



# Penetanguishene's Climate Change Action Plan

**Local**  
**Climate Change**  
**Action Plan**  
Sustainable Severn Sound



## Sustainable Severn Sound (SSS) and the Sustainability Committee (SC)

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.

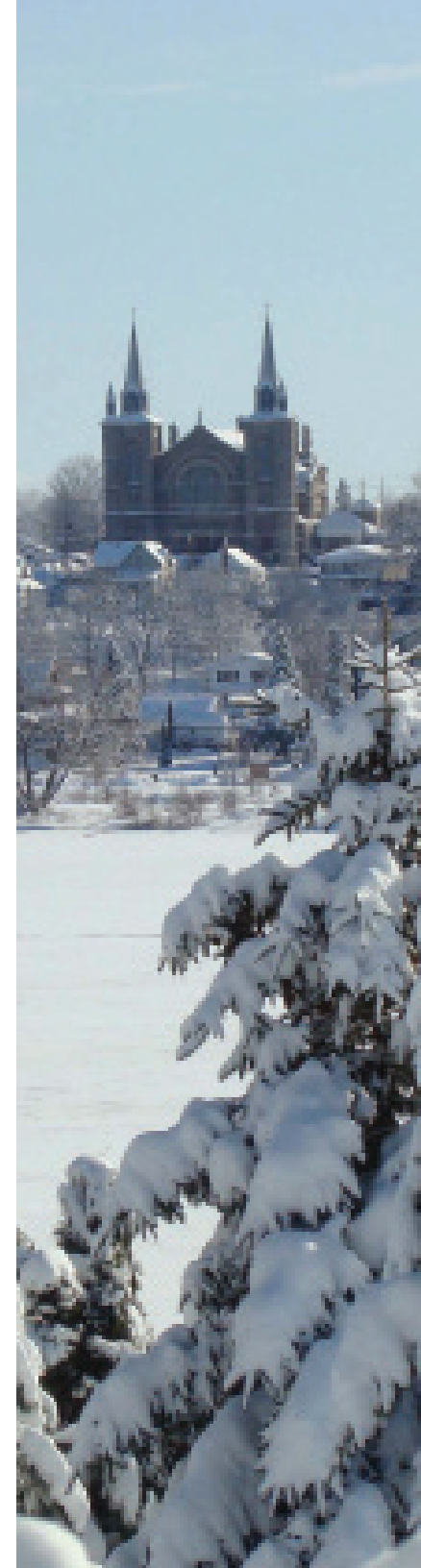


© 2018 Sustainable Severn Sound (SSS). All Rights Reserved.

This preparation of this plan was carried out with assistance from the Municipalities for Climate Innovation Program (MCIP), a fund financed by the Government of Canada and administered by the Federation of Canadian Municipalities (FCM). Notwithstanding this support, the views expressed are the personal views of the authors, FCM and the Government of Canada accept no responsibility for them. This plan was prepared by Tracy Roxborough and Victoria Ervick of SSS.

# Contents

Sustainable Severn Sound and the Sustainability Committee .....	2
Background .....	4
Table 1. The PCP program framework .....	4
Alignment with existing plans and policies .....	5
GHG emissions .....	6
Figure 1. Per cent (%) of total regional GHG emissions per municipality, 2015 .....	6
Figure 2. Penetanguishene's total GHG emissions (tCO <sub>2</sub> e), 2015 .....	6
GHG emissions per capita .....	7
Table 2. Per capita GHG emissions (tCO <sub>2</sub> e) per municipality, 2015 .....	7
Community GHG emissions .....	8
Table 3. Penetanguishene's community GHG emissions (tCO <sub>2</sub> e) per sector, 2015 .....	8
Figure 3. Community GHG emissions (per cent) per municipality as contributed to the regional total, 2015 .....	8
Figure 4. Penetanguishene's community GHG emissions (per cent) per sector, 2015 .....	8
Community GHG forecast, 2015-2028 .....	9
Figure 5. Community GHG emissions forecast, 2015-2028 .....	9
Community GHG emissions reduction target to 2028 .....	9
Corporate GHG emissions .....	10
Table 4. Penetanguishene's corporate GHG emissions (tCO <sub>2</sub> e) per sector, 2015 .....	10
Figure 6. Corporate GHG emissions (per cent) as contributed per municipality, 2015 .....	10
Figure 7. Penetanguishene's corporate GHG emissions (per cent) per sector, 2015 .....	10
Corporate GHG emissions forecast, 2015-2028 .....	11
Figure 8. Corporate GHG emission forecast, 2015-2028 .....	11
Corporate GHG emissions reduction target to 2028 .....	11
Table 5. Penetanguishene's top 5 GHG emitting facilities and estimated energy cost, 2015 .....	12
Opportunities for reducing corporate GHG emissions .....	13
Actions and recommendations .....	13
Table 6. Actions to reduce GHG emissions, 2019-2028 .....	14-15
Table 7. Additional actions to reduce corporate GHG emissions .....	16
Summary .....	17
Links and resources .....	18
Contact .....	19



# 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 February 2018, your Council further demonstrated Penetanguishene’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 you through a 5-step Milestone Framework (Table 1) to take action on climate change by reducing emissions in your municipality and community. In July 2018, the Town of Penetanguishene 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, Penetanguishene will receive multiple co-benefits, including cost savings, cleaner air and healthier communities, more resilient infrastructure as well as the reduced impact on the environment. Climate change affects us all and in order to ensure sustainability for future generations, support and understanding is needed by Council, municipal staff, and the residents of Penetanguishene.

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, Penetanguishene's Climate Change Action Plan and the Town's commitment to the PCP program, supports a number of existing corporate documents within the Town including,

1. The Town of Penetanguishene's existing strategic goal of, '*promoting environmental integrity and protection, community wellbeing and economic prosperity through participation in Sustainable Severn Sound,*' ([Strategic Plan, 2014-2017](#)).
2. Penetanguishene's [Climate Change Risk Assessment, 2017](#),
3. The Town's Energy Conservation and Demand Energy Management (CDM) Plan ([O. Reg. 397/11](#)) and Asset Management Plan (AMP) ([O. Reg. 588/17](#)). Recognizing the recent changes to O. Reg 397/11, the Town 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.
4. The Town of Penetanguishene's [Official Plan's](#)\* Goal and Objective (Section 1.4.2) to 'Conserve the Natural Environment' specifically in reference to minimizing impacts from climate change through innovative techniques, and promoting the reduction of greenhouse gas emissions. These goals and objectives also support the Town's general policies of energy conservation, energy efficiency and renewable energy projects as noted within Section 3.2.2, Section 3.3, and Section 3.5.3.

\* On January 24th, 2018 Council of the Town of Penetanguishene approved the release to the public the final draft new Official Plan, but subject to final adoption by the County of Simcoe.



# GHG emissions

As presented in the LCCAP, the Town of Penetanguishene's total GHG emissions account for approximately 13% of the area's total emissions (Figure 1). This equates to 68,805 tonnes of CO<sub>2</sub> equivalent (tCO<sub>2</sub>e)<sup>1</sup>, with corporate emissions accounting for 1% (774 tCO<sub>2</sub>e) of Penetanguishene's total emissions and community emissions accounting for 99% at 68,031 tCO<sub>2</sub>e (Figure 2).

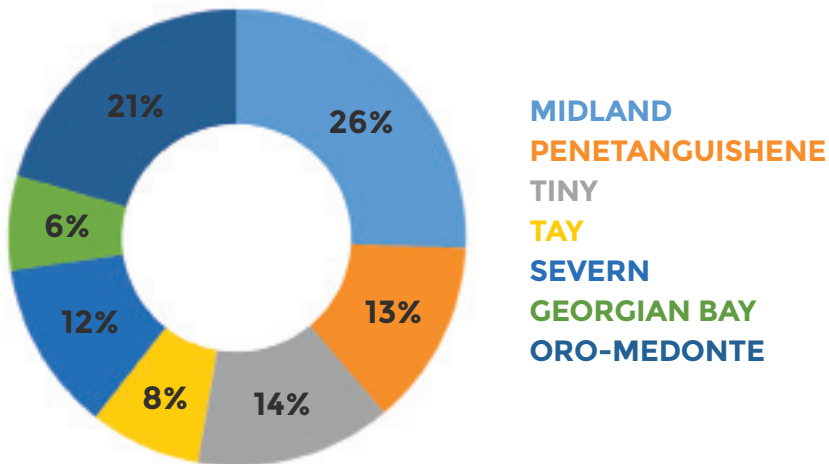


Figure 1. Per cent (%) of total regional GHG emissions, per municipality, 2015

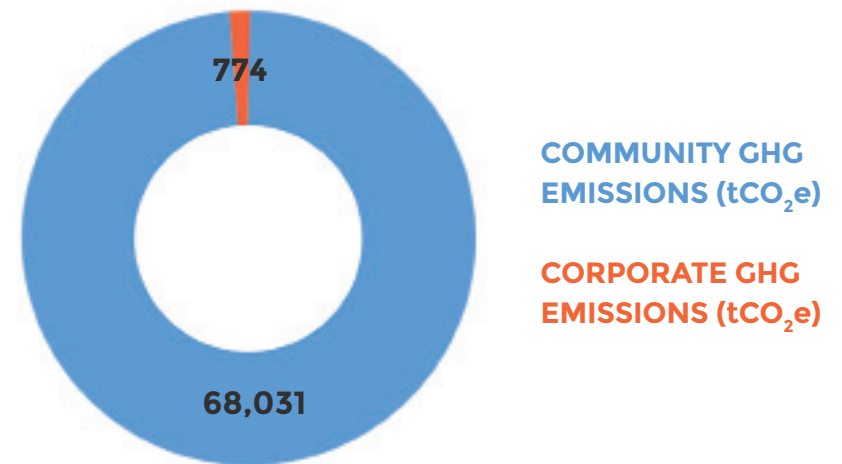


Figure 2. Penetanguishene's total GHG emissions (tCO<sub>2</sub>e), 2015

<sup>1</sup> Carbon dioxide equivalent is a measure used to compare the emissions from various greenhouse gases based upon their global warming potential. 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 8,962 in 2015 (Statistics Canada, 2016) the Town of Penetanguishene emitted approximately 7.67 tonnes of CO<sub>2</sub>e per capita. As you can see in Table 2, Penetanguishene has the 3<sup>rd</sup> highest per capita emissions compared to the other 6 SSS partner municipalities, and is above the 7.07 per tCO<sub>2</sub>e per capita average. 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).

Compared to the majority of the world's countries and population, Canadians, and Ontarians, have some of the world's highest per capita emissions, higher than most other developed countries, 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	Permanent population (Census 2016, Statistics Canada)	Total GHG emissions, 2015 (corporate + community)	Per capita emissions, including corporate (tCO <sub>2</sub> e)
Georgian Bay	2,499	33,777	13.51
Midland	16,864	135,305	8.08
Penetanguishene	8,962	68,805	7.67
Tiny	11,787	74,024	6.28
Oro-Medonte	21,036	108,159	5.14
Severn	13,477	64,061	4.75
Tay	10,033	41,052	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, residential, commercial and institutional, industrial buildings and community solid waste) and collected for the baseline year of 2015. The Town of Penetanguishene's community GHG emissions account for 13% of the area's total community emissions (Figure 3), being the 4<sup>th</sup> highest emitter out of the 7 municipalities inventoried.

As illustrated in Figure 4, community transportation is the largest emitter of GHGs, accounting for 45% (30,975 tCO<sub>2</sub>e) of Penetanguishene's total community emissions. The personal vehicle, in large part, remains the dominant method of choice for travel in our area. SSS and the Town of Penetanguishene are recommending that residents consider alternatives to the obvious choice, such as telecommuting, carpooling, biking, walking or public transit when possible.

Table 3. Penetanguishene'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	30,975	45%
Residential	13,422	20%
Commercial & institutional	9,786	15%
Industrial	8,218	12%
Waste	5,632	8%
<b>Total</b>	<b>68,031</b>	<b>100%</b>

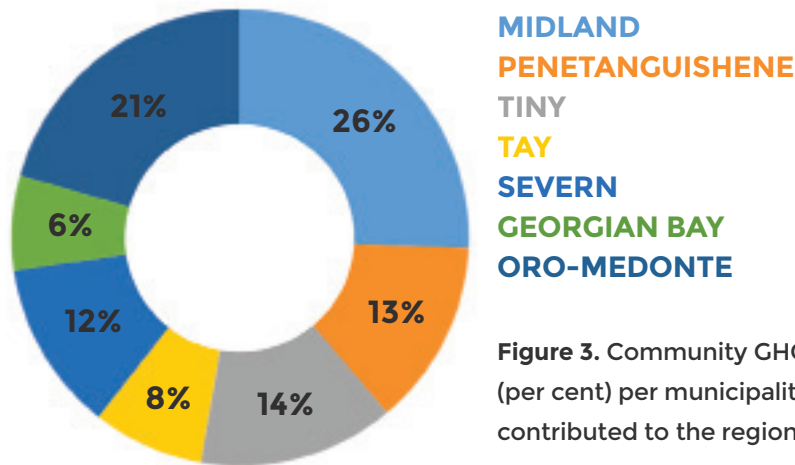


Figure 3. Community GHG emissions (per cent) per municipality as contributed to the regional total, 2015

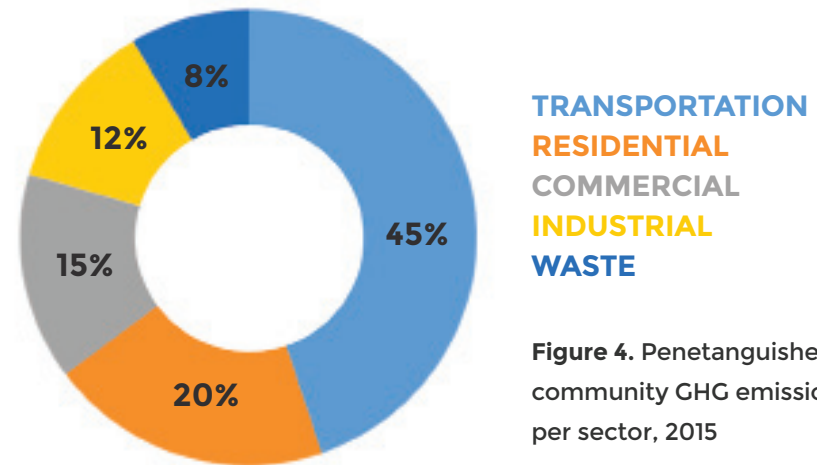


Figure 4. Penetanguishene's community GHG emissions (per cent) per sector, 2015

The residential sector was the 2<sup>nd</sup> largest emitter of community emissions in 2015. GHG emissions from energy use was approximately 13,442 tCO<sub>2</sub>e which is equivalent to 345,284 Gigajoules (GJ) of energy consumption. Moving forward, SSS will explore 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 Town of Penetanguishene to consider a strong planning policy that supports more sustainable homes, developments and neighbourhoods that exceeds Building Code and/or Planning Act requirements.



# Community GHG emissions forecast, 2015-2028

In 2015, 68,031 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. This forecast was developed per an annual 1.14% population growth rate, based upon the projected increase of the Town's population to approximately 11,000 by 2031 from 2011, as contained in Schedule 7 of the Growth Plan and the County of Simcoe Official Plan. As a result of this projected increase and considering a business-as-usual (BAU) approach, community GHG emissions are expected to reach 78,835 tCO<sub>2</sub>e by 2028. If no significant action is taken, this increase of 15.8% over 2015 GHG emission levels would allow an additional 10,804 tCO<sub>2</sub>e to be emitted by the community in 2028, further contributing to the acceleration of climate change.

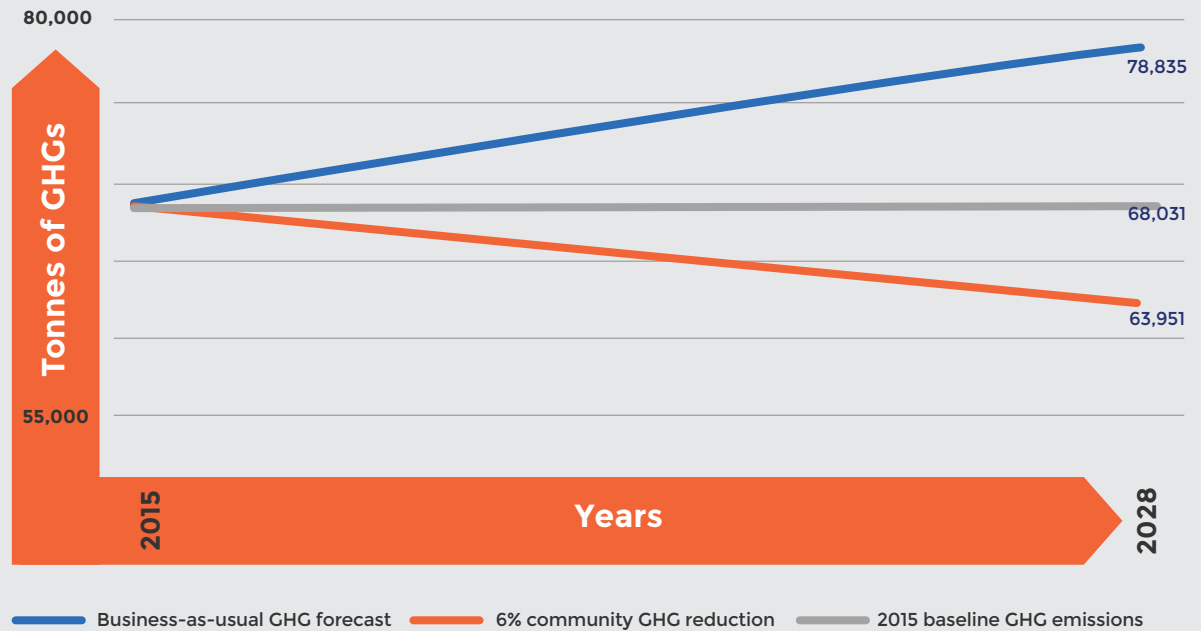


Figure 5. Community GHG emissions forecast, 2015-2028

## Community GHG emissions reduction target to 2028

The community of Penetanguishene is aiming to achieve a 6% reduction in its GHG emissions from the 2015 baseline by 2028. This target represents an absolute emission reduction of 4,080 tCO<sub>2</sub>e relative to the 2015 baseline emissions and a 2028 target of 63,951 tonnes of CO<sub>2</sub>e. This reduction is equivalent\* to:

- Removing approximately 1,007 passenger vehicles from the road.
- 250 residents reducing their annual kilometres travelled by 50km.
- Replacing 166,521 incandescent bulbs to light-emitting diodes (LEDs).

\* 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 such as 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 Town. 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 Penetanguishene's geographical boundary.

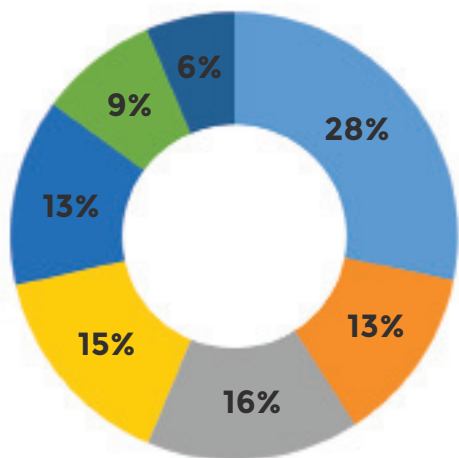
In 2015, the baseline year, the Town of Penetanguishene's total energy use was approximately 27,770 GJ. This is equivalent to 774 tCO<sub>2</sub>e and accounts for approximately 13% of the region's total corporate emissions as presented in the LCCAP (Table 4).

Penetanguishene'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% (Figure 5).

As illustrated in Table 4 and Figure 7, the Town's corporate GHG emissions predominately stem from fleet (39%) and buildings and facilities (34%). Emissions generated from Penetanguishene's fleet are relative to neighbouring fleets, and also present the greatest opportunity for emissions reduction. Most building and facility emissions are generated from electricity and natural gas, used to heat and power each of the Town's 26 buildings and facilities, while fleet emissions are generated from diesel and gasoline consumption.

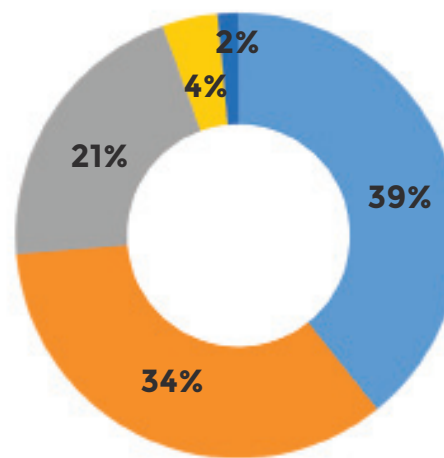
Table 4. Penetanguishene's corporate GHG emissions (tCO<sub>2</sub>e) per sector, 2015

Sector	GHG emissions (tCO <sub>2</sub> e)	% of total community emissions
Fleet	306	39%
Buildings & facilities	267	34%
Water & wastewater	160	21%
Streetlights	30	4%
Solid waste	11	2%
<b>Total</b>	<b>774</b>	<b>100%</b>



MIDLAND  
PENETANGUSHENE  
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. Penetanguishene's corporate GHG emissions (per cent) per sector, 2015

# Corporate GHG emissions forecast, 2015-2028

In 2015, the Town's corporate GHG emissions were 774 tCO<sub>2</sub>e as a result of day-to-day municipal operations. Based upon the projected increase of the Town's population to approximately 11,000 by 2031 from 2011, as contained in Schedule 7 of the Growth Plan and the County of Simcoe Official Plan, the Town's corporate GHG emission forecast is projected per a 1.14% annual population increase to 2028. As a result of that increase and considering business-as-usual (BAU) operations, corporate GHG emissions are expected to grow to 903 tCO<sub>2</sub>e, or by 14.2% by 2028. As GHG emissions are directly correlated to energy costs, the expectation is that municipal expenses will also increase relative to the increase of GHGs. Under the Paris Agreement, Canada has committed to reducing GHG emissions by 30% below 2005 levels by 2030<sup>3</sup>. The 25% target to be achieved by the Town remains consistent with the selected Federal target, and FCM's recommended target of 20%.

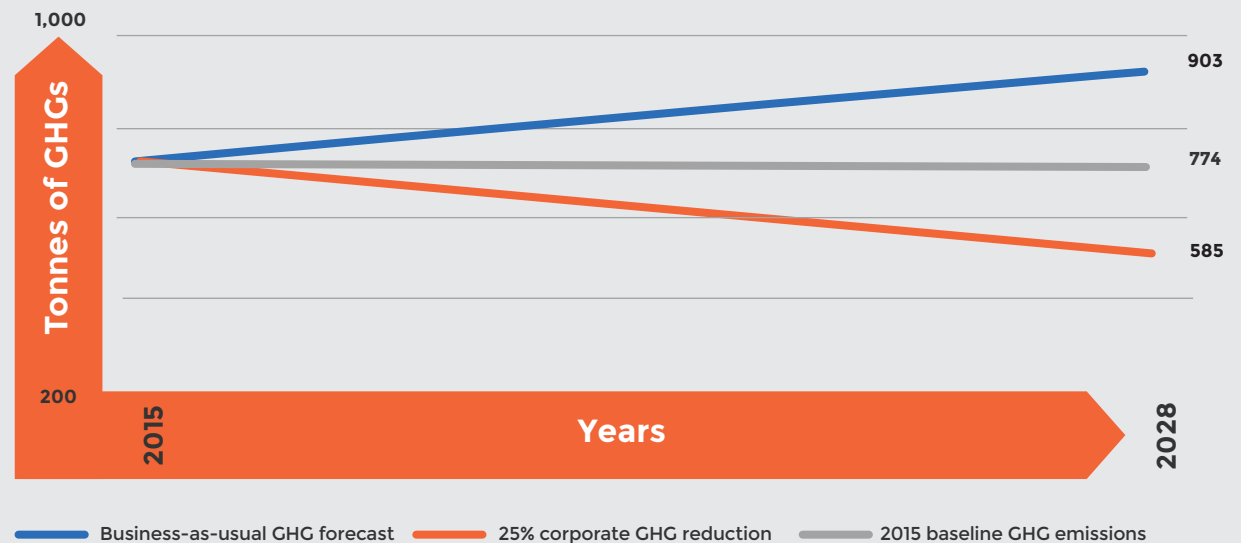


Figure 8. Corporate GHG emission forecast, 2015-2028

## Corporate GHG emissions reduction target to 2028

The Town of Penetanguishene is aiming to achieve a corporate GHG emissions reduction target of 25% below 2015 levels by 2028. This target represents an absolute emissions reduction of approximately 189 tCO<sub>2</sub>e relative to the 2015 baseline emissions of 774 tCO<sub>2</sub>e, and encourages the Town to emit no more than 585 tCO<sub>2</sub>e from corporate activities in 2028. A reduction of 25%, or 189 tCO<sub>2</sub>e is equivalent\* to:

- Reducing corporate kilometers travelled by 50km on 10 vehicles by 2028.
- Having 30 corporate vehicles each idle 10 minutes less per year for the next 10 years.
- Reducing gasoline usage by 5,618 litres by 2028, or 561 litres per year for the next 10 years.

\* Equivalent calculations produced by the Government of [Canada's Calculator for greenhouse gases and common air contaminants](https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/progress-towards-canada-greenhouse-gas-emissions-reduction-target.html)

<sup>3</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>

Based on Ontario’s average historical cost for electricity and natural gas in 2015\*, the Town of Penetanguishene spent approximately \$558,197 on energy consumption for their municipal buildings and facilities, with an estimated \$401,753 spent on these top 5 GHG emitting buildings alone. Achieving the corporate GHG reduction target of 25% below 2015 levels by 2028, could result in a total projected cost savings of up-to approximately \$139,549 per year over the next 10 years across all buildings and facilities, or a savings of \$100,438 per year to 2028 from the top 5 GHG emitting buildings<sup>4</sup> alone. This is a conservative estimate<sup>5</sup> which considers average annual costs for buildings and facilities only, with the opportunity for greater cost-savings highly likely if the 25% target is achieved and GHG emissions are reduced across each of the 5 sectors, not just buildings and facilities.

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

Municipal operation	Address	Total square feet (sq. ft)	Energy consumption		GHG emissions (tCO <sub>2</sub> e) per facility
			Electricity (kWh)	Natural Gas (m <sup>3</sup> )	
Arena	61 Maria Street	38,858	629,918	67,620	153
STP - Main	24 Main Street	0	1,526,893	17,848	95
Townhall	10 Robert Street West	26,770	181,607	14,396	34
Payette pump station	64 Payette Street	0	733,387	0	29
Library	24 Simcoe Street	13,820	77,391	11,026	24
<b>Total</b>			<b>3,149,196</b>	<b>110,890</b>	<b>335</b>
<b>Estimated total cost (\$)*</b>			<b>\$392,074</b>	<b>\$9,678</b>	<b>\$401,753</b>

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

<sup>4</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.

<sup>5</sup> This estimate assumes average building and facilities energy costs of \$558,197 per year over 10 years, for a total of \$5,581,973 in costs, with a direct 25% reduction in those costs presented as a result of the achieved 25% reduction in corporate GHG emissions.

# Opportunities for reducing corporate GHG emissions

As part of the implementation plan for the regional-scale LCCAP, SSS staff will review Penetanguishene'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 the recommendations are directly aligned with Penetanguishene's Energy Conservation and Demand Management Plan, and all have positive environmental, social and economic outcomes.

## Actions and recommendations

Table 6 lists the actions SSS and the Sustainability Committee have identified that will help the Town of Penetanguishene achieve the GHG reduction targets of 6% for the community and 25% corporately. Municipal staff had the opportunity to review these actions and provide comment, to ensure successful implementation. Both this Plan and the actions listed on the next page will be reviewed by SSS and municipal staff every 5 years to reflect new opportunities that can further contribute to the reduction of GHG emissions.

## Implementation costs

A detailed Implementation Cost Analysis (ICA) can be provided by SSS based upon approval by the Sustainability Committee and municipal staff. For the purpose of this Plan, four expenditure categories were used to estimate the total cost associated with the implementation of each action listed 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 the actions listed in Table 6, and estimated per hourly wage.
- 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 Town staff. If possible, the expected return on investment (ROI) will be considered by both SSS and the municipality prior to implementation.

**Table 6. Actions to reduce GHG emissions, 2019-2028**

#	Recommended action items	Year
1	Include updates of municipal & community energy consumption & climate messaging in regular newsletters, water bills & tax bills	Q2 2019
2	Include climate change language & influence of management decisions on GHG emissions in a new Strategic Asset Management Policy as part of 2019 AMP update	Q2 2019
3	Include GHG inventories, GHG targets & climate change action items into Official Plans & municipal Strategic Plans (i.e., Council Strategic Plans, Active Transportation, Transit, Parks & Recreation Master Plans, Community Wellbeing, etc.)	Ongoing
4	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 Town's PCP program commitment	Ongoing
5	Prepare an inventory of municipal buildings & their associated energy audit status (not-completed, completed, implemented, etc.) & utilize this inventory in the update of the municipalities' CDM Plan in 2019, complete further actions as feasible - prioritizing the top 5 GHG emitting buildings & facilities (see Table 5)	Q3 2019
6	Consider recommendations to update Emergency Management Plans, specifically the Hazard Identification Risk Assessment (HIRA) to include climate change impacts (i.e., extreme weather, wildfire, flooding, etc.) & how residents can be better prepared	Q4 2019
7	Establish a Corporate Energy Revolving Fund <sup>7</sup> to finance corporate energy retrofit projects	Q4 2019
8	Develop a 'no-mow' & pollinator policy with municipal commitments to improve the environment for pollinators & reduce corporate fuel use	2020
9	Review Vulnerability Assessment <sup>6</sup> results & integrate actions to mitigate high-level vulnerability ranked impacts into municipal work plans	2020
10	Designate warming centres for winter, designate cooling centres for summer, & ensure on-site cooling locations for summer festivals & events	2021
11	Develop a Sustainable Fleet Management Plan to reduce GHGs associated with corporate transportation	2021
12	Investigate the feasibility of completing building & facility waste audits, complete audits & implement recommendations	2022
13	Prepare a Water Management Plan to reduce corporate & community water use & to minimize the risk for flooding & drought	2023
14	Develop a community & corporate energy plan	2025+

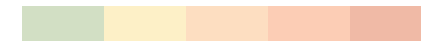
<sup>6</sup> In 2017, the Town participated in the Train-the-Trainer Workshop Series as part of the Great Lakes Climate Change Adaptation Project. Staff engaged with stakeholders in both Vulnerability & Risk workshops to identify the climate change impacts (environmental, social & economic) that pose the greatest risks to the Town & its residents, & how vulnerable the Town is to those selected impacts. A higher vulnerability is correlated to a higher risk. These risks should be further considered when implementing projects in the Town. This document is available at: <https://drive.google.com/open?id=1DhK6gBdnspmT9iMRN3h3wTpe9efNqeTs>

<sup>7</sup> 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	Support*	tCO <sub>2</sub> e re-duction by 2028**	Cost***
	Clerk	N/a	N/a	\$
	Director, Public works	Manager, Capital projects	N/a	\$
	All departments	Clerk, all departments	N/a	\$
	All departments	Clerk, all departments	Med: 45	\$\$
	Director, Public works	Manager, Capital projects	High: 55	\$\$
	Director, Fire/emergency services	Admin. support	N/a	\$
	Director, Finance/Treasurer	All departments	N/a	\$\$
	Director, Recreation & Community Services	Director, Planning	Low: 10	\$\$
	Manager, Capital Projects	All departments	N/a	\$\$
	Director, Fire/emergency services	Admin. support	N/a	\$
	Manager, Capital projects	Director, Finance/Treasurer	High: 55	\$\$\$
	Director, Recreation & community services	Manager, Facilities	Low: 10	\$\$\$\$
	Chief wastewater/water operators	Public works: Admin. support	Low: 10	\$\$\$\$
	Manager, Capital projects	Director, Planning	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
- N/a:** No estimate available

<b>Total corporate GHG emissions (tCO<sub>2</sub>e) per 2015 baseline</b>	<b>774</b>
<b>Total GHG reduced (estimated tCO<sub>2</sub>e) through implementation of the action items</b>	<b>185</b>
<b>Additional GHG reduction (tCO<sub>2</sub>e) potential through low-level implementation of Table 7 actions</b>	<b>86</b>
<b>Total achievable GHG reductions by 2028</b>	<b>25%</b>

\* Your municipal Sustainability Committee & PCP program representatives are considered as support for all actions as needed, and will report to SSS when decisions that impact GHG are made.

\*\* 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 GHG emissions**

List of actions	Approx. implementation cost*
Adding or rearranging windows for increased daylight in retrofits & new builds	\$-\$\$\$
Adoption of green driving policy (i.e., anti-idling, right-sizing, car-pooling, telecommuting, etc.)	\$
Employee training & awareness program to conserve water, energy & resources	\$\$
Environmental stewardship or conservation actions (i.e., tree planting & preservation, habitat enhancements, etc.)	\$-\$\$\$\$
Install occupancy sensors to control interior building or facility lighting	\$-\$\$
Install/add exterior lighting control for buildings & facilities	\$\$-\$\$\$
Install low-flow faucets with sensors & automatic shut-offs	\$-\$\$
Purchase/replace office equipment with energy efficient models	\$-\$\$
Replace weather-stripping for doors & windows	\$-\$\$
Use cool/white roofs on buildings & facilities	\$\$\$ - ICA
Seal building(s) or facility with caulking or spray foam	\$-\$\$
Upgrade indoor lighting systems	\$\$-\$\$\$\$
Vehicle replacement with a hybrid, electric, or alternative fuel vehicle	ICA
Add insulation in building(s) or facility	\$-\$\$\$
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	\$\$\$-ICA
Renovation/reconfiguring building or facility interior	\$\$\$-ICA
Retrofit/replace supply fan motor & variable frequency drives (VFDs) in buildings & facilities	\$\$-\$\$\$\$
Update inefficient heating/furnaces & cooling systems	\$\$\$-ICA
Upgrade outdoor lighting systems	\$\$-ICA
Add Demand Controlled Ventilation for larger buildings &/or facilities	\$\$-\$\$\$
Replace the roof, considering green roof, solar shingles, renewable technologies, etc.	\$\$\$-ICA
Install electric vehicle (EV) charging station(s)	\$\$
Install solar photo-voltaic (PV) systems or solar thermal installations for buildings or facilities	\$\$\$-ICA
Replace heating, ventilation &/or air-conditioning systems (HVACs) a renewable technology (i.e., ground-source heat pump)	ICA

**Estimated GHG reduction potential per action (one-time reduction)**

**LOW** 10 (tCO<sub>2</sub>e) of GHGs reduced

Equal to or less than 1% GHG reduction, estimated at approximately 10 tCO<sub>2</sub>e or less

**MED** 45 (tCO<sub>2</sub>e) of GHGs reduced

Equal to or less than 5% GHG reduction, estimated at approximately 45 tCO<sub>2</sub>e or less

**HIGH** 55 (tCO<sub>2</sub>e) of GHGs reduced

Greater than 5% GHG reduction, estimated at approximately 55 tCO<sub>2</sub>e or more

N/a

No estimate available

\*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). These are estimates only, as the cost will be impacted by a number of factors, including fees & services, project scope, size & location of project, or facility, & varying cost, quality & availability of materials, etc.



## Summary

The regional LCCAP and Penetanguishene's Climate Change Action Plan allows your municipality to take results-driven action towards corporate and community GHG reduction targets while also working towards on-going Town priorities. The LCCAP builds upon the work already completed by the Town (i.e. being the first municipality in Ontario to undertake a large scale installation of LED streetlights, Penetanguishene's Climate Change Vulnerability Assessment, and the on-going work to become a sustainable multi-modal community) and encourages these actions 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 your municipalities' Associate Member of the PCP program, SSS will continue to support the Town of Penetanguishene in completing PCP Milestones, as well as:

1. The submission of formal reports to the PCP Secretariat every 2 years on behalf of the Town, documenting Penetanguishene'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 Town 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 Town of Penetanguishene'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 Town of Penetanguishene, especially Deputy Mayor Anita Dubeau, Councillor Mike Lauder and Andrea Betty, Director of Planning and Community Development, the Council and staff PCP program point-of-contacts, and Sustainability Committee members, for supporting climate change action within the municipality.

The insight and support provided by representatives of the Town has allowed our organization to succeed in delivering on our goal to complete the LCCAP, and to develop your municipal-level climate change action plan, establishing the framework for municipal climate change action within the municipality.

## Links and resources

1. Sustainable Severn Sound <https://www.sustainablesevernound.ca/>
2. SSS's Local Climate Change Action Plan: Greenhouse Gas (GHG) Summary <https://www.sustainablesevernound.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. Town of Penetanguishene, Official Plan, 2018 [https://www.penetanguishene.ca/en/townhall/resources/Official-Plan-Review-2016-2017/2018\\_Jan-Final-Draft-OP\\_For-Public-Review.pdf](https://www.penetanguishene.ca/en/townhall/resources/Official-Plan-Review-2016-2017/2018_Jan-Final-Draft-OP_For-Public-Review.pdf)
6. Town of Penetanguishene, Strategic Plan, 2014-2017 <https://penetanguishene.civicweb.net/document/196705>
7. Town of Penetanguishene, Climate Change Risk Assessment, 2017 <https://drive.google.com/file/d/1DhK6gBdnspmT9iMRN3h3wTpe9efNgeTs/view>
8. Town of Penetanguishene, Energy Conservation and Demand Energy Management (CDM) Plan, 2015 <https://drive.google.com/open?id=0B0yPSaaMSvkOTUg2aGZJdIVwQnM>
9. Town of Penetanguishene, Asset Management Plan (AMP), 2013 [https://www.penetanguishene.ca/en/townhall/resources/Penetanguishene\\_Asset\\_Management\\_Plan\\_2013.pdf](https://www.penetanguishene.ca/en/townhall/resources/Penetanguishene_Asset_Management_Plan_2013.pdf)
10. 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>
11. Ontario's Electricity Act\* <https://www.ontario.ca/laws/statute/98e15>
12. O. Reg. 588/17: Asset Management Planning for Municipal Infrastructure <https://www.ontario.ca/laws/regulation/r17588>
13. Growth Plan for the Greater Golden Horseshoe, 2017 [http://placestogrow.ca/index.php?ltemid=14&id=430&option=com\\_content&task=view#4.2.10](http://placestogrow.ca/index.php?ltemid=14&id=430&option=com_content&task=view#4.2.10)



Sustainability Committee members Councillor Mike Lauder and Deputy Mayor Anita Dubeau accept the Town's PCP membership statue, June 2018.



## Contact information

Sustainable Severn Sound (SSS) and the Sustainability Committee  
P.O. Box 8, 105 Fourth Street  
Midland, ON  
L4R 4K6  
P: 705.526.1371 x. 111  
E: [info@sustainablesevernsound.ca](mailto:info@sustainablesevernsound.ca)  
W: [www.sustainablesevernsound.ca](http://www.sustainablesevernsound.ca)

Connect with us on social media



@SustainableSevernSound

<https://www.facebook.com/SustainableSevernSound/>



@sustainsevsound



**Local**  
**Climate Change**  
 **Action Plan**  
Sustainable Severn Sound