

Partners for Climate Protection

Greenhouse Gas Reduction Initiative of the Month

Dawson Creek's energy-efficient exterior lighting



Municipal Profile

Population: 11,000

PCP Member since 2004

The City of Dawson Creek, B.C., initiated a community energy plan in January 2005 that examines the municipality's current and future energy use patterns and identifies where improvements can be made. Four years later, in March 2009, the city added to the plan by launching a strategy to make Dawson Creek's municipal operations carbon neutral by 2012.

Background

As part of BC Hydro's *E Points* program (a program that encourages BC Hydro's largest customers to reduce energy use), Dawson Creek conducted an assessment of energy-efficiency opportunities within its municipal operations. Retrofitting street and traffic lighting were identified as prime energy-saving candidates.

"The City of Dawson Creek could quickly see that the payback on this project was approximately four to five years, simply on energy," says Kevin Henderson, Dawson Creek's Director of Operations. "Reduced maintenance costs on the new lights have proven to be an unexpected bonus."

Implementation and Approach

The city's engineering department oversaw the project, along with a private lighting consultant. An electrical contractor installed the new fixtures. No approval from council was required, as the project was part of the department's regular maintenance work.

Over the course of two months, the city replaced 200 of its 400W mercury vapour streetlights with 150W high-pressure sodium fixtures, and all of its traffic lights with light-emitting diodes (LEDs). These new fixtures are "dark-sky friendly," emitting less than 3% of light skyward, reducing light pollution and increasing the light quality on the ground.



High-pressure sodium fixture (Credit: Cheryl Shuman)

As part of the same project, the city also purchased solar photovoltaic panels to power several lighting applications. For example, solar-powered lights were installed at a pedestrian-activated crosswalk and along roadways as warnings that stop signs or curves are ahead. *(Photo at right credit: City of Dawson Creek)*



“The lights have helped to bring attention to these signs or hazards and have worked well as a transition for traffic entering the city from the rural area, where vehicle speed tends to be a little higher,” says Mr. Henderson. The city is also using solar-powered lights along a walking trail, an area where access to a traditional power source is not readily available.

Results

The city spent approximately \$60,000 to purchase the new traffic, street and solar lighting and is saving approximately \$15,000 a year in energy costs, for a simple payback of four years. Energy consumption has been cut by approximately 100,000 kWh/year. Mr. Henderson says that the new fixtures don't require as much maintenance, so savings may also be found from reduced staff costs to maintain and service the lights.

“The old mercury vapour lights were famous for blinking on and off for extended periods of time before they died. The efficiency of the light decreased even though the power consumption did not,” he says. “The new lights are a big improvement and the light quality is better.”

Lessons Learned

Mr. Henderson says that the project ran smoothly and that the city faced no issues with installation or maintenance. He recommends that municipalities considering a similar project contact their local power authority to see what auditing or funding programs may be available for street or traffic lighting initiatives.

Future Direction

The city is now considering LED street lighting for a new industrial subdivision.

Dawson Creek also has several other renewable energy and energy-efficiency projects on the go, including energy audits of six municipal facilities. It retrofit the lighting systems at the Fire Hall, the RCMP station, City Hall, an arena and a mechanics welding shop, and installed solar hot water heaters at City Hall, the Fire Hall, the RCMP station, the airport and the public works yard.

Further Information

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Download a copy of Dawson Creek's *Carbon Neutral Strategy* at:
<http://www.planningforpeople.ca/documents/Dawson-Creek-action-plan.pdf>.

The Partners for Climate Protection (PCP) program is a network of Canadian municipal governments that have committed to reducing greenhouse gases and acting on climate change. PCP is the Canadian component of ICLEI's Cities for Climate Protection (CCP) network, which involves more than 900 communities worldwide. PCP is a partnership between the Federation of Canadian Municipalities (FCM) and ICLEI – Local Governments for Sustainability. PCP receives financial support from FCM's Green Municipal Fund.