

SACKVILLE MILESTONE 5 RESULTS



PARTNERS FOR **CLIMATE** PROTECTION





Partners for Climate Protection

- Federation of Canadian Municipalities and ICLEI
- National network of 350+ municipalities
- Exists to help municipalities reduce greenhouse gas emissions and act on climate change

Partners for Climate Protection
PCP MILESTONE TOOL



SACKVILLE

Milestone One – baseline emissions inventory

Milestone Two – set emission reduction targets

Milestone Three – create an emission reduction plan

Milestone Four – update the emission reduction plan

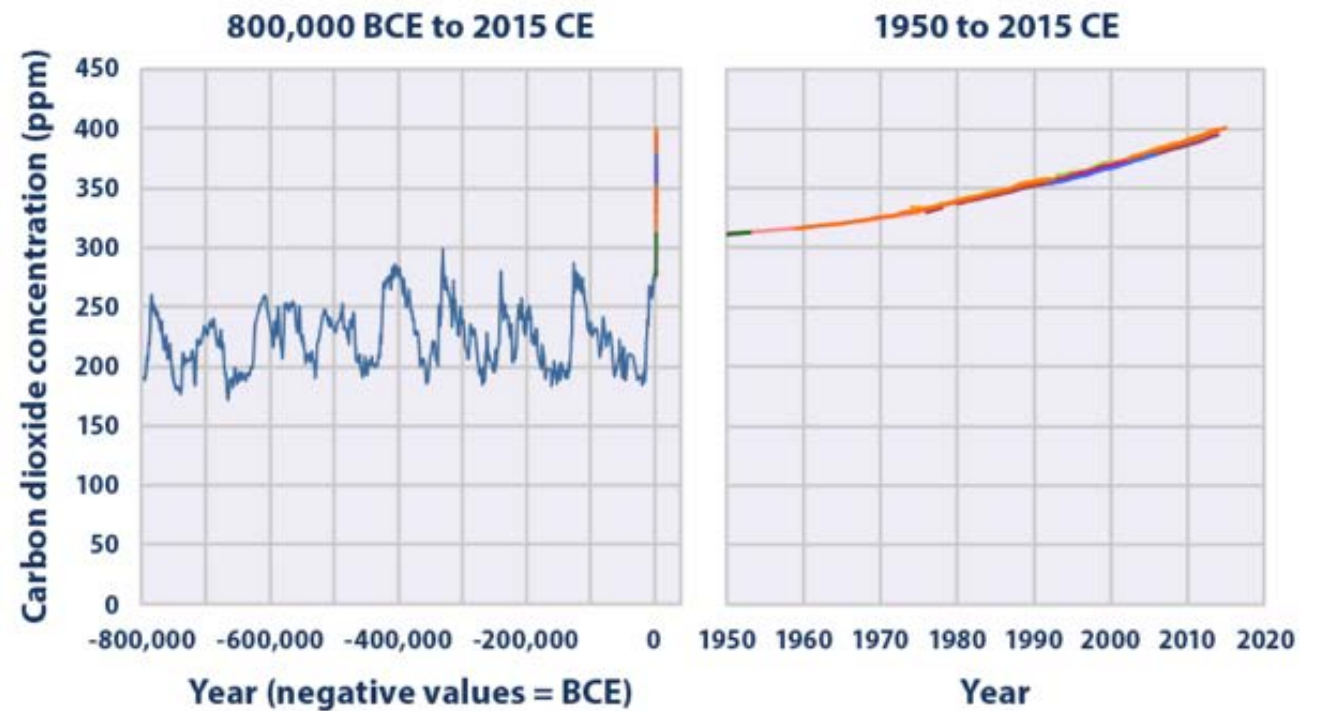
Milestone Five – do another emission inventory to assess progress towards emission reduction goals

Use this map to learn more about PCP's members and the milestones they've completed.



BASIC CLIMATE SCIENCE

Global Atmospheric Concentrations of Carbon Dioxide Over Time



Data source: Compilation of 10 underlying datasets. See www.epa.gov/climate-indicators for specific information.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

31%

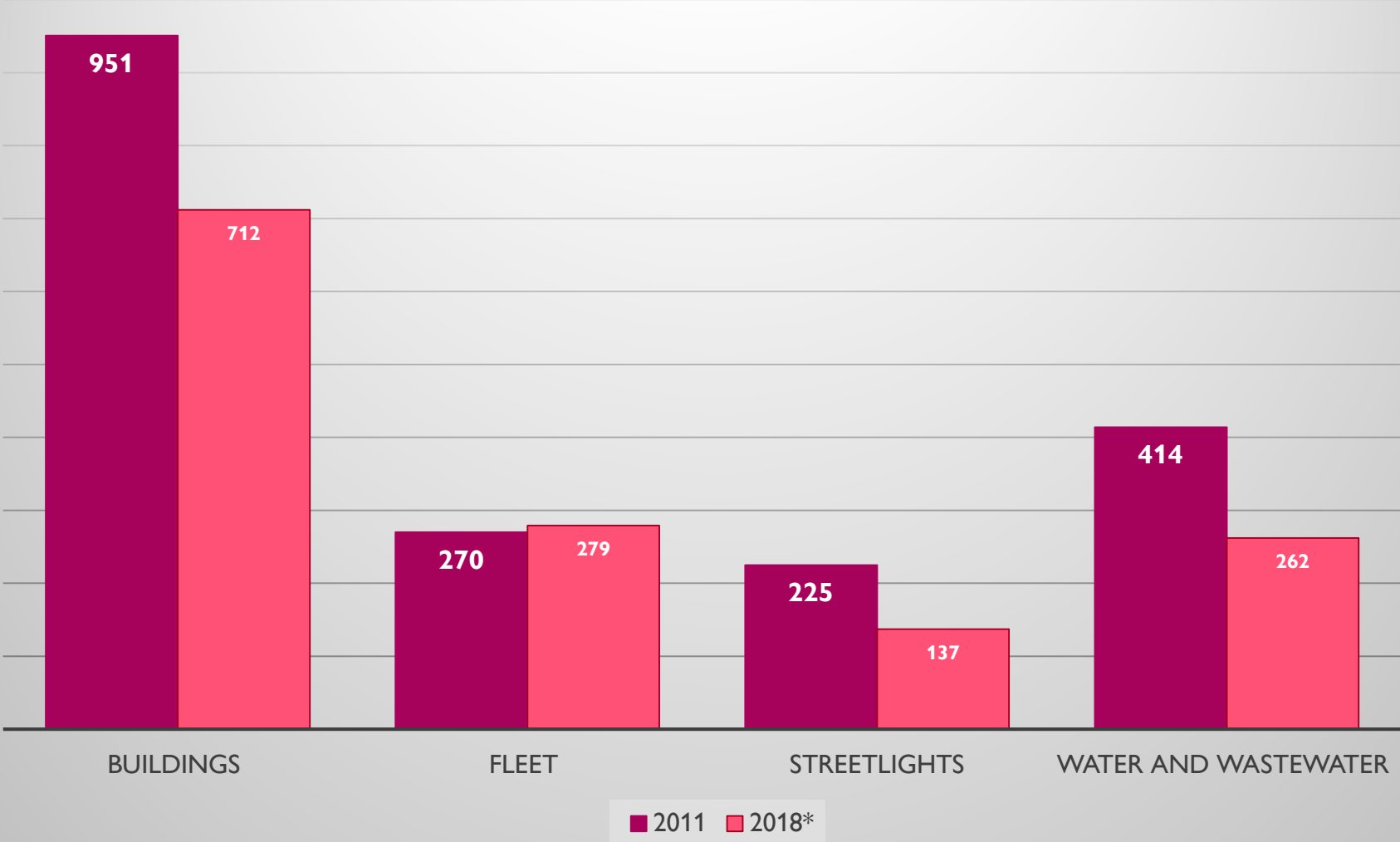
- During the winter of 2013-2014, the Sackville Town Council agreed to the goal of reducing municipal emissions by 10% from 2011 levels, by the year 2021.
- The 2018 emissions inventory showed that overall emissions for the Town of Sackville have been reduced by 31%. The goal has been surpassed 3 years early and by 21% more than planned.
- EOS would like to congratulate the Town of Sackville for their efforts and recommends that they begin the PCP process again during the next year or two, to ensure that the progress made during the first round of the PCP program can be built on further and additional emission reductions can be achieved.

RESULTS - CORPORATE

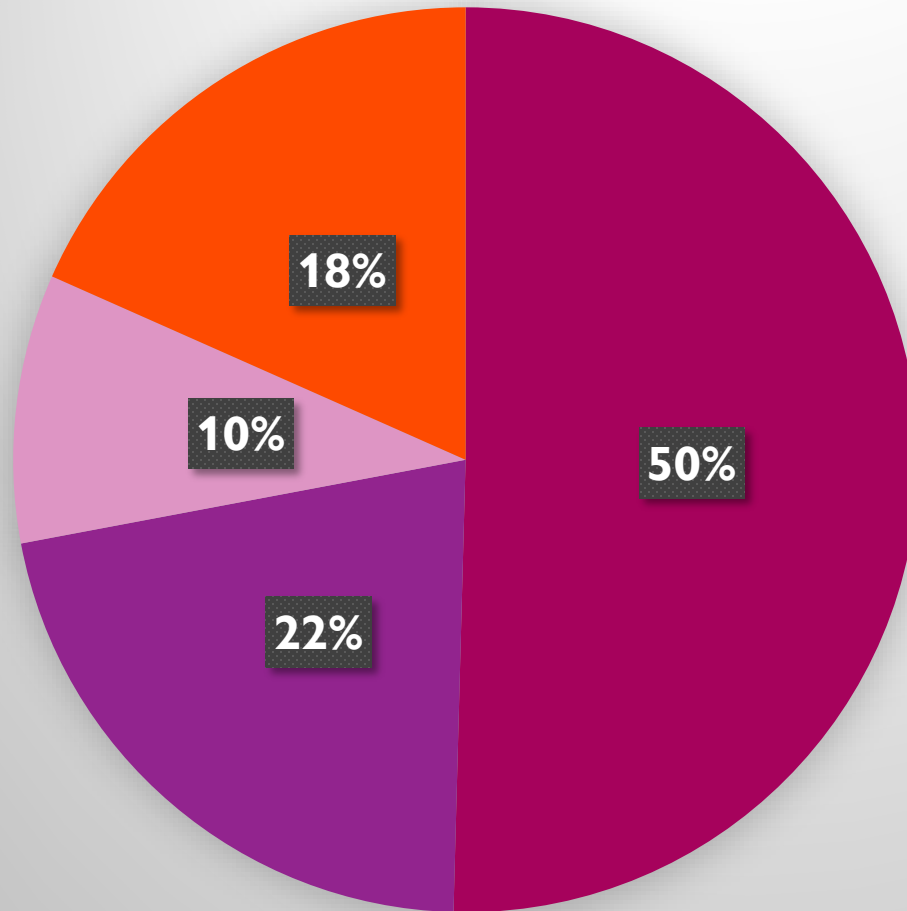
Changes in the Town of Sackville GHG Emissions (2011 – 2018)

Sector	Corporate GHG Emissions (tonnes CO ₂ e)		Change Relative to Baseline (2011)
	2011	2018	
Buildings	951	651	-32%
Vehicle Fleet	270	279	+3%
Streetlights	225	124	-45%
Water and Sewage	414	237	-43%
Corporate Waste*	-	-	-
TOTAL	1860	1291	-31%

Town of Sackville Emission Reduction



2018



- Buildings
- Fleet
- Streetlights
- Water and Wastewater

28%

- During the winter of 2013-2014, the Sackville community also agreed to the goal of reducing community emissions by 10% from 2011, by the year 2021.
- The 2018 emissions inventory shows that emissions from the residential, commercial and transportation sectors have been reduced by an average of 28%. This surpassed their goal by 18%, 3 years early.
- Data from solid waste was not conclusive, and so efforts to obtain better data in the future, and a waste audit, are recommended.

RESULTS - COMMUNITY

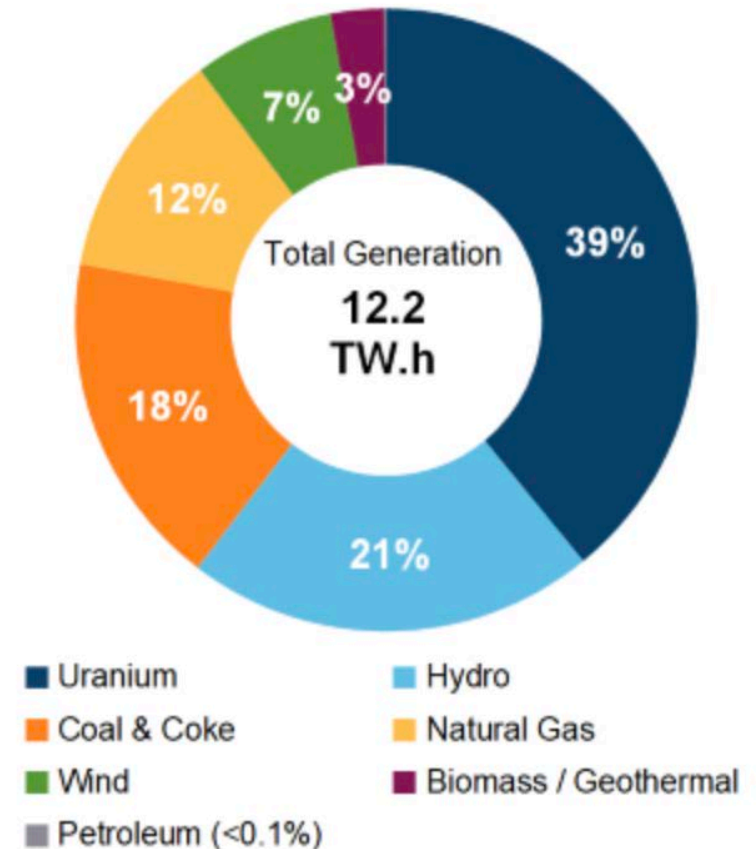
Sackville community emissions in 2011 and in 2018.

Sector	Community GHG Emissions (tonnes CO ₂ e)		Change Relative to Baseline (2011)
	2011	2018	
Residential	22035	15882	-28%
Commercial	26644	17582	-34%
Industrial	4093	-	-
Transportation	20481	18678	-9%
Solid Waste	1566	964	*
TOTAL	76830	56952	-28%

REASONS FOR EMISSION REDUCTION

- Generally, the reason why there was a decrease in emissions is because the New Brunswick electricity emission coefficient decreased between 2011 and 2018 by 33%
- 450 g CO₂e/kWh in 2011
- 300 g CO₂e/kWh in 2018
- In 2018, approximately 39% of New Brunswick's electricity generation was from nuclear, 30% was from [fossil fuels](#) (natural gas, coal, and petroleum), and 21% was from [hydroelectricity](#). The remainder was produced from wind and [biomass](#).

Figure 2: Electricity Generation by Fuel Type (2018)



OTHER REASONS FOR A DECREASE IN EMISSIONS

- The Town of Sackville
 - replaced burnt out bulbs with LEDs (lights at the baseball field, parking lot of Visitor Information Centre and Civic Centre)
 - Replaced vehicles in the municipal fleet with more fuel-efficient models (bulldozer, sidewalk plow, a loader, fire trucks) and by-law officer vehicle was replaced with a hybrid.
 - The EMO storage facility uses excess heat from the electric boiler in the Tantramar Veterans Memorial Civic Centre for its in-floor heating.
 - 3 stream waste implementation
 - Planting trees

Thank you!

QUESTIONS? COMMENTS?

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**IDEAS FOR
FUTURE EMISSION
REDUCTION
PROJECTS**



ICE RINK

The Veteran's Civic Centre rink presents a huge opportunity to reduce emissions and save energy through upgrades

Examples of Heat Recovery Systems

- In 2010, Fredericton installed an [ammonia heat recovery system](#) at the Lady Beaverbrook Rink, the first of its kind in a Canadian city arena. The ammonia used to make ice passes through a heat exchanger coil embedded in a water-holding tank so that it releases some of its heat to the water. The preheated water is fed to the rink's natural gas boiler to supplement the energy needed to reach the required temperature.
- In the city of Pickering, Ontario, waste heat generated by the ice-making equipment is used to heat water for the hot water supply.
- In Halifax, Nova Scotia, the BMO Centre is Canada's most energy-efficient 4 rink arena. Waste heat from the refrigeration system is used to heat water for showers, locker room floors, and provides additional space heating. The city is looking into a small district energy system because the centre produces 3 times the heat required for the facility operations.

**PURCHASE AN ELECTRIC VEHICLE
FOR THE MUNICIPAL FLEET AND
RENT IT OUT TO COMMUNITY
MEMBERS ON THE EVENINGS AND
WEEKENDS**

- Example: Plessisville, Quebec

MUNICIPAL COMPOSTING FACILITY

- A project to get businesses in town to switch to compostable takeout containers, that can only be composted in a facility, not in landfill or your backyard, would be a perfect match with this project.
- This facility can be used to compost primarily food scraps and yard waste from apartment buildings and businesses in the area. Could also include wood chips from trees, leaves.... Etc.
- It would be great to be able to process things like meat and dairy products that homeowners might not want to put in their own backyard compost piles.

REDUCE LANDFILL WASTE FROM THE COMMERCIAL SECTOR AND MULTI-UNIT RESIDENTIAL BUILDINGS

- A waste audit is the 1st step, to determine what is going on with your solid waste.
- More than likely, there will be an opportunity to divert organic materials from the landfill
 - This increases the longevity of the landfill by freeing up space over time
 - Reduces methane emissions, methane emissions are created when organic material is deprived of oxygen
 - Could create jobs, inject money into the local economy
 - Reduce emissions from trucks taking organic waste to Moncton
 - Reduce tipping fee costs for landlords, business owners, etc.
 - You can sell the finished compost and make a profit

TURBINES IN WATER AND WASTEWATER PIPES

- Micro-hydro project in Fort St. John, British Columbia
 - In 2016, a generator was placed on the gravity fed water treatment facility discharge pipe. This creates enough energy every year to power 70 homes. Fort St. John receives approximately \$75,000 in revenue from BC hydro. Funding for this project came from the provincial gas tax grant program and annual gas tax allocation.

FOR MUNICIPAL BUILDINGS

- Consume less energy, decrease costs, reduce harmful pollutants
- The thing you spend the most money on, focus on energy efficiency there
- Dimmer switch or occupancy sensor (can save 30% of your electricity consumption)
- Low flow water fixture or low flow aerators, tankless hot water heater
- Program your thermostats
- High efficiency air filter, replace every 3 months
- Heat recovery ventilator
- Smart power bars, plug load timers for coffee machines in convenience stores

RETROFITS + PACE FINANCING

- Retrofits to existing houses to reduce GHGs, focused on the building envelope
- **Benefits** homeowners, municipality and community
 - Homeowners: utility bill savings, increased property value, more comfortable, reduced energy price fluctuations, you retain indoor temperature longer during a power outage
 - Municipality/Community: reduces municipality GHGs, improves building stock, increases property tax revenue, local economic benefits and jobs, reduces pressure on energy infrastructure, reduces local air pollution
- **Barriers to retrofits**: high upfront costs (\$20,000+), short term ownership (5-8 years), uncertain utility bill savings, rental property, who is paying for utilities, not well understood.
- PACE (Property Assessed Clean Energy) financing, seeks to address these barriers

- Clean energy financing program, payment stays with the house, PACE financing

**** would need to advocate the NB government to change the Municipalities Act**

The logo for the Federation of Canadian Municipalities (FCM), featuring the letters 'FCM' in a bold, dark red font. The 'M' is stylized with a small figure of a person inside the bottom loop.

FEDERATION
OF CANADIAN
MUNICIPALITIES

FÉDÉRATION
CANADIENNE DES
MUNICIPALITÉS

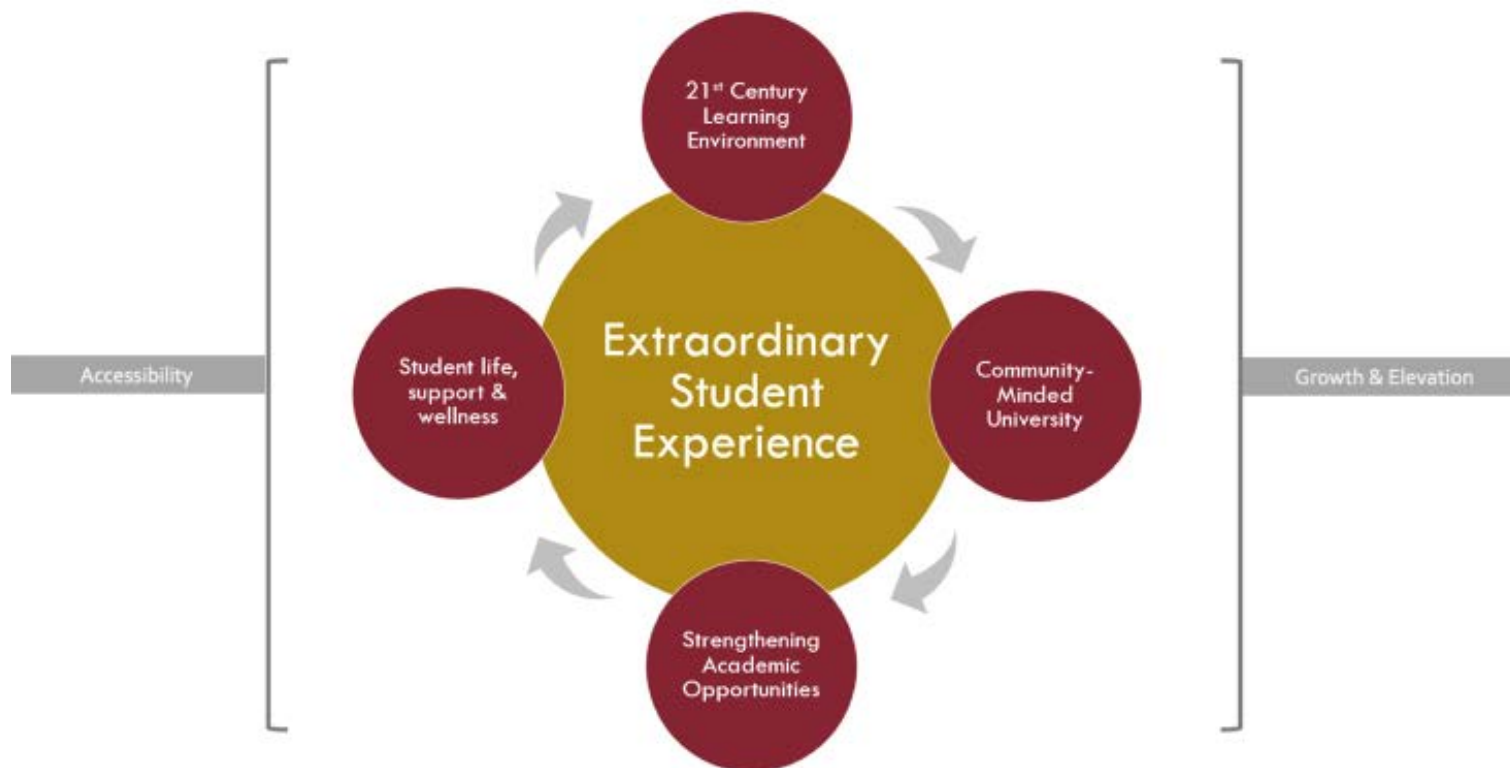
The title 'Green Municipal Fund' is displayed in a large, green, sans-serif font. The text is positioned on the right side of the page, overlaid on a background image of a modern building under construction with a wooden frame. The background is a soft-focus photograph of a cityscape with a clear blue sky and a few clouds. The overall color palette is dominated by greens and blues, with a red and purple gradient at the bottom of the page.



Sackville Town Council

December 2, 2019

Charting our path forward



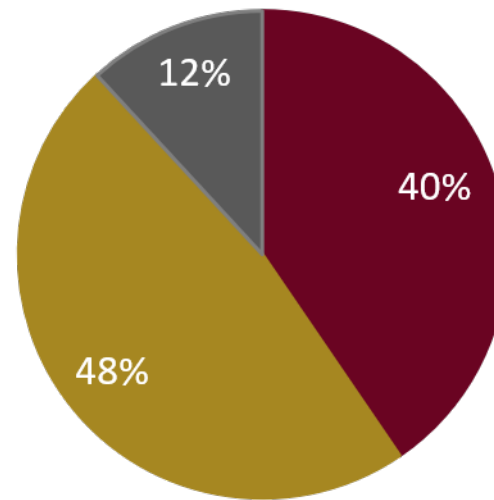
University & Town Initiatives

- Welcoming New Students and Families
- Provision of IT Support
- Collaboration for the benefit of residents and students
- Facilities and Public Works working together
- Student Relations Committee
- Students volunteering in the community
- Quarry Project
- Waterfowl Park Partnership

Current Environment

- 500 Employees
- 2,167 Students

Enrolment



■ NB ■ Rest of Canada ■ International

Projects

- Windsor Hall
- Library
- Athletic Centre
- Planning for next projects

Questions