used to heat, cool, and power homes.

Figure 9: Buildings Emission Sectors

Buildings Emissions come from:

- **Residential Buildings**
- **Commercial & Institutional Buildings**
- **Industrial Buildings**

DID YOU KNOW?

Home energy costs in Ontario can be as much as 60% higher in rural communities compared to urban communities.

Financial Accountability Office of Ontario, 2021

To reduce emissions from buildings, residents and businesses will have to retrofit buildings to increase energy efficiency and conservation, promote low-carbon building practices for new builds, and increase the supply of clean and renewable energy. To support this, local plans and policies must reflect these aims. Educational resources and programs that build knowledge of energy efficiency retrofits, energy conservation behaviours, and alternative energy-savings technologies will be a key element in supporting this transition.

In many cases, energy efficiency and energy conservation are the easiest and most cost-effective ways to reduce GHG emissions. To support and enable residents to implement various retrofits, new and innovative financing mechanisms and programs are emerging. These opportunities can be explored locally in the GBB region to help residents and businesses with retrofit costs.

Energy used for space-heating accounts for roughly 64% of the energy used in the average home (Natural Resources Canada, 2019). With energy sources such as natural gas, propane, fuel oil, and wood being used for space-heating in the region, this makes fuel-switching to low-carbon energy sources like electricity an effective method for reducing GHG emissions. Operating at efficiencies greater than 100%, the increased use of electric heat pumps will be a key factor in these fuel-switching efforts. Local policies, incentives, and education materials are needed to further support and enable greater uptake of these technologies.

To address emissions at their source, processes that generate energy without emitting any GHG emissions, such as solar power systems, geo-exchange, and biofuels are needed. Combined with innovative energy storage technologies and solutions, these renewable energy sources can be leveraged to create micro-grids and district energy systems that can supply communities and neighbourhoods with on-demand clean energy. While these systems have substantial potential for emissions reductions, they are also complex. Implementing these types of initiatives will require careful planning and partnerships with utility agencies.

By integrating these approaches, residents and business can advance towards net-zero emissions in their buildings. While the pathway to net-zero is not linear, the approaches to reducing GHGs outlined in the CCAP are key steps in this process.

An overview of action reduce buildings emissions can be found in the following checklist. Further details about these actions can be found in Appendix A.

Buildings

Action Checklist

Objective 1 Increase public education and awareness on building emissions and energy use.

- 1.1 Create and provide education materials on buildings energy use and GHG emissions.
- 1.2 Invest in educational programs that engage and teach skills to youth for trades in clean energy sectors.
- 1.3 Promote energy conservation and efficiency retrofits in residential, commercial, and institutional buildings.
- 1.4 Promote and encourage residents and businesses to undertake an energy audit of their building(s).
- 1.5 Showcase energy efficiency projects and achievements by businesses and public facilities.
- 1.6 Promote the use of low-impact construction materials and energy efficient appliances.
- 1.7 Promote passive housing and neighbourhood-scale energy systems.

Objective 2 Integrate and increase the use of low-carbon building policies and planning practices.

- 2.1 Review zoning practices and explore opportunities for increased use of mixed residential building types.
- 2.2 With regional partners, advocate for programs that publicly disclose the GHG emissions of buildings.
- 2.3 Explore the development of programs that support energy efficiency retrofits and implement where feasible.
- 2.4 Develop policies that support green building practices.
- 2.5 Explore the development of policies that allow for district energy infrastructure and implement where feasible.
- 2.6 Develop policies that encourage walkable neighbourhood developments.
- 2.7 Develop policies that encourage mixed-use and in-fill housing developments.
- 2.8 With regional partners, advocate for retrofit financing programs that are connected to property assessments.

Objective 3 Increase energy efficiency retrofits in homes and businesses.

3.1 Encourage businesses and industry to measure and monitor their energy consumption and GHG emissions.
3.2 Support and partner with utilities in delivering energy retrofit programs.
3.3 Explore the development of a local retrofit program and implement where feasible.

Objective 4 Increase and promote the use of net-zero building practices for new buildings.

4.1 With regional partners, advocate for municipal-specific Green Development Standards.
4.2 Support and encourage new community facilities to be designed to net-zero standards.

Objective 5 Increase clean energy generation and energy management practices.

5.1 Promote and encourage solar, wind, micro-hydro, and other clean energy installations.
5.2 Promote decentralized community energy generation at the neighbourhood scale.
5.3 Promote the benefits of integrated automotive and housing energy systems.
5.4 Encourage community energy installations to use net metering and feed into the grid where feasible.
5.5 Explore opportunities for energy and battery storage and implement where feasible.

Transportation

Transportation is the largest contributor of GHG emissions in the Township, accounting for approximately 71% of GHG emissions. Of the transportation emission sectors outlined in Figure 10, waterborne transportation contributes the most, followed by on-road transportation which includes emissions from the gasoline and diesel used to fuel cars and trucks. Transportation represents a large portion of the region's total emissions because residents and business live, work and play in a large geographic area which requires lengthy trips to local amenities.

Figure 10: Transportation Emission Sectors

Transportation Emissions come from:

- **On road transportation**
- **Off road transportation**
- **Waterborne transportation**

To reduce transportation emissions, residents and businesses will have to re-think how they get around. To support this, residents and businesses will need educational products and programs that build knowledge of alternative transportation options and can help them make informed purchasing decisions. This will also require the development of policy and supporting infrastructure which enables residents and businesses to use these transportation options within and between communities.

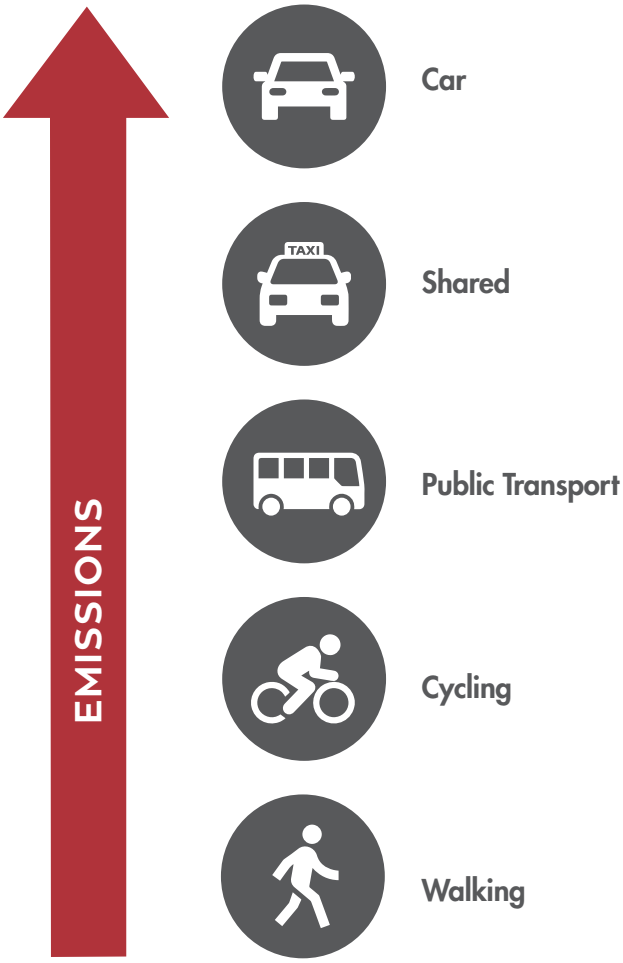
DID YOU KNOW?

The Government of Canada has mandated that by 2035, 100% of new light duty vehicle sales in Canada must be zero emission vehicles. This means that by 2035, only zero emission cars and light duty trucks and vans will be available for purchase when buying a new vehicle.

Government of Canada, 2022

The region's transportation system plays a major role in the local economy and serves as a gateway to northern Ontario. It is therefore important to propose changes to the transportation system that will make the economy more resilient and promote a healthy workforce and community. These changes can include improving the quality of active transportation options and developing new public transport opportunities in the region. The sustainable transportation hierarchy found in Figure 11 can serve as a useful guide for prioritizing transportation modes in communities, based on their emissions output.

Figure 11: Sustainable Transportation Hierarchy



Reliance on personal vehicles can be reduced through alternative approaches to neighbourhood design and improved access to public and active transportation options. However, sometimes public or active transportation options are not feasible in rural settings, due to the expansive distances between communities and the infrastructure and safety complexities this causes. Careful planning of programs that enable further adoption and use of these modes are therefore needed.

Given these challenges, it will be critical to support a shift to zero-emission vehicles (ZEVs) in the region. ZEVs are quickly being adopted, and it is anticipated that this uptake will continue to grow. This is because the Government of Canada has mandated that by 2035, all new light-duty vehicle sales in Canada must be ZEVs. The GBB region must be prepared for this by developing supporting infrastructure, policy and partnerships.

An overview of actions to reduce transportation emissions can be found in the following checklist. Further details about these actions can be found in Appendix B.

TECHNOLOGY SPOTLIGHT

EVs have maintenance costs that are roughly 70% below comparable Internal Combustion Engine (ICE) vehicles. This is because EVs have fewer moving parts in their drivetrains and do not need oil changes, coolant flushes, mufflers or exhaust systems to keep them running optimally.

Canada Energy Regulator, 2019

Transportation

Action Checklist

Objective 6 Improve public education and awareness regarding Active and Zero-Emission Transportation.

- 6.1 Develop and support municipal plans and policies that support zero-emissions transportation.
- 6.2 Explore the feasibility, impact, and implementation options of a local carbon offset fund.
- 6.3 Develop an education campaign to increase awareness about the benefits of active transportation.
- 6.4 Promote existing and emerging active transportation modes and opportunities for use.
- 6.5 Promote existing and emerging recreational trails and active transportation networks.
- 6.6 Create education materials on the use and benefits of electric vehicles.
- 6.7 Create and distribute educational resources on EV charging stations and transportation emissions.
- 6.8 Develop communications that showcase local examples of zero emission transportation.

Objective 7 Increase the use of Active Transportation.

- 7.1 Develop, improve, and maintain walking and bike-friendly infrastructure
- 7.2 Explore opportunities for active transportation pilots.
- 7.3 Explore and support improvements to community design for pedestrian access to essential services.
- 7.4 Encourage local business to support cyclist clientele.
- 7.5 Explore the development of an e-bike/bike share program.
- 7.6 Explore infrastructure upgrades that support active transportation.
- 7.7 Encourage visitors to engage in low GHG emissions activities.

Objective 8 Increase the use of Zero Emission Transportation.

8.1 Support expansion of public level 2 EV charging infrastructure.
8.2 Support expansion of public level 3 (DCFC) EV charging infrastructure.
8.3 Promote and support the transition to zero or low-emission vehicles.
8.4 Explore the development a public ride-sharing program.
8.5 Develop communications to raise awareness about the use of electric boats.
8.6 With regional partners, advocate for policies and regulations that support and enable zero-emission transportation.

Objective 9 Improve transportation efficiencies for goods and people.

9.1 Support the local production, distribution, and consumption of products.
9.2 Promote planning practices that encourage mixed-use development
9.3 Explore opportunities for public transportation.
9.4 Support the planning and implementation of walkable neighbourhoods.

Solid Waste

Waste is another contributor to GHG emissions in the Township, accounting for approximately 4% of community GHG emissions. As seen in Figure 12, much of these emissions come from the breakdown of organic materials, like food scraps, paper, or yard waste, when they are left to decompose in a landfill.

Figure 12: Factors Contributing to Waste Emissions

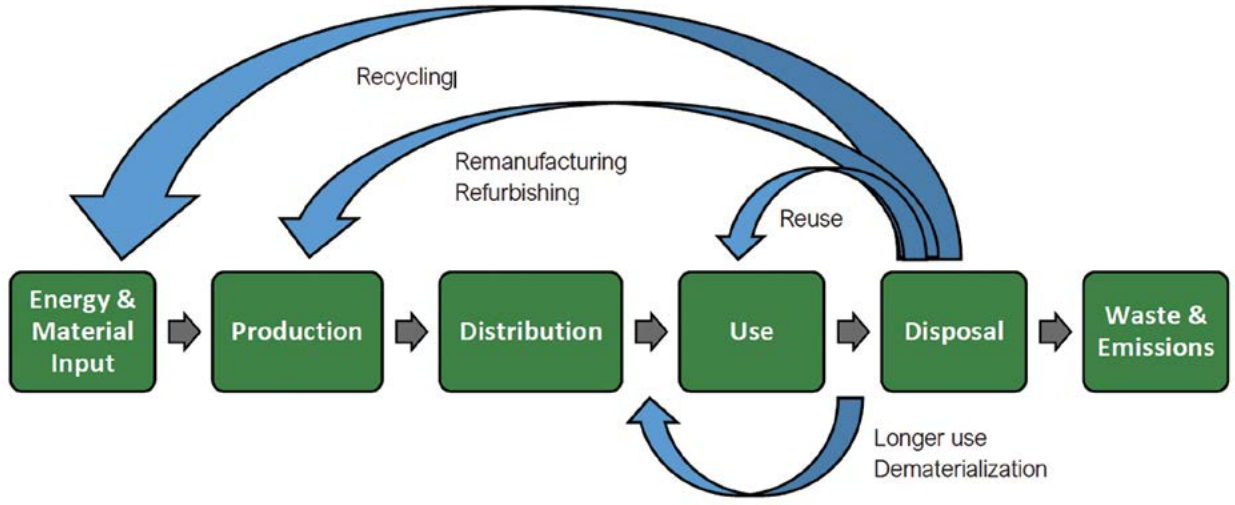
Waste Emissions come from:

- **Quantity of Waste**
- **Types of Waste**
- **Landfill Characteristics**

To reduce waste emissions, residents and businesses will need to look to reduce their overall consumption of products, and divert more from landfill by reusing, reclaiming, and repairing items. Educational resources and programs that build knowledge of circular economy principles, waste diversion and reduction practices, and composting will be a key element in supporting this transition.

A circular economy aims to prevent waste and its associated emissions by designing products to be durable and repairable, and to repurpose end-of-life materials through enhanced upcycling and resource recovery processes. This can present opportunities for local economic development. As seen in Figure 13 turning waste into materials can be reinjected throughout the value chain of different industries, creating new and additional revenue streams and business opportunities.

Figure 13: Value Chain Opportunities in a Circular Economy



With much of the Township's waste emissions coming from organics, programs and policies aimed at composting organics can be highly effective. When organics decompose in landfills, a lack of oxygen during the decomposition process produces methane, a GHG more potent than carbon dioxide. On the other hand, when organics decompose in a compost pile, the available oxygen during this process limits the production of methane. The production of compost can have ripple effects as well, as it creates a product that can be sold or used for the production of local food, improving food availability and security in the region.

Waste-to-energy technologies are increasingly presented as an attractive option to reduce organic waste and GHG emissions, provide on-site renewable energy and address limited landfill capacity challenges. Waste-to-energy technologies work by processing organic waste into a product that can be used for heat, electrical generation, or as a liquid bio-fertilizer for growing local food. Increasing appropriate diversion rates at buildings and facilities and recreation areas can support waste-to-energy efforts by providing clean feedstock for these technologies.

An overview of action to reduce waste emissions can be found in the following checklist. Further details about these actions can be found in Appendix C.

DID YOU KNOW?

Organics are the leading cause of waste emissions in the GBB region. Composting programs can therefore be highly effective at mitigating GHG emissions in landfills.

Georgian Bay Biosphere, 2022

DID YOU KNOW?

When it decomposes, organic waste produces methane, a greenhouse gas that is 25 times more potent than carbon dioxide. Reducing the amount of organic waste destined to landfills can be a highly effective way at reducing GHG emissions.

Environment and Climate Change Canada, 2022

Solid Waste

Action Checklist

Objective 10 Improve public education and awareness regarding waste reduction options and impacts.

- 10.1 Create and provide education materials for school activities related to waste reduction.
- 10.2 Create and provide public education materials that raise awareness and support waste reduction strategies or habits.
- 10.3 Update signage at transfer stations to provide additional and explicit instructions for waste diversion.
- 10.4 Promote local food producers and low-packaging consumption.

Objective 11 Improve waste reduction strategies to reduce the volume of waste produced.

- 11.1 Promote and support local efforts to the elimination of single-use plastics.

Objective 12 Improve waste diversion strategies to divert the volume of waste disposed at landfills.

- 12.1 Facilitate free Repair Cafes to encourage lower consumption of goods.
- 12.2 Encourage greater enforcement of proper use of transfer stations and landfills.
- 12.3 Create and distribute resources for recycling uncommon items.

Objective 13 Improve diversion of organic waste.

13.1 Explore initiating a green bin program and implement where feasible.
13.2 Promote backyard composting and counter top composting alternatives.
13.3 Develop a "Kitchen to Compost" mentorship program for those new to composting.
13.4 Encourage and support Food Rescue programs.

Objective 14 Work with local business and industry to improve overall waste reduction.

14.1 Explore opportunities to engage with businesses to better understand their waste streams and disposal practices.
14.2 Develop and support a Green Award competition to showcase local waste reduction and diversion champions.

Community Leadership

Effective climate action is achieved by more than just Technological interventions. To enable widespread climate action across the region, residents and businesses must participate and serve as community champions. As leaders, these community champions can serve as inspiration and sources of knowledge for others. Although the GHG emissions associated with these efforts cannot be quantified, they are equally as important.

Through the decisions made by residents and businesses, the region may either grow in a climate compatible manner, or lock itself into an inefficient and unsustainable path for decades to come. Therefore, capital investment into climate action will be critical for success and needs to be aligned and integrated with long term financial planning and asset management plans. Leveraging external funding through federal and/or provincial grant programs will also play a key role in unlocking many of the actions in this CCAP.

Leading by example in areas where the Township has a high level of influence is also critical in setting the pace and catalyzing community action. Investing in action can stimulate local economic growth and industry knowledge that can utilized by the community in their efforts. Open and transparent communications about the implementation of this CCAP can offer lessons learned and guidance to the community by helping them understand how they can implement their own actions. Success will only be possible if the Township, its residents, and businesses all participate.

Metrics & Evaluation

Success can be measured in many ways; the most relevant approach for the purposes of this CCAP is the reduction of GHG emissions over time. Success can also be seen in the number of actions that have been implemented, their distribution across the Township, and the impacts those actions have had. By measuring and monitoring the impact of actions, new and emerging priorities and opportunities can be identified. Success will be measured by reaching the GHG reduction targets identified in the CCAP and the ultimate goal of striving for net-zero GHG emissions by 2050.

Every Two Years

Every two years, the actions outlined in this plan will be reviewed to ensure they remain relevant and are implemented efficiently. This may include:

- Progress on actions
- Success and lessons learned
- New actions
- New external funding opportunities

Every Five Years

A comprehensive review of this plan will be conducted every five years, including:

- Progress update on GHG emissions reduction targets
- Review of actions to identify implementation gaps and opportunities
- New partnership and engagement opportunities

Ongoing

As new technology and government regulations emerge, this plan will also evolve and adapt to leverage new opportunities. As technologies and market conditions change over time, new actions may be added and existing actions may be modified. Therefore, the CCAP should be considered a living document that can be modified to remain effective and relevant.

The Township will continue to engage with ICECAP members and partners, the public, stakeholders, the community, and subject matter experts to understand how circumstances across different scales may impact the implementation of this CCAP. Continuing to develop and engage in supportive partnerships will ensure actions are implemented efficiently. All the actions in this CCAP do not need to be implemented to achieve success. There are many pathways to success, and aligning actions with community priorities and other factors will be key in defining the outcomes of this CCAP.

Call to Action

Climate change is one of the great challenges of our time. It affects every aspect of our lives and is changing how we interact with the landscape, affecting mental and physical health, the local economy, and livelihoods. Therefore, we all have a role to play in taking climate action. Actions that we take today can have a significant impact now and for generations to come.

Tackling climate change requires a shift in how we live, work and think. It requires the involvement of individuals, businesses and all levels governments. Collaboration will be the key to success. Policies and regulations are needed at the federal and provincial level that enable and empower certain actions in communities, and it will be imperative that individuals and businesses join local governments in taking actions.

There is strength in numbers, and ICECAP's collaborative approach to climate change planning and action has the opportunity to support and guide the Township towards a healthier, more prosperous and sustainable future. Through collaboration, resources and knowledge can be shared, and efforts can be coordinated to ensure that implementation is done efficiently and effectively.

Conserving energy and becoming less reliant on fossil fuels reduces several types of pollutants, which in turn improves overall public health, encourages innovation and saves money. Reducing our daily water intake protects our water sources and the plentiful bodies of water we enjoy in the Township. Additionally, efforts to limit the waste we produce, coupled with appropriate waste diversion practices can extend the life of our existing landfills, preserving wilderness that may otherwise be cultivated to accommodate waste growth. Taking conscious efforts to follow these principles can therefore have a major impact.

Big or small, taking any form of action moves us in the right direction. But it is crucial that action begins nonetheless. Shifting the ways we live, work, and think can take many years or even decades. This means that change needs to begin immediately to prepare communities for a net-zero future. There is much work to do, but with the establishment of this CCAP, the Township is already well on its way.

To join a Climate Action Group, or get involved in climate action, please contact the Township or the Georgian Bay Biosphere for more information.

Thank You, Miigwech

This plan has been developed in partnership with the Georgian Bay Mnidoo Gamii Biosphere (GBB), with input from ICECAP members & partners.

The GBB is an inclusive and dynamic organization that builds capacity for regional sustainability in eastern Georgian Bay.

The GBB is a non-profit registered Canadian charity governed by a Board of Directors.

For more information, please visit: gbbr.ca