

# Severn's Climate Change Action Plan

Local  
Climate Change  
Action Plan  
Sustainable Severn Sound



## Sustainable Severn Sound and the Sustainability Committee

Sustainable Severn Sound (SSS) is a regional sustainability program supported by seven municipalities in the County of Simcoe and the District Municipality of Muskoka including the Towns of Midland and Penetanguishene, and the Townships of Georgian Bay, Severn, Oro-Medonte, Tiny and Tay. This project also receives in-kind support and Sustainability Committee (SC) representation from the North Simcoe Community Futures Development Corporation / Société d'aide au développement des collectivités Simcoe Nord (NSCFDC), the Severn Sound Environmental Association (SSEA), the Simcoe-Muskoka District Health Unit (SMDHU) and the County of Simcoe. The SC serves as an advisory committee to SSS by supporting the SSS objectives to: (1) educate municipalities and their communities on sustainable practices and policies and connect them to resources, tools and funding, (2) advance the adoption of practices/policies within municipal operations to support climate change action, greenhouse gas mitigation and sustainable communities, and (3) advocate for sustainable environmental, social and economic practices and policies at the direction of the partner municipalities.

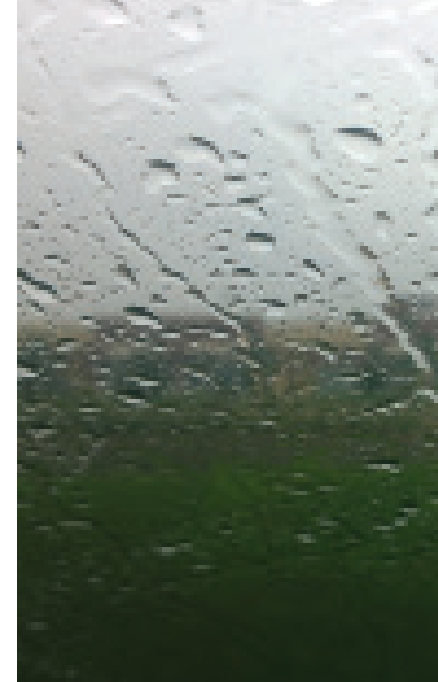


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# Background


In collaboration with our municipal and community partners, SSS released the area’s first Local Climate Change Action Plan (LCCAP): Regional Greenhouse Gas (GHG ) Summary in June 2018. The LCCAP includes both a corporate and community inventory of GHG emissions for each of our municipal partners including: Midland, Penetanguishene, Georgian Bay, Severn, Oro-Medonte, Tiny and Tay; identifies regional GHG reduction targets to be achieved by 2028, and recommends 18 high-level actions to reduce municipal and community contributions to climate change.

In April 2018, your Council further demonstrated Severn’s commitment to taking action on climate change and approved a model resolution to join the Federation of Canadian Municipalities (FCM) Partners for Climate Protection (PCP) program. The PCP program is a joint initiative between FCM and ICLEI Canada - Local Governments for Sustainability, and is a national network of over 350 municipal governments working to address climate change. The PCP program guides your municipality through a 5-step Milestone Framework (Table 1) to take action on climate change by reducing emissions within your municipality and community. In July 2018, the Township of Severn successfully achieved Milestone 1 of the program and through the adoption of the GHG reduction targets outlined in this Plan, will achieve Milestones 2 and 3.

Up to half of Canada’s GHG emissions are under the influence of municipal governments. By reducing GHG emissions from municipal operations and in the larger community, Severn will receive multiple co-benefits when mitigating the effects of climate change, including cost savings, cleaner air and healthier people, more resilient infrastructure as well as the reduced impact on the environment. Climate change affects us all and to ensure sustainability for future generations, support and buy-in is needed by Council, municipal staff, and the residents of Severn.

Table 1. The PCP program framework

Milestone	Status
<b>Milestone 1</b> – Creating a GHG emissions inventory and forecast	Achieved Jul-2018
<b>Milestone 2</b> – Setting an emissions reduction target	In-progress
<b>Milestone 3</b> – Develop a local action plan	In-progress
<b>Milestone 4</b> – Implementing a local action plan or set of activities	Expected 2020 & on-going
<b>Milestone 5</b> – Progress and reporting results	2020 & on-going



# Strategic Plan

## Alignment with existing plans and policies

The LCCAP, Severn's Climate Change Action Plan and the Township's PCP membership commitment supports a number of key corporate plans within the municipality including:

1. The Township of Severn's [corporate objectives](#) to, *'pursue cost sharing partnerships with other municipalities,'* and the *'commitment to balance the needs of a growing Township with the need to preserve and protect the natural environment for future generations of Severn residents and visitors.'*
2. The Township's [Energy Conservation and Demand Management \(CDM\) Plan](#) (re: [O. Reg. 397/11](#)) and the Township's [Asset Management \(AMP\) Plan](#) (re: [O. Reg. 588/17](#)). Recognizing the recent changes to O. Reg 397/11, the Township is still required to report annually on its facility energy consumption and associated GHG emissions under the amended Electricity Act. Both Plans are to be updated by Summer 2019, with the requirement to have a Strategic Asset Management Policy, which is to include vulnerabilities that may be caused by climate change to the municipality's infrastructure assets.
3. Severn's [Official Plan, 2010](#) (re: [Growth Plan for the Greater Golden Horseshoe, 2017, Section 4.2.10](#)).



# GHG emissions

As presented in the LCCAP, the Township of Severn's total GHG emissions account for approximately 12% of the area's total emissions (Figure 1). This equates to 64,061 tonnes of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e)<sup>1</sup>, with corporate emissions accounting for 1% (777 tCO<sub>2</sub>e) of Severn's total emissions and community emissions accounting for 99% at 63,284 tCO<sub>2</sub>e (Figure 2).

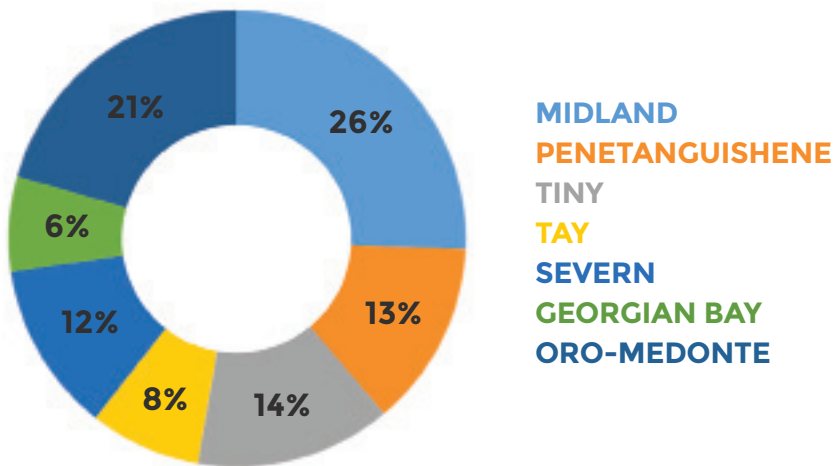


Figure 1. Per cent (%) of total regional GHG emissions, per municipality, 2015

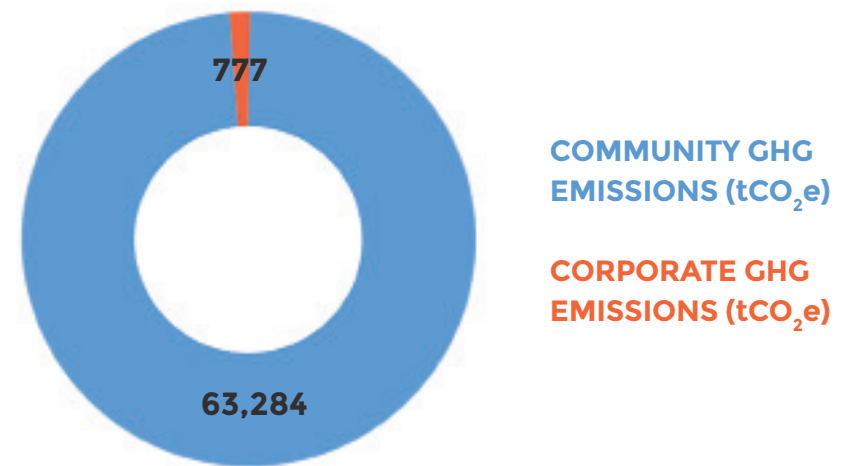


Figure 2. Severn's total GHG emissions (tCO<sub>2</sub>e), 2015

<sup>1</sup> Carbon dioxide equivalent is a measure used to compare the emissions from various GHGs based upon their global warming potential (GWP). For example, the GWP for methane over 100 years is 21. This means that emissions of one million metric tons of methane is equivalent to emissions of 21 million metric tons of carbon dioxide. OECD - Organisation for Economic Co-operation and Development, 2018. Available from: [www.oecd.org](http://www.oecd.org)

# GHG emissions per capita

Measuring GHG emissions on a per capita basis allows us to examine and benchmark the emissions of each municipality relative to its population. With a recorded population of 13,477 in 2015, (Statistics Canada, 2016) the Township of Severn emitted approximately 4.75 tCO<sub>2</sub>e per capita. It is important to note that it is the absolute amount of GHG emissions that ultimately affects the environment. For example, an area with a high per capita emission rate but a small population (Georgian Bay) could produce fewer emissions than one with a lower per capita emission rate and larger population (Tay).

There are several opportunities to significantly reduce both corporate and community GHG emissions, as Ontarians have some of the world's highest per capita emissions, higher than most other developed countries, and even higher than other northern countries with cold climates. To contribute to the GHG emission target of 80% less by 2050 as set by the Federal government, Ontario's emissions in 2050 will have to be less than 2 tCO<sub>2</sub>e per person<sup>2</sup>. This will require a significant transformation in the way we live and how we use energy.

Table 2. Per capita GHG emissions (tCO<sub>2</sub>e) per municipality, 2015

Municipality	Population	Total GHG emissions, 2015 (corporate + community)	Per capita emissions, including corporate (tCO <sub>2</sub> e)
Georgian Bay	2,499	33,264	13.51
Midland	16,864	134,650	8.08
Penetanguishene	8,962	68,031	7.67
Tiny	11,787	73,102	6.28
Oro-Medonte	21,036	108,159	5.14
Severn	13,477	64,061	4.75
Tay	10,033	40,154	4.09
		<b>AVERAGE</b>	<b>7.07</b>

<sup>2</sup> The Environmental Commissioner of Ontario, 2018. Climate action in Ontario: What's next? Available from: <https://eco.on.ca/reports/2018-climate-action-in-ontario/>

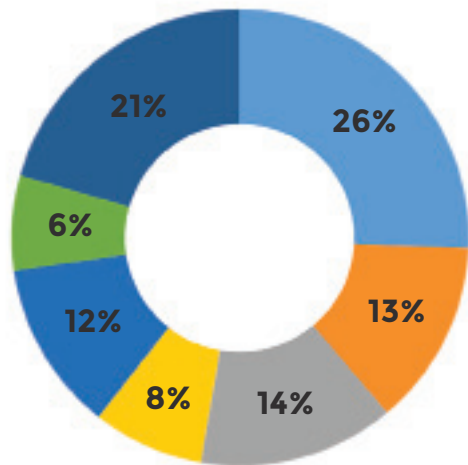
# Community GHG emissions

Following the PCP's program [Canadian Supplement to the International Emissions Analysis Protocol](#), community energy use and emissions were reported by sector (transportation, community solid waste, residential, commercial and institutional, and industrial buildings) and collected for the baseline year of 2015. The Township of Severn's community GHG emissions account for 12% of the area's total community emissions (Figure 3).

As illustrated in Table 3, community transportation is the largest emitter of GHGs, accounting for 72% (45,458 tCO<sub>2</sub>e) of Severn's total community emissions. The personal vehicle, in large part, remains the dominant method of choice for travel in our area, which can be attributed to the largely rural setting of the community. SSS and the Township recommend residents to consider alternatives to the obvious choice, such as telecommuting, carpooling, biking, walking or public transit when possible. The waste sector was the 2<sup>nd</sup> largest emitter of community emissions in 2015. GHG emissions from waste was approximately 8,469 tCO<sub>2</sub>e. Using the PCP protocol as a guide, SSS calculated emissions from waste based on total population and County of Simcoe's per capita waste generation in 2015. By educating the residents of Severn on best practices, emissions from community waste can be lessened.

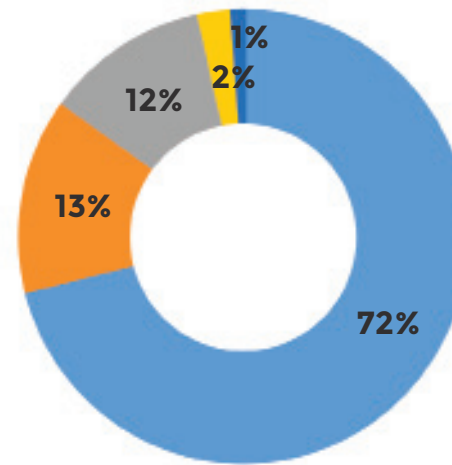
Table 3. Severn's community GHG emissions (tCO<sub>2</sub>e) per sector, 2015

Sector	GHG emissions (tCO <sub>2</sub> e)	% of total community emissions
Transportation	45,458	72%
Waste	8,469	13%
Residential	7,239	12%
Commercial	1,476	2%
Industrial	642	1%
<b>Total</b>	<b>63,284</b>	<b>100%</b>



**MIDLAND**  
**PENETANGUISHENE**  
**TINY**  
**SEVERN**  
**GEORGIAN BAY**  
**ORO-MEDONTE**

Figure 3. Community GHG emissions (per cent) per municipality as contributed to the regional total, 2015



**TRANSPORTATION**  
**WASTE**  
**RESIDENTIAL**  
**COMMERCIAL**  
**INDUSTRIAL**

Figure 4. Severn's community GHG emissions (per cent) per sector, 2015

The residential sector was the 3<sup>rd</sup> largest emitter of community emissions in 2015. GHG emissions from energy use was approximately 7,239 which is equivalent to 187,584 gigajoules (GJ) of energy consumption. Moving forward, SSS will investigate opportunities to work with the community to encourage a reduction in the amount of electricity and natural gas used in our homes through conservation, improved efficiency, and the use of renewable energy sources. We also encourage the Township of Severn to consider a strong planning policy that supports more sustainable homes, developments and neighbourhoods that exceed Building Code and/or Planning Act requirements.



# Community GHG emissions forecast, 2015-2028

In 2015, 63,284 tCO<sub>2</sub>e were emitted through community day-to-day activities, including the energy used in residential, commercial, institutional and industrial sectors, and the GHG emissions created as a result of transportation and solid waste generation. Based upon the projected increase of the Township's population to approximately 17,000 by 2031 from 2011, as contained in Schedule 7 of the Growth Plan and the County of Simcoe Official Plan<sup>3</sup>, the Township's community GHG emission forecast is projected per a 1.31% annual population growth rate to 2028. As a result of that increase and considering business-as-usual (BAU) operations, if no significant action is taken, GHG emissions are expected to grow to 74,953 tCO<sub>2</sub>e, or by 18.5% by 2028. This increase over 2015 GHG emission levels would allow an additional 11,669 tCO<sub>2</sub>e to be emitted by the community by 2028.

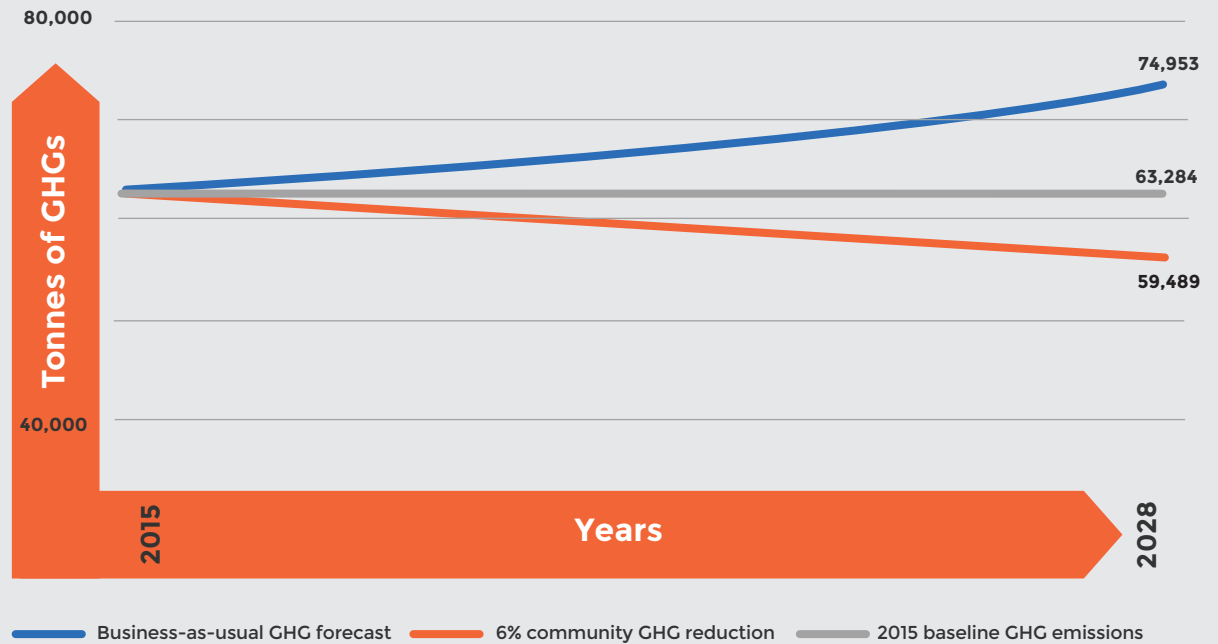


Figure 5. Community GHG emissions forecast, 2015-2028

## Community GHG emissions reduction target to 2028

Based upon the limited influence that the Township of Severn has on community GHG emissions, the recommended community GHG reduction target is 6% less by 2028. This target represents an absolute emissions reduction of 3,795 less tCO<sub>2</sub>e relative to 2015 baseline emissions of 63,284 tCO<sub>2</sub>e, representing a 2028 target of 59,489 tCO<sub>2</sub>e. Achieving this target would be equivalent\* to:

- Encouraging 200 residents to reduce their annual kilometres travelled by 50km by 2028.
- Replacing 144,149 incandescent bulbs to light-emitting diodes (LEDs).
- 125 Severn residents closing their blinds during the summer months in order to reduce electricity consumption.

<sup>3</sup> Growth Plan for the Greater Golden Horseshoe, Government of Ontario. [Schedule 7](#)

\* Equivalent calculations produced by the Government of [Canada's Calculator for greenhouse gases and common air contaminants](#)

# Corporate GHG emissions

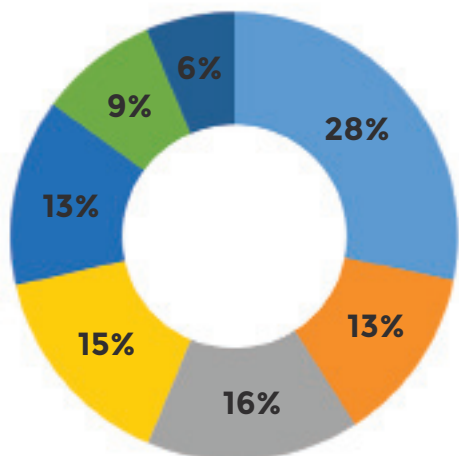
This municipal climate change action plan includes recommendations to reduce energy and emissions from municipal operations including fleet, buildings and facilities, water and wastewater, streetlights and corporate waste. The corporate data inventoried focuses exclusively on energy and GHG emissions that are directly controlled by the Township. It does not include emissions that are a consequence of activities from sources not controlled or owned by the municipality (including third-party contractors, construction activities, business, or air travel) or those that occur outside Severn's geographical boundary.

In 2015, the baseline year, the Township of Severn's total energy use was approximately 19,816 GJ. This is equivalent to 777 tCO<sub>2</sub>e and accounts for approximately 13% of the region's total corporate emissions as presented in the LCCAP (Table 4). Severn's total corporate emissions are generated from the use of diesel, gasoline, electricity and natural gas. In comparison, the Township of Tay's municipal GHG emissions accounted for 15% of the regional corporate total, while Midland's corporate GHG emissions account for 28% of the regional corporate total (Figure 5).

As illustrated in Table 4 and Figure 7, the Township's corporate GHG emissions predominately stem from fleet (57%) and buildings and facilities (23%). Comparable to the other municipal fleets inventoried as part of the LCCAP, Severn's fleet emissions are considered high, and thus presents the greatest opportunity for GHG emissions reduction and associated cost-savings. Most building and facility GHG emissions are generated from electricity and natural gas, used to heat and power each of the Township's 15 buildings and facilities reported under the Government of Ontario's open data catalogue ([Energy use and greenhouse gas emissions for the Broader Public Sector](#)<sup>4</sup>) while fleet emissions are generated from diesel and gasoline consumption.

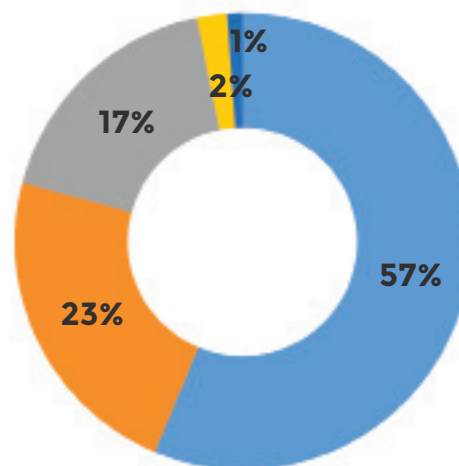
Table 4. Severn's corporate GHG emissions (tCO<sub>2</sub>e) per sector, 2015

Sector	GHG emissions (tCO <sub>2</sub> e)	% of total corporate emissions
Fleet	444	57%
Buildings & facilities	178	23%
Water & wastewater	134	17%
Streetlights	16	2%
Solid waste	5	1%
<b>Total</b>	<b>777</b>	<b>100%</b>



MIDLAND  
PENETANGUISHENE  
TINY  
TAY  
SEVERN  
GEORGIAN BAY  
ORO-MEDONTE

Figure 6. Corporate GHG emissions (per cent) as contributed per municipality, 2015



FLEET  
BUILDINGS  
WATER & WASTEWATER  
STREETLIGHTS  
WASTE

Figure 7. Severn's corporate GHG emissions (per cent) per sector, 2015

<sup>4</sup> Queens' Printer for Ontario, 2012-2018. Available from: <https://www.ontario.ca/data/energy-use-and-greenhouse-gas-emissions-broader-public-sector>

# Corporate GHG emissions forecast, 2015-2028

In 2015, the Township's corporate GHG emissions were 777 tCO<sub>2</sub>e as a result of day-to-day municipal operations. Based upon the projected increase of the Township's population to approximately 17,000 by 2031 from 2011, as contained in Schedule 7 of the Growth Plan and the County of Simcoe Official Plan, the Township's corporate GHG forecast is projected per a 1.31% population increase to 2028. As a result of that increase and considering BAU operations, corporate GHG emissions are expected to grow to 921 tCO<sub>2</sub>e, or by 18.5% by 2028. As GHG emissions are directly correlated to energy costs, the expectation is that municipal expenses would also increase relative to this increase of GHGs. Under the Paris Agreement, Canada has committed to reducing GHG emissions by 30% below 2005 levels by 2030<sup>5</sup>. The 25% target to be achieved by the Township remains consistent with the selected Federal target.

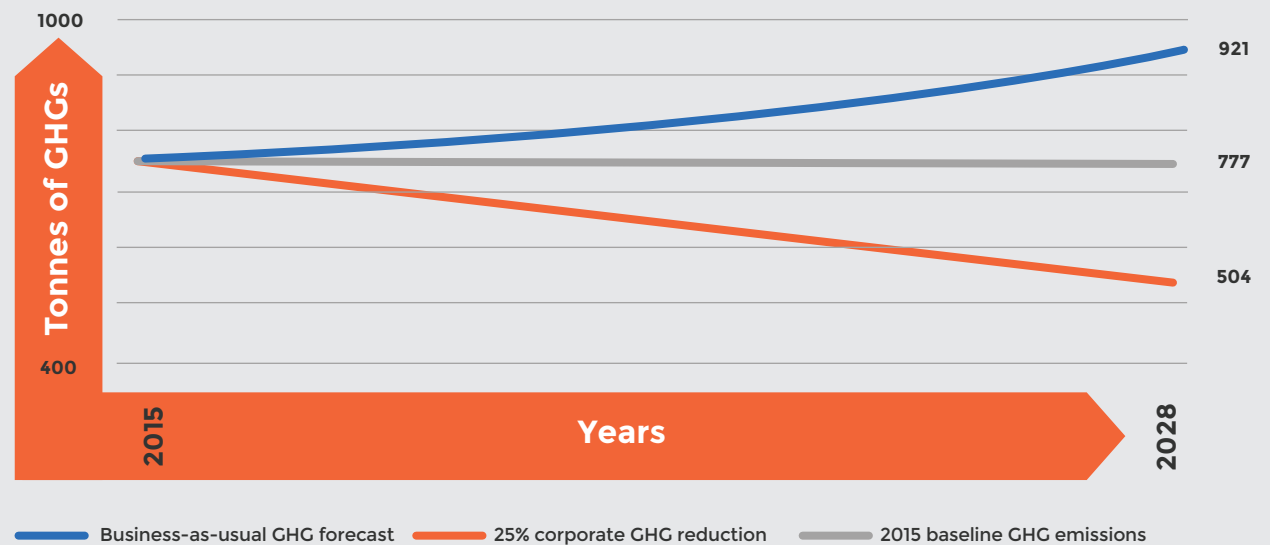


Figure 8. Corporate GHG emission forecast, 2015-2028

## Corporate GHG emissions reduction target to 2028

SSS has recommended that Council support a corporate GHG emissions reduction target of 25% below 2015 levels by 2028. This target represents an absolute emissions reduction of 273 tCO<sub>2</sub>e relative to 2015 baseline emissions of 777 tCO<sub>2</sub>e, having the Township strive to emit no more than 504 tCO<sub>2</sub>e from corporate activities in 2028. A reduction of 25% of tCO<sub>2</sub>e is equivalent\* to:

- 35 corporate vehicles idling 10 minutes less per year for the next 13 years.
- Reducing gasoline usage by 8,930 litres per year to 2028.
- Reducing kilometres travelled on 15 corporate vehicles by an average of 50km in one year.

<sup>5</sup> Government of Canada, 2018. Available from: <https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/progress-towards-canada-greenhouse-gas-emissions-reduction-target.html>

\* Equivalent calculations produced by the Government of [Canada's Calculator for greenhouse gases and common air contaminants](#)

Based on Ontario’s average historical cost for electricity and natural gas in 2015\* and Natural Resource Canada’s average price for propane in Ontario in 2015<sup>6</sup>, the Township of Severn spent approximately \$285,776 on energy consumption for their municipal buildings and facilities, with an estimated \$221,738 spent on the top 5 buildings alone. By achieving the Council approved corporate GHG reduction target of 25% below 2015 levels by 2028, or a 3.6% GHG reduction per year over the next 10 years<sup>7</sup>, this could result in a total projected cost savings of up-to approximately \$71,444 across all buildings and facilities, or a savings of \$55,434 from just the top 5 GHG emitting buildings. This is a conservative estimate, with the opportunity for greater cost savings highly likely if the targets are achieved in each respective sector, including fleet, water and wastewater, streetlights and solid waste.

**Table 5. Severn’s top 5 GHG emitting facilities and estimated energy cost, 2015**

Municipal operation	Address	Energy consumption			GHG emissions (tCO <sub>2</sub> e) per facility
		Electricity (kWh)	Natural Gas (m <sup>3</sup> )	Propane (L)	
Westshore water & sewage treatment plant	3333 New Brailey Line	697,760	34,542	0	93
South shop	4251 Burnside Line	63,125	28,446	0	56
Coldwater community centre & arena	11 Michael Anne Drive	326,122	19,031	0	49
North shop	2068 North River Drive	25,246	0	22,220	35
Coldwater upper big chute	1130 Upper Big Chute Road	505,980	0	0	20
<b>Total</b>		<b>1,618,233</b>	<b>82,019</b>	<b>22,220</b>	<b>253</b>
<b>Estimated total cost (\$)*</b>		<b>\$201,470</b>	<b>\$7,158</b>	<b>\$13,109</b>	<b>\$221,738</b>

\*Estimates are based on commodity price and do not include fixed or semi-fixed costs (i.e. delivery charges, etc.)

<sup>6</sup> Natural Resources Canada, 2018. Propane prices. Available from: <https://www.nrcan.gc.ca/energy/fuel/prices/4801>

<sup>7</sup> This projection uses 2015 historical costs and does not include expected energy cost increases, price fluctuations, nor hedge/spot market billing scenarios. The projected cost savings is only representative of those 5 buildings and facilities (top 5 emitters), and does not include opportunities within other buildings or sectors.

# Opportunities for reducing corporate GHG emissions

SSS staff are reviewing Severn’s long-term and annual capital budgets to identify opportunities to reduce corporate GHG emissions. Moving forward, SSS will provide recommendations as to what scheduled projects and/or plans have the potential to reduce GHG emissions, how those initiatives may result in additional GHG reductions through enhanced sustainability options, and will work closely with municipal staff to integrate these recommendations into municipal operations, policies and procedures where feasible. With that being said, as changes to policy, legislation, technology, climate and/or other changes occur, the recommended actions will evolve. Some of these recommendations are directly aligned with Severn’s Conservation Demand Management Plan, Asset Management Plan and/or Strategic Plan, and all have positive environmental, social and economic outcomes.



## Actions and recommendations

The table below (Table 6) lists the actions SSS and the Sustainability Committee have identified to guide the Township in meeting their 25% corporate and 6% community GHG reduction targets. Table 6 and this document will be updated every 5 years by SSS and the Sustainability Committee to reflect new projects and GHG emission reduction opportunities.

## Implementation costs

For the purpose of this plan, four expenditure categories were used to estimate the total cost associated with the implementation of each action in Table 6.

- Capital** Capital expenditures by local jurisdictions are typically for projects and programs related to local jurisdictional operations, such as installing solar photovoltaics (PV) on municipal facilities, or bike lane construction.
- Salary** Represents the personnel costs required to implement CAP activities. Salary costs were estimated at staff hours per action.
- Consultants** Municipalities often hire external consultants to support the implementation of climate plan actions.
- Materials** Some actions may require materials and supplies (i.e. brochures and meeting materials).

The cost is expressed as low (\$ = less than \$1,000), moderate (\$\$ = more than \$1,000 but less than \$5,000), medium (\$\$\$ = more than \$5,000 but less than \$10,000), high (\$\$\$\$ = more than \$10,000 but less than \$20,000), ICA (more than \$20,000). If the cost of any action is estimated as more than \$20,000, this will automatically require the preparation and municipal review of an ICA, either provided by SSS or by Township staff. As relevant, the expected return on investment (ROI) will also be considered by both SSS and the municipality prior to implementation.

Table 6. Actions to mitigate GHG emissions, 2019-2028

	Recommended action items	Year
1	Include educational communication pieces in regular newsletters, water & tax bills on various topics relating to climate change, ways residents can reduce their GHG emissions, energy conservation, etc.	Q2, 2019
2	Update Emergency Management Plan, specifically the Hazard Identification Risk Assessment (HIRA) to include climate change impacts (i.e., extreme weather, wildfire, flooding, etc.)	Q3, 2019
3	Ensure business decisions & activities, including staff reports, bids, tenders & contracts - include climate change considerations involving the energy efficiency & expected GHG impact of that decision &/or activity, & how it relates to the Township's PCP program commitment	Q3, 2019
4	Incorporate GHG inventories, GHG reduction targets, climate change considerations & the township's commitment to the Partners for Climate Protection program into Council's Strategic Plan, as well as the township's Official Plan, Transportation Master Plan, etc.)	Q3, 2019 & on-going
5	Include climate change language & the influence of management decisions on GHG emissions in the new Strategic Asset Management Policy, required as part of the 2019 Asset Management Plan update (O. Reg. 588/17)	Q3, 2019
6	Conduct municipal energy audits to identify opportunities to increase energy efficiencies	2020
7	Establish a Corporate Energy Revolving Fund* to finance corporate energy retrofit projects	2021
8	Develop a 'low-mow' & pollinator policy with municipal commitments to improve the environment for pollinators & reduce corporate fuel use	2021
9	Develop a Sustainable Fleet Management Plan to reduce GHGs associated with corporate transportation	2021
10	Conduct a Solid Waste Audit within municipal buildings & facilities to better identify how much solid waste the township's corporate buildings are generating	2022
11	Prepare a Water Conservation Strategy to reduce corporate & community water use	2023
12	Complete a climate change infrastructure vulnerability assessment	2023
13	Develop a community & corporate energy plan	2025+

\* The premise is to provide sufficient funding from a percentage of savings incurred through renewable energy projects, grants, utility rebates, approved capital projects, demand response, etc. to finance on-going energy management initiatives

EOI	Department lead	Secondary lead*	tCO <sub>2</sub> e reduction by 2028**	Implementation cost***
	Communications	CAO	N/a	\$
	Fire/emergency services	CAO	N/a	\$
	All/multiple	CAO	Med: 45	\$\$
	All/multiple	CAO	N/a	\$
	Public Works	Finance/treasurer	N/a	\$
	Public Works	Finance/treasurer	High: 55	\$\$
	Finance/treasurer	CAO	N/a	\$\$
	Parks/recreation	Public works	Low: 10	\$\$
	Public works	Finance/treasurer	High: 55	\$\$\$
	Public works	Parks/recreation	Low: 10	\$\$\$\$
	Finance/treasurer	Public Works	Low: 10	\$\$\$\$
	Public works	Planning	N/a	\$\$\$
	Planning	Public Works	N/a	ICA

**LEGEND**

Priority (Light Green = Highest)



Ease of implementation (EOI) 'quick-win', medium, hard, difficult



GHG reduction potential

- Low: Equal to or less than 1% GHG reduction, estimated at approximately 10 tCO<sub>2</sub>e less
- Med: Equal to or less than 5% GHG reduction, estimated at approximately 45 tCO<sub>2</sub>e less
- High: Greater than 5% GHG reduction, estimated at approximately 55 tCO<sub>2</sub>e or more
- NA: No estimate available

<b>Total corporate GHG emissions (tCO<sub>2</sub>e) per 2015 baseline</b>	<b>777</b>
<b>Total GHG reduced (estimated tCO<sub>2</sub>e) through implementation of the action items</b>	<b>185</b>
<b>Estimated GHG reductions by 2028</b>	<b>25%</b>
<b>Additional GHG reduction (tCO<sub>2</sub>e) potential through low-level implementation of Table 7 actions</b>	<b>86</b>

\* Your municipal Sustainability Committee & PCP program representatives are considered as support for all actions as needed.

\*\* Low estimates of GHG reductions are presented, actual GHG reductions are anticipated to be 15-20% higher than estimated.

\*\*\* These estimates for implementation include consideration for costs associated with capital, salary, consultant & materials/supplies. The cost is expressed as low (\$ = less than \$1,000), moderate (\$\$ = more than \$1,000 but less than \$5,000), medium (\$\$\$ = more than \$5,000 but less than \$10,000), high (\$\$\$\$ = more than \$10,000 but less than \$20,000), & ICA (more than \$20,000). It should be noted that the majority of actions are not 'stand-alones,' in that most align with required municipal activities, either as existing work plan items, or as anticipated items required per Provincial legislation.

**Table 7. Additional actions to reduce corporate and community GHG emissions**

List of Actions	Estimated GHG reduction potential per action (one-time reduction)
Adoption of climate change policies and GHG emissions considerations in all municipal plans & documents	LOW 10 (tCO <sub>2</sub> e) of GHGs reduced
Adding or rearranging windows for increased daylight in retrofits & new builds	Equal to or less than 1% GHG reduction, estimated at approximately 10 tCO <sub>2</sub> e less
Adoption of green driving policy (i.e., anti-idling, right-sizing, car-pooling, telecommuting, etc.)	MED 45 (tCO <sub>2</sub> e) of GHGs reduced
Employee training and awareness program to conserve water, energy & resources	Equal to or less than 5% GHG reduction, estimated at approximately 45 tCO <sub>2</sub> e less
Environmental stewardship or conservation actions (i.e., tree planting & preservation, habitat enhancements, etc.)	HIGH 55 (tCO <sub>2</sub> e) of GHGs reduced
Install occupancy sensors to control interior building or facility lighting	High: Greater than 5% GHG reduction, estimated at approximately 55 tCO <sub>2</sub> e or more
Install/add exterior lighting control for buildings and facilities	N/A
Install low-flow faucets with sensors & automatic shut-offs	No estimate available
Purchase/replace office equipment with energy efficient models	
Replace weather-stripping for doors & windows	
Use cool/white roofs on buildings and facilities	
Seal building(s) or facility with caulking or spray foam	
Upgrade indoor lighting systems	
Vehicle replacement with a hybrid, electric, or alternative fuel vehicle	
Add insulation in building(s) or facility	
Vehicle replacement with a more fuel efficient model	
Add solar thermal water heaters for recreation facilities	
Install sub-metering (building monitoring system)	
Operator (building) training to optimize performance & return-on-investment	
Public transit enhancements to either routes or equipment	
Renovation/reconfiguring building or facility interior	
Replace window glazing & doors	
Retrofit/replace supply fan motor & variable frequency drives (VFDs) in buildings & facilities	
Update inefficient heating/furnaces & cooling systems	
Upgrade outdoor lighting systems	
Add Demand Controlled Ventilation for larger buildings and facilities	
Replace the roof, considering green roof, solar shingles, renewable technologies, etc.	
Install electric vehicle (EV) charging stations	
Install solar photo-voltaic (PV) systems or solar thermal installations for buildings or facilities	
Replace heating, ventilation &/or air-conditioning system (HVACs) with a renewable technology (i.e., ground-source heat pump)	
Replace HVACs with more energy efficient models (i.e., radiant, chilled beams, displacement or natural ventilation, water-source heat pumps)	





## Summary

The regional LCCAP and this municipal-level climate change action plan prepared for the Township of Severn puts your municipality in a position to take results-driven action towards corporate and community GHG reduction targets while also working towards on-going Township priorities. This document builds upon the work already completed by the Township (i.e. on-going efforts in the conversion of streetlights to light emitting diodes (LEDs), energy-conscious fleet procurement through the purchase of the building department's hybrid vehicle, sustainable procurement considerations by the recreation department, a Council-supported travel conservation policy, etc.) and encourages these actions and more to continue through a lens that supports GHG emission reduction.

Many GHG and energy reduction actions are being pursued within existing municipal work plans and in many cases through initiatives driven by co-benefit priorities (i.e., cost-savings through retrofits and improvements, protection of land and water, multi-modal communities). As the township's Associate Member of the PCP program, SSS will continue to support the Township of Severn in completing PCP Milestones, as well as:

1. The submission of formal reports to the PCP Secretariat every two years on behalf of the township, documenting Severn's achievements in the PCP program,
2. The submission of progress reports to the PCP program Secretariat to track actions and provide recognition as the township advances through the milestone framework,
3. Completion of an annual PCP Members Survey, which will provide FCM with information that can be used to recognize the Township of Severn's achievements in FCM's yearly National Measures Report, and
4. An annual report to Council from SSS and the Sustainability Committee highlighting program activities, achievements, implementation progress as well as an update on corporate and community GHG emissions every two years.



# Acknowledgements

SSS and the Sustainability Committee would like to thank the Township of Severn, especially Councillor Ron Stevens, the Council PCP program point-of-contact and Sustainability Committee member as well as Mr. W. Henry Sander, former CAO, as the 2018 staff PCP program point-of-contact, for supporting climate change action within the municipality. The insight and support provided by Councillor Stevens has allowed SSS to succeed in delivering on our goal to complete the LCCAP and your municipal-level climate change action plan, and to establish the framework for municipal climate change action with our region.

## Links and resources

1. Sustainable Severn Sound <https://www.sustainablesevernsound.ca/>
2. SSS's Local Climate Change Action Plan: Greenhouse Gas (GHG) Summary <https://www.sustainablesevernsound.ca/about-page.php?id=3>
3. Federation of Canadian Municipalities, Partners for Climate Protection program <https://fcm.ca/home/programs/partners-for-climate-protection.htm>
4. Canadian Supplement to the International Emissions Analysis Protocol [https://fcm.ca/Documents/reports/PCP/PCP\\_Protocol\\_Canadian\\_Supplement\\_EN.pdf](https://fcm.ca/Documents/reports/PCP/PCP_Protocol_Canadian_Supplement_EN.pdf)
5. Township of Severn, Official Plan, 2010 <https://drive.google.com/open?id=1INmbp5P0YkIFnZfV6w2eiD6dooByGFTM>
6. Township of Severn, Strategic Plan, 2012 <https://drive.google.com/open?id=0B0yPSaaMSvkOMFhZeGgzZUc5d2c>
7. Township of Severn, Energy Conservation and Demand Energy Management (CDM) Plan <https://drive.google.com/open?id=0B0yPSaaMSvkOa2NkWWVIXzRSdkE>
8. Township of Severn, Asset Management Plan (AMP), 2013 [https://drive.google.com/open?id=1rZJQaA\\_N7HZO6oAYdW0WKfXjkzzG9R8T](https://drive.google.com/open?id=1rZJQaA_N7HZO6oAYdW0WKfXjkzzG9R8T)
9. O. Reg. 397/11: Energy Conservation and Demand Management Plans (anticipated to be amended under Ontario's Electricity Act\*) <https://www.ontario.ca/laws/regulation/r11397>
10. Ontario's Electricity Act\* <https://www.ontario.ca/laws/statute/98e15>
11. O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure <https://www.ontario.ca/laws/regulation/r17588>
12. Growth Plan for the Greater Golden Horseshoe, 2017 [http://placestogrow.ca/index.php?Itemid=14&id=430&option=com\\_content&task=view#4.2.10](http://placestogrow.ca/index.php?Itemid=14&id=430&option=com_content&task=view#4.2.10)



Councillor Ron Stevens, the Township's Sustainability Committee member accepts the PCP program recognition statue on behalf of the municipality, as joined by the Town of Penetanguishene's PCP & SC representatives, Deputy Mayor Anita Dubeau & Councillor Mike Lauder, June 2018.





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