DRAFT

Climate Mitigation Plan

2023

Reduce | Improve | Switch



owen sound
where you *want* to live

Prepared By:
City of Owen Sound

Table of Contents

Page 3 - Land Acknowledgement
Page 4 - Team Acknowledgements
Page 6 - Message from the Mayor
Page 7 - Introduction
Page 8 - Stakeholder Engagement
Page 9 - City's Vision of a Green City
Page 10 - Emissions Reduction Targets
Page 11 - Partners for Climate Protection (PCP) Five Milestone Framework
Page 13 - Baseline Green House Gas Emissions Inventory
Page 14 - Community Emissions Inventory and Business-as-Usual Projection
Page 19 - Corporate Emissions Inventory and Business-as-Usual Projection
Page 24 - Climate Action in the City of Owen Sound
Page 25 - Benefits of Climate Action
Page 26 - Community Actions
Page 38 - Corporate Actions
Page 39 - Implementation
Page 46 - Monitoring and Review
Page 47 - Ways You Can Help
Page 48 - Glossary

Land Acknowledgement



The City of Owen Sound is situated on the traditional territory of the Anishinabek Nation: The People of the Three Fires, known as Ojibway, Odawa, and Pottawatomie Nations.

We respectfully acknowledge the history, spirituality, and culture of the Anishinaabe peoples and ancestors who shared this land and these waters. Our community is enriched by the enduring knowledge and deep-rooted traditions of the diverse First Nations, Metis, and Inuit in Owen Sound today.

Grounded in generations of place-based observations and experiences, Indigenous knowledge systems are central to a thorough understanding of how people perceive, understand, mitigate, and adapt to climate change. During the implementation phase of the Climate Mitigation Plan, the City of Owen Sound will seek to develop and maintain collaborative relationships with the Saugeen Ojibway Nation, the traditional keepers of this land, and Indigenous communities and organizations located in Owen Sound to nurture their contributions and guidance, and to ensure that their feedback is integrated into the Plan.

Team Acknowledgments



The City of Owen Sound would like to acknowledge everyone who participated in the development of the Climate Mitigation Plan. The Plan is the result of efforts and strong leadership demonstrated by the Internal Project Team and key external stakeholders and reflects a diverse range of knowledge and expertise.

We thank you for your efforts in increasing the City's resilience to the impacts of climate change.

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Mayor's Message

As Mayor of Owen Sound and on behalf of City Council, I thank you for taking the time to read, and helping to develop, our Climate Mitigation Plan.

The decisions we make each day as individuals and as a municipality have an impact on the changing world around us. We need to make necessary changes to protect and preserve our environment and plan for a sustainable future. We want to be leaders in climate action by embracing new technology and modern practices.

Through this Climate Mitigation Plan, we hope not just to inform but also to inspire our community to act against climate change and find inclusive solutions that leave nobody behind.

May we work together in effort,



His Worship Ian Boddy
Mayor
City of Owen Sound



"WE HOPE NOT JUST TO INFORM BUT ALSO TO INSPIRE"

Introduction



The climate is changing in Owen Sound and around the world.

Climate change, which refers to long-term changes in the average weather conditions of an area, is caused by an increase in greenhouse gas emissions in the atmosphere, which are produced primarily through the combustion of fossil fuels. The process of climate change has been occurring for decades (or longer) and is resulting in changes in the frequency and intensity of extreme weather events, as well as shifts in the locations where these events might normally occur.

Fluctuations in the Earth's climate are normal to an extent, but the speed at which climate change has occurred over the last one hundred years is unprecedented and is due to human activities. Industrialization, manufacturing processes and deforestation are key causes of climate change, as are everyday activities such as heating our homes and facilities and powering our vehicles. These activities produce greenhouse gas emissions, which remain in the atmosphere and trap heat energy from the sun, causing the process of climate change.

This Climate Mitigation Plan is the first chapter in the City's Strategy to manage climate change in Owen Sound. Climate change mitigation focuses on minimizing or preventing climate change by taking actions to reduce greenhouse gas emissions. In doing so, the City is working to limit the negative effects of climate change occurring in Owen Sound. The Climate Mitigation Plan introduces a baseline greenhouse gas emissions inventory for the City, as well as emissions reduction targets based on the data captured in the inventory and actions that the City will take to reduce the production of emissions in Owen Sound.

CLIMATE CHANGE MITIGATION FOCUSES ON MINIMIZING OR PREVENTING CLIMATE CHANGE BY TAKING ACTIONS TO REDUCE GREENHOUSE GAS EMISSIONS.

Stakeholder Engagement

Engagement with internal City staff, external stakeholders, and the public shaped the development of the Climate Mitigation Plan through the identification of actions to reduce emissions in the City of Owen Sound.

Multiple action planning sessions were held for internal staff in March 2023. These sessions provided staff with an opportunity to learn about the Climate Mitigation Plan and to brainstorm actions that their divisions could support to reduce both corporate and community emissions in the City. Involving internal staff in the action planning process provided the City with valuable insights into the areas in which actions might be most effective or realistically implemented in terms of our municipal operations. In addition to these sessions, a climate action survey was circulated internally to staff as a second way to generate participation in the action planning process.

Throughout the development of the Climate Mitigation Plan, City staff attended meetings with Grey County staff to collaborate on the best ways for the City, as a member municipality of the County, to support the climate work already being done. Meeting with Grey County presented an opportunity to prevent the duplication of efforts and has allowed the City to determine the best ways to implement, support, and promote climate action in Owen Sound. City staff have also attended regular Community of Practice meetings with climate change professionals from other member municipalities to learn about other climate action work being done in our local area.

A draft of the Climate Action Mitigation Plan was released to the public in April 2023. By releasing the draft plan, it gave staff a valuable opportunity to learn about perceptions of climate change in the City and to identify priority areas of community members in terms of our municipal climate action. Following its release, City staff had an information booth at the Earth Day Grey Bruce event and presented at a public meeting hosted by the Climate Action Team Owen Sound. Both events enabled the community to ask questions and provide feedback. In addition to the in-person events, the City utilized the Our City platform to gather input from the broader community. This survey gave community members an important opportunity to provide feedback, ask questions, and make suggestions about the contents of the draft Climate Action Mitigation Plan. Following this period of community engagement, City staff and CATOS reviewed the feedback, identified themes, and integrated it into the Climate Action Mitigation Plan.

City's Vision of a Green City



The City of Owen Sound is dedicated to taking actions to address climate change across municipal operations and throughout the community. The City is creating a more prosperous, sustainable, and healthier future for residents by taking collaborative action with local governments, embracing energy conservation, promoting awareness, and working with local businesses and homeowners to achieve climate solutions that are equitable, inclusive, and attainable.

THE CITY IS CREATING A MORE PROSPEROUS, SUSTAINABLE, AND HEALTHIER FUTURE



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

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

Switch the source of the remaining energy required to a clean source of energy that doesn't use fossil fuels or produce GHG emissions. Clean energy sources include electricity (in Ontario – 92% of electricity is produced by nuclear, hydroelectric, wind and solar).

Emissions Reduction Targets

In 2015, Canada signed the Paris Agreement at the 21st Conference of the Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC). The Paris Agreement aims to keep the increase in global average temperature to less than 2°C above pre-industrial levels. The Canadian Net-Zero Emissions Accountability Act, which became law in June 2021, declares in legislation Canada's commitment to achieve net-zero emissions by 2050.

Recognizing this national commitment to achieve net-zero emissions by 2050, the City of Owen Sound has set a net-zero emissions target and has established midterm 2030 emissions targets based on this timeline. These targets have been deemed ambitious but realistic and will enable the City to meet the Canadian Net-Zero Emissions Accountability Act's goal of net-zero by 2050. The City's targets will be achieved through several corporate and community actions aimed at reducing Owen Sound's greenhouse gas emissions.

THE CITY OF OWEN SOUND HAS SET THE FOLLOWING EMISSIONS REDUCTION TARGETS:

Year	Community Target	Corporate Target
2026	15%	20%
2030	30%	35%
2035	50%	50%
2040	60%	65%
2045	75%	80%
2050	Net-zero	Net-zero

Partners for Climate Protection (PCP) Milestone Framework



Partners for Climate Protection (PCP) 5 Milestone Framework image courtesy of www.pcp-ppc.ca

In September 2022, the City of Owen Sound joined ICLEI Canada and the Federation of Canadian Municipalities' (FCM) Partners for Climate Protection (PCP) program. The PCP program has operated in Canada for over 25 years in support of climate change mitigation planning at the local government level, and currently has over 500 local government members across Canada. In the development of the Climate Mitigation Plan, the City has utilized the PCP's Five Milestone Framework, which provides a structural approach and comprehensive methodology for climate change planning, specifically created for municipal governments in Canada.

Partners for Climate Protection Milestones

In following the PCP's Five Milestone Framework, the City has developed a baseline emissions inventory, has set emissions reduction targets and identified corporate and community actions to help achieve these targets, and has developed a plan to implement these actions across numerous sectors to reduce the City's contributions to climate change. As of May 2023, the City has achieved the first two milestones.

THE FIVE MILESTONES:



01 Creating An Inventory

Achieved prior to the publication of the City's draft Climate Mitigation Plan.



02 Setting A Target

Achieved prior to the publication of the City's draft Climate Mitigation Plan.

03 Developing A Plan

The development and finalization of the Climate Mitigation Plan will achieve Milestone 3.

04 Implementing A Plan

Will be accomplished upon the implementation of the actions laid out in the Climate Mitigation Plan.

05 Monitoring The Impact

To achieve Milestone 5, the City will monitor the impact of the Climate Mitigation Plan and will update the document as necessary.

Baseline Greenhouse Gas Emissions Inventory



A baseline emissions inventory was completed for Owen Sound's municipal operations (referred to as the corporate inventory), and for the community of Owen Sound as a whole (referred to as the community inventory). 2018 was chosen as the baseline year for the inventory to align Owen Sound's Climate Mitigation Plan with the climate action work already completed by Grey County.

GREENHOUSE GAS (GHG) EMISSIONS, BOTH NATURAL AND ANTHROPOGENIC, ABSORB AND EMIT RADIATION AT SPECIFIC WAVELENGTHS

Preparation for both inventories followed the Global Protocol for Community-Scale Greenhouse Gas Emission Inventories (GPC) BASIC level of reporting and the Partners for Climate Protection Protocol: Canadian Supplement to the International Emissions Analysis Protocol.



Community Emissions in 2018

Community emissions – those associated with the community of Owen Sound as a whole – account for approximately 98% of the total emissions captured in the baseline emissions inventory.

The community inventory is based on data shared with the City by Grey County, which was collected during the completion of the Grey County Climate Change Action Plan. Where it was possible, data specific to Owen Sound was segregated, and where segregation was not possible, data was prorated using population as a scaling factor to calculate total quantities of emissions reflective of Owen Sound.

The community inventory is comprised of the following sectors: residential, commercial, and manufacturing buildings, on-road transportation, wastewater and sewage treatment, and solid waste. The total emissions captured in the community inventory was 147,213 tCO2e in 2018.



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Community Emissions in 2018

BY SECTOR

The highest contributing sector in the community inventory is on-road transportation, which accounts for approximately 54% of the total emissions captured. The next highest emitting sectors are residential and commercial buildings, accounting for 20% and 15% of emissions, respectively. The final three sectors, solid waste, manufacturing buildings, and wastewater treatment produced fewer emissions, contributing approximately 7%, 3%, and less than 1%. A breakdown of total community emissions by sector is shown in Table 1.

TOTAL EMISSIONS

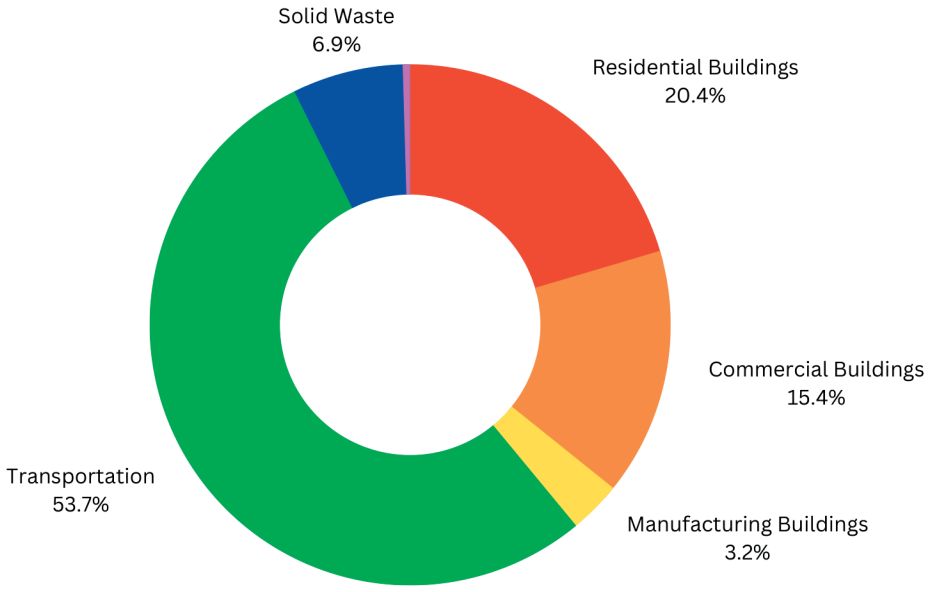


TABLE 1 - COMMUNITY EMISSIONS BY SECTOR

Sector	Total Emissions (tCO2e)
Residential Buildings	30,048
Commercial and Institutional Buildings	22,610
Manufacturing Buildings	4,766
On-road Transportation	78,989
Solid Waste	10,119
Wastewater & Sewage	682

Community Emissions in 2018

BY SOURCE

On-Road Transportation Fuel is the highest energy consumption at 68%. Electricity is the next highest fuel consumption at 22%, followed by Manufacturing Industries and Construction Fuel at 9%. Natural Gas has a significant energy consumption but due to an error in the PCP calculator it is not showing. Table 2 shows emissions and energy by source.

ENERGY CONSUMPTION (GJ)

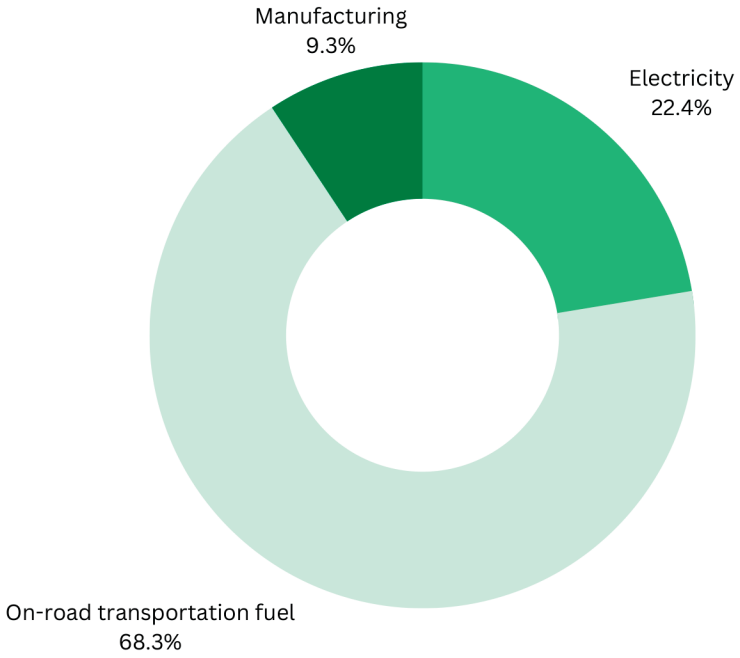


TABLE 2 - COMMUNITY ENERGY (GJ) BY SOURCE

Source	Emissions (tCO2e)	Energy (GJ)
Electricity	3,130	381,330
Manufacturing Industries and Construction Fuel	4,766	157,414
Natural Gas	49,528	0*
On-Road Transportation Fuel	78,989	1,162,683

** Note there is an error with the partners for Climate Protection (PCP) Calculator and the calculation for the GJ for natural gas is incorrect. This will be updated once the PCP Calculator is corrected.*

Community Emissions in 2018

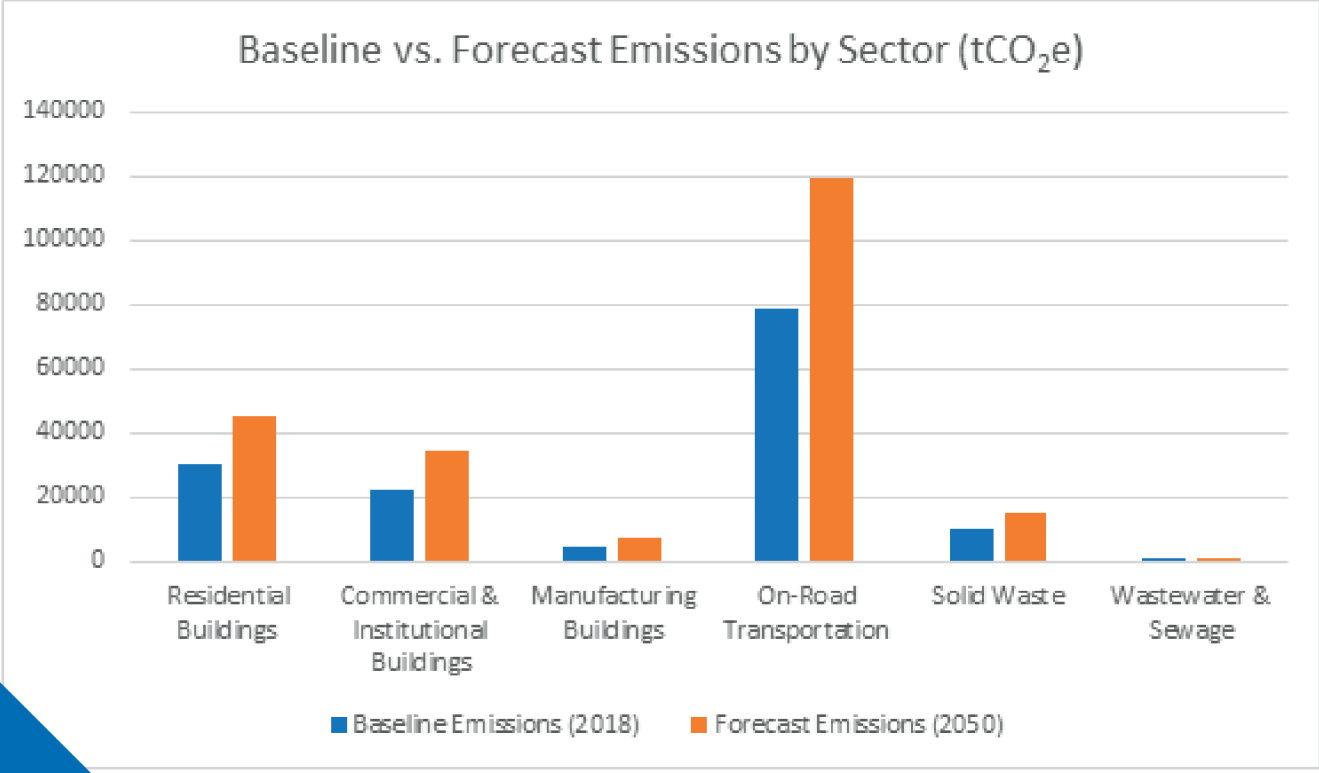
BUSINESS-AS-USUAL PROJECTION FOR COMMUNITY EMISSIONS

The Business-as-Usual scenario is a projection of future greenhouse gas emissions for the City of Owen Sound which assumes that no actions to reduce emissions are taken and that the patterns of emissions production demonstrated in the baseline year continue.

Calculations are from the PCP calculator and utilized an annual population growth of 1.3%.

A comparison of community baseline emissions and community forecast emissions is shown below in Figure 3.

FIGURE 3 - COMMUNITY BASELINE AND FORECAST EMISSIONS BY SECTOR (TCO2E)



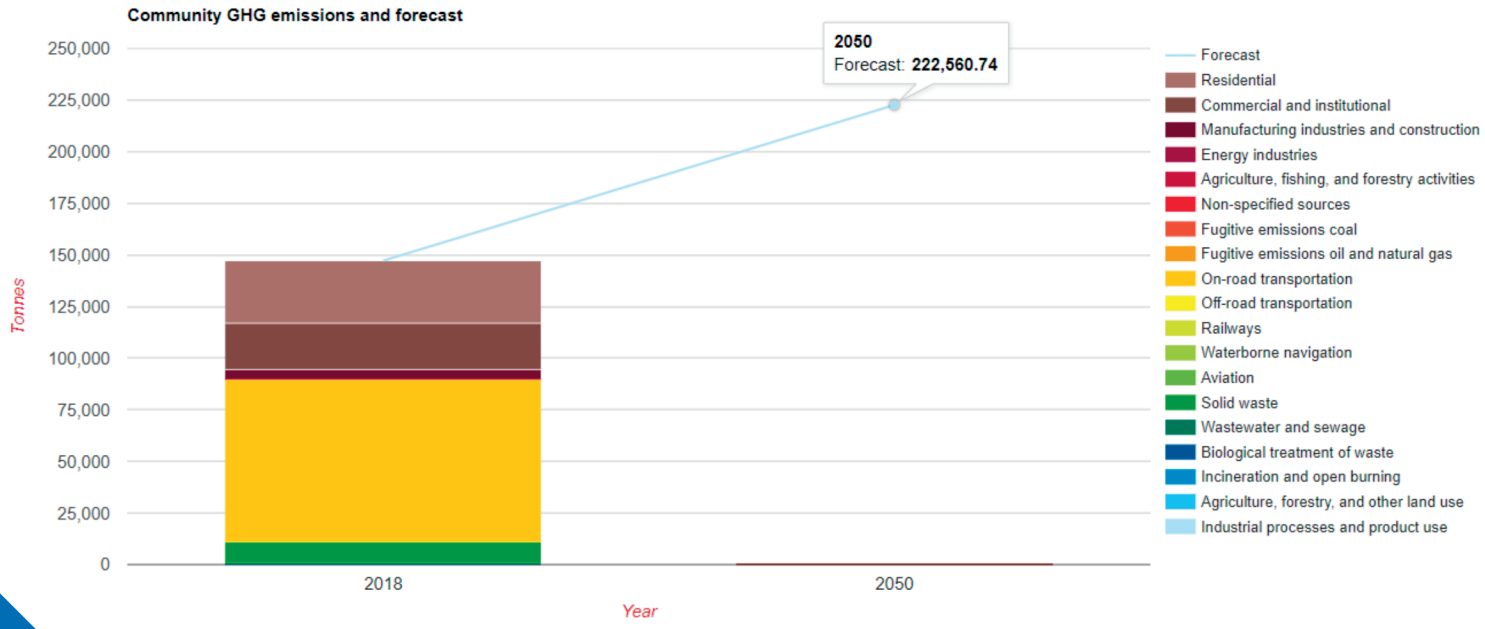
Community Emissions in 2018

BUSINESS-AS-USUAL PROJECTION FOR COMMUNITY EMISSIONS

The Business-as-Usual scenario is a projection of future greenhouse gas emissions for the City of Owen Sound which assumes that no actions to reduce emissions are taken and that the patterns of emissions production demonstrated in the baseline year continue.

The BAU forecasts featured in the Climate Mitigation Plan utilize 2050 as the projection year. The community forecast predicts a total of 222,561 tCO2e if the City does not take action (as shown in Figure 4).

FIGURE 4 - COMMUNITY BASELINE AND FORECAST ENERGY CONSUMPTION



Corporate Emissions in 2018

Corporate emissions – those associated with City operations – account for less than 2% of the total emissions in the baseline inventory.

The total emissions captured across all City-owned corporate facilities, fleet vehicles and equipment, and street lighting was 2,699 tCO2e in 2018.

It should be noted that the City Hall facility was under construction during 2017 to 2018, meaning that consumption data was not available during these years. Data from 2016 was used for City Hall in the corporate inventory, as it was the closest year with 12 full months of energy usage data available.



Corporate Emissions in 2018

BY SECTOR

Buildings is the highest contributing sector in the corporate inventory, accounting for more than 59% of the total emissions captured. The water and wastewater treatment sector is the second-largest emitter, at 21%. This sector includes emissions produced by the operation of water and wastewater treatment facilities and excludes emissions produced as a result of the treatment process, which are captured in the community inventory. The City's fleet is the third-highest emitting sector, at 19%. Finally, the lowest-emitting sector in the corporate inventory is streetlights, which represents less than 1% of the total corporate emissions. The streetlight sector of the inventory includes all outdoor lighting under operational control of the municipal government. A breakdown of total corporate emissions by sector is shown in Table 5.

TOTAL EMISSIONS

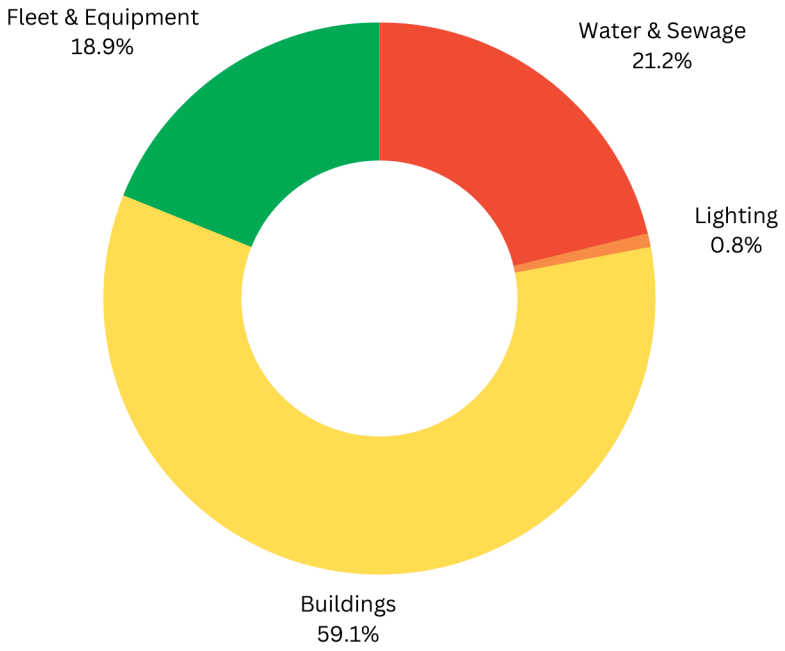


TABLE 5 - CORPORATE EMISSIONS BY SECTOR

Sector	Total Emissions (tCO2e)
Buildings	1,594
Fleet and Equipment	511
Water and Sewage	573
Street and outdoor Lighting	21

Corporate Emissions in 2018

BY SOURCE

Within the Corporate Emissions, electricity has the highest energy consumption at 52%. Natural Gas has an energy consumption at 40%. Diesel at 5% and Gasoline at 3% have the lowest energy consumption. A breakdown of energy consumption is shown in Table 6.

ENERGY CONSUMPTION (GJ)

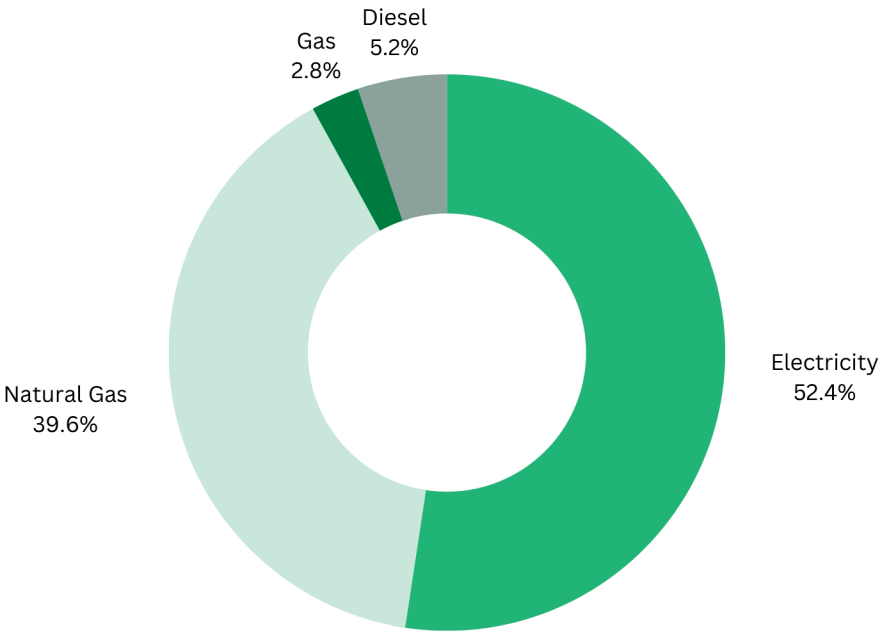


TABLE 6 - CORPORATE ENERGY (GJ) BY SOURCE

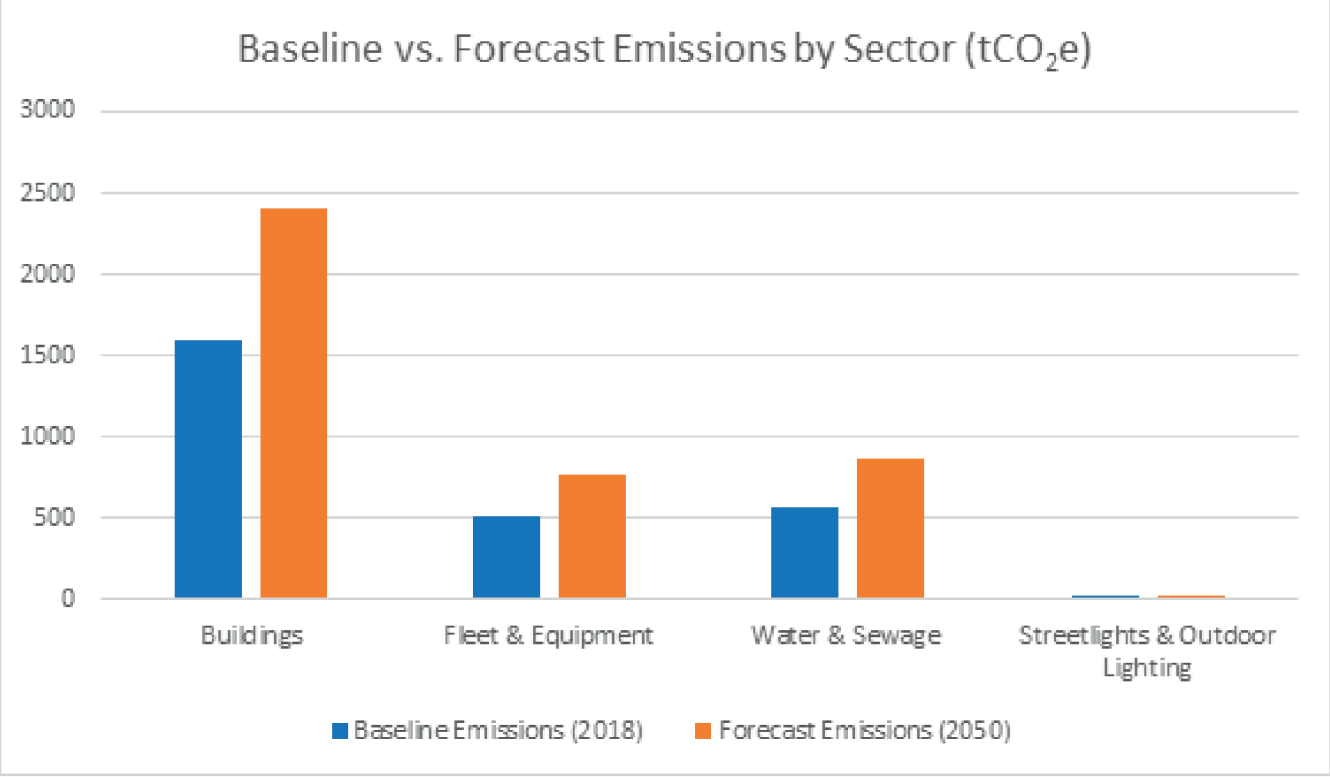
Source	Emissions (tCO2e)	Energy (GJ)
Electricity	394	47,989
Natural Gas	1,794	36,303
Diesel	339	4,755
Gasoline	172	2,602

Corporate Emissions in 2018

BUSINESS-AS-USUAL PROJECTION FOR CORPORATE EMISSIONS

A comparison of corporate baseline emissions and corporate forecast emissions is shown below in Figure 7.

FIGURE 7 - CORPORATE BASELINE VS. FORECAST EMISSIONS BY SECTOR (TCO2E)



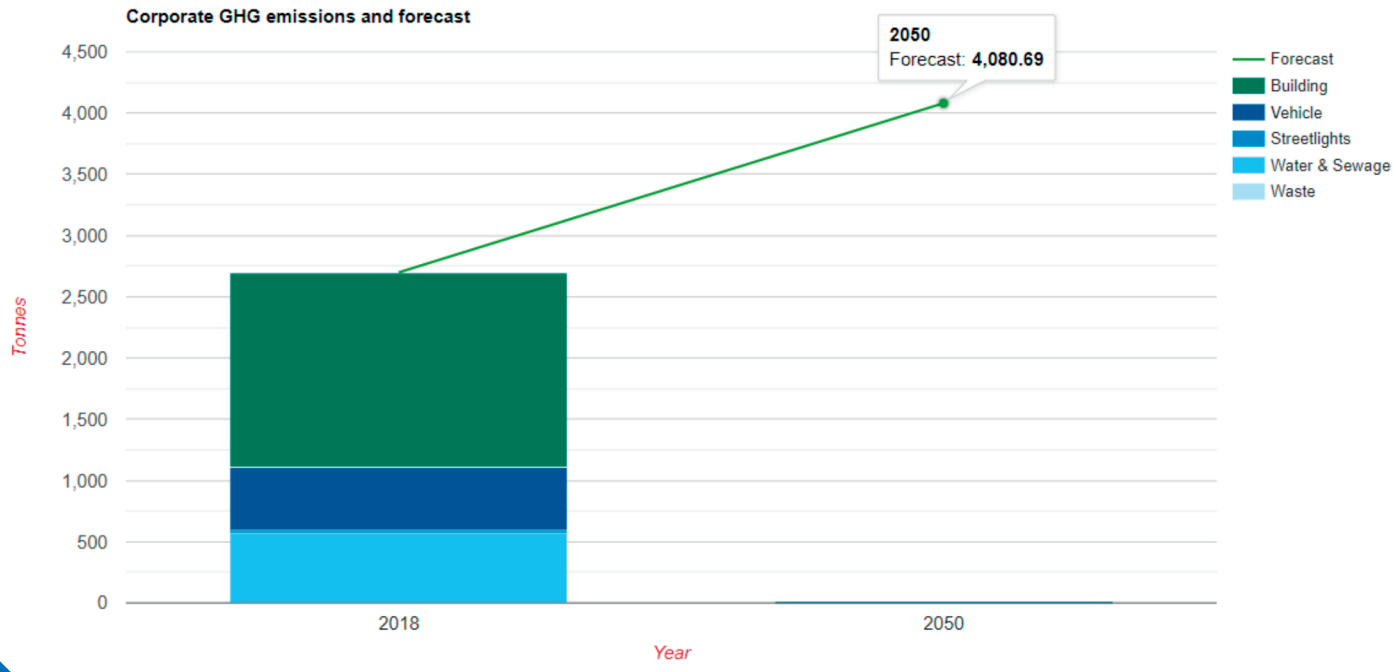
Corporate Emissions in 2018

BUSINESS-AS-USUAL PROJECTION FOR CORPORATE EMISSIONS

The corporate BAU is similar to the community model, as it predicts future emissions produced by municipal operations in the future should no action be taken to mitigate climate change. Like the community model, the corporate model utilizes 2050 as the projection year.

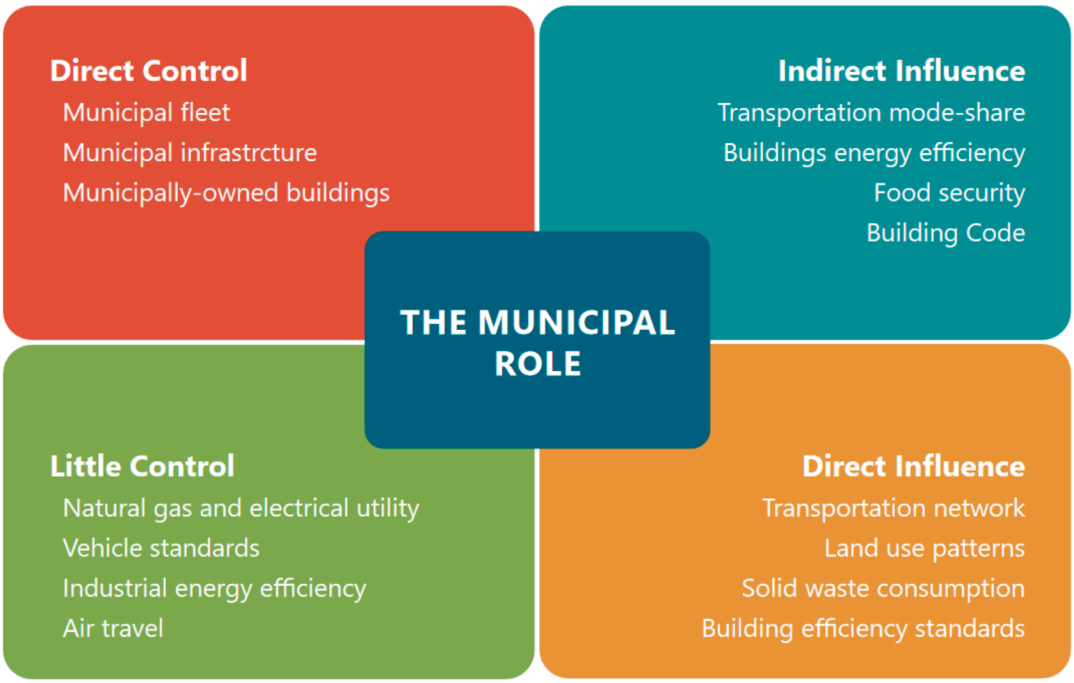
The corporate model predicts a total of 4,081 tCO2e in 2050, if the City does not take action (as shown in Figure 8).

FIGURE 8 - ENERGY CONSUMPTION FORECAST



Climate Action in the City of Owen Sound

Climate change is a current, increasingly pressing threat that the City of Owen Sound faces. By taking action to mitigate climate change, the City is working to create a more sustainable and livable future for all residents of Owen Sound. Municipalities are on the front lines of the fight against climate change and are therefore the most important and influential political actors in efforts to mitigate a changing climate.



The following sections of the Climate Mitigation Plan outline several actions identified during the development of the Plan that will reduce greenhouse gas emissions in Owen Sound and will therefore aid in the mitigation of climate change. These actions are the result of collaborative planning between City staff of all divisions, as well as Grey County staff, and have been deemed feasible for implementation by the City.

In further alignment with Grey County's Climate Change Action Plan, it is important to note that this Climate Mitigation Plan is a living document and should be updated to account for any changes and/or opportunities that arise.

Benefits of Climate Action

Taking action to mitigate climate change in Owen Sound will provide financial, environmental, and social benefits to our residents and community members.



COMMUNITY BENEFITS

- Healthier local and global environments
- Improved food security
- Improved housing quality
- Improved physical and mental health
- More reliable power/energy
- Preservation of healthy green spaces and water

ECONOMIC BENEFITS

- Increased access to knowledge, expertise, and networks related to energy innovation
- Increased employment opportunities
- Increased sustainable tourism
- Local, regional, national, and international recognition
- More diverse, resilient, and competitive local economy
- Reduced energy costs



FINANCIAL BENEFITS

- Decreased operational costs

	2018	2030 (reduction of 35%)	2045 (reduction of 80%)
GHG Emissions (tCO2e)	2,699	1,754	540
Energy Consumption (Gj)	91,649	59,572	18,330
Energy Costs	$9,941,667	$6,462,084	$1,988,333

Operational costs for each year are expressed in 2018 costs.
Chart is for visual representation only and does not include increases to carbon tax for fossil fuel usage.

Community Actions

As a member municipality of Grey County, Owen Sound recognizes the value of collaboration in tackling the issue of climate change in our area and is committed to supporting the community actions laid out by Grey County in the Climate Change Action Plan. Community emissions account for approximately 98% of the total emissions captured in the baseline inventory. It can be more difficult for municipalities to directly control the production of emissions by the greater community, and Owen Sound recognizes the critical importance of continued partnerships with active community members and other external stakeholders in impacting our community emissions.

Outlined on the following pages are the community actions from Grey County's Climate Change Action Plan under which Owen Sound, as a member municipality, is identified as being a leading organization or a key supporting partner.These community actions are organized under seven main guiding themes: nature-based solutions, waste, transportation, buildings and development, energy, climate adaptation, and outreach and engagement.Listed alongside each action are the divisions of City operations foreseen to be involved in supporting the action as the implementation and monitoring processes begin. Support from Council and Committee, as well as continued collaboration with Grey County and the other member municipalities will be essential in ensuring that these actions are implemented in the most effective and efficient ways.



Community Actions

Theme:
Nature-Based Solutions

Action 1: Forest, Habitat and Biodiversity Protection and Expansion

- Create urban forest management plans and tree-cutting by-laws
- Develop and enhance natural heritage areas and critical wildlife and pollinator habitats
- Expand and promote naturalization programs in planning processes
- Explore green/natural assets to replace traditional “grey” infrastructure
- Monitor and protect Grey-owned forests, natural assets, green spaces, wetlands and ecosystems
- Provide incentives to encourage naturalization and tree planting
- Support tree preservation and planting programs, and hedgerows/fence rows

Potential supporting division(s): Community Services – Parks and Open Spaces, River District, Building, Planning and Heritage, Events, Tourism and Marketing; Corporate Services – Bylaw; Public Works and Engineering – Engineering Services; Tom Thomson Art Gallery

Action 2: Conservation and Protection of Wetlands

- Improve and expand wetland evaluation and mapping
- Promote the importance of ecological features and alternatives to tile drainage
- Support watershed monitoring and reporting activities

Potential supporting division(s): Public Works and Engineering; Community Services – Building, Planning and Heritage, Parks and Open Spaces; Corporate Services – Bylaw

Community Actions

Theme:
Nature-Based Solutions

Action 3: Facilitate Ongoing Capacity Building in Sustainable Agricultural Best Practices

- Develop materials, on-farm demonstrations and pilot and research projects
- Improve sustainability, manure management and nutrient loss, programs and guidelines
- Provide incentives for sustainable and regenerative practices to increase the capture of carbon dioxide (collect and store in plants and soil)
- Reduce methane production and improve animal digestion
- Restore degraded lands and convert marginal farmlands

Action is not applicable to Owen Sound; Owen Sound is not identified as a supporting partner

Action 4: Local Food Promotion

- Enable connections with local producers
- Explore “Grown-in-Grey” identification system
- Integrate climate action in the local food strategy
- Promote local food, providers and distributors
- Support extended hours and/or additional days for farmers’ markets

Potential supporting division(s): City Manager’s Department – Communications; Community Services – Tourism and Marketing, Events, Planning and Heritage, River District

Community Actions

Theme: **Waste**

Action 5: Waste Diversion

- Collaborate with businesses on recycling and re-use pathways
- Encourage new and existing food waste diversion initiatives and local food repurposing
- Increase backyard composting and education and awareness programs
- Promote community waste diversion initiatives and re-use events
- Support waste diversion initiatives and resource-sharing in municipalities

Potential supporting division(s): Public Works and Engineering – Environmental Services, Engineering Services; Community Services – Tourism and Marketing; City Manager's Department – Communications; Corporate Services – Bylaw

Action 6: Re-Use/Re-Build It Operations

- Connect County's new residential building retrofit program to re-use/rebuild initiative
- Explore and support a community tool library
- Promote through education and awareness initiatives to residents, developers and contractors

Potential supporting division(s): Public Works and Engineering – Environmental Services; Community Services – Building, Planning and Heritage; Corporate Services – Facilities and Asset Management, Bylaw

Community Actions

Theme: **Transportation**

Action 7: Zero-Emissions Vehicles

- Advocate for provincial and federal funding of EV infrastructure and incentives
- Explore a County-wide electric car share program
- Promote Grey County as an EV-friendly destination
- Support educational programs related to EV adoption and information

Potential supporting division(s): ·Corporate Services – Bylaw, Facilities Management; Fire and Emergency Services; Public Works and Engineering; Community Services – Building, Planning and Heritage

Action 8: Active Transportation

- Add bike routes and multi-use roadways and expand trail connectivity
- Explore alternative transportation such as electric bicycles
- Maintain and/or add bicycle racks, sidewalks, pedestrian walkways, road-crossings and signage to create “complete streets”
- Promote active transportation through the community and to County employers
- Support complete and compact development where residents can meet everyday needs close to home

Potential supporting division(s): Community Services – Planning and Heritage, Events, Tourism and Marketing, Parks and Open Spaces; Public Works and Engineering – Engineering Services, Environmental Services; Corporate Services

Community Actions

Theme: **Transportation**

Action 9: Bus, Rideshare, and On-Demand Transit

- Consider fee-supports for low-income residents
- Establish new and/or support ride share services
- Explore federal funding to support zero-emissions transit solutions
- Monitor and expand Grey Transit Route service

Potential supporting division(s): Public Works and Engineering – Environmental Services; Community Services – Community Development

Community Actions

Theme:
Buildings & Development

Action 10: Compact, Mixed-Use Development

• Encourage denser residential areas with multi-unit construction, infilling (new homes on vacant or underused land), additional residential units and brownfield redevelopment
• Increase focus on mixed-use development including affordable housing
• Integrate climate projections and green infrastructure in land-use planning
• Provide incentives for development on brownfield sites
• Support municipalities on compact, mixed-use development

Potential supporting division(s): Community Services – Planning and Heritage, Building; Public Works and Engineering – Engineering Services

Action 11: Green Standard for New Buildings

• Adapt the green development standard of Ontario communities for Grey County
• Create tools and resources to support developers
• Integrate green development standard and metrics into existing plans
• Introduce incentives to encourage higher-efficiency standards

Potential supporting division(s): Community Services – Building, Planning and Heritage

Community Actions

Theme:
Buildings & Development

Action 12: Residential Building Energy Retrofit Program

- Create an education and awareness campaign
- Develop retrofit funding options and advocate for federal and provincial support
- Encourage trade programs for energy efficiency construction
- Prioritize low-income households and buildings not already connected to natural gas
- Promote existing financial supports for those experiencing energy poverty

Potential supporting division(s): Community Services – Building, Planning and Heritage; City Manager's Department – Communications; Fire and Emergency Services

Action 13: Non-Residential Building Energy Efficiency Retrofit

- Advocate for greater program support at the provincial and federal levels
- Create an education and awareness campaign
- Develop resources, tools and a retrofit program for the agricultural community
- Facilitate the sharing of best practices in energy among businesses
- Include efficiency incentives and financing for business owners
- Promote retrofit programs and funding streams

Potential supporting division(s): Fire and Emergency Services; Community Services – Building, River District; City Manager's Department – Communications

Community Actions

Theme: **Energy**

Action 14: Support Renewable and Emerging Energy Technologies

- Explore green jobs training programs
- Include solar design guidelines as part of the green development standard
- Prioritize solar installations on brownfields, parking lots and less ecologically sensitive lands
- Provide clear direction on renewable energy procedures, regulations and permits
- Remove barriers to renewable energy development in bylaws, policies and procedures

Potential supporting division(s): Community Services – Community Development, Tourism and Marketing, Planning and Heritage; Corporate Services

Action 15: Biogas Capture and Conversion

- Collaborate with partners and members of the agricultural community on a biogas cooperative
- Promote biogas in collaboration with regional and community partners

Action is not applicable to Owen Sound; Owen Sound is not identified as a supporting partner

Community Actions

Theme:
Climate Adaptation

Action 16: Develop a Climate Action Strategy

- Identify how climate change will impact key economic sectors
- Include climate projections in emergency planning activities
- Increase local education and awareness of climate change
- Protect and enhance natural assets and adopt more nature-based solutions

Potential supporting division(s): City Manager's Department – Communication

Action 17: Reduce Flood Risk

- Collaborate with Conservation Authorities on mapping drainage and water flow
- Develop resources, guidelines and educational materials on flooding
- Support conservation of natural infrastructure and encourage green infrastructure

Potential supporting division(s): Public Works and Engineering – Engineering Services; Community Services – Planning and Heritage, Building, Community Development, Marketing

Community Actions

Theme:
Climate Adaptation

Action 18: Prevent Shoreline Erosion

- Monitor shoreline health
- Provide resources to private landowners about best management practices
- Promote tree planting and other nature-based solutions
- Strengthen mapping and policies that protect shorelines

Potential supporting division(s): Community Services – Parks and Open Spaces, Building, Planning and Heritage, Community Development, Marketing; Public Works and Engineering – Engineering Services; Corporate Services – Asset Management

Community Actions

Theme:
Outreach & Engagement

Action 19: Climate Action Engagement Program

• Develop educational materials on climate action (including energy conservation, waste reduction, and active transportation practices), carbon footprints and climate justice
• Establish volunteer opportunities for residents to get involved and take action
• Provide information and updates on County climate change action

Potential supporting division(s): City Manager's Department – Communications

Action 20: Promote Sustainable Tourism Programs & Incentives to Operators

• Advance external investment in sustainable tourism
• Engage tourism operators in retrofit and green standard programs
• Highlight active transportation opportunities, trails and infrastructure
• Promote sustainable tourism funding and agri-tourism opportunities

Potential supporting division(s): Tourism and Marketing

Action 21: Establish a Climate Action Implementation Advisory Group

• Convene a Group with a variety of expertise and lived experience
• Engage the Group on ongoing implementation of this Action Plan and annual reporting
• Represent the diversity of Grey County, including youth and the Indigenous community

Potential supporting division(s): City Manager's Department – Strategic Initiatives Corporate Services - Facility Management

Corporate Actions

In comparison to the community emissions, corporate emissions account for a small percentage of the total captured in the baseline inventory.However, corporate emissions produced by our local government operations are under the direct control of the City and reducing these emissions provides an important opportunity for the City of Owen Sound to lead by example and to demonstrate effective climate action on the municipal level.

Outlined on the following pages are corporate actions that the City of Owen Sound will take to reduce emissions resulting from City operations. These actions fall under these main themes:



Facilities



Fleet and Equipment



Streetlights and Traffic Signals



Waste



Natural Infrastructure



Corporate Wide

Implementation

To ensure that the actions identified in the Climate Mitigation Plan are implemented effectively over the long-term, the City is developing a plan for implementation.

As the City of Owen Sound is committed to supporting the community actions laid out in Grey County's Climate Change Action Plan, City staff will refer to the County's implementation plan for the community actions.This implementation plan, which can be found on page 96 of the County's Climate Change Action Plan, outlines potential leading organizations and supporting partners for each action, as well as estimated timeframes, relative cost characterizations, potential funding opportunities, suggested monitoring metrics, resilience co-benefits, and relative greenhouse gas reduction impacts for each action. As a member municipality, Owen Sound will be working collaboratively with Grey County to determine our role in supporting each of the community actions in our municipality as the County's implementation process begins.

The corporate actions laid out in the Climate Mitigation Plan are specific to the City of Owen Sound, and therefore, implementation will be carried out by the City. An implementation plan for the corporate actions can be found in Table 3 on the following page. The implementation plan includes the following items:



TIMEFRAME

Length to begin implementation of the action:

- Ongoing/Near Term: Already underway, will be continued/expanded with existing resources
- Short-term: Start work in 1-3 years



RELATIVE GHG IMPACT

Where actions have quantifiable emission reduction associated, the relative impact in respect to all other actions is identified by a range. The following values were used to assign the range based on an action's cumulative reduction potential:

- Low Impact: < 300 tCO2e
- Medium Impact: 300 – 1,000 tCO2e
- High Impact: > 1,000 tCO2e



RELATIVE COST

Estimated cost range for implementing each action:

- N/A: Cost is covered by existing staff capacity or operating budgets
- Low Cost: $0 - $100, 000
- Medium Cost: $100, 000 - $500, 000
- High Cost: $500, 000+



RESILIENCE CO-BENEFIT

Identification of whether a simultaneous co-benefit associated with climate change adaptation exists through implementation of the action

Corporate Actions

Theme: **Facilities**

Objective: Maximize energy efficiency in facilities

Actions:

• Conduct building condition assessments (BCAs)/energy audits across corporate facilities to determine a priority order for retrofits, beginning with the least energy-efficient facilities, and to determine areas in buildings with the greatest opportunity for energy-efficient improvements

• Continue to upgrade/retrofit City-owned buildings/facilities with energy efficient systems for heating, ventilation, and cooling (HVAC) systems, interior lighting, building climate control by integrating passive heating for winter and passive cooling for summer

• Investigate green infrastructure such as green roofs/walls, low impact development (LID) landscaping, permeable pavements and native species planting into facility retrofits

• Reduce water demand and wastewater produced for City facilities through energy retrofits including the use of grey water reuse systems

• Assess facility capacity for integrating electric vehicle infrastructure and incorporate into facility retrofits

• Utilize green development standard (being developed in collaboration with Grey County) for any new builds

• Develop staff training for all existing staff and as part of the onboarding process for new staff on how to reduce energy consumption

Ongoing	High	High	Yes

Corporate Actions



Theme:
Fleet & Equipment

Objective: Optimize and innovate the City's fleet and equipment through right-sizing, technology, and use of alternative fuels

Actions:

• Develop and implement a Fleet Management Strategy that looks for opportunities to increase vehicle sharing, reduce the number of vehicles, and ensure the right size of vehicles is used for the job

• Develop and implement an anti-idling policy for City vehicles to restrict idling except where certain conditions exist e.g. mobile work station, lights or equipment require the vehicle to be running

• Optimize fleet equipment by reviewing levels of service and alternative fuel sources

• Transition vehicle and equipment to alternate fuel that has a lower emissions rating at the time of planned replacement

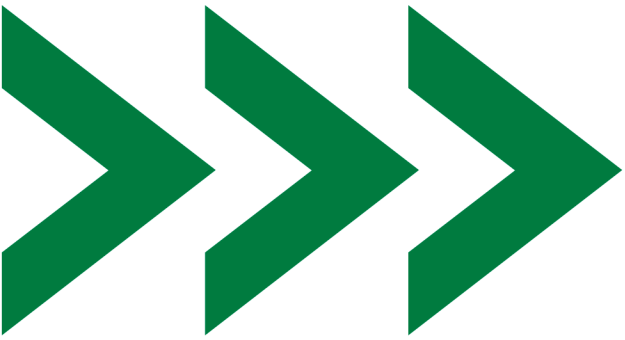
• Assess route planning for vehicles that use regular routes such as transit, snow plows for efficiency

• Install technology to enable analysis of fuel-efficient driving habits such as reducing speed, maintaining a steady speed, slowing acceleration, coasting to decelerate

• Provide training and annual refresher courses for employees that operate fleet vehicles

Ongoing	Medium	Medium	Yes

Corporate Actions





Theme: **Streetlights and Traffic Signals**

Objective: Reduce the amount of energy consumption through technology and utilization of renewable energy sources

Note All traffic signals and streetlights utilize LED technology and are powered by electricity which is already a relatively low source of emissions, but additional efforts can be made to reduce the amount of energy consumption.*

Actions:

• Monitor developments in potential provincial and federal policy which would enable technology for auto-dimming streetlights when cars and pedestrians are not present and for the use of renewable energy e.g. solar for streetlights and traffic signals



Short-term



Low



Low



Yes

Corporate Actions

Theme: **Waste**

Objective: Reduce waste produced at City facilities by reducing packaging, reusing items, and diverting waste from landfill including diversion of organic waste

Note Within the City's emissions inventory, waste is considered a source of community emissions*

Actions:

• Conduct a corporate waste audit to identify opportunities for waste diversion and reduction

• Participate in the green bin pilot program planned for the community in 2024

• Continued installation of water refill stations at City facilities and spaces

• Restrict single-use plastics at City events and facilities

Short-term	Low	N/A	N/A

Corporate Actions

Theme: Natural Infrastructure

Objective: Enhance the City's natural ecosystem to sequester carbon and support biodiversity

Actions:

- Increase promotion of the boulevard tree program using natural tree species
- Review bylaws relating to lawn maintenance and grass-cutting, and watering
- Review service levels related to grass-cutting at City facilities and in parks and open spaces
- Convert City gardens and plantings to at least 50% native and pollinator plants
- Complete an inventory of the urban tree canopy
- Expand tree canopy by continuing the City's annual tree planting program and increasing the number of trees planted per year
- Review and document best practices for tree maintenance being utilized by the City
- Use native grasses and ground cover alternatives for new seeding
- Continue to promote community gardens

Short-term	Low	Low	Yes

Corporate Actions

Theme: Corporate Wide

Objective: Promote a culture of awareness and action through education and continuous improvement

Actions:

• Develop and implement climate lens assessments and tools to be utilized for projects as well as the review and development of policies

• Expand the Climate/Environmental Implications section of Committee/Council reports to demonstrate how the climate and environmental impacts have been considered including adding quantifiable and/or qualitative information

• Encourage staff to carpool, use active transportation and telework in alignment with the Remote Work Policy to reduce staff travel

• Encourage the use of videoconferencing for meetings to reduce staff travel

• Utilize programmable thermostats and timed lights in facilities with existing capabilities and encourage turning off lights and turning down thermostats where automated facility systems aren't in place as well as explore minimum and maximum temperature settings

• Utilize continuous improvement activities to assess how work is completed and to identify potential changes which will positively impact the environment eg. reducing paper files

• Develop staff training for all existing staff and as part of the on-boarding process for new staff on how to reduce energy consumption

• Provide training and annual refresher courses for employees that operate fleet vehicles

• Implement annual public reporting on energy use and emissions

• Develop and implement a communication plan to highlight the activities of the Mitigation Plan and celebrate successful Climate Action stories.

Short-term	Low	Low	N/A

Monitoring and Review

Monitoring and evaluating the implementation of the Climate Mitigation Plan will be critical in ensuring its effectiveness. This section of the plan describes several measures that should be taken by the City to ensure the overall success of the City's climate action initiatives.

The City's emissions inventory will be updated on an annual basis. This will allow the City to monitor the progress of emissions reductions in Owen Sound.

The Strategic Leadership Team is accountable for climate mitigation activities across the organization. Managers are responsible for implementing and tracking activities that fall within their service area. It is suggested that annual progress reports be prepared by staff for the service areas facilitated by the Manager of Corporate Services. This will allow the City to understand which actions are being successfully implemented in which areas, and which may require revision to be more effective.

Owen Sound is fortunate to already be receiving support for its climate action initiatives from internal staff, key external stakeholders, and community members. Continued engagement with each of these parties will be important in the monitoring and reviewing processes.Climate change impacts every facet of society, and receiving input and feedback from a diverse range of actors will allow the City to gain a more fulsome understanding of the Climate Mitigation Plan’s success following implementation.

Each of the measures described above should be utilized in the reviewing and updating of the overall Climate Mitigation Plan as a whole. It should be noted once more that the Plan is considered a living document, and that the success of its implementation is a component that should guide each update.



Ways You Can Help

Every small action contributes to a bigger success in emissions reduction, especially when we work together. Connect with friends and neighbours on our sustainable future and share your climate actions. Be a part of the solution – here are some things you can do right now:

- **Naturalize** your garden with native plants
- Choose local producers and **locally grown** food, or grow your own food
- **Make food choices** that reduces the impact on the environment
- Waste less food: buy only **what you need to**
- **Shop second-hand** and donate good condition old clothes
- **Re-use or repair** items rather than trash them
- **Replace old appliances** with Energy-Star products
- **Drive less**, **carpool** more (and use local transit)
- **Insulate your home** and when replacing heating and cooling systems, choose low-carbon options like heat pumps
- **Walk, ride** your bike, for short trips
- **Talk** to neighbours, family, and friends **about climate change**; take action together
- Do the **Footprint Challenge** available on the City's website



BE A PART OF THE SOLUTION

Glossary

Adaptation: Includes any initiatives or actions in response to actual or projected climate change impacts and which reduce the effects of climate change on built, natural, and social systems.

Baseline: Estimation of the current (2018) energy use and greenhouse gas emissions.

Building Retrofit: Upgrades to a building's envelope (walls, floor, ceiling), windows, doors, HVAC (heating, ventilation, and air conditioning) systems, and lighting that reduces the heating and cooling needs of a building and operate with greater energy efficiency.

Business-as-Usual (BAU): The Business-as-Usual (BAU) scenario is developed to understand future energy consumption, energy costs and emissions for Grey County, assuming no action is taken to reduce energy or emissions.

Climate Change: Changes in long-term weather patterns caused by natural phenomena and human activities that alter the chemical composition of the atmosphere through the build-up greenhouse gases which trap heat and reflect it back to the earth's surface.

Climate Projections: Projections of the response of the climate system to emissions or concentration scenarios of greenhouse gases and aerosols. These projections depend upon the climate change (or emissions) scenario used, which are based on assumptions concerning future socioeconomic and technological developments that may or may not be realized and are therefore subject to uncertainty.

Co-Benefits: Potentially large and diverse range of benefits associated with climate action initiatives that go beyond direct contributions to climate change mitigation or adaptation.

Gigajoule (GJ): A derived unit of energy in the International System of Units. It equals one billion Joules. The amount of energy represented by one GJ is equivalent to 278 kWh.

Greenhouse Gas (GHG) Emissions: Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of thermal infrared radiation, emitted by the Earth's surface, the atmosphere itself, and by clouds. Water vapor (H2O), carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), ozone (O3), and chlorofluorocarbons (CFCs) are the six primary greenhouse gases in the Earth's atmosphere in order of abundance. Greenhouse gas emissions are measured in tonnes of carbon dioxide equivalent (tCO2e).

Intergovernmental Panel on Climate Change (IPCC): An intersectional body established under the United Nations to assess the science, impacts, and response options to climate change.

Kilowatt-Hour (kWh): A kilowatt-hour is a unit of electrical energy used as the basic billing unit and equals the use of one thousand watts of electricity in one hour.

Mitigation: The promotion of policy, regulatory, and project-based measures that contribute to the stabilization or reduction of greenhouse gas concentrations in the atmosphere.

Net-Zero: Achieved through the reduction of anthropogenic emissions of greenhouse gases with the goal of balancing emissions produced and emissions removed from the atmosphere. It is important to note net-zero emphasizes a commitment to reducing greenhouse gas emissions as much as possible.

Net-Zero Ready: Implies an energy efficiency performance standard for the building envelop and other technologies whereby on-site renewable energy systems meet the remaining energy needs. For example, a Passive House or Canadian Green Building Council Zero Carbon Building.

Resilience: The capacity of a system, community, or society exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure.

Sequestration: Long-term storage of carbon (carbon dioxide) from the atmosphere.

Solar Photovoltaic: The use of solar cells to convert energy from the sun into electric energy, either with on-site solar panels or offset site generation distributed through the electricity grid.

Tonnes of Carbon Dioxide Equivalent (tCO2e): The standard unit for counting greenhouse gas (GHG) emissions.

Weather: The day-to-day state of the atmosphere, and its short-term variation in minutes to weeks.

Vulnerability: The sensitivity of predisposition to be adversely affected by climate change.Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.

DRAFT

Climate Mitigation Plan

2023

Reduce | Improve | Switch



owen sound
where you *want* to live

Prepared By:
City of Owen Sound