



sustainable
Peterborough 

Peterborough Area Climate Change Action Plan

Curve Lake First Nation – Corporate Emissions Inventory

Partners for Climate Protection Milestone 1

October 16, 2017

1 Introduction and Overview

Greater Peterborough Area Climate Change Action Plan

Sustainable Peterborough is developing a Climate Change Action Plan (CCAP) for the Greater Peterborough Area to reduce local contributions to climate change and prepare the community for present and expected changes that will occur as a result of our changing climate. This Plan represents an integrated approach to dealing with some of the most important issues related to the sustainability of this diverse region. The overall objective of the CCAP is to reduce greenhouse gas (GHG) emissions, reduce the use of fossil fuels, lower energy consumption, and adapt to changing climate.

The Plan will identify goals, actions, and emission reduction targets that fit with and address the needs of each municipality and First Nation within the Greater Peterborough Area. This report summarizes the baseline greenhouse gas emissions for the Curve Lake First Nation from corporate sources to satisfy Milestone 1 of the Partners for Climate Protection (PCP) Program.

Partners for Climate Protection Program

The PCP program is a network of Canadian local governments that have made a commitment to reduce GHG emissions and act on climate change. Administered by the Federation of Canadian Municipalities, the program has over 225 local and regional governments participating. Curve Lake First Nation and Hiawatha First Nation were granted special permission to participate in the program in 2015, being the first two First Nations in Canada to be involved with the program. The City of Peterborough joined the program in December 2000. The County of Peterborough and the eight Townships have all joined in 2014 and 2015.

The Climate Change Action Plan is following the PCP's five-milestone framework for the reduction of greenhouse gas emissions (i.e. climate mitigation). The five-milestone framework is a performance-based model used to guide communities to reduce GHG emissions. Once a milestone is completed, the community – typically led by the local government – submits their material to the PCP program for a technical review and approval. To prepare the Climate Change Action Plan, the following 5 milestones will be completed:

1. Establish a GHG inventory and forecast
2. Set emission reduction targets
3. Develop Climate Change Action Plans
4. Implement the local action plans
5. Monitor progress and report on results

Milestone 1 – Corporate GHG Inventory and Forecast

A greenhouse gas inventory brings together data on corporate sources of greenhouse gas emissions to estimate emissions for a given year. For the Greater Peterborough Area Climate Action Plan, 2011 has been selected as the baseline year. Establishing a baseline is a useful tool to identify areas for improvement, inform development of a GHG reduction action plan, estimate cost savings from reductions, and serve as a reference point to track improvements. Associated with the baseline GHG inventory is also a forecast that projects future emissions based on assumptions about population, economic growth and fuel mix.

Typical corporate GHG inventories and forecasts for corporate operations include the following sources of GHG emissions:

- Buildings
- Streetlighting
- Water and sewage treatment

- Municipal fleet
- Solid waste

2 Corporate Emission Inventory

The Corporate inventory tracks emissions from internal operations. The criteria for including emissions in the corporate inventory relies on the concept of *operational control*, and requires the organization to report all emissions from operations over which it has control.

Curve Lake First Nation Corporate Emissions Inventory

In 2011, 357 tonnes of CO₂e were emitted by the Curve Lake First Nation's corporate operations. Breakdowns of emissions by sector and source are presented visually in Figure 1 and summarized in Figure 2 below.

Fig 1. Curve Lake First Nation Corporate Emissions by Sector and Source

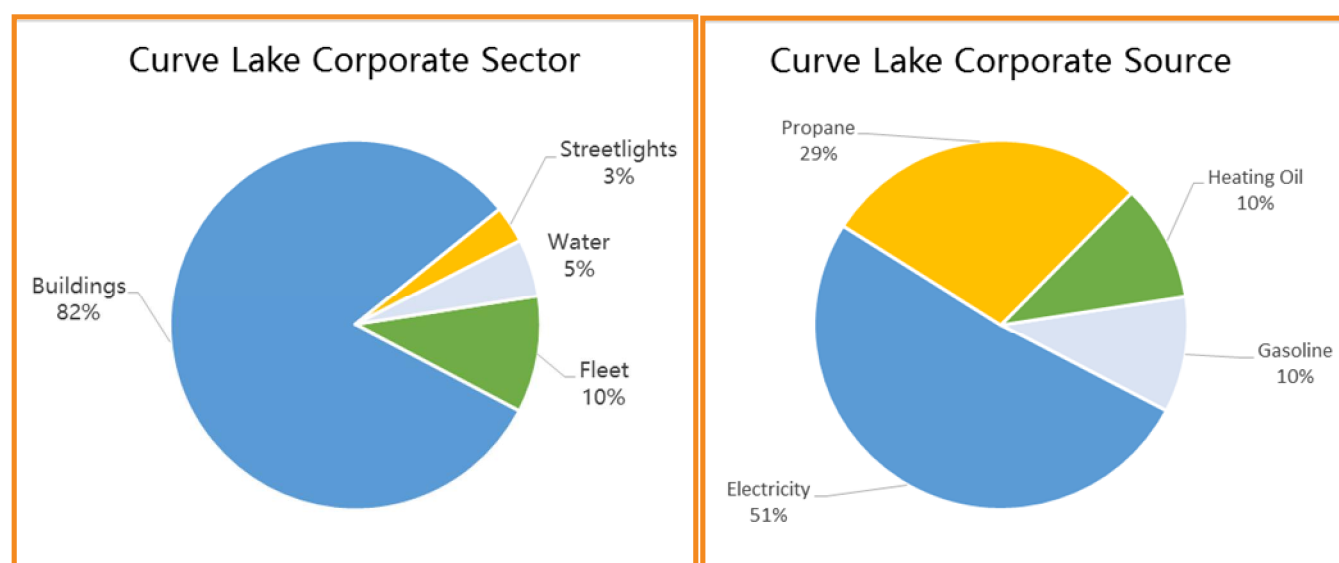


Fig 2. Curve Lake First Nation Corporate Tonnes CO₂e by Sector and Source

Sector	Emissions (tCO ₂ e)	Source	Emissions (tCO ₂ e)
Buildings	291	Electricity	183
Fleet	36	Gasoline	36
Streetlights	12	Propane	101
Water Treatment	18	Heating Oil	36
Total	357	Total	357

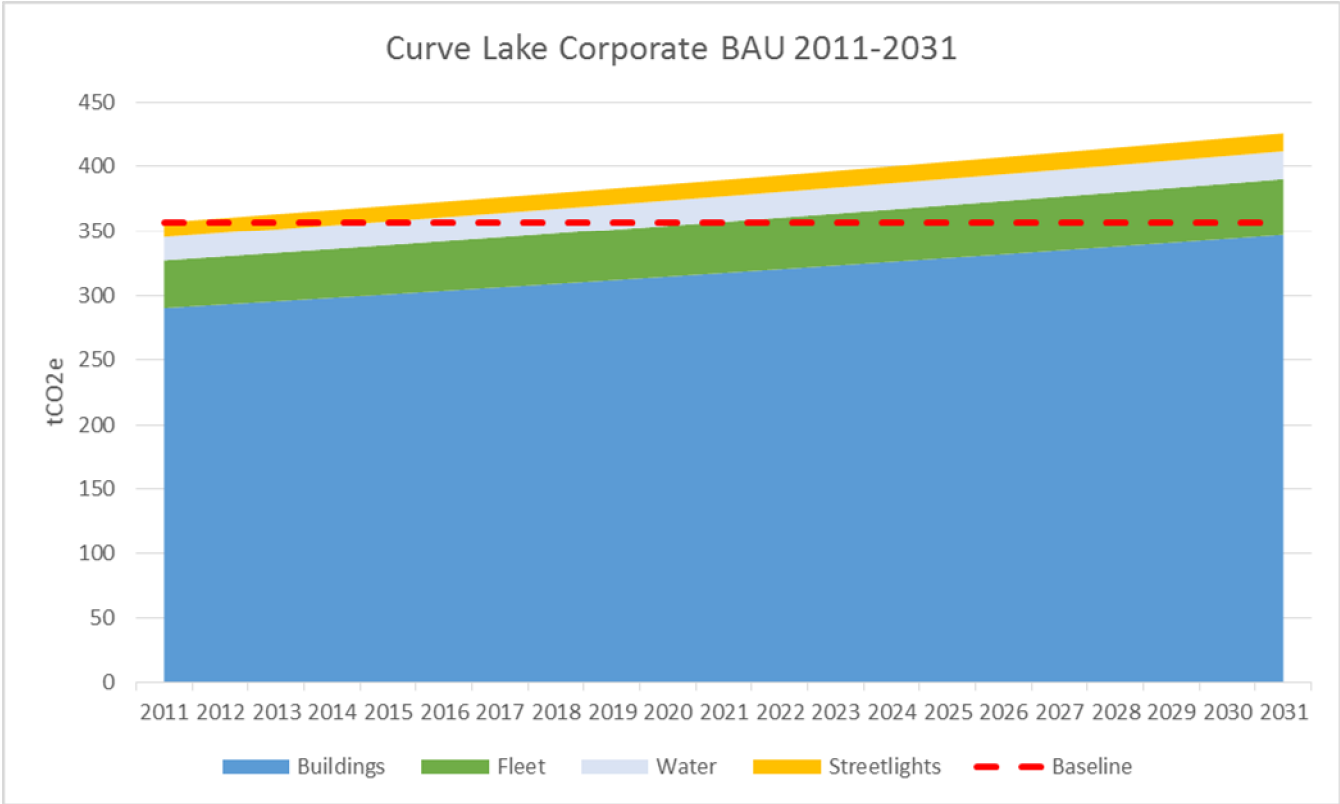
Corporate Operations Data Summary

Energy consumption for **Buildings**, **Streetlights**, and **Water Treatment** were determined using actual billed electricity and heating fuel data provided by the organization. **Fleet** fuel consumption was based on actual consumption data for litres of gasoline and diesel provided by the organization. All **emissions coefficients** are derived from Canada's *National Inventory Report*, in line with PCP methodologies, and electricity emissions factors reflect the carbon intensity of Ontario's electricity grid for 2011.

Business-As-Usual Forecast for the Curve Lake First Nation Corporate Emissions

A business-as-usual (BAU) forecast is an estimate of annual GHG emissions into the future considered projected population growth if Curve Lake’s corporate operations continues to operate exactly as it did in 2011 (i.e. if nothing is done to reduce emissions). The BAU forecast for the corporate operations is based on annual growth rates derived from official population projections. It was assumed that operations would increase with population growth – this aligns with standard PCP methodology for creating BAUs. Corporate emissions for 2031 are projected to increase to 426 tCO₂e by 2031. The BAU projection is presented in Figure 3 below.

Fig 3. Curve Lake First Nation Corporate BAU Forecast 2011-2031



3 Next Steps

Completion of the Milestone 1 baseline inventories is the first step in the Greater Peterborough Area Climate Change Action Plan. Next steps involve identifying opportunities to reduce GHG emissions based on the inventories and prepared itemized action plans with estimated GHG reductions and establishing reduction targets. Actions identified in the action plans will be done in collaboration with the eleven other local governments in the Greater Peterborough Area to explore efficiencies and cumulative impacts. Ideas for actions will be based on best practice research, public input, and ongoing meetings with 80+ community organizations and stakeholders.