

# Township of Red Rock

## Energy Conservation & Demand Management Plan 2020-2024

*Township of Red Rock*

## **Township of Red Rock Energy Plan**

To meet the Provincial Regulation 397/11 under the Green Energy Act, the Township of Red Rock has been inputting its energy consumption for use in the development of a document to guide Municipal efforts in improving energy efficiency. 2017 data was submitted on June 26, 2019 and a five year Energy Conservation & Demand Management (ECDM) Plan will be completed by June 27, 2019 as required by legislation. Within the ECDM Plan will be a summary of Township's annual energy consumption and greenhouse gas emissions for its operations as required by O.Reg...397/11. Also required is a description of previous, current and proposed measures for conserving and otherwise reducing the amount of energy consumed by the public agency's operation and for managing the public agency's demand for energy, including a forecast of the expected results of current and proposed measures. As well, the Municipality has produced this plan to identify our goals for conserving and reducing energy, proposed energy conservation measures including estimated costs and savings, a description of renewable energy generation facility and the amount of energy produced, as well as how long each proposed measure will be in place for.

### **History**

Red Rock has been informally working towards becoming an innovator in utilizing renewable energy and energy efficient practices throughout its history. Like many municipalities on the North Shore of Lake Superior, Red Rock was created by the forestry industry with a pulp and paper mill operating under various names until 2006. At one time, a large portion of the Municipality was heated utilizing a centralized district heating system from the large boilers in the Mill that supplied waste heat to the Recreation Centre, as well as other buildings. The Municipality undertook an energy audit in 2010 and implemented numerous measures to become more energy efficient in its building and operations.

### **Intent of the Plan**

It is the intent of the Municipality that this plan will provide a structured and well defined strategy to focus our efforts towards energy efficiency. It has been written to meet the requirements of regulation 397/11 and will be a working document that will annually be reviewed during the budgeting process to add new projects or make changes if necessary. The plan will be used in cooperation with other plans including the Council Strategic Plan - 'Adjusting Our Sails' - and the Asset Management Plan.

### **Municipal Infrastructure**

Red Rock has a population of 892 as identified by the 2016 Census. This is down significantly with the closing of the Norampac Mill in 2006. This population decline has made it difficult to maintain the level of service that was developed for a greatly higher population; however the Municipality strives to provide as much service for the quality of life of its residents as possible.

## **Municipal Buildings**

- Recreation Centre (1957) – 64,000 sq ft
- Water Treatment Plant (2009) – 3,300 sq ft
- Public Works Garage/Fire Hall (1972) – 5,600 sq ft
- Municipal Building/Library (1955) – 5,800 sq ft
- Sewage Treatment Building (1972) – 730 sq ft
- Marina Building & Interpretive Centre (2013) – 3,600 sq ft

## **Vision for Red Rock**

Red Rock will be known as a leader in implementing energy conservation initiatives with the reduction of energy and the production of renewable energy being high priorities for the Municipality.

## **Goals**

The goal of this plan is to achieve a 10% reduction in energy consumption, based on 2019 data, throughout the buildings & lighting of the Township of Red Rock by 2024. This goal may be high considering the energy efficiencies that were implemented prior to 2019. These include T-8 lighting in all municipal buildings, soft start motors in the Water Treatment Plant and new energy efficient boilers in the Recreation Centre and street light and marina pole lamps replaced with LED's as noted in other parts of the report.

## **Objectives**

- Organizational wide understanding of the importance of energy efficiency and a coordinated attack to reduce consumption
- Renovation of buildings to incorporate energy efficiency practices □ Striving for LEED certification in construction of new buildings.
- Continuously seeking and evaluating energy efficiency and renewable energy projects for the Municipality

**2017 Energy Consumption Results** are attached below.

## **Renewable Energy 2019**

Constantly looking for opportunities

## **Previous Measures**

Some of the measures completed towards energy efficiency from 2011-2019 include:

- The Township installed water meters in every household and business in 2011 which had the effect of reducing water consumption and hence water production.

When submitting household water billings, if water consumption is above average the household is called to warn them of excess usage.

- Roof replacement at the Recreation Centre with added insulation.
- Light motion detectors in washrooms at the recreation centre.
- New energy efficient boilers at the recreation centre installed in 2011.
- The Marina Building & Interpretive Centre, completed in 2013, is an energy efficient straw bale/timber frame construction with R65 walls, T5 lighting, solar hot water, 10kW solar panels, high efficiency windows and gray water reuse.
- Energy efficient window 3M NV Film was installed on the Interpretive Centre windows to reflect the sunlight and heat.
- Red Rock has been a long time member of the LAS Electricity & Gas Procurement Programs.
- Installation of variable frequency drives motors at the water treatment, pump house, generating plant and recreation centre is continuing.
- New siding on the Recreation Centre arena and curling club wings to reduce wind penetration. Further enhancements are scheduled.
- Energy efficient windows in the Municipal Office and Library.
- Energy efficient window screening in the municipal Office and Library.
- Replacement of the gas heat in the water tower with a bubbler system.
- Outdoor lighting on all municipal buildings are now on timers or photocells.
- All Township 152 High Pressure and Low Pressure Sodium street lights have been replaced with LED Cobra Head Lamps
- In the Recreation Centre Ice surface, 36 – (400 W Metal Halide bulbs) were replaced with HID LED Lamps.
- In the Recreation Centre Gymnasium, 20 – (400 W Metal Halide bulbs) were replaced with HID LED Lamps.
- All 45 boardwalk and marina 250W HPS pole lights were replaced with 54 W LED lamps

### **Studies Undertaken by the Municipality**

- Energy audit by Hydro One for all municipal buildings.
- Energy efficient design of new Red Rock Waste Water Treatment Plan by Hatch
- Energy efficient audit to improve building wind penetration.

### **Future Measures**

Some of the Measures we are evaluating for the future:

- Future installation of a RV Campground at the Red Rock Marina with design elements to have all lighting LED and monitor water usage using water meter.
- Future installation of siding and insulation on municipal buildings to reduce wind penetration
- An aggressive move to replace end of life vehicle fleet with E-vehicles.

### **Private Sector Cooperation**

Constantly looking for opportunities

## **Municipal Operations**

- Energy efficiency training and awareness for all Municipal staff and signage to promote energy efficiency throughout Municipal Buildings
- Install variable drive motors where they have not already been replaced as they come to the end of their life cycle or funding opportunities present themselves.
- The design of the new Waste Water Treatment Plant which is in the construction stage. This will be an energy efficient building.
- Further building siding improvements to the Recreation Centre.

## **Community Capacity Building**

- Work with our business community to provide education on identifying energy savings for the business sector
- Continue educating our users groups of Municipal buildings on importance of energy efficiency
- Advertise energy efficiency ideas to the public through use of the Municipal Facebook page and website

## **Scheduling & Priority of Improvements**

### **2020**

- Energy efficiency training and awareness for all Municipal staff and user groups to promote energy efficiency throughout Municipal Buildings
- Continue improved signage throughout Municipal buildings about importance of turning things off when not in use – Save Energy, Save \$\$\$ to be the message
- Continuing to work on the new building ventilation system at the Recreation Centre.
- Launch a no unnecessary idling awareness campaign for our residents
- Develop an idea system for staff and community groups to bring forward suggestions for improving energy efficiency in Municipal operations.

### **2021**

- Implement upgrades at the new Waste Water Treatment Plant.
- Ensure payback period analysis on energy efficiency projects is integrated into the annual budgeting process
- Continue to evaluate the installation of electronic, real-time monitoring systems at Municipal buildings to better understand the use of electricity in zones and times
- Annually conduct energy efficiency training and awareness for all Municipal staff and user groups to promote energy efficiency throughout Municipal Buildings

## **2020 - 2024**

- Construction of Waste Water Treatment Plant using energy efficiencies outlined in the building design completed in 2016 - 2019. The Contract Engineers – Hatch
- Construction – is currently underway for the new Waste Water Treatment Plant.

## **Conclusion**

The Township of Red Rock is placing a high importance on energy efficiency and utilizing renewable energy. By utilizing the ideas of our staff for evaluation by experts in various fields, the Township will work towards reducing its carbon footprint and decreasing what we pay to consume energy.



