



Township of Selwyn

Partners for Climate Protection Milestone 4-5 Report

Community Sector Implementation,
Monitoring and Reporting Results
2011-2018

Our
change

sustainable
Peterborough



Introduction

The effects of climate change are projected to intensify over the next decade. According to Climate Data Canada, the annual average temperature in Selwyn Township for 1981-2010 was **6.6°C**. Under a high emissions scenario, annual average temperatures are projected to be **8.5°C** for the 2021-2050 period.

A changing climate will exasperate extreme weather events as the following risks will become more prevalent:

- Heightened frequency of severe rainfalls and windstorms
- Higher number of days above **30°C**
- Chance of freezing rain events more probable in winter

In 2018, the United Nation's Intergovernmental Panel on Climate Change (IPCC) released a special report urging mitigation of greenhouse gas (GHG) emissions to limit the global average temperature increase to only **1.5°C** from the current **1°C** of global warming. The IPCC recommends that a decrease in GHG emissions of **45 %** from 1990 levels by 2030 is necessary to prevent the worst implications of climate change.

The good news is that climate change can still be managed, but immediate community action is critical. Residents and businesses can influence **95%** of a community's GHG emissions through direct action and positive climate stewardship. Some examples include residents choosing to retrofit their homes with energy efficient upgrades, driving less, reducing waste, buying locally and using renewable energy. Businesses can do their part by shifting to more sustainable operations and day-to-day practices. When residents and businesses commit together in a concerted effort to reduce their carbon footprint, then community-wide GHG emissions will decline.

Local government can support these efforts by providing relevant tools and resources and leveraging potential by facilitating collaboration among community actors. Capturing and contextualizing community data as it pertains to action on climate change will help identify the strengths and areas for improvement as we work collectively to reduce GHG emissions. The Township of Selwyn is working hard to recognize and reward community efforts so that progress can continue.

Overview

In 2012, the City and County of Peterborough, the eight-member Townships, Curve Lake First Nation, and Hiawatha First Nation adopted the Greater Peterborough Area Integrated Community Sustainability Plan, coined Sustainability Peterborough Plan. Within this Plan, climate change was identified as one of the eleven key theme areas.

In 2014, each of the twelve Greater Peterborough Area (GPA) member communities came together to develop a Climate Change Action Plan (CCAP), designed to reduce local contributions to climate change while preparing the community for future changes. They joined a network of more than 250 other communities across Canada to address climate change through participation in the Federation of Canadian Municipalities' Partners for Climate Protection (PCP) program.

The PCP program aims at reducing GHG emissions from both municipal/First Nation operations ("corporate" emissions) and the community at large ("community" emissions). The program uses a five-milestone framework:

PCP Milestone Framework

	Milestone Description	Status
Milestone 1	Create a greenhouse gas emissions inventory & forecast	completed 2015
Milestone 2	Setting an emissions reductions target	completed 2016
Milestone 3	Developing a local action plan/CCAP	completed 2016
Milestone 4	Implementing the local action plan	underway 2019/2020
Milestone 5	Monitoring progress & reporting results	Underway 2019/2020

Milestone 1 – Selwyn Township Community GHG Emissions Inventory and Forecast

Table 2: Selwyn Township Community GHG Emissions inventory & forecast, retrieved from CCAP.

Sector	Emissions (tCO ₂ e)	Source	Emissions (tCO ₂ e)
Residential	33,053	Natural Gas	20,381
Commercial and Institutional	9,048	Electricity	15,484
Industrial	2,492	Gasoline	26,150
Transportation	26,372	Diesel	217
Waste	400	Propane	2,777
Agriculture Forestry and Other	17,515	Fuel Oil	5,955
Land Uses		Solid Waste	400
Total	88,880	Livestock	14,517
		Managed Soils	2,997
		Total	88,879

(Note: totals are not equal due to rounding)

When published in 2016, the CCAP established a 2011 GHG emission baseline quoting that the total Community Sector emissions for the Township of Selwyn was **88,880 tonnes** of carbon dioxide equivalent (tCO₂ e).

The raw data and data collection methodology could not be obtained from CCAP consultants to confirm the 2011 GHG emissions baseline total. Therefore, staff have re-baselined 2011 community GHG emissions using the same methodology as calculating 2018 emissions. Based on these calculations, the new and more accurate 2011 GHG emissions baseline is **90,009 tonnes** of CO₂e.

As of 2018, community GHG emissions stand at 93,715 tonnes of CO₂e. This represents a 4% increase between 2011 and 2018.

Community emissions are expected to grow to **106,085 tonnes** CO₂e by 2031 if nothing is done to reduce GHG emissions.

There are 5 community sectors assessed in the CCAP:

1. Residential
2. Commercial and institutional/ manufacturing industries and construction
3. On-road transportation
4. Agriculture, forestry and other land uses.
5. Waste

Milestone 2 – Setting an Emissions Reduction Target

The Selwyn community is aiming to achieve a **39% reduction** in its GHG emissions from the 2011 baseline by 2031. This is equivalent to removing **30,178 less tonnes** of CO₂e from the community by 2031, lowering the total emissions generated to **45,956 tonnes** of CO₂e.

Milestone 3 – Developing a Local Climate Change Action Plan/CCAP

One of the key requirements of the completion of Milestone 3 was the adoption of both the Corporate Sector and Community Sector emissions reductions targets and the Action Plan by Selwyn Township Council in 2016.

The CCAP was developed to outline potential actions to assist the Township in achieving community emissions reduction targets. The CCAP outlined twenty-seven overarching strategies with corresponding priority actions to remove **30,178 tonnes** of CO₂e from community linked emissions in Selwyn by 2031.

Resolution No. 2016 – 262 – Selwyn Township – Climate Change Action Plan Update

"That the report of the Facilities Maintenance/Special Projects Coordinator regarding the draft Greater Peterborough Area Climate Change Action Plan be received for information; and That the draft Greater Peterborough Area Climate Change Action Plan be received for information; and Further that the Township of Selwyn Community Sector and Corporate (Municipal) Sector emission reduction targets of 39% and 40% respectively, and that the associated local action plans be adopted."

Carried.

Completed and Ongoing Community Mitigation and Adaptation Actions



CCAP Community Strategy	Action Description & Implementation Comments	Year	Quantifiable GHG Saved (tCO ₂ e)
Strategy F1: Support localization of the food system	<p>The Lakefield Farmer's Market celebrated local food for its third successful season in 2012.</p> <p>Farmers' Markets support job creation among the agricultural community.</p>	2012	
Strategy W1: Improve energy and water efficiency of existing buildings and business operations	Lakefield Community Centre received AMO's "Best in Class Award" for energy efficiency.	2012	
Strategy W1: Improve energy and water efficiency of existing buildings and business operations	<p>The Township installed 10 kW rooftop solar installations on Lakefield & Bridgenorth Libraries as well as the Municipal Office.</p> <p>Each MicroFIT solar panel installation cost \$43,500 for a total cost of \$130,500.</p> <p>Revenue from solar power generation helps to offset these costs.</p>	2012	
Strategy L3: Protect and enhance natural assets	The Township completed a shoreline stabilization and naturalization project at Isabel Morris Park in Lakefield.	2012	
Strategy L3: Protect and enhance natural assets	In partnership with Otonabee Region Conservation Authority (ORCA), the Township of Selwyn planted 1,500 trees as part of its 2012 gravel pit rehabilitation program.	2012	25 tCO ₂ e saved.

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy M1: Build an active transportation network and support active transportation	The Township incorporated a Complete Streets model in the Community Improvement Plan.	2013	
Strategy M1: Build an active transportation network and support active transportation	The Township completed its Trails Master Plan.	2013	
Strategy H3: Reduce the amount of waste generated by residents that contribute to greenhouse gas Emissions	The Township participated in a community battery recycling program with Raw Materials Company Inc. with battery collection areas across the Township such as schools, the libraries and landfill.	2013	
Strategy P2: Foster a culture of climate change awareness	<p>The Township committed to helping develop the Greater Peterborough Climate Change Action Plan and became members of the FCM ICLEI Partners for Climate Protection Program.</p> <p>The CCAP for Selwyn Township is aimed at a 39% reduction in GHG emissions across Corporate and Community sectors by 2031.</p>	2014	
Strategy L3: Protect and enhance natural assets	In partnership with ORCA, the Township planted over 1,000 trees as part of the Township's gravel pit rehabilitation program.	2014	17 tCO ₂ e saved.
Strategy L3: Protect and enhance natural assets	The Township completed a shoreline rehabilitation project at the Lakefield Beach, which included the reconfiguration of the trail, plantings and the installation of bio-retention cells to mitigate the impacts of overland flow from the beach parking lot entering the river.	2014	

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy H3: Reduce the amount of waste generated by residents that contribute to greenhouse gas Emissions	<p>The Township expanded the battery collection program with community partners such as local schools. The batteries are collected at Township facilities and other community facilities and then shipped to RAW for recycling.</p> <p>Since the program started, the Township collects an average of 2,000 batteries each year across collection areas.</p>	2014	
Strategy M1: Build an active transportation network and support active transportation	The Township's Recreational Trails Master Plan was completed in June of 2014. The goal of the Trails Master Plan is to provide the Township with a long-range strategy for trails and trail facilities.	2014	
Strategy P2: Foster a culture of climate change awareness	The Township achieved Milestone 1 under the Partners for Climate Change Protection as a participant in the Greater Peterborough Area Climate Change Action Plan.	2015	
Strategy L3: Protect and enhance natural assets	In partnership with ORCA, the Township completed shoreline improvements including planting of native plants along the shoreline at Hague Boulevard in Lakefield.	2015	
Strategy L3: Protect and enhance natural assets	1,550 trees were planted in Selwyn Township to rehabilitate the environment.		26 tCO ₂ e saved.
Strategy F1: Support localization of the food system	A Community Garden was established by Nourish Lakefield Community Garden on Lakefield District School Board property.	2015	
Strategy L3: Protect and enhance natural assets	The Township provides on-going support to various organizations which seek to beautify the community including the Ennismore Horticultural Society, the Bridgenorth Beatification Committee and Beautiful Buckhorn.	2016	

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy W1: Improve energy and water efficiency of existing buildings and business operations	<p>The Township purchased two battery operated edgers for the arenas, which operate more efficiently than the propane units which they replaced. Each arena now has a zero emission edger (which is the greatest polluter within the arena) instead of the fuel driven units used previously.</p> <p>Each edger cost approximately \$7,000.</p> <p>Fuel cost savings, a longer life expectancy of the unit, and less heat loss from having to clear the air of fumes from propane units helps to offset these costs.</p>	2016	
Strategy 5: Utilize renewable energy sources	<p>The Township installed 3 FIT projects. Rooftop solar PV installations at Ennismore Arena (250 kW), Main Public Works Garage (70 kW), Lakefield Public Works Garage (22 kW). As of 2016, the Township owns and operates 6 rooftop solar PV projects – 3 FIT and 3 microFIT – for a total installed capacity of 372 kW.</p> <p>The FIT solar panel installations combined cost approximately \$950,000.</p> <p>Over their lifetime, the 6 solar panel installations have generated \$657,820 in revenue.</p>	2016	
Strategy P2: Foster a culture of climate change awareness	The Township completed Milestones 2 & 3 in the Partners for Climate Protection (PCP) program. After obtaining Milestone 3, the Township can measure progress against adopted GHG reduction targets.	2016	
Strategy P2: Foster a culture of climate change awareness	Township Council officially adopted a Climate Change Action Plan for both corporate and community operations.	2016	

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy L2: Identify climate change risks and prepare for potential impacts	The Township is the recipient of a grant through ICLEI Canada to aid in the development and implementation of a Climate Change Action Plan adaption project.	2016	
Strategy W1: Improve energy and water efficiency of existing buildings and business operations	The Township undertook several retrofits of numerous decorative light fixtures such as street lights, those in parks, parking lots, boardwalks and at the Lakefield Marina. Power consumption associated with these retrofits has dropped by more than half. These projects combined cost approximately \$10,000. Energy savings help offset these costs.	2016	
Strategy M4: Help transition vehicles to use cleaner and lower greenhouse gas emitting fuel sources	An electric vehicle (EV) charging station was installed in the Lakefield Municipal Parking Lot. This work was funded by the Province of Ontario and led by Peterborough Utilities Group. The charging station unit, plus installation, cost approximately \$5,000.	2016	
Strategy H3: Reduce the amount of waste generated by residents that contribute to greenhouse gas emissions	In partnership with Peterborough Public Health, the Township installed a water refilling station at the Lakefield campground and the Ennismore Community Centre/Arena. The water refilling station unit, plus installation, cost approximately \$3,000.	2017	
Strategy L3: Protect and enhance natural assets	Flower beds at the Township Office and the Bridgenorth Library were replaced with vegetable gardens which provided Township staff, volunteers and their families with fresh vegetables throughout the summer and fall.	2017	

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy L3: Protect and enhance natural assets	The Township successfully delivered the Canada 150 Re-leaf program, whereby 150 property owners were provided with a maple tree to plant along the streetline of their properties.	2017	2.5 tCO ₂ e saved.
Strategy L3: Protect and enhance natural assets	1,200 trees were planted in Township gravel pits.	2017	20 tCO ₂ e saved.
Strategy L2: Identify climate change risks and prepare for potential impacts	The Township commenced gathering LIDAR data to create a floodplain mapping model in collaboration with ORCA and the County of Peterborough.	2017	
Strategy L3: Protect and enhance natural assets	The Township conducted shoreline restoration and tree planting projects with community partners including schools, youth organizations, neighbourhoods and corporate partners.	2017	
Strategy W1: Improve energy and water efficiency of existing buildings and business operations	Implemented two major energy saving projects at the Ennismore Arena including Real Ice cold water ice making technology and an LED lighting retrofit. This technology makes good quality ice using cold instead of hot water resulting in estimated natural gas savings of 8455 cubic meters annually. Real Ice costs approximately \$25,000 and LED retrofit approximately \$50,000. Energy savings help offset these costs.	2017	67 tCO ₂ e saved.
Strategy P2: Foster a culture of climate change awareness	The Township implemented a WATT energy reader borrowing program at the Lakefield Library.	2017	

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy F2: Encourage purchasing of locally produced food	The Township initiated a Local Food Co-operative Advertising Campaign. Strexer-Harrop and Associates was contracted to manage a 3-month co-operative advertising and social media campaign with a focus on local food.	2018	
Strategy F2: Encourage purchasing of locally produced food	The Lakefield Farmer's Market celebrated its 9th successful season in 2018.	2018	
Strategy F2: Encourage purchasing of locally produced food	Bridgenorth Farmer's Market celebrated its 2nd successful season in 2018.	2018	
Strategy H1: Help existing homes become more energy and water efficient and be more adaptable to climate risks	The Township re-launched the sump pump inspection program which provides residents with the opportunity to schedule a complimentary appointment with a specialist to verify that their residential sump pump is appropriately connected to a drainage system and not to the sanitary sewage system.	2018	
Strategy W1: Improve energy and water efficiency of existing buildings and business operations	The Township installed a new roof over the ice surface using a solution called "metal over metal" where an additional layer of insulation is installed in the roof structure. This helps keep the arena space cold during the shoulder seasons when outdoor temperatures are warm, lowering energy costs. This project cost approximately \$280,000.	2018	
Strategy W1: Improve energy and water efficiency of existing buildings and business operations	Project involved replacing all pole lighting throughout the campground and lights at the beach, parking lot, docks, boat launch and garbage compound with LED lighting. This LED lighting project cost approximately \$9,500.	2018	9 tCO ₂ e saved.

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy L1: Strengthen land use policy and the development review process to better support climate change mitigation and adaptation	The Township of Selwyn initiated amendments to the County Official Plan and Township Comprehensive Zoning By-law in order to permit second units in dwellings which will improve density of residential housing stock.	2018	
Strategy L3: Protect and enhance natural assets	In celebration of International Trails Day, Selwyn's Trail Committee hosted a Nature Hike with Gabby Nichols, who shared her knowledge of invasive plants, and native trees, shrubs and plants.	2018	
Strategy L3: Protect and enhance natural assets	The Township of Selwyn was declared the 18th Bee City in Canada. The application was a collaborative effort among the Lakefield & District Horticultural Society, the Ennismore & District Horticultural Society, ORCA and the Ontario Turtle Conservation Centre.	2018	
Strategy L3: Protect and enhance natural assets	In partnership with ORCA, the Township planted 10,000 trees as part of its gravel pit rehabilitation program.	2018	165 tCO ₂ e saved.
Strategy M3: Make public transportation more appealing to increase its usage	<p>The Township of Selwyn, in partnership with Curve Lake First Nation, Community Care, and the City of Peterborough received \$1,488,400 in funding from the Provincial Government to establish a pilot rural transportation system "The Link" to service area residents.</p> <p>This project contracts Peterborough Transit as the operator, creating new jobs for their drivers and administrators.</p>	2018	

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy W1: Improve energy and water efficiency of existing buildings and business operations	<p>12 more Township buildings were converted to LED lighting for the small business lighting program. This is estimated to save 89,793 kWh per year.</p> <p>The Small Business Lighting program cost approximately \$19,000. Energy savings help to offset these costs. The Township will save \$10,774 per year through these LED retrofits.</p>	2019	1.55 tCO ₂ e saved.
Strategy W3: Facilitate climate change friendly business operations and practices	Green Event Policy was developed by the Township to help reduce the carbon footprint of events on Township property. Several community organizations have shown interest in using the policy including the Ennismore Curling Club, Selwyn Public Library, the Lakefield Lions, the Lakefield Regatta and the Lakefield Jazz, Craft and Art Festival.	2019	
Strategy H3: Reduce the amount of waste generated by residents that contribute to greenhouse gas emissions	The Ennismore Curling Club banned the sale of plastic water bottles in their facility and replaced it with water coolers.	2019	
Strategy F3: Reduce the amount of wasted food	Lakefield District Public School was awarded funding from TD Friends of the Environment for their project "Closing the Loop on Food and Organic Waste". The project engaged 5 classrooms in collecting food scraps for sustainable diversion through traditional composting, vermicomposting and using a backyard digester, and planting vegetable gardens.	2019	
Strategy H3: Reduce the amount of waste generated by residents that contribute to greenhouse gas emissions	Waste Reduction Week: tours of the Smith Landfill and Lakefield Water Treatment Plant were provided to local students.	2019	

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy W1: Improve energy and water efficiency of existing buildings and business operations	6 businesses in the Township have participated in the SBL program and the total energy savings is 44,240 kWh.	2019	1.3 tCO ₂ e saved.
Strategy 5: Utilize renewable energy sources	To the end of 2019, The Township's six solar installations have generated 1,611,327 kWh versus power generated by traditional sources in their lifetime, and revenue of \$657,820.	2019	47.6 tCO ₂ e saved.
Strategy F3: Reduce the amount of wasted food	Funded by Frank Cowan Company, the Township provided 30 free backyard digesters, plus installation, to help residents sustainably divert food waste. FCC provided \$5,500 to the Township for the purchase of trees (\$50 each) and digesters (\$80 each).	2020	
Strategy L3: Protect and enhance natural assets	Funded by Frank Cowan Company, the Township is providing 52 free maple trees for resident properties. It cost the Township \$5,500 for the purchase of 52 trees (\$50 each) and 30 digesters (\$80 each).	2020	0.9 tCO ₂ e saved.
Strategy H3: Reduce the amount of waste generated by residents that contribute to greenhouse gas emissions	Waste Reduction Week 2020: in addition to waste tips information sharing, the Township will offer contests to the public who demonstrate their commitment to a more sustainable relationship with textiles and plastics.	2020	
Strategy P2: Foster a culture of climate change awareness	Advancing the 2030 Agenda: Sustainable Development Goals for Peterborough/Nogojiwanong: Township staff were involved in the Climate Action Committee for a federally funded project led by GreenUP and the Kawartha World Issues Centre. Selwyn's involvement has helped to amplify diverse voices, strengthen data collection and build on local success in the rural context.	2020	

Completed and Ongoing Community Mitigation and Adaptation Actions **Continued...**

Strategy H3: Reduce the amount of waste generated by residents that contribute to greenhouse gas emissions	In January, 2021, Township staff, in partnership with the Kawartha Chamber of Commerce hosted a "Greening Your Business" webinar series supporting businesses in adopting sustainable practices.	2020	
Strategy H3: Reduce the amount of waste generated by residents that contribute to greenhouse gas emissions	Clear bag program: The Township is implementing a clear bag program for garbage to improve diversion of recyclable materials from the landfill.	2020	
Strategy M4: Help transition vehicles to use cleaner and lower greenhouse gas emitting fuel sources	Fleet electrification: The Township was awarded funding from the Federation of Canadian Municipalities' Green Municipal Fund (GMF) to lease a plug-in hybrid vehicle for the Building & Planning department and install an electric vehicle charging station at the Township office for free public use for a year. \$14,300 for one-year lease of the PHEV. \$5,000 for the charging station.	2020	This project has the potential to avoid 3.42 tCO ₂ e. This is a 34% reduction in GHG emissions from the Building and Planning Department.
Strategy F2: Encourage purchasing of locally produced food	The Lakefield Farmers' Market 2020 AGM reported a 35% increase in total sales in 2020 versus 2019 sales.	2020	
Strategy L3: Protect and enhance natural assets	Depave Paradise: The first Depave Paradise project in Selwyn Township is occurring on Winfield Shores Harbour property. Lead by GreenUP, 100m ² of asphalt will be replaced with greenspace to beautify the area, improve stormwater infiltration and biodiversity.	2021	
Strategy H1: Help existing homes become more energy and water efficient and be more adaptable to climate risks	Rain Ready Action Program: The Township, in partnership with GreenUP, is offering a two-part workshop series and subsidy program on rain barrels and water wise garden kits to support homeowners in adapting to flood and drought risk.	2021	

Thank you to **Sustainable Peterborough** and Selwyn Township staff who have helped keep records of community action on climate change since 2012 and contributed highlights to the annual Sustainable Peterborough Report Cards.

In **2021**, the Township looks forward to the continuation and commencement of climate-focused community initiatives...

Public & Active Transportation

The Link Rural Bus Service

On **May 3, 2021**, the Township of Selwyn along with project partners Curve Lake First Nation, Community Care Peterborough and the City of Peterborough will implement *The Link* rural bus program servicing major hubs across the Township with a connection to the City of Peterborough at Trent University. *The Link* is funded by the Ministry of Transportation's Community Transportation Grant Program.

The Link is scheduled to run until **March 2023**. However, project partners have submitted a formal request to the Ministry of Transportation requesting an extension on the grant to **March 2025** so we may have a **full 4 years** of operating time.

Aligns with CCAP strategies M2: Facilitate alternatives to single-occupant vehicle use to reduce frequency of personal vehicle use & M3 Make public transportation more appealing to increase its usage.



Active School Travel Program

Selwyn Township is supporting GreenUP in active school travel planning for 4 schools located in Selwyn Township (in Bridgenorth, Lakefield & Ennismore).

This program began in **January, 2021** and run for **1.5 years**, ending in **June 2022**.

Aligns with CCAP strategies M1: Build an active transportation network and support active transportation & M2: Facilitate alternatives to single-occupant vehicle use to reduce frequency of personal vehicle use.

Neighbourhood-Level Climate Adaptation



Rain Ready Action Program

The Township has partnered with GreenUP to offer a community-based climate adaptation project focused on stormwater management from spring, 2021 - fall, 2021.



The Selwyn **Rain Ready Action Program** is helping residents manage flood and drought risk on their properties to improve resiliency of their homes to extreme weather events, conserve water, and improve source water quality by proper infiltration on the lot level.

Rain Ready is offering Township residents subsidized rain barrels and Water Wise Garden Starter Kits as well as a two-part workshop series on managing flooding and drought at home.

*Aligns with **CCAP strategy H1**: Help existing homes become more energy and water efficient and be more adaptable to climate risks.*

*In October, 2020, the **Association of Ontario Municipalities** released a discussion paper on municipal responses to flooding and climate change quoting that "*Managing increasing storm and flood waters is Ontario's most apparent climate change adaptation need in the immediate term.*" These neighbourhood climate adaptation projects are a step toward meeting this need.



2021 Continued...

County-Wide Climate Action

The County of Peterborough has entered into a pilot partnership agreement with GreenUP to support and measure community action on climate change through three specific initiatives offered County-wide. These include:

- 1) "Climate Action at Home" Home Energy Retrofit Video Series
- 2) Expansion of the Green Economy Hub
- 3) County School Climate Action Guide

Each of these initiatives are scheduled to begin **early, 2021**. With the exception of the Retrofit Video Series, these initiatives will be on-going.

*Aligns with **CCAP strategy H1**: Help existing homes become more energy and water efficient and be more adaptable to climate risks.*



Residential Energy Efficiency

In Selwyn Township, the residential sector has the second highest carbon footprint, next to the transportation sector. Conversations on the Township and County level have been occurring about how to best support homeowners to become more energy efficient.

With support from the City of Peterborough, GreenUP and the County's "Climate Action at Home" video series has been created to educate homeowners on the benefits of undertaking home energy renovations, such as draft-proofing, insulation, and mechanical efficiency. This resource is intended to inspire homeowners to think about how they can make their home more climate-friendly while also save money on energy bills. This will help prepare homeowners to take advantage of future funding and incentive opportunities for home energy retrofits such as the **Greener Homes Initiative** offered by the Government of Canada.

The **Greener Homes Initiative** promises up to 700,000 grants of up to \$5,000 to help homeowners make energy efficiency retrofits to their homes. The Township of Selwyn sees this as an excellent opportunity for homeowners and is committed to helping encourage uptake across the community.

*Aligns with **CCAP strategy H1**: Help existing homes become more energy and water efficient and be more adaptable to climate risks.*

Wait! There's more in **2021...**

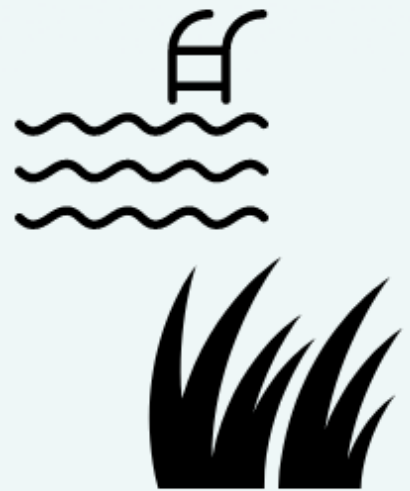
Shoreline Rehabilitation & Naturalization

Natural Edge Program

Selwyn Townships is proposing shoreline sites for rehabilitation and naturalization through Watersheds Canada Natural Edge Program. The Kawartha Lakes Stewards Associated has obtained funding and is facilitating this program.

Site assessments will be conducted in **spring, 2021**, and implementation will occur **fall, 2021**.

*Aligns with **CCAP strategy L3**: Protect and enhance natural assets.*



Sustainable Businesses

Greening your Business Webinar

In **January, 2021** Township staff, in partnership with Peterborough and Kawarthas Chamber of Commerce, offered a two-part webinar series focused on supporting business to be more sustainable in their day-to-day operations, while also saving costs. Topics ranged from energy efficiency, waste management, transportation, and preparing for Federal and Provincial Legislations related to single-use plastics and Blue Box Recycling.

Four Selwyn businesses presented during the webinar series, on what they do to be more sustainable in an effort to inspire other local business owners.

*Aligns with **CCAP strategy W1**: Improve energy and water efficiency of existing buildings and business operations*

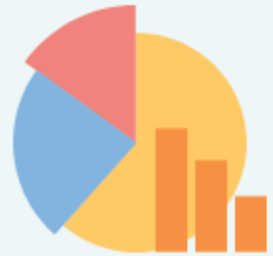


Data Collection Methodology Overview

This progress report used 2018 community data gathered from a variety of sources to assess the rate of change from the baseline regarding energy, solid waste, and vehicle fuel consumption to ascertain GHG emissions. ICLEI-Canada's *PCP Tool* was used to generate GHG emissions per sector. High levels of community data precision (in certain contexts) were achieved by acquiring actual customer information that was aggregated to the community scale. No personal information connecting individuals or businesses to the data collected was provided as postal codes were used to protect privacy.



There are limitations to the resources available for accessing data to capture an exhaustive list of GHG emitting behaviours across the community, such as all emitting modes of travel. There are also limitations related to schedules of data collection, such as the Provincial census and the University of Toronto's *Transportation Tomorrow* survey (both of which were last updated in 2016). As well, utility providers have different archival recovery abilities; some do not maintain records as far back as the baseline year of 2011.



2018 marks the second time community emissions data has been collected for the Township of Selwyn.

Community GHG Emissions by Sector and Source

****Note:** comparing 2011 and 2018 data should take into consideration potential discrepancies in data collection methodology between 2011 and 2018. There was no way to validate 2011 data because the raw data cannot be provided and the original consultant is no longer available for comment. For example, 2011 residential sector emissions published in the CCAP are much higher than what is recorded in the PCP Tool for 2011.

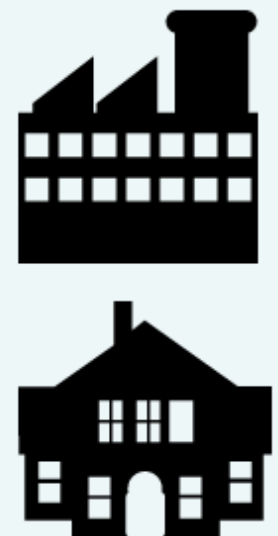
In 2019, with support from Sustainable Peterborough, as much up-to-date data on source consumption for stationary energy sectors for Selwyn was sourced in the ways outlined below.

For which 2011 source consumption data could not be ascertained, the executive decision was made to follow what was published in the CCAP, for example, propane & heating oil.

Residential & Commercial/Industrial:

Stationary energy for these sectors was sourced from utility companies servicing the Township (i.e. electricity- Hydro One & Peterborough Utilities, Natural Gas- Enbridge). In 2018, commercial & institutional and manufacturing industries & construction sectors were combined because Hydro One does not separate commercial and industrial electricity users. Therefore, these two sectors have been combined into "commercial/industrial".

The means to confirm the accuracy of 2011 stationary energy (residential & commercial/industrial) consumption data are unattainable. Neither Enbridge or Hydro One is able to provide electricity and natural gas consumption data for 2011. Enbridge does not keep records of consumption data as far back as 2011 and Hydro One changed accounts in 2013 making it difficult to provide data for anything earlier. However, the same methodology that the CCAP indicates was used to obtain 2011 stationary energy consumption data was used for obtaining 2018 data, so comparisons are moderately reliable. Peterborough Utilities did provide 2011 electricity consumption data which has been incorporated.



Agriculture, Forestry & Other Land Uses:

Data was sourced from the 2016 OMAFRA census and won't be updated until the 2020 census is complete. Data includes the number and type of animal heads.



On-Road Transportation

Transportation emissions are calculated using U of T's *Transportation Tomorrow* survey data of total vehicle kilometers travelled per mode of travel. 5% of households were surveyed in 2011 and 2016 and results were scaled to represent the total population of Selwyn. VKT percentages were allocated according to vehicle characteristics from the *Transportation Tomorrow* survey data and fuel efficiencies were prepopulated by the PCP Tool. Because the transportation model is based on resident activity surveys, it does not include emissions from the commercial sector or non-automobile emissions (water travel and air travel), these are areas for future improvement.



Solid Waste

Solid waste data is based on the tonnage of garbage and leaf and yard waste collected at curbside and brought to the City of Peterborough's Bensfort Road facility.



Source & Sector Results 2011 vs. 2018

Community GHG emissions for the Township of Selwyn has increased by **4% (3,706 tonnes CO₂e)** since 2011. This is an average increase of **529 tonnes** of CO₂e per year.

Emission Source	2011 GHG (tCO ₂ e)	2018 GHG (tCO ₂ e)	Percent Difference
Residential (Electricity, natural gas, propane, heating oil)	19,339	17,538	-9%
Commercial/Industrial (Electricity & natural gas)	2,928	6,029	106%
Agricultural, Forestry & Other Land Uses	17,252	17,252	0%
Transportation (Diesel & gasoline)	49,825	52,154	5%
Waste	665	742	12%
Totals	90,009	93,715	4%

2011 Consumption	Electricity (kWh)	Natural Gas (m ³)	Propane (L)	Heating Oil (L)
Residential	104,826,353	283,767	1,795,646	2,177,148
Commercial/Industrial	30,422,409	2,460		
Totals	135,248,762	286,227	1,795,646	2,177,148
2018 Consumption	Electricity (kWh)	Natural Gas (m ³)	Propane (L)	Heating Oil (L)
Residential	96,809,630	6,826,951	359,129	435,429
Commercial/Industrial	44,915,000	2,475,707		
Totals	141,724,630	9,302,658	359,129	435,429
Percent Difference	5%	188%	-133%	-133%

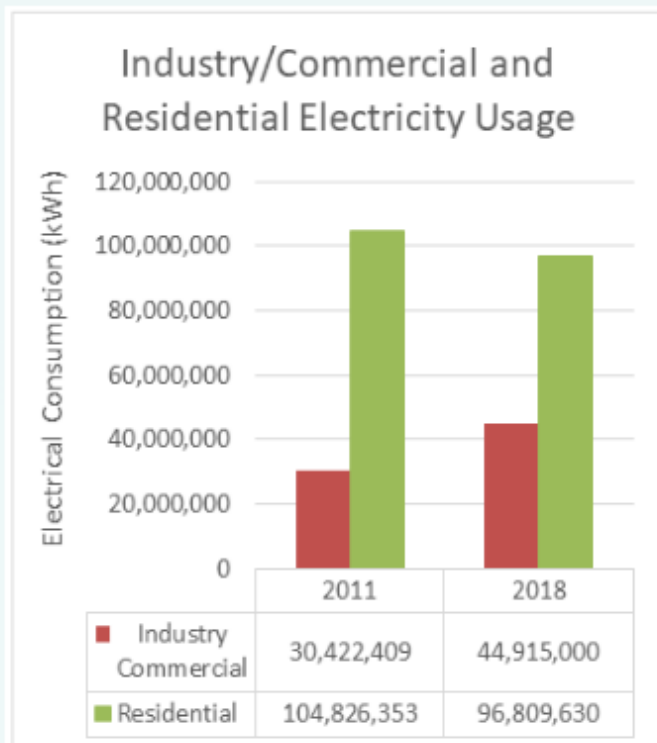
Selwyn Township Community Consumption Data

Source Consumption Analysis

Propane & Heating Oil

This report did not have access to propane or heating oil records but can intuit that these space-heating sources were substituted for natural gas.

Industry/Commercial & Residential Electricity Usage 2011 vs.2018



Electricity

Residential electricity consumption has decreased by **8%** while commercial/industrial electricity consumption has increased **48%**. However, even with a **1.3%** population increase from 2011 to 2018, overall electricity consumption has only risen **5%**. With uncertainty regarding the accuracy of 2011 calculations it is difficult to deduce high accuracy reasons for these changes. There is potential that electricity campaigns and resources aimed at reducing usage for the residential sector may have had some impact on consumption rates.

Electricity GHG Emissions

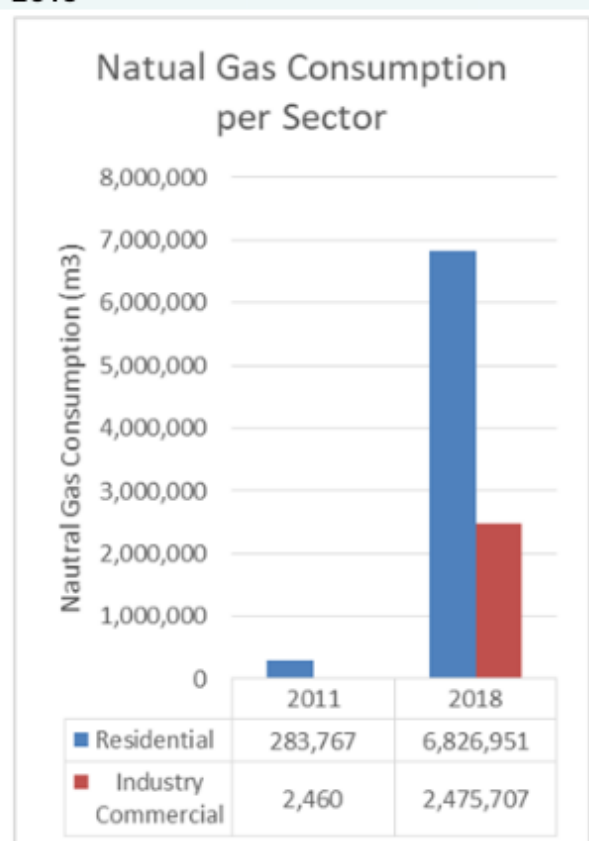
The reduction of electricity GHG linked emissions is directly related to the closure of all of Ontario's coal power-plants starting in 2013 that decarbonized the electrical grid. The closure of coal power-plants has increased the efficiency of the electrical grid throughout the province. However, the Ontario grid still maintains natural gas-fired powerplants in its energy mix that are significant contributors to GHG emissions (IESO, 2019). Several new natural gas power-plants will operate in coming years to offset refurbishments of Ontario's nuclear powerplants. This will negatively affect the gains found in electricity's decarbonization. Ultimately, community electricity emissions will increase in the following years until the restoration of Ontario's nuclear capacity is reinstated. See more details in Conclusions and Recommendations.



Natural Gas

The total natural gas consumption for all community sectors enlarged sizably between 2011 and 2018 (Figure). While the majority of the gas distribution system in Selwyn Township was built in the late 1990s and early 2000s, records show most of the growth since 2011 has been customers converting to natural gas (fed from the existing distribution system), and small subdivisions that have been constructed (Figure). Natural gas is considered to have supplanted other forms of space heating (electricity, propane, and heating oil).

Natural Gas Consumption per Sector 2011 vs. 2018



Enbridge New Gas Services Installed Since January 1, 2012

TOWN	NEW SERVICES
ENNISMORE	331
LAKEFIELD	260
BRIDGENORTH	138
SELWYN	113
GRAND TOTAL	842



Energy Efficiency Program Participation Savings

Enbridge Residential, Commercial, Industrial and Low-Income program participation 2016-2019. *Information on Hydro One program participation could not be obtained.

Selwyn				
Year	2016	2017	2018	2019*
Residential				
Home Efficiency Rebate (formerly Home Energy Conservation)				
# of Homes	1	2	1	5
Total gross annual natural gas savings (m3)	1,660	877	1,133	4,702
Average gross annual natural gas savings (m3) per home	1,660	438	1,133	940
Other Residential (Smart Thermostats)				
# of Smart Thermostats	5	7	9	13
Total gross annual natural gas savings (m3)	925	1,295	1,665	2,045
Commercial (includes Custom & Prescriptive)				
# of projects		6	1	
Total gross annual natural gas savings for Commercial (m3)		14,157	1,988	
Industrial (includes Custom & Prescriptive)				
# of projects	2			
Total gross annual natural gas savings for Industrial (m3)	2,300			
Low Income				
Low Income Home Weatherization Program (HWP)				
# of Homes (Whole Home Savings)	1	2		3
# of basic measures : TAPS and smart thermostats			1	4
Total gross annual natural gas savings for HWP (m3)	196	666	185	3,375

Energy Efficiency Program Participation Savings Continued...



Enbridge Program Participation Savings

(based on the table pictured in the previous page)

Total Residential Program Savings, 2016-2019 (including Low Income) = 18,724 m3 of Natural Gas OR & 36 CO2e tonnes!

Total Commercial & Industrial Savings 2016-2019 = 18,445 m3 of Natural Gas OR 35 CO2e tonnes!

**Program participation among the commercial & industrial sector has gone down in recent years. Tailored engagement to these sectors to improve uptake would be beneficial. Participation data prior to 2016 could not be obtained.*

Peterborough Utilities (PDI) Commercial Program Participation

The following savings are from projects that Selwyn/Lakefield commercial PDI customers participated in during 2011-2019. This includes all Save On Energy Retrofit projects completed by the Township of Selwyn.

Total kWh (energy savings) saved = 1,482,713 kWh's or 1,048 CO2e tonnes

The majority of these projects focused mainly on lighting retrofits and motor upgrades, including variable frequency drives on motors and HVAC units.

Peterborough Utilities was not able to provide residential program participation.



Sectors Analysis

On-Road Transportation



Transportation Tomorrow Survey Data Selwyn Township 2011 & 2016

Travel Mode	2011		2016	
	# of Kilometers Travelled	Mode Share (%)	# of Kilometers Travelled	Mode Share (%)
Driver	26 KM/day/person	80%	28 KM/day/person	83%
Passenger	6 KM/day/person	18%	5 KM/day/person	14%
Taxi	0.7 KM/month/person	.08%	3.3 KM/month/person	0.3%
Totals	195,221,345 KM/year		202,257,268 KM/year	

Transportation Today survey

Community vehicle GHG emissions were found to increase by **5%** since 2011, emitting an annual total of **52,154 CO₂e**. This increase in vehicle emissions can be attributed to a change in vehicle mode patterns identified using the *Transportation Today* survey conducted in Selwyn Township in 2011 and 2016.

The vehicle survey revealed a **3%** increase in the number of kilometers driven with by single-occupancy vehicles, a **4%** decline in passenger vehicle kilometers, and a **275%** rise in taxi passenger kilometers.

*The transportation GHG emissions extrapolated from Selwyn's *Transportation Today Survey* data set was compared with results from Loyalist Township, a municipality comparable to Selwyn, who used the same methodology.

Transportation Today Survey collection information:



- A trip is denoted as a "one-way movement between two destinations for a single purpose."
- Only Monday to Friday trips included in the survey
- Ages 11+ were included to capture student age public transit travel
- 5% of area households in Selwyn (361 out of 7,310) were surveyed which was extrapolated to generate final totals

On-Road Transportation Continued...

The table below shows 2018 vehicle registration data for Selwyn Township obtained through the Ministry of Transportation. 2011 vehicle registration data could not be obtained through the Ministry of Transportation without paying a fee. Without 2011 data to compare with 2018, it is difficult to deduce reasons for the changes demonstrated in the *Transportation Tomorrow* survey.

An increase in taxi kilometers could be due to a higher number of post-secondary students living in Selwyn Township. It is possible many students (or youth) opt to take a taxi into Peterborough because they do not own vehicles or want to enjoy the night life. Selwyn's rising aging population could be driving less and opting to take a taxi for weekly errands and appointments.

Notably, there are **36 electric vehicles** registered in Selwyn Township as of 2018. Although most local EV drivers charge their vehicles at home, there has been an increase in usage of the Electric Vehicle Charging Station downtown Lakefield since it was installed in 2017 and new users of the charging station at the Township office installed in 2020.



Although it is likely many households own more than one vehicle, the total number of registered vehicles suggests that up to 80% of Township residents own a vehicle.

Vehicle Type	Engine Type	Number of Vehicles in 2018
Car	Gasoline	9,768/ 71% of total
Car	Diesel	226/ 2%
Car	Electric	36/ 0.3%
Light Truck	Gasoline	2,958/ 22%
Light Truck	Diesel	535/ 4%
Heavy Truck	Gasoline	9/ 0.07%
Heavy Truck	Diesel	132/ 1%
Total		13,664



Transportation Data Gaps

Information on **commercial, air, waterborne, motorcycle, snowmobile and ATV travel** would be useful to fully understand the Township's travel-related GHG emissions. Capturing data on waterborne and snow and trail travel modes would be especially relevant to a rural community with ample water and trail access.

For **waterborne** data, staff have submit enquiries with the Youngs Point and Peterborough Marina for fuel sale data of Township, and an enquiry with Parks Canada for the number of boats using the lock system in Selwyn Township.



Air travel: Commercial air travel data out of Selwyn Township could be ascertained through a community survey or review of air passenger traffic at Canadian Airports through Statistics Canada. There are no air fields in the Township to account for private air travel.



Sales from **snowmobile or ATV** retailers in the Township or a community survey on the use of the travel modes may provide adequate information on these data types.



Commercial travel is challenging to obtain because commercial fuel sales at gas stations are not counted in small rural areas like Selwyn Township. A traffic count may provide information on daily trips of commercial vehicles through which can be extrapolated into pertinent data.



Solid Waste

In **2018**, the Township sold **22 backyard digesters** and **19 composters**.

This equals approximately **14 tonnes** of food waste sustainably diverted!

In **2019**, the Township sold **23 digesters** and **43 composters**.

This equals approximately **12 tonnes** of food waste sustainably diverted!

In **2020**, **30 digesters** will be installed on **resident properties**, diverting approximately **18 tonnes** of food waste.

FUN FACT: Approximately **2,774 pounds (1.2 tonnes)** of food waste is sustainably diverted every 2 months by Lakefield College School through *1.5 Degrees Composting Solutions* serving the Peterborough area.

For a family of 2-4 people, a digester can handle up to **13 lbs of food waste per week** or **676 pounds per year!**



Clear bag program

Diversion of recyclable materials from the garbage stream is being monitored through the clear bag program. Reducing overall garbage tonnage will prolong the life of the Bensfort Road landfill site receiving Township resident curbside garbage.

Organics Program

The City of Peterborough expects to launch a City-wide **organic** waste collection and composting program in the fall of 2023. Township staff are staying up-to-date on this program and opportunities for services to reach the Township.

Agriculture, Forestry & Other Land Uses

According to the 2016 OMAFRA agricultural census, Selwyn farms have an average of **8,613 animal heads**. Of this total, **calves** make up **63%**, **beef cows** **26%**, **dairy cows** **5%**, **sheep** **4%**, **steers** **2%** and **pigs** **0.2%**. GHG emissions data on cash crops, forestry and other land uses is not attainable at this time. However, a recent Business Retention and Expansion survey led by Peterborough and Kawartha's Economic Development revealed that there are several non-animal farms in Selwyn. Specifically those which grow and produce dairy/milk, corn, soybean, grains, hay, strawberries, raspberries, garlic and winter wheat. Surveying these farms to gather emissions data is an item for future research.



Sectors Analysis Summary

From highest to lowest, on-road transportation, residential, and agriculture, forestry and other land uses have been the community's highest emitting sectors since 2011. Electricity has remained the highest consumer source for energy. According to 2018 data, all sectors but on-road transportation have decreased in CO₂e emissions compared with 2011. In terms of stationary energy sectors, this is largely because electricity has become more efficient and, along with natural gas, become more popular as opposed to energy sources like fuel oil and propane.

Current and recommended actions for continuing to lower the carbon footprint of community sectors are offered in the *Conclusions and Recommendations* section of this report.

Decision-Making Process & Engagement



The Climate Change Action Plan for Selwyn Township was developed from numerous community contributions in 2016. In 2019, public engagement on climate change gained momentum with the hiring of a Climate Change Coordinator. The following is a quantified list of engagement activities in **2019 & 2020**:



- Weekly** booth at a local Farmers' Market raising climate change awareness through 2019 season (May-Oct.)
- 4** pop-up booths at community events
- 2** presentations at cottager and lake associations
- 3** school tours of the landfill site
- 1** school tour of the water treatment plant
- 2** Greening Your Business webinars for local businesses
- 1** Rain Ready Action Program workshop for homeowners
- 3** public open houses for The Link rural bus service
- 3** stakeholder engagements for The Link rural bus service
- 2** online & hard copy public feedback surveys
- 2** school visits for food waste program on vermicomposting education
- Clear bag program outreach booth at landfill site **twice weekly**, July-Oct. 2020
- Monthly** meetings for 4 different committees
- 3** Council meeting presentations on GHG reductions and green initiatives
- On-going staff support for **several community-based initiatives** including information sharing to businesses and community groups
- Numerous** social media posts related to green initiatives
- Regular content** on green initiatives in Township e-newsletters
- Approximately **8 stories** on green initiatives in local news publications

Decision-Making Process & Engagement Continued...



Township staff has collaborated with and supported a range of local environmental groups taking action on climate change. These include **but are not limited to:** GreenUP, Sustainable Peterborough, Peterborough Public Health's Health and Climate Change Adaptation Committee, the Local Government Climate Changing Working Group, the Kawartha Lake Stewards Association, the Selwyn Tree Committee, the Selwyn Trail Committee, the Electric Vehicle Society of Ontario Kawarthas Chapter, Nourish Lakefield, For Our Grandchildren, the Peterborough Master Gardeners and other horticultural groups, the Environment Council for Stoney, Clear and White Lakes and other cottager and lake associations, and more. For many years, the Township has worked with Scouts, Girl Guides and students from local schools on tree planting and clean-up efforts.

The Township seeks to continually share information on funding opportunities and incentive programs with an environmental focus to the non-profit, community and commercial sectors and always welcomes feedback from residents on how we could be doing better for the environment.

Information on environmental projects is housed on the Township's Green Initiatives page and regularly through social media, the e-newsletter, hard copy publications, and Sustainable Peterborough's archive of report card items from CCAP partners.



Setting Positive Examples- Community Action on Climate Change

There are numerous examples of community organizations, businesses, and non-profits across community sectors in Selwyn Township taking actions which align with a range of community CCAP priorities. Starting in winter of 2019, the Township invited the community to submit sustainable highlights for this report. The following are the submissions.

i) Medium-Large Commercial Establishments



Foodland, Lakefield

- Replaced all interior lighting to LED.
- All refrigerated cases have been retrofitted to LED lighting.
- Hired an outside company to pick up their recycling exceeding Township limit so it does not go to landfill.
- Recycles approximately 700lbs of cardboard per day to be reused.
- Reusable bags and totes are offered for sale (to reduce plastic bag use).

R&J Machine, Lakefield

R&J Machine provides custom-built marine docking & lift solutions. In the past 2 years R&J Machine has:

- Incorporated several improvements such as machinery reconfigurations and upgrades to reduce unnecessary movement of materials around the facility.
- Installed new LED lighting for all of the shop floor facilities
- Installed a new mobile equipment monitoring system to improve operator performance and reduce fuel consumption.
- Conducts detailed ongoing analysis of energy bills to determine source of opportunity to reduce energy consumption.
- Created detailed inventory of all electrical energy consuming and fossil fueled consuming devices and reviewed operational profiles.
- Replaced older radiant tube heater with new high efficiency unit instead of repairing it.
- Installed timers for block heaters to ensure they are only turned on when needed.
- Improved segregation of waste streams to try and maximize recoverable materials.
- Insulated raw material storage room to reduce parasitic heat loss from cold raw material movement to production.



ii) Small Business

Sunblockers, Lakefield



Sunblockers is an independent bathing suit and beachwear store.


- Switched to compact florescent lightbulbs through **IESO Save On Energy** program.
- Uses a programmable thermostat, reducing air conditioning & heating costs/usage.
- Turns out **80%** of lighting at night.
- Installed a low volume toilet and on demand hot water heater.
- Through the **Township's Community Improvement Fund** program replaced front store windows & entry door, savings in heating and cooling costs/usage.
- Offer to recycle customers' drinking cups and shoe boxes
- Eliminated plastic shopping bags and offer reusable shopping bags.
- Replaced outdoor lighting with sensor lights.
- Where possible, purchase items that are available locally.

Chocolate Rabbit, Lakefield.




The Chocolate Rabbit sells chocolate, tea, fudge and truffles.

- Switched to more efficient lighting through a Peterborough Utilities Program.
- No longer carry or offer single use plastic bags for products. Instead they offer paper or reusable bags.
- In 2020 they are replacing non-recyclable tea pouches with compostable or recyclable ones.



The Chocolate Rabbit was lead initiator for Lakefield BYOB – Bring Your Own Bag initiative



*Some of these local businesses will share their sustainable success stories through the **Greening Your Business** webinar series in January, 2020!*

iii) Schools



Lakefield District Public School (LDPS)

Granted \$8,000 from TD Friends of the Environment Fund, LDPS is working with Selwyn Township to implement a food and organic waste reduction and diversion project. More information on this project can be found in Table 2.

LDPS has had a Nature Team for several years running inspiring environmental stewardship school-wide. In 2019, the Planet Protector Academy with a focus on **climate change** was offered in LDPS classrooms.

LDPS is also a trilingual school, and infuses classroom learning with Indigenous environmental teachings.

Lakefield College School (LCS)

Each year LCS participates in a few environmental work days weeding and planting with the Township Parks and Recreation department. As well, LCS sustainably diverts its food waste each week through 1.5 Degrees Composting Solutions, reducing **methane-emissions** at landfill.



iv) Non-Governmental Organizations

Environment Council for Clear, Stoney and White Lakes (EC)

The EC is a volunteer, non-profit conservation group. Their goal is to preserve and enhance the sustainability of the local watershed environment for future generations of humans and wildlife. In 2019, they formed a Task Force to combat the invasive macro-algae species called Starry Stonewort. The Starry Stonewort Task Force has been hard at work coordinating community removals, undertaking research and formulating an action plan. **Global warming**, a symptom of **climate change**, creates conditions for the growth of invasive species.



Kawartha Lake Stewards Association (KLSA)

KLSA monitors lakes for yearly changes in phosphorus and E.coli levels, and seeks to understand the dynamics of lake ecosystems and the causes of problems such as macrophyte (water plant) growth, including invasive species, such as Starry Stonewort.

KLSA also educates cottagers, year-round residents and the general public about the importance of protecting the Kawartha Lakes and the **impacts of climate change** on local water bodies.



iv) Non-Governmental Organizations Continued...

Kawartha Land Trust (KLT)

KLT has two protected properties in Selwyn Township. The preservation of natural areas allows for carbon sequestration. Protected properties include:

1. Ayotte's Point Woods: in 2017 through the **Climate Change Canada's Ecological Gifts Program**, Jane and Peter Darling and family donated their 77 acre property located just north of Young's Point, Ontario on the west side of Clear Lake to ensure it remains a protected land in the Clear Lake corridor.

2. Dance Nature Sanctuary (Sharpe): this property was donated to KLT in 2006 and anchors KLT's Moore Lake Focus Area. It includes a portion of the provincially significant Moore Lake Wetland Complex, and Lakefield Crevasse Fillings, an Earth Science Area of Natural and Scientific Interest.

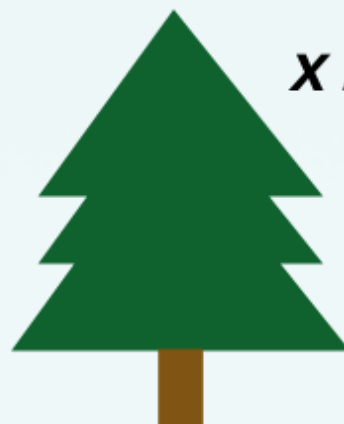


Otonabee Region Conservation Authority (ORCA)

Approximately **25,000** trees have been planted in Selwyn Township in partnership with ORCA between 2011 and 2019. This planting was undertaken on public and private property, in partnership with the Township, and other groups including Girl Guides, Scouts, and students. Tree planting has many climate benefits including carbon sequestration, air purification, and shade.

The following are ORCA-protected areas in Selwyn Township:

- Selwyn Beach Conservation Area
- Gannon's Narrow Conservation Area
- Imagine the Marsh Conservation Area
- Miller Creek Wildlife Area



x 25,000!

iv) Non-Governmental Organizations

Peterborough Public Health (PPH)

In 2016/2017 through the Healthy Kids Community Challenge, PPH were instrumental in having water filling stations installed at the Ennismore arena and Lakefield beach. Water filling stations are a way to encourage re-fillable water bottles instead of single use plastics bottles. The stations may have metrics re. "number of bottles filled" to demonstrate the number of plastic water bottles avoided.

Peterborough Public Health is also leading a **Climate Change and Health Advisory Committee** researching the unique impacts of climate change on health in the Greater Peterborough Area.



Nourish Lakefield

Consisting of a working group of local community members, Nourish Lakefield was formed in 2015 with a vision to expand access to healthy food in the area and support sustainable agriculture and food production. Thanks to the generous support of the Peterborough Master Gardeners, they established **10** new community garden plots at Lakefield District Public School (LDPS).

The garden has garnered a growing list of community partners and supporters, including LDPS, the Lakefield Food Bank, the Lakefield Library, the Early On Garden Program, as well as many local businesses.

Nourish Lakefield volunteers also maintain a donation bed to supply fresh produce to food bank patrons. Nourish Lakefield is a partner on the food and organic waste reduction and diversion project at LDPS mentioned in the table of community actions.



Summer Roads Flower Company, Selwyn Road, Lakefield

Summer Roads Flower Company specializes in seasonal, locally grown flowers, inspired by the natural world.



Soil + Water Health:

- Covered aerobic composting of household and business wastes, including waste from a local restaurant
- No tillage of growing beds to reduce carbon loss, increase soil health, and increase water infiltration
- Restoration of degraded soils through use of cover crops and a wide crop diversity to prevent erosion, sequester carbon, and improve soil health
- Integration of livestock and crops for nutrient cycling
- Water Retention through key-line design
- No use pesticides or fertilizers



Biodiversity:

- Protected natural areas on the farm for wildlife, including wetlands, a pond, a small forest and pollinator habitat
- Plants **125 native trees** every year in both wet and dry areas
- Other:
- Selling locally through farm stand, local custom orders, local shops and CSA models
- Uses only recyclable/compostable packaging
- Supports local businesses for as many supplies as possible

Blossom Hill Nursery, outskirts of Selwyn near Peterborough

Blossom Hill Nursery specializes in the hybridization and propagation of British delphinium and peony flowers.



- Sells drought tolerant perennials, grown and propagated from their own stock plants
- Collected rainwater in three **1600 gallon** tanks for watering instead of using drinking water
- Bee-keeping of over **60 hives**, including queen rearing by grafting, and producing bees, honey and beeswax candles.
- Planted a **12 acre** native wildflower meadow/tallgrass prairie and windbreaks to prevent erosion and sequester carbon from the atmosphere
- Engaging university students for soil testing and observation of bird and insect species



iv) Community Groups and Committees

The following is a list of Selwyn Township's community groups and committees with an environmental focus. These community leaders are doing their part to enhance and protect natural assets, promote and improve access to active transportation, reduce waste & reliance on plastics, reduce fossil-fuel dependency, support localization of the food system and sustainable agriculture, stimulate the circular economy and provide education and resources to local residents!

Protecting & Enhancing Natural Assets + Promoting & Improving Access to Active Transportation

- *Lakefield Trail Stewardship Committee (LTSC)*
- *Selwyn Tree Committee (STC)*
- *Trail Town Committee (TTC)*
- *Peterborough Master Gardeners (PMG)*
- *Lakefield Horticultural Society*
- *Lakefield Lions and Lakefield Village Lions*
- *Ennismore & District Horticultural Society*
- *Bridgenorth Beautification Committee*
- *Beautiful Buckhorn*



Supporting Localization of the Food System & Sustainable Agriculture + Stimulating the Circular Economy

- *Farmers' Markets:* Lakefield Farmers' Market, Bridgenorth Farmer's Market, & the Buckhorn Farmers' and Craft Market.
- *Selwyn Public Library:* stimulating circular economy through New-To-You Stores.



At the **Lakefield Farmers' Market** 2020 AGM, Market Manager Jenny Ross reported that vendors had an increase of **35%** in total sales this year over **2019** sales.

iv) Community Groups and Committees Continued...

Reducing Fossil Fuel Dependency

- *Buckhorn Community Centre*: installed a solar panel array.
- *Electric Vehicle Society of Ontario, Kawarthas Chapter*: promotes electric vehicles.



Reduce Waste & Reliance on Plastics

- *Lakefield Jazz, Craft & Art Festival*: when COVID restrictions are lifted, will pilot the Township's Green Event Policy through the festival!
- *Ennismore Curling Club*: ceased selling bottled water at the facility.
- *Ennismore Optimus Club*: helped install water re-filling stations at Township arenas.



Provide Environmental Education & Resources

- *For Our Grandchildren (4RG)*: with members living in Selwyn Township, 4RG enables grandparents to join a movement to counter and prepare for the effects of climate change on behalf of all of our children and grandchildren.



Residential Examples: The Missing Link



It is challenging to accurately capture the sustainable efforts of individual households across the community. For example, the number of households that are sustainably diverting food waste, using renewable energy, low-carbon transportation options, or undertaking energy efficient upgrades through their homes. Data from utility providers includes information on energy consumption across the residential housing stock and in some cases, participation in energy saving programs, but not the sources of energy consumption *within* households.

The Township keeps a record of composters and digesters sold to residents in the Township, but that does not capture all food waste diversion efforts. There is vehicle registration data but no system of tracking the use of public or active transportation options among Selwyn residents.

Future research may want to include ways of gathering this information, with respect to data privacy, to capture in community reports. A Township-wide survey could help illuminate these nuanced behaviour patterns. This information could help the Township understand trends and accessibility issues related to sustainable behaviour change which could illuminate reasons for shifts in GHG emissions data related to the residential sector.

Plan Variations and Considerations

Protecting and Enhancing Natural Assets

Protecting and enhancing natural assets is an understated strategy in the CCAP for Selwyn Township. Numerous initiatives across the Township are advancing this strategy and the climate change mitigation benefits are significant. By virtue of being a rural area, there are myriad natural assets which provide climate change adaptation and mitigation purposes. There is potential to preserve and create new carbon sequestration opportunities with the preservation and enhancement of woodlands, wetlands, trees, naturalized properties, and cover cropping on farms. Wetlands, for example, help us adapt to increased levels of precipitation caused by climate change by absorbing and filtering stormwater.

Introducing low impact stormwater management enhancements to resident and municipal properties like native plantings, rain gardens, rain barrels and permeable surfacing are responses that provide mitigation and adaptation purposes. From an adaptation perspective, these interventions address climate change related increases in the frequency of stormwater events. From a mitigation perspective, these enhancements help to protect source water quality and reduce the strain on municipal stormwater and sanitary sewer systems, and septic systems.

However, these natural assets are under increased stress due to climate change and need to be protected to ensure they can continue doing their job.

It would be advantageous to expand the CCAP section on protecting and enhancing natural assets to include a more nuanced list of supporting actions.

Challenges of a Rural Community



GHG emissions associated with transportation and agriculture are typically higher in rural areas than in urban areas.

Rural area residents are often reliant on the use of passenger vehicles for mobility to various destinations. Many people are too far away to use active transportation to access shopping, employment, civic and recreational centres. However, there are opportunities to invest in public transit and enhance active transportation corridors and infrastructure (e.g. trails and bike racks) where there is reasonable distance to popular destinations. As well, applying a "complete communities" lens to future growth can help ensure proximity to neighbourhood amenities are within walking and biking distance.

Agricultural sector activity is also more active in a rural community and a key staple in the local economy. It is recommended that future efforts focus on engaging the agricultural community to advance CCAP priority Strategy L4: "Facilitate best management practices for low emission farming and climate change adaptation".

There would be benefits to taking a closer look at how CCAP priorities are tailored to the unique needs and climate risks of rural communities.



COVID 19 & Climate: A Just Recovery



The COVID-19 pandemic has demonstrated that all levels of government have the means to address public health concerns with swift and substantive interventions. Although the health impacts of climate change may not feel as acute as our current public health crisis, it is only a matter of time before climate-related community health becomes a pressing issue.

Selwyn is a rural community with many aging residents. This means that many people's homes are far apart and support from neighbours and emergency services is hard to access in the event of a dangerous storm. Aging people are more susceptible to poor health from extreme temperatures and air pollution. The agriculture sector may suffer from inconsistent and shorter growing seasons. It is never too early to start protecting our community and the environment. Lastly, vector-borne diseases can be more prevalent in heavily wooded areas common to rural communities.

It is also important for governing authorities to consider the impacts of digressing from climate action in the age of COVID-19. For example, COVID-19 has meant that more waste from PPE equipment, postage and food packaging is ending up in the landfill and polluting waterways. People are also apprehensive about public transit, increasing reliance on passenger vehicles.

There would be benefits to adapting CCAP priorities focused on health and climate change to incorporate the context of COVID-19.

Federal and Provincial Policies & Regulations

It is advised that Selwyn Township adapt the CCAP according to environmental policies and regulations that emerge from all levels of government. This may require strengthening existing strategies to counteract new policies or regulations which are detrimental to the environment or adapting strategies so as to leverage the benefits of those that are environmentally supportive. For example, Township staff should stay up-to-date on local implications of the Federal Government's Single-Use Plastics Ban proposal (2021) and the Provincial Government's Blue Box Transition to Producer and Consumer Responsibility (2024).



Conclusions & Recommendations

Discussed earlier in this report, the effects of climate change are projected to intensify over the next decade. Residents and businesses can influence **95%** of a community's GHG emissions through direct action and positive climate stewardship.

Stronger support from upper levels of government to make green investments more accessible is needed. Also needed is more consistent scientific rigour around GHG emission inventories across all levels of government so we can adequately assess current realities and make realistic reduction targets. Furthermore, data and large-scale actions are important but building grassroots adaptive capacity through empowering people with the tools and knowledge to make a difference in their community builds resilience for an uncertain future.

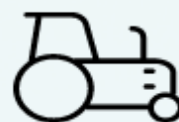
The following is a list of recommended future actions and associated resources for community sectors:



- Eventually reduce garbage bag limits and the amount of recyclable material and food permitted in garbage bags.
- Phase out single use plastics and plastic water bottles in the Township.
- Stay up-to-date on opportunities with the City of Peterborough's GROW (Green Resource Organics Works) program.

Agriculture, Forestry & Other Land Uses

- Survey non-animal farms to extract GHG emissions data.
- Better engage the farming community around the benefits of environmental farm plans to reduce GHG emissions associated with agricultural practices.



Transportation

- Ensure *The Link* rural bus service becomes a sustainable public transportation option.
- Continue promoting the use of electric or hybrid vehicles to reduce reliance on fossil-fuels.
- Monitor the success of Active School Travel planning programs in 2021 and scale up to the business community.



Stationary Energy: Residential & Commercial Sector



- Create a **Community Energy Plan** aimed at improving the energy efficiency of commercial and residential housing stock. Funding for a Community Energy Plan is possible through the **Municipal Energy Plan Program** offered through the **Ministry of Energy, Northern Development and Mines**.

Substantial, longer-term projects to explore in this plan could include:

- +Conducting a feasibility study on County-wide community energy efficiency financing programs. **The Federation of Canadian Municipalities (FCM)** offers a **Community Efficiency Financing** program which could be utilized. Applications will be accepted on an on-going basis for all program levels starting February, 2021.
- +Exploring potential for leveraging (pending) **Community Net Metering** programs through the **Ministry of Energy, Northern Development and Mines**. Community net metering allows residents to become shareholders in localized renewable energy assets such as a solar array. Staff is registered with the Environmental Registry of Ontario for updates on this proposal.
- +Investing in tools to identify the **highest emitting businesses** across the Township and build tailored engagement strategies to help them reduce their carbon footprint. Climate Smart is a database service which helps to identify a municipality's highest emitting small-medium businesses. Currently, it is being adapted to support small, rural municipalities.
- +Investing in tools to **map photovoltaic potential** across rooftops and land in the Township to identify prime areas for solar panel installations. A preliminary proposal for Selwyn Township was developed early 2019 in partnership with the **University of Guelph's** Department of Geography, Environment and Geomatics.
- +Investing in community survey strategies for identifying homes using **propane and heating oil** and build tailored engagement strategies to encourage fuel switching (e.g. propane furnace to air source heat pump). A preliminary proposal and several supporting studies have been prepared on this topic.
- +Using the **Energy Poverty & Equity Explorer Tool** by **Canadian Urban Sustainability Practitioners** to identify and support homeowners struggling to heat or cool their homes during extreme temperature events. This is especially relevant for aging people and other groups vulnerable to health impacts of extreme temperatures.
*Utilizing this tool could be an important component of a **Community Climate Change Adaptation and Vulnerability Assessment**.



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