Energy and water efficiency opportunities identified

A closer look at the Manitoba Municipal Efficiency Project

Submitted by Manitoba Hydro

Improving a building's water and energy efficiency has many benefits. Building operating and maintenance costs are reduced; employees and visitors enjoy improved physical comfort; and negative impacts on the environment decrease.

While many energy and water efficient technologies are now available, how does a municipality determine where to begin upgrades, especially smaller municipalities with limited resources?

The Manitoba Municipal Efficiency Project (MMEP) was developed to help municipalities identify energy and water efficiency opportunities and provide them with the support to make improvements.

The first phase of the MMEP involved audits of 159 buildings across 14 Manitoba municipalities. Final audit reports detailing recommended improvements to arenas, curling rinks, and fire halls, among other municipal-owned or operated buildings, have now been completed.

Recommendations for improvements cover a range of upgrades to lighting, windows, doors, walls, roofs, and heating, ventilating and air-conditioning (HVAC) systems.

According to **Bob Brennan**, President and CEO of Manitoba Hydro, the results obtained through the MMEP audits can make a positive impact in all Manitoban municipalities. "The municipalities that participated in the project now have the information to begin making their buildings more efficient and Power Smart," says Brennan. "But every municipality can benefit from the common energy savings measures and efficiency improvements identified during the audits and in the final AMM/MMEP comparison report. This information provides municipalities with a starting point for an action plan."

The potential for savings in municipalities is high, if efficiency improvements are implemented. The MMEP set goals for performance improvements to decrease average energy use by 35% and decrease water consumption by 30%.

Thirty-five common energy saving measures, with an average payback of 10 years or less, were identified across the 14 municipalities. Some of the measures offer immediate energy savings, such as the recommendation for arenas to take ice shavings outside for melting, rather than melting them indoors; and reducing temperatures to 10° C at all times in unoccupied facilities, such as water treatment plants.

Other recommendations encouraged replacing older equipment with high-efficiency versions, such as high efficiency condensing boilers and furnaces; replacing exit signs with LED exit signs; replacing T12 lighting with T8s; and installing parking lot controllers to reduce plug-in expenses.

In addition to achieving energy and water savings, municipalities that act now can take advantage of commercial incentives offered by Manitoba Hydro.

"In most cases, municipally-owned or operated buildings qualify for Power Smart for Business commercial buildings programs. Pre-approval is required, so it's important for municipalities to contact Manitoba Hydro for information before they get started," says Brennan.

Power Smart for Business programs offer technical support, advice and incentives for many of the efficiency upgrades identified in the audit reports.

The Commercial Building Envelope Program provides incentives for upgrades to insulation levels in existing buildings, and installation of energy-efficient windows for buildings heated with electricity or natural gas supplied by Manitoba Hydro.

An incentive for upgrades to a high-efficiency furnace, boiler or water-cooled chiller is offered through the Commercial HVAC Program. To be eligible, customers must receive their natural gas from Manitoba Hydro or be in Manitoba Hydro natural gas service area.

Guidance and financial assistance are offered for upgrades and installation of energy-efficient lighting through the Commercial Lighting Program (CLP).

Municipalities can also 'plug into savings' by taking advantage of incentives offered through the Commercial Parking Lot Controller program.

"There are a number of things municipalities can do to improve efficiency and start saving. Manitoba Hydro is here to help them get started," adds Brennan.

The Manitoba Municipal Efficiency Project (MMEP) was developed by the AMM in partnership with Manitoba Hydro, Manitoba Conservation and Culture, Heritage and Tourism, Manitoba Intergovernmental Affairs, and Agriculture and Agri-Food Canada - Prairie Farm Rehabilitation Administration. The goal of the project was to provide energy and water audits,

Water and energy efficiency tips

This checklist provides quick reference to the most common upgrades recommended for energy savings in these types of buildings, according to the MMEP:

Arenas
- Improvements to zamboni water heating systems
- Dump rink ice shavings outside (as opposed to melting it indoors)
- Ventilate the rink area to reduce the load on the ice plant
- Replace ice plant motors with high efficiency motors

Curling Rinks
- Improve the efficiency of the heating systems
- Upgrade insulation in walls and roofs, and weather-strip windows and doors to reduce heat loss from the building envelope
- Install programmable thermostats to control the indoor temperature

Community Halls
- Upgrade insulation in walls and roofs, and weather-strip windows and doors
- Replace thermostats with programmable thermostats

Fire Halls
- Weather-strip and caulk the vehicle and pedestrian doors
- Replace leaky backdraft dampers with motorized dampers to reduce infiltration

Municipal Offices/ Administration Buildings
- Installation of high efficiency lighting, parking lot controllers, HRVs, water efficient sink faucets, and high efficiency air conditioning systems to maximize savings and comfort.

Municipal Shops/Garages
- Replace furnaces with unit heaters or radiant heaters and position in such a way that the majority of the heat is aimed at snowplows to melt the ice without heating the rest of the building
- Weather-strip the vehicle doors and reduce air infiltration.

recommendations for improving system efficiencies in municipal water distribution and wastewater collection, and energy and water efficiencies in municipal owned or operated buildings.

Participating municipalities include: the Municipality of Birtle, Town of Carberry, Town of Carman, RM of Grahamdale, Town of Niverville, Municipality of Manitou, Village of Cartwright and RM of Roblin, Town of Roblin, RM of Stanley, RM of St Andrews, Town of Swan River, RM of Whitemouth, City of Flin Flon, and the Town of The Pas.

Audits were performed by KGS Group, and reports were produced with assistance from the Green Municipal Enabling fund (financed by the Government of Canada), the Federation of Canadian Municipalities, and the Manitoba Conservation Sustainable Development Innovations Fund (SDIF). The MMEP audits reports for all municipalities and a copy of the comparison report are posted on AMM website at *www.amm.mb.ca/res_MMEP.html*.

Call Manitoba Hydro for more information about Power Smart commercial programs at: 1-888- MB HYDRO (1-888-624-9376) or email your questions to *powersmartforbusiness@hydro.mb.ca*.

Information is also posted on the Manitoba Hydro website at: *www.hydro.mb.ca/psfb*.