SUCCESS STORY

Municipal Climate Change Action Centre

Town of Edson
Wastewater Treatment Plant

Working within regulatory constraints and process requirements, the Town of Edson implemented a range of cost-free measures in its Wastewater Treatment Plant that will save over $14,500 per year.

THE CHALLENGE

The Town of Edson's wastewater treatment plant, constructed in 2019, is the second highest energy consumer in the Town's building portfolio. An all-electric building, its energy consumption is very carbon intensive. Solutions are available, but the facility must adhere to strict regulatory requirements set out by Alberta Environment and Parks. Any new energy conservation measures must fall within regulations and cannot affect the efficient operation of the facility.

THE SOLUTION

The Town's Municipal Energy Coordinator, Brendan Riome, worked with the Senior Manager, Infrastructure, Pat Fisher, to identify no-cost measures that could reduce energy consumption and greenhouse gas emissions. Notably, temperature setpoints for ventilation were reduced in process areas and other setpoint and schedule adjustments were made throughout the facility.

Additionally, Fortis Alberta conducted a Review of Minimums (ROM), looking at the facility's contracted minimum power demand to determine if it could be reduced. The facility had contracted demand of 461 kW, when in actual operation it averaged only 200 kW of demand. All else being equal, the ROM will significantly reduce transmission and distribution costs.

TOWN OF EDSON

Edson is a community *of 8,500 with a long history in forestry, coal mining, oil and gas exploration and construction. It is a railway depot for CN Rail and a major service centre between Edmonton and Jasper. As an older town, Edson is in the process of replacing aging infrastructure while managing the boom-and-bust cycles of its resource-based economy.*

GOAL

Reduce energy consumption, greenhouse gas emissions, and utility costs without any impact on facility operations.

ACTION

Implemented six no-cost energy conservation measures.
January 2022

Conducted Review of Minimums.
June 2022

SUCCESS

Greenhouse gas emissions are projected to reduce by 98 tonnes annually.

Utility costs are projected to decrease by $59,500 ($14,500 from measures, $45,000 from ROM).

Overall, the facility will consume 20% less energy.

LESSONS LEARNED

It is often assumed that it takes significant capital investment to secure major financial and energy savings in a facility like a wastewater treatment plant.

However, optimizing operation of the facility through no-cost changes can provide noticeable and measurable reductions in energy use, greenhouse gas emissions, and cost.

Working directly with Operators and Engineering staff was instrumental in identifying suitable operational adjustments to the facility.

A Review of Minimums has the potential to significantly reduce the transmission and distribution costs in a wastewater treatment plant—costs that are continuously rising.

Monitoring the impact of completed energy conservation measures was key to demonstrating the value of the work to leadership. Energy modelling provided high quality data and accurate results. RETScreen Clean Energy Management Software was used to both determine and monitor the savings.

KEY ACTIONS IMPLEMENTED

- Completed Review of Minimums of the facility's electricity demand.
- Optimized setpoints and schedules on the lab's variable refrigerant flow system.
- Reduced temperature in storage rooms.
- Reduced temperature setpoints in Process Areas.
- Applied a schedule to the domestic hot water circulation pump.
- Shut down an unused hot water heater.

MUNICIPAL CLIMATE CHANGE ACTION CENTRE

These savings were enabled by the Municipal Energy Manager Program, which provided up to $80,000 for a professional to develop energy management plans, improve building performance, and produce noticeable energy savings. Designed and delivered by the Municipal Climate Change Action Centre, a partnership of:

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