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# Quispamsis trims energy use

Quispamsis, New Brunswick

## Green Municipal Fund Case Study



An arena in Quispamsis after a lighting upgrade (Photo: Town of Quispamsis).

### Energy Management Plan for Municipal Operations (GMF 9292)

Date project completed: August 2006

Total project value: \$20,000

GMF grant: \$10,000

- The Town of Quispamsis commissioned an energy audit
- Retrofits such as programmable thermostats, heat-recovery technologies and insulation will cut annual greenhouse gas emissions by 244.9 tonnes
- Changes will cost roughly \$284,000, with 6.74-year payback
- Annual energy cost savings will top \$42,000

### PROJECT TEAM

Town of Quispamsis  
Enerplan

**CONTEXT** The Town of Quispamsis, a suburban community of 15,000 just east of Saint John, was the first New Brunswick municipality to join the Partners for Climate Protection (PCP) program, a partnership between the Federation of Canadian Municipalities and ICLEI — Local Governments for Sustainability that helps municipal governments reduce greenhouse gas emissions. The town is carrying out a five-phase PCP plan designed, in part, to reduce emissions from the town's municipal facilities — including a town hall, arena, food bank, firehall/civic centre and lagoon — and 46-vehicle fleet. In the first two phases, the town measured the greenhouse gas emissions of all its municipal operations and set its reduction target. The third phase involved developing the action plan summarized in this case study.

**OVERVIEW** The Town of Quispamsis commissioned an energy audit and a local action plan for its municipal facilities and vehicle fleet. The town had already set a target to reduce its annual municipal greenhouse gas emissions by 826 tonnes — 20 per cent below 1994 levels — by 2011. If the town implements all the measures outlined in the plan — at a total estimated cost of \$283,615 — it expects to save 452,919 kilowatt hours of electricity, 1,139 litres of oil and 7,124 litres of propane each year. As a result, the municipality would annually save an estimated \$42,064 and reduce its greenhouse gas emissions by 244.9 tonnes.



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**APPROACH** The Town of Quispamsis hired Enerplan, a Moncton energy management services company, to develop a local action plan to reduce greenhouse gas emissions from municipal facilities and vehicles.

The study team reviewed data on propane, oil and electrical consumption for the previous year, engineering drawings, estimated building occupancy schedules, details of any recent renovations and any concerns about specific facilities. Using records from calendar-year 2005, the study team developed baseline energy consumption data. It analyzed each facility to estimate heat loss components, lighting loads, hot water use, electrical loads for mechanical equipment and miscellaneous loads.

The team fed these data into proprietary software that uses average local temperatures to model heating and cooling loads, as well as energy consumed. It used these models to recommend energy-saving options for lighting, building envelopes, energy management control systems, and heating, ventilation and air conditioning.

The study team also analyzed vehicle operation procedures and the energy efficiency of the town's fleet.

**RESULTS** Recommended energy-saving options included programmable thermostats, heat-recovery technologies and insulation. Some options, such as a solar water-heating system, were not recommended because they were found to be economically unfeasible. The average simple payback period for all of the recommendations was estimated to be 6.74 years.

Payback periods for individual facilities ranged from 4.74 years to 12.31 years, depending largely on the extent of the predicted energy savings. Larger expenditures didn't always mean longer payback periods. The most expensive component of the recommendations — changes to the town's arena, with an estimated price of \$131,675 — had an expected payback period of 6.31 years, due to estimated annual cost savings of over \$20,000.

The study team found town employees were already using good driving techniques — such as using cruise control and maintaining proper tire pressure — to reduce greenhouse gas emissions from the town's relatively new fleet. It recommended that Quispamsis consider buying hybrid vehicles and using biodiesel in the future.

Implementing all the plan's recommendations would cut the town's annual greenhouse gas emissions by 244.9 tonnes.

**NEXT STEPS** In the fourth phase of the Partners for Climate Protection plan, the town started carrying out the recommendations in the local action plan. The final phase will involve monitoring, verifying and reporting on any resulting greenhouse gas emissions reductions.

The town will also keep encouraging citizens to reduce their own greenhouse gas emissions. As part of that effort, Quispamsis will hold public consultations to develop a sustainable community plan, which will include environmental, social and economic goals and targets.

**LESSONS LEARNED** After receiving the final plan, municipal employees tried to adopt multiple recommendations at once. If they had it to do over again, they might overhaul one building at a time instead, says Debbie Allen, facilities manager for the Town of Quispamsis. "It was a little overwhelming, trying to come up with a plan of attack for each facility on all the components," she says.

Finding sources of funding and filling out the required paperwork has presented another obstacle to carrying out the recommendations. "We are aware of programs out there, but the application process is intense and stringent," Allen says.

### CONTACTS

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**ADDITIONAL RESOURCES** For other GMF projects of this type or category, or from this municipality, province or territory, please contact the GMF at 613-241-5221 or at [planning@fcm.ca](mailto:planning@fcm.ca). For the complete project report, please visit the GMF website at [www.fcm.ca/gmf](http://www.fcm.ca/gmf).

#### About the Green Municipal Fund

The Government of Canada endowed the Federation of Canadian Municipalities (FCM) with \$550 million to establish the Green Municipal Fund™ (GMF). The Fund provides low-interest loans and grants, builds capacity, and shares knowledge to support municipal governments and their partners in developing communities that are more environmentally, socially and economically sustainable.

#### Federation of Canadian Municipalities Green Municipal Fund

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