

THE MUNICIPAL CORPORATION OF THE TOWNSHIP OF ARMOUR

BY-LAW #21-2019

Being a by-law to adopt an updated Energy Reporting and Conservation and Demand Management Plan.

WHEREAS the Province of Ontario passed to the Electricity Act, 1998;

WHEREAS the Province of Ontario passed Ontario Regulation 507/18 Energy Reporting and Conservation and Demand Management Plans requiring municipalities to update their 5-year energy CDM plans;

NOW THEREFORE the Council for The Municipal Corporation of the Township of Armour hereby enacts as follows:

- 1. That the updated “Township of Armour Energy Reporting and Conservation and Demand Management Plan” for 2019 to 2023 is hereby adopted as set out in Schedule “A” attached hereto and forming part of this By-law.
- 2. That this by-law shall come into effect upon its passing.

Read in its entirety, approved, signed and the seal of the Corporation affixed thereto and finally passed in open Council this 12th day of March, 2019.

Original signed by Bob MacPhail
Robert MacPhail, Reeve

Original signed by John Theriault
John Theriault, Clerk



TOWNSHIP OF ARMOUR ENERGY REPORTING AND CONSERVATION AND DEMAND MANAGEMENT PLAN

January 2019

This plan is designed to demonstrate municipal compliance with Ontario Regulation 507/18 Energy Reporting and Conservation and Demand Management Plan. The Township recognizes the need to prevent the wasting of fossil fuels and making sure that when these fuels are used, that the maximum efficiency is attained. The Township of Armour has a proud history of managing and limiting the amount of energy consumed.



THE MUNICIPAL CORPORATION OF THE TOWNSHIP OF ARMOUR

SECTION 1 INTRODUCTION

INTRODUCTION AND INTENT OF PLAN

The Corporation of the Township of Armour has, over the last number of years, investigated and undertaken a number of initiatives that fall under the umbrella of environmental planning, sustainability and conservation management. With the intention of further improving upon the Municipality's environmental record, and enhancing accountability to residents.

This plan fulfills the Municipality's monitoring and reporting requirements for Ontario Regulation 507/18. In addition, this plan includes a series of progressive and attainable actions to help improve the environmental performance of the Municipality over a five-year planning horizon.

The Township of Armour is committed to following the direction of the Plan, and will take the necessary steps to ensure the Plan's success through continual review and development.

The purpose The Energy Reporting and Conservation and Demand Management Plan is to provide a basis for the Township of Armour to implement improvements to its infrastructure and operations that reduce energy and water use, their associated costs, as well as environmental effects of the Township's activities.

DECLARATION OF COMMITMENT:

The Township of Armour will use existing resources and leverage outside agencies where appropriate to reduce our energy consumption and its related environmental impact.

Declaration of Commitment: By-law #21-2019 dated March 12, 2019.

BE IT RESOLVED THAT By-law #21-2019, a by-law to adopt an updated Energy Reporting and Conservation and Demand Management Plan" be approved;

AND FURTHER THAT the Council of the Township of Armour is committed to the promotion of responsible energy management, through the implementation of economically viable energy efficiencies and environmental care throughout all facilities and equipment.

BACKGROUND:

The Township of Armour's Energy Conservation Plan was developed to meet the requirements of Ontario Regulation 507/18. The purpose of this Plan is to develop projects to formally address energy management initiatives. The Township of Armour has been committed to energy conservation for many years in order to reduce energy consumption, decrease operating costs and to set an example for the community as to why conservation is important. It is the intention of the municipality to further develop the Energy Conservation Plan and enhance the municipality's commitments as projects develop through Council's approval and as the Township's aging infrastructure requires rehabilitation and/or replacement. Similar to the Township's previous 2014 Energy Conservation and Demand Management Plan, this five-year plan is valid from 2019-2023, at which time a thorough review process will be required for a subsequent five-year plan.

VISION AND GOALS:

The Township of Armour already has a number of formative plans that set the overall direction for the municipality, and environmental leadership. This Energy Reporting and Conservation and Demand Management Plan is guided by vision and goals contained in our Official Plan and will be influenced by the principal sustainability policy. We are community leaders in the efficient use of energy resources. We will incorporate energy efficiency into all areas of our activity including our organization and human resources management procedures, procurement practices, financial management and investment decisions and facility operations and maintenance. The corporation will encourage community-based energy initiatives.

OVERALL TARGET:

Facilities included in the base year reporting include the municipal office, the municipal garage, the landfill and a community centre.

Based on the energy audits that have been completed on all of our buildings, the Township of Armour has completed all renovations/retrofits that can be done. We are committed to maintaining our energy efficiency and will strive to immediately rectify any deficiencies as they become apparent.

Armour:

- A responsible, cost effective and accountable local government;
- Well managed growth, well planned spaces;
- A safe, livable and healthy community;
- A diverse and sustainable economy; and,
- A thriving natural environment that is a valued community asset to be protected, maintained and enjoyed.

ASSET MANAGEMENT:

Asset Management planning takes into consideration the potential impacts of climate change and any actions that may be required to address vulnerabilities that may be caused by climate change to the township's infrastructure assets. This involves any adaptation opportunities that could arise from climate-driven vulnerabilities, as well as mitigation opportunities such as greenhouse gas emission reduction targets. In addition, mitigation approaches, such as reduced energy consumption, can be a significant decision driver when replacing new assets or rehabilitating existing assets.

The Township of Armour's contribution to climate change through greenhouse gas emissions will be mitigated in accordance with local reduction targets, financial capacity, and stakeholder support. In addition, climate change will be considered as part of the township's risk analysis within its asset management plan. Awareness of infrastructure risks will enable the municipality to balance the potential cost of climate change vulnerabilities with the cost of proactively reducing or eliminating these vulnerabilities before they occur.

ONTARIO REGULATION 507/18:

Ontario Regulation 507/18 was established to help municipalities better understand their energy usage, develop conservation plans and to help guide energy savings and demonstrate leadership in conservation.

The purpose of this Plan is to develop projects to formally address energy management initiatives. The Township of Armour has been committed to energy conservation for many years in order to reduce energy consumption, decrease operating costs and to set an example for the community as to why conservation is important. It is the intention of the municipality to further develop our Energy Reporting and Conservation and Demand Plan and enhance the municipality's commitments as projects develop through Council's approval.

This five-year plan is valid from 2019-2023, at which time a thorough review process will be implemented before proceeding further.

We have appointed the following positions to act as departmental energy efficiency team members:

- Clerk-Administrator
- Waste Management Administrator
- Roads Supervisor
- Administrative Assistant
- Partners and Free Resource Systems:
- LAS/AMO, Energy Planning Tool, Grants

Semi-annual meetings will allow for review of the Energy Management Plan. An annual meeting will allow for the identification of new measures.

SECTION 2: CURRENT STATE, BASELINE & OPPORTUNITY

ENERGY OPPORTUNITY ASSESSMENT:

An energy opportunity assessment was undertaken to confirm the current state of operations, develop an energy consumption, demand and greenhouse gas baseline, as well as to identify and quantify opportunities for improved performance for Township facilities.

The energy opportunity assessment comprised of a brief evaluation of utility consumption history and a brief walk-through of each Township-owned facility. Energy conservation measures (ECMs) have been identified and evaluated for possible application at each Township facility to reduce energy consumption.

PORTFOLIO DESCRIPTION:

The Township has a diverse inventory of buildings. The following portfolio description provides context for the energy opportunity assessment and is consistent with Ontario Regulation 507/18 reporting requirement.

Municipal Building & Council Chambers

56 Ontario Street
Burk's Falls, Ontario

The Municipal Office is a 2304 square foot building (214 square metres) owned by the Township of Armour. The building was built in 1979 and renovated in 2011 to provide the municipality with extra administration space and as well as to provide space for business services in the Emergency Preparedness Plan. The single storey facility consists of a kitchen, office and meeting space. Numerous energy efficiency measures are present in the facility including energy efficient lighting and a ground source heating/cooling system. Blinds in the office are predominately lowered to reduce heat gain during the summer months. The facility is open from 9:00 am – 4:30 pm, Monday to Friday.

Municipal Garage & Yard

564 Garage Road
Burk's Falls, Ontario

The Operations Yard is a year-round operations facility consisting of two main sections; office space, and five truck bays that house a portion of the fleet of maintenance. The garage and office space is a 6000 square foot facility (557 square metres). Heating is provided to the office wing by electric baseboards, while the truck bay is heated with four radiant overhead heating structures by propane. During warmer months the truck bay doors are mainly left open during operational hours to provide ventilation. Furthermore, this allows sufficient light to enter the wing enabling manually operated artificial lighting to remain off for a large portion of the day. In 2015 a 10 Kw Micro FIT solar system was installed. Operational hours during the winter months can be affected by variations of weather conditions resulting in potentially 24-hour operation of the facility. This facility is not open to the general public and does not house any sub-lease space.

Katrine Community Centre

6 Browns Drive
Katrine, Ontario

The Katrine Community Centre is a 3816 square foot building (355 square metres) and an all year facility. The building is a single storey with a basement. The facility consists of a meeting hall, kitchen and support spaces. The facility is a community rental space only; as such it is not open to the public and is only open when rented. The basement of the building is operated by the local senior's Club and is used as a recreational facility for adults over 55 years of age. The facility offers programs, clubs, and support of varying descriptions designed to keep participants engaged in the community and ensure a high standard of life.

Starting in 2019, our Community Centre will also be used as a warming/cooling center for our community.

Berriedale Community Centre

232 North Pickerel Lake Road
Burk's Falls, Ontario

The Berriedale Community Centre is a 1421 square foot building (132 square metres) and an annually leased facility. The building is operated as an antiques store during the summer months only and not occupied year-round. During the non-operational season, all loads including pumps and lighting at the facility are turned off. The lessee pays for the electricity.

12-Three Mile Lake Road

Burk's Falls, Ontario

This facility has a 200 square foot building (18.58 square metres), and an annually leased property. The building is used storage with a mobile food truck (chip truck) on the premises during the summer months only and not occupied year-round. The food truck is owned by the lessee. During the non-operational season, all loads including pumps and lighting at the facility are turned off. The lessee pays for the electricity.

Bicentennial Park – Doe Lake

1014 Ferguson Road
Katrine, Ontario

A structure with wash and change rooms, storage rooms and a mechanical room containing water pumps is located at the public beach. During the non-operational season, all loads including pumps and lighting at the facility are turned off.

Landfill

141 Chetwynd Road
Burk's Falls, Ontario

The Landfill is a shared service with two other municipalities, The Township of Ryerson and The Village of Burk's Falls. It is a year-round facility, providing garbage disposal and recycling programs to the communities. The main 3000 square foot building is not accessible to the public and consists of a 1900 square foot heated room within the facility. The building is steel clad, wood timber frame and built in the late 1980s. The ceiling height in the unheated portion is 30' and 20' in the heated portion. Heating is provided through a forced air system to the enclosed space by natural gas. The facility also include a 10" X 12" attendant shelter which is heated with a high efficiency wall heater.

ENERGY SUPPLY

The types of energy used in the operation of the Township of Armour's facilities and delivery of services include:

- Electricity – provided by Hydro One.
- Natural Gas – provided by Union Gas for the Landfill
- Propane – provided by Moore Propane for the Garage

- Propane – provided by Superior Propane for the Katrine Community Centre

SUMMARY OF CURRENT ENERGY CONSUMPTION

Energy consumption baselines have been established in conformance with the Regulation using 2018 data.

PREVIOUS AND CURRENT ENVIRONMENTAL AND ENERGY-RELATED INITIATIVES

The Township of Armour has developed and implemented policies relating to the environment and energy.

- ✓ A diverse and sustainable economy with the creation of the Official Plan.
- ✓ A thriving natural environment that is a valued community asset to be protected, maintained and enjoyed through our naturalized zones in parks and open spaces, recycling facilities in Township buildings, promotion and participation in the annual Pitch-In Canada Campaign, and Earth Hour participation.
- ✓ A culture of energy conservation and demand management through the energy conservation measures, by facilities as detailed in Section 3 – Our Plan.
- ✓ The Township just passed Bylaw 2019-17, our Tree Canopy & Natural Vegetation Bylaw. A mature urban tree canopy creates shade, which lowers energy consumption for a community. This is accomplished via the direct link of shading households, and a community wide impact of reducing the urban heat island effect.

SECTION 3 – OUR PLAN

GOALS:

Our goals are to create a culture of conservation and to continuously improve the energy efficiency of our facilities and processes in order to reduce operating costs, our energy consumption and greenhouse gas emissions.

OBJECTIVES:

Improve the Township of Armour's understanding of energy consumption and increase staff awareness awhile motivating staff to use energy more efficiently by improving awareness of climate change and greenhouse gas emissions; to report energy performance changes and improvements.

FOCUS AREAS AND POLICIES:

Strategic

Long-term strategic issues:

We will develop and implement energy policies, organize for energy management, develop the required skills and knowledge, manage energy information, communicate with our stakeholders, and invest in energy management measures. Link with other municipal plans as an integral component of the management structure; the energy management plan is coordinated with the municipality's budget planning process.

Departmental responsibilities

We have incorporated energy budget accountability into departmental responsibilities.

Development of Energy Projects

Internal assessments:
We did develop a methodology for the internal assessment of energy performance of municipal facilities and their energy loads. In addition, a process was developed for identifying and cataloguing energy efficiency improvements that will be addressed through semi-annual meetings.

Investment in Energy Projects

Investment criteria:
We did develop and/or clarified as necessary the financial indicators that were applied to investment analysis and prioritization of our energy projects, taking due consideration of the priority given to energy efficiency projects versus other investment needs. We have incorporated the life cycle cost analysis into the design procedures for facility related projects.

Budgetary resources for energy projects

Energy projects were integrated into our capital planning and budget development procedures.

Procurement

Consideration of energy efficiency of acquired equipment:

Our purchasing procedures were modified as required to incorporate energy efficiency into the criteria for selection and evaluation of materials and equipment.

Standards for new buildings

We will consider criteria for the design and/or acquisition of new buildings that include energy performance factors.

SECTION 5 - OUR EXECUTION

All work completed on the plan to date culminates in the development of actions for execution. Generally, an action can be classified as a program, process, or project.

SUMMARY OF ENERGY CONSERVATION MEASURES (ECMs)

Assessments were completed at each facility. A number of common and categorized ECMs were identified. The following table indicates what measures have been identified for each facility. The table is followed by general descriptions of the categorized ECMs.

YEAR	LOCATION	MEASURE	DESCRIPTION
2013	Municipal Office	Paper Reduction	Purchased 5 Asus Tablets
2014	Municipal Office	Electricity	Parking Lot Lights replaced with LED conserving Lumen
		Electricity	Beam Vacuum replaced with Nilfisk Supreme 150 Central Vacuum
	Katrine Community Center	Heating	Climate Control System: Repaired Ducts
		Electricity	Hot Water Heater Replacement
		Heating	Roof Reshingling
		Electricity	Parking lot lights replaced with LED conserving Lumen
	Landfill	Heating	Replace furnace
		Electricity	Install 11 LED interior lights
		Electricity	Lightning Strike Repairs, ballasts, etc.
	Garage	Electricity	Parking Lot lights replaced with LED conserving Lumen
2015	Municipal Office	Heating	HVAC Policy #CDM15-01
		Electricity	Replace GFI plugs
	Landfill	Electricity	Remove 2 lights & replace with LED lights (exterior)
		Electricity	Shut Down Policy #CDM15-02
		Electricity	Replace 2 flood lights with 4 Par 38 LED bulbs & fixtures
	Garage	Solar Power	10kw Micro FIT Solar Panels
	Doe Lake Park	Electricity	Replace 4 outdoor park lights with LED Conserving Lumen
2016	Municipal Office	Window Replacement	Replace front office window
		Electricity	Shredder
	Landfill	Envelope	Repair/Renovate Recycling Building
	Berriedale Community Center	Heating	Replace propane tank venting
	Katrine Community Centre	Electricity	Replaced Fridge/Freezers
		Envelope	Building Repairs
		Electricity	Dishwasher
2017	Municipal Office	Envelope	Building Performance Assessment
		Electricity	Photocopier/Finisher
		Electricity	Mailing/postage machine
		Electricity	High Efficiency Wall Heater x 1
		Electricity	Commercial Vacuum Power Kit
	Garage	Electricity	High Efficiency Wall Heater x 2
	Landfill	Electricity	High Efficiency Wall Heater x 1
2018	Municipal Office	Windows/Doors	Framing removed and insulation blown in to fill in all spaces around both windows and doors
		Paper Reduction	New tablets purchased for all Council members.
		Electricity	New energy efficient dishwasher installed
		Electricity	LED digital sign installed, daylight sensor
2019	Municipality	Envelope	Insulation blown into attic
		Electricity	Outside lights changed to LED and timer installed (off at 11 p.m. and weekends)
		Electricity	Basement renovation using LED lighting

SECTION 6 - OUR EVALUATION

The results of our energy management plan are evaluated annually by monitoring our progress towards our targeted performance, and by reporting the findings to our various stakeholders. Our evaluation will include a review and update of the energy plan as necessary with a continual improvement and revision to plans. The energy plan will be in effect for a maximum of 5 years. Should a facility use change, the energy plan will be amended accordingly.

Ongoing monitoring of consumption: an energy monitoring process will be implemented and maintained as an integral component of our management information system.