



Burman Energy Consultants Group

Township of Chapleau Five Year
Conservation and Demand Management Plan

O.Reg. 397/11 – July 1, 2014

Burman Energy
2/27/2014

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Disclaimer: The information in this document has been prepared in good faith and represents The Township of Chapleau’s intentions and opinions at the time of issue. The Township of Chapleau however, operates in a dynamic environment affected by the changing requirements of customers. The plans are constantly evolving to reflect the most current information and circumstances. The Township of Chapleau, its directors, officers, shareholders or representatives do not accept any liability whatsoever by reason of, or in connection with, any information in this document or any actual or purported reliance on it by any person. The Township of Chapleau may change any information in this document at any time.

EXECUTIVE SUMMARY

Burman Energy has developed this Conservation and Demand Management (CDM) Plan for the Township of Chapleau. This Plan has been designed to facilitate the conservation activities in the municipality and the Township's goal to meet the requirements of the Green Energy Act O. Reg. 397/11, due July 1st, 2014.

This report represents the Five Year Conservation and Demand Management Plan for the Township of Chapleau for 2014-2019. The CDM Plan uses the 2011 baseline Greenhouse Gas (GHG) report as submitted on July 1, 2013, as required by O.Reg.397/11, to identify the present state of energy management in the Township of Chapleau. The Plan outlines the desired state of energy management, and includes recommendations to set goals and targets, aimed at continually improving and managing energy use within the municipality.

The CDM Plan is afforded the benefits of the results of thorough facility energy audits conducted in the premises of the Township of Chapleau. Additionally, monetary incentives from the OPA, accessible through Chapleau PUC as delivery agent, support the decisions to move forward with the implementation of these initiatives.

The Plan identifies the possible measures and opportunities to implement key improvements, geared toward managing energy consumption and costs. By achieving the set targets for GHG emissions reduction and Energy savings, the Township of Chapleau will be moving toward to its preferred state, as identified in the Goals/Objectives section of this Plan.

INTRODUCTION - BACKGROUND

CLIMATE CHANGE ACTION PLAN

In 2007 the Ontario Government announced Greenhouse gas (GHG) reduction targets as part of its "Climate Change Action Plan".

| | |
|------------------|--------------------------------------|
| Base Year – 1990 | 176 million tons of GHG |
| Target: 2014 | Reduction of 6% (below 1990 levels) |
| Target: 2020 | Reduction of 15% (below 1990 levels) |
| Target: 2050 | Reduction of 80% (below 1990 levels) |

Since 2007 a slight decrease was noted, in part due to phasing out coal plants. Adding to the decrease was the recession where energy consumption decreased, reflecting in decreased emissions from 2007-

2009. Initially the recession contributed to the realization of these target reduction goals. However, from 2009-2010 with the increase in economic activity, levels have started to rise again and clearly the challenge remains to continue economic growth, while reducing emissions. This was the impetus for the government action, when they set legislation via the Green Energy Act, influencing public agencies to be part of this solution.

GREEN ENERGY ACT - O.REG. 397/11: REQUIREMENTS FOR MUNICIPALITIES

Conservation is considered Ontario's most environmentally friendly and cost effective resource, and is part of the province's plan to build a clean, modern, reliable energy system.

This new regulation under the Green Energy Act requires public agencies to:

- **Report annually** on energy use and greenhouse gas emissions, beginning July 1, 2013, and post that information online
- **Develop five-year energy conservation plans** starting July 1, 2014, and post those plans on line
- **Post annual reports** on the agency's website and make printed versions available for the public.

ENERGY CONSERVATION AND DEMAND MANAGEMENT PLANNING PROCESS

Environmental concerns are providing a driving force for local municipalities to change the way energy use and energy costs are viewed. Energy must now be considered as manageable input to the business process, much like any other resource cost.

The first step in managing energy costs is to capture information critical to energy management planning. This formalizes the process involved in understanding the relative magnitude of energy costs, the possible ways to reduce energy use, energy targets that are likely to be achievable, and other associated activities that need to occur. This Conservation and Demand Management (CDM) Plan provides the "big picture" view as an ongoing framework for optimizing overall energy use and achieving success.

CDM Planning is intended to be a process of "continuous improvement." The Township of Chapleau has implemented a closed-loop feedback approach in managing the municipal conservation process in an effort to demonstrate the results that will justify further investment in efficiency. The following diagram shows the circular steps that have been adopted into the planning process:



Plan: Create the energy management plan ensuring budgets, resources, and timelines are established to meet the targets and objectives of the plan. The tracking and monitoring processes within the plan will ensure effective reporting to all stakeholders.

Do: Execute the plan by deploying the resources and budgets, developing projects’ design and execution, preparing status reports, and implementing the communication strategy.

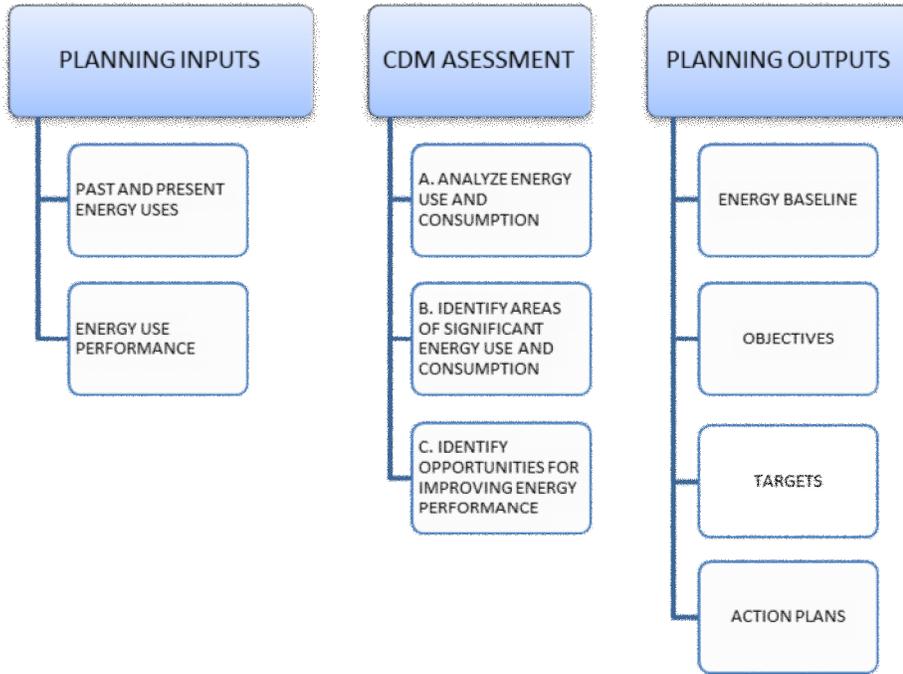
Check: Measure and monitor performance of projects and programs against the desired outcomes as planned and reported to stakeholders with recommendations for improvements and course corrections.

Act: Analyze the variances to the plan and their causes. Recommend improvements, course corrections, and modifications to the plan.

The Township of Chapleau will focus on the energy performance of the municipality and tools to maintain and continually improve energy conservation and demand management. Benchmarking is the process that the Township of Chapleau has implemented for collecting, analyzing and relating energy performance data of comparable activities, with the purpose of evaluating and comparing performance between or within entities.

The CDM planning process including inputs and outputs, is illustrated below:

CDM Planning Process Inputs and Outputs



MISSION, GOALS AND OBJECTIVES

The following represents the Mission Statement for the Township of Chapleau. Core values are included in the graphic that follows:

“Council for the Corporation of the Township of Chapleau endeavors to make Chapleau the cleanest, friendliest, safest and most prosperous and financially stable community in Northern Ontario that ensures the prudent use of taxpayer’s funds to provide for the efficient provision of all essential services and a community that promotes a lifestyle for its citizens that complements the natural beauty of our surroundings.”



This Plan has been developed as a blueprint for energy conservation activities in the municipality. The Plan is consistent with Township responsibilities under the Green Energy Act 2009, and the need to explore mechanisms that balance municipal electricity supply and demand.

The Township of Chapleau has established major goals and objectives within the 5 Year CDM Plan, which will evolve and be revised as deemed desirable. The Township of Chapleau has also established a target to focus its activities. The overall energy reduction target, from 2014-2019 is set at 10%.

MAJOR OBJECTIVES, GOALS AND ACTIONS OF THE CDM PLAN

Objectives

- ✓ Maintain clean community, protect the environment and conserve natural resources through energy conservation, energy demand management and GHG reduction.
- ✓ Identify barriers to energy efficiency.
- ✓ Select projects that are cost-effective and implementable.
- ✓ Determine environmental impacts and economic benefits of projects.
- ✓ Select leadership and participants for successful implementation.
- ✓ Promote energy surveys and audits.

Goals

- ✓ Develop sustainable energy practices.
- ✓ Achieve 10% reductions in energy consumption and peak loads.
- ✓ Explore opportunities to balance energy supply and demand with maximum resource efficiency.
- ✓ Create economic net benefits to the municipality.
- ✓ Protect and enhance the local, national and global environment.
- ✓ Work collaboratively with Chapleau Public Utilities Commission to:
 - Implement cost-effective programs that enhance Energy Efficiency and Load Management.
 - Provide consumer information and education on energy conservation.
 - Promote activities for implementation of energy conservation programs.

Actions

- ✓ Establish a team to develop and sustain energy conservation ideas and initiatives.
- ✓ Foster energy conservation ideas/discussion within operations and administration meetings and on agendas.
- ✓ Educate management and operations staff regarding energy efficiency and share energy savings results.
- ✓ Communicate municipal-led energy conservation projects to local energy utilities to leverage community advertising of event.
- ✓ Publicize energy retrofits in public buildings as an example for the community.
- ✓ Track accomplishments and monitor progress of energy related projects.
- ✓ Identify sources of financing and support for energy projects and programs.
- ✓ Encourage energy efficient land development practices.
- ✓ Urge architects to produce energy-efficient building designs.
- ✓ Promote energy efficient homebuilding codes.

- ✓ Explore energy saving opportunities such as: lighting, indoor climates, hot water, refrigeration, and industrial processes.
- ✓ Reduce transportation fuel costs by: increasing fuel efficiency, promoting efficient use of vehicles, and reducing demand for travel.
- ✓ Explore experiences in other communities.

MUNICIPAL COUNCIL COMMITMENT

This CDM Plan has been approved by the Township of Chapleau Municipal Council, championed by the municipality and other key community stakeholders, with the primary goal to implement the Five Year Plan in the local community setting.

The Council of the Township of Chapleau is fully committed to energy conservation and GHG emission reduction. This Conservation and Demand Management Plan has been supported by Council in the following critical areas:

- Ensuring that the objectives are established and met
- Communicating to different stakeholders the importance of meeting the objectives, goals and targets
- Establishing the CDM Guiding Principles (Appendix C)
- Conducting ongoing CDM Plan Reviews with the input of various stakeholders
- Ensuring the availability of resources

RESPONSIBILITY, AUTHORITY AND COMMUNICATION

The Township of Chapleau's activities as related to energy conservation and GHG emission reduction advocacy are to be implemented through the following framework levels:

- The Township of Chapleau Council will:
 - ✓ Approve the CDM Plan
 - ✓ Determine on-going modifications to plan as necessary
 - ✓ Provide advocacy in promoting energy conservation and GHG emission reduction
 - ✓ Provide general oversight of the plan rollout into operational realities
- CDM Team (Township Council and Senior Staff) will:
 - ✓ Develop the CDM Plan and facilitate various plan execution activities
 - ✓ Manage and Monitor Performance against plan
- Key Project Stakeholders will:
 - ✓ Support the CDM Plan execution
 - ✓ Provide input in planning and project activities

COMPETENCE, AWARENESS AND TRAINING

Employees will receive training, to be accomplished through instruction documents, directives and job aids. Training will be focused on specific equipment, processes and monitoring of energy conservation and GHG emission reduction practices.

The Township of Chapleau has also recognized the importance of a community-wide natural resources conservation and environmental preservation culture, driven by the municipal government and key stakeholders. The Township of Chapleau will provide regular outreach and updates on how the energy conservation objectives and targets are met. The Township of Chapleau will also identify the GHG emission reduction issues on a regular basis.

ENERGY CONSUMPTION

FACILITY ASSESSMENTS

The Township of Chapleau retained Burman Energy to perform energy audits and/or facility assessments for the following facilities:

- ✓ Moore Arena
- ✓ Centennial Museum
- ✓ Water Plant
- ✓ Sewage Treatment Plant
- ✓ Riverside Lift Station
- ✓ Lisgar Lift Station
- ✓ Dufferin Lift Station
- ✓ Public Works Garage
- ✓ Civic Centre
- ✓ Fire Hall
- ✓ Public Library
- ✓ Airport

The five-year CDM Plan incorporates the results of this facility audits and assessments. The plan may be amended and updated as more information from completed retrofit installations become available, and as the CDM Plan matures.

GHG BASELINE

In compliance with O. Reg. 397/11 requirements, the Township of Chapleau has completed its baseline GHG report, which was submitted to the Ministry of Energy on July 1, 2013. This baseline report gathered data from January 2011 – December 2011 with additional evaluations and updates for 2012 and 2013. The information collected via Energy Audits and extensive analyses have formed the basis from which targets, activities and measures have been set in the Five Year CDM Plan. (See Appendix A)

FIVE YEAR CDM PLAN

The Township of Chapleau is committed to maintaining customer satisfaction and improving service quality, while delivering sustainable and reliable cost effective services to the community meeting regulatory requirements and obligations. The Township of Chapleau seeks to enhance Conservation and Demand Management to benefit the local community and to facilitate potential future implementation of renewable generation, green gas reduction and energy efficiency optimization projects. This CDM Plan also identifies opportunities for continued energy conservation measures and sustainability initiatives to build on existing plans.

The Township of Chapleau anticipates a variety of benefits in having a CDM Plan. Reducing energy consumption can result in freeing up limited funding which could be better directed towards core activities. With a focus on being, 'green' this commitment resonates with the general public opinion.

The CDM Plan is based on the Township of Chapleau's business mission statement to focus on achieving an optimal balance between the key elements of conservation management, service levels, costs and business risk. This plan outlines the long-term strategy for managing Conservation Demand Management. The current CDM Plan covers the conservation projects for the next five years.(Appendix B-1)

Conservation and Demand Management Planning is not a static process. As circumstances change (e.g. technologies, standards, knowledge, etc.) the expenditure interventions required in a given year are likely to fluctuate, and the plan may be revised accordingly. Interim reviews and specific Plan adjustments may be required to better serve the dynamics of the business environment. Additional research and planning will be necessary to establish consumption targets and develop initiatives for consideration during the budget process and coordination with capital forecasts.

ANALYSIS: MEASURES

CDM MEASURES

The CDM measures considered in development of the plan include:

- Technical Measures
- Organizational Measures
- Behavioural Measures

IDENTIFICATION OF CDM MEASURES

Burman Energy conducted energy audits on the facilities in 2011 -2012, and developed reports on Energy Consumption and GHG emissions. Further discussions and consultations with staff and managers may reveal additional operational/behavioural opportunities to be amended in this plan.

Incentives, where possible, have been accessed, through the OPA incentive programs. Given the status of these programs, and their slated end date of December 31, 2014, those projects identified as eligible for the OPA program incentives, which provide immediate cost savings and energy conservation target achievement potential, are to be considered as a high priority.

Where possible, additional opportunities have been identified for low-cost operational and maintenance improvements in existing buildings and equipment to bring the buildings and equipment up to the design intentions of their current usage. This focus is on optimizing existing system performance, rather than relying on major equipment replacement.

The CDM Guide developed by the Ministry of Energy encourages that the following strategic planning process be considered when determining goals, targets, and measures toward achieving the vision of the 5 Year CDM Plan. This process was followed in the development of the Five Year CDM Plan. This forms the basis for an illustrative chart which is included, discussing technical, operational and behavioural measures.

Burman Energy has deployed a robust methodology through the CDM Planning Process in the following stages:

- **DEFINE THE PREFERRED STATE** - The preferred state is where the Municipality wishes to be with respect to energy and energy conservation. This sets the long-term direction and vision for energy management for the Township of Chapleau. In essence, this forms the basis used to identify goals and objectives.
- **IDENTIFY THE PRESENT STATE** - The present state is the current energy use within the Township of Chapleau, and indicates the variance between current energy usage and preferred energy usage.
- **IDENTIFY MEASURES** - At this stage, specific measures are identified to move from the present to the preferred state of energy management. Priorities are assigned to aid with effective implementation of the plan.
- **DOCUMENT RESULTS** - The results of the strategic planning session should be documented in the CDM plan along with the other planning requirements discussed in this guide.

A summary of recommended measures for the Township of Chapleau follows:

Summary of Energy Conservation Measures

| PREFERRED STATE | PRESENT STATE | MEASURES | PRIORITY | TIMELINE |
|--|--|---|----------|-----------|
| ORGANIZATIONAL AND BEHAVIORAL MEASURES | | | | |
| Established Energy Conservation Organizational System | CDM Projects have been identified. Lack of structured evaluation driven program exists | Implement sustainable CDM Program | Medium | 5 years |
| Sustained employee awareness and engagement in energy conservation activities | Staff is building awareness about energy conservation and is getting engaged in various activities | Establish a CDM Lead team to provide training and sustain energy conservation ideas and initiatives. | Low | 4 years |
| Consumer information and education provided | Lack of information about energy conservation best practices | Explore experiences in other communities and promote energy conservation best practices | Low | 4 years |
| TECHNICAL MEASURES | | | | |
| Optimized energy efficient lighting | Lighting energy consumption in the buildings is high. Energy inefficient T-12 HO lamps require replacement | Install LED lighting , T-8 lamps and ballast , de-lamp and remove unnecessary light bulbs | High | 1-2 years |
| Optimized energy consumption of buildings | Energy consumption for building maintenance is high | Monitor energy consumption scheduling and install PLCs and times, install energy-smart products | Low | 4 years |
| Optimized energy consumption parameters related to ice arena maintenance | Ice rink energy consumption is high | Optimize the temperature of floodwater for the ice rink | Low | 4 years |
| Reduced energy consumption of Pumping stations | Water consumption relates to the pumps usage and directly increases energy consumption | Reduce water consumption , install closed glycol loop for the ice rink | Medium | 3 years |
| Optimized functional parameters of the Pumping stations with energy efficient design | Energy inefficient pumps (end of life) | Replace the old pumps with new energy efficient pumps, install VFDs to optimise the functional parameters and energy consumption of the remaining pumps | High | 1-2 years |
| Reduced energy consumption of blower motors and other motors | High energy consumption from inefficient old motors | Replace the old motors where feasible with energy efficient new motors. Also install VFDs to reduce the energy consumption to | High | 4 years |

| | | | | |
|--|--|--|--------|---------|
| | | optimal and sync belts | | |
| Reduced electrical consumption for heating and hot water heating | High electrical consumption from heating and hot water | Install ceiling fans , install electro thermal storage , install dc-superheater for hot water | Medium | 3 years |
| Sustainable low cost renewable generation for local consumption | No existing solar generation projects (upstream transmission system capacity constraints prevents connection of FIT projects) | Install solar generators where possible. Work with stakeholders to enable the renewable generation projects. | Low | 4 years |

COSTS, SAVINGS AND LIFESPAN OF MEASURES

Appendix B-2 illustrates the direct cost and savings estimates for the proposed high priority measures, the estimated time that measures will be in place, and post project performance monitoring guidelines.

RENEWABLE ENERGY

The Township of Chapleau is currently not planning renewable energy projects; upstream transmission capacity constraints currently do not support the connection of these types of projects.

Any renewable energy projects will be included in this Plan and this plan will be revised if the future Transmission and Distribution System Development can accommodate the renewable generation projects.

PLAN IMPLEMENTATION

The CDM Five Year Plan considers overall five-year targets for GHG reduction and includes recommendations as to which measures can be most readily implemented to achieve targets. Informed decisions have been determined based on the established priorities.

PRIORITIZING OF MEASURES

The conservation measures are prioritized in several areas: implementation costs and savings, simple payback and Net Present Value (NPV) Analysis. Other less obvious measures are included based on factors such as ease of implementation and importance, the propensity to participate as determined by the Township of Chapleau and/or the CDM team.

TIMELINES FOR MEASURES IMPLEMENTATION

Timelines are assigned based on measures/ facility prioritization. These timelines allow for flexibility during implementation, and will be dependent upon the costs/incentives and business decisions driven by the Township of Chapleau.

RESPONSIBILITY FOR MEASURES

The Township Council and Senior Staff are responsible for overseeing implementation of the conservation measures. Additionally, the Township of Chapleau will establish guidelines, and/or use discretion to determine accountability for implementation.

INTEGRATION OF CORPORATE ACTIVITIES WITH CDM PLAN

The Township of Chapleau will make available any information relating to municipal initiatives geared toward energy conservation so that results and targets are met. The Township of Chapleau will work with other stakeholders, agencies and organizations to collaboratively achieve targets. Promotion of the CDM Plan Goals and Objectives will encourage successful implementation of the Plan.

MONITORING & EVALUATION – POST CDM PLAN – DUE JULY 1, 2019

Ontario Regulation 397/11 requires that the Township of Chapleau to report on the results of the Plan at the end of the 5-year planning period. At that time, the Township of Chapleau will provide an update to include any revisions to the Plan. The Township of Chapleau will submit and publish the Energy and Greenhouse Gas Emission Template, as it will continue to do annually following its original submission of 2011 GHG levels, as submitted on July 1, 2013. The revised Plan will be completed by July 1, 2019 and will provide:

- ✓ A description of current and proposed measures for conserving and otherwise reducing energy consumption and managing its demand for energy
- ✓ A revised forecast of the expected results of the current and proposed measures
- ✓ A report of the actual results achieved
- ✓ A description of any proposed changes to be made to assist the public agency in reaching any targets it has established or forecasts it has made.

ADMINISTRATION

The CDM Plan is publicly available through:

- Publishing the CDM plan on the Township of Chapleau website

- Printed form, available for the public, at Town Hall

A cover letter, signed by the Council confirming approval of the CDM plan, and affirming commitment to implementing the Plan is included.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

- The Township of Chapleau is on its way to the implementation of a robust CDM Culture
- The Township of Chapleau has completed energy audits supporting the investment decision in technologies to reduce electricity expenditures
- Reasonable targets have been set, and appear to be achievable by the analysis done with the facility assessments
- A structured implementation approach has been outlined to secure the success of the CDM initiative

RECOMMENDATIONS

- Facilitate the CDM team and the key stakeholders through stakeholder analysis and active input
- Develop a CDM Program
- Revise plan as required based on the collected performance data
- Revisit the energy assessments toward the end of the 5 year period to set a successful future planning

APPENDIX A

GHG Report – 2011 (as submitted July /2013, and forming the baseline “present state” from which the CDM Plan is derived)

GHG Report – 2012 (as required to be included, but not submitted-due July 1/2014)

APPENDIX B

CDM Plan details

APPENDIX A

| Energy Consumption and Greenhouse Gas Emissions Reporting - for 2011 | | | | | | | | | | | | | | | |
|--|---|--------------------|--|-------------|--------------------------|---------------------------|--|----------------|---------|--------------------|------------------------------|-------------------------------------|---|-----|-------|
| Confirm consecutive 12-month period | 01/2011 TO 12/2011 | | | | | | | | | | | | | | |
| (Sector): | Municipal | Please fill in the | | | | | | | | | | | | | |
| Agency Sub-sector | Municipality | | | | | | | | | | | | | | |
| Organization Name | TOWNSHIP OF CHAPLEAU | | | | | | | | | | | | | | |
| Operation Name | Operation Type | Address | Total Floor Area of the Indoor Space in which Operation is Conducted | | Average # Hours Per Week | Annual Flow (Mega Litres) | Energy Type and Amount Purchased and Consumed in Natural Units | | | | | | Total (These columns will calculate when file is Saved) | | |
| | | | | | | | Electricity | Fuel Oil 1 & 2 | Propane | GHG Emissions (Kg) | Energy Intensity (ekWh/sqft) | Energy Intensity (ekWh/Mega Litres) | | | |
| Moore Arena | Indoor ice rinks | Maple Street | 49,779 | Square feet | 108 | | 893,018 | kWh | 3,556 | Litre | | | 81,140 | 19 | |
| Centennial Museum | Cultural facilities | Monk Street | 1,538 | Square feet | 48 | | 3,596 | kWh | | | | | 288 | 2 | |
| Water Plant | Facilities related to the treatment of water | Water Plant Road | 5,985 | Square feet | 168 | 362 | 594,573 | kWh | | | | | 47,566 | 99 | 1,642 |
| Sewage Treatment Plant | Facilities related to the treatment of sewage | Riverside Drive | 992 | Square feet | 168 | 406 | 153,065 | kWh | | | | | 12,245 | 154 | 377 |
| Riverside Lift Station | Facilities related to the pumping of sewage | Riverside Drive | 450 | Square feet | 168 | 406 | 148,334 | kWh | | | | | 11,867 | 330 | 365 |
| Lisgar Lift Station | Facilities related to the pumping of sewage | Lisgar Street | 392 | Square feet | 168 | 28 | 13,681 | kWh | | | | | 1,094 | 35 | 483 |
| Dufferin Lift Station | Facilities related to the pumping of sewage | Dufferin Street | 392 | Square feet | 168 | 71 | 34,182 | kWh | | | | | 2,735 | 87 | 483 |
| Public Works Garage | Storage facilities where equipment or vehicles are maintained, repaired or stored | Martel Road | 6,520 | Square feet | 40 | | 1,467 | kWh | | | 17,699 | Litre | 27,444 | 19 | |
| Civic Centre | Administrative offices and related facilities, including municipal council chambers | Pine Street | 4,483 | Square feet | 40 | | 72,270 | kWh | | | | | 5,782 | 16 | |
| Fire Hall | Fire stations and associated offices and facilities | Pine Street | 6,028 | Square feet | 168 | | 97,191 | kWh | | | | | 7,775 | 16 | |
| Public Library | Public libraries | Pine Street | 4,946 | Square feet | 32 | | 79,746 | kWh | | | | | 6,380 | 16 | |

APPENDIX B-1

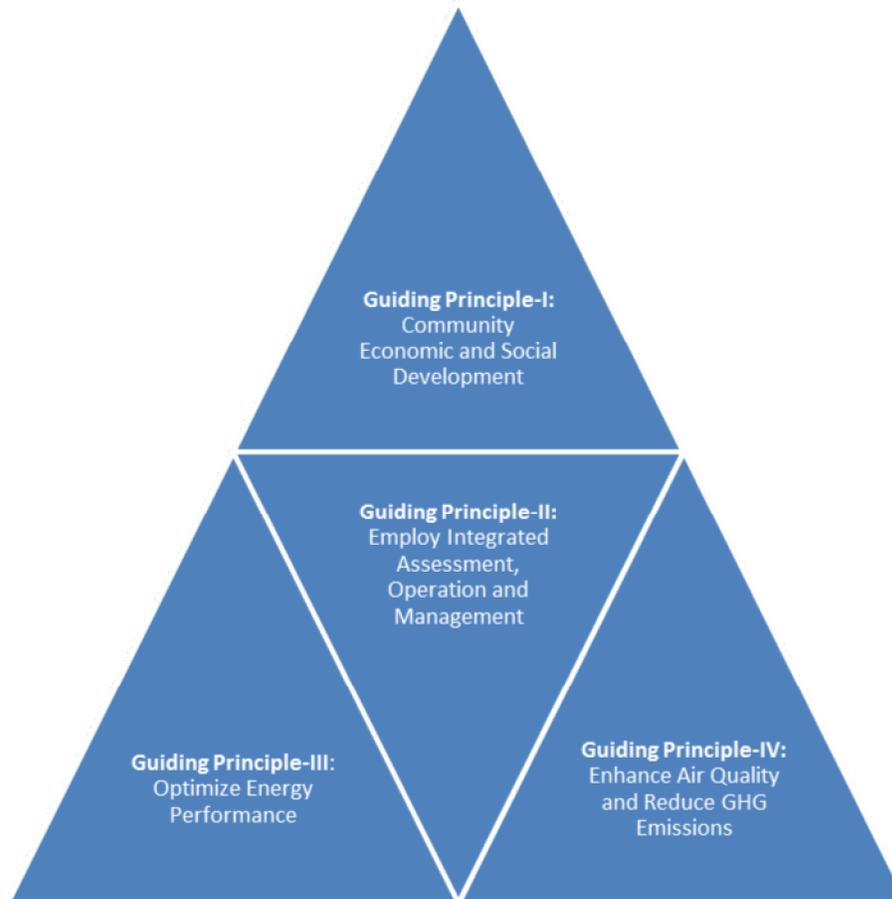
| Operation | Type | MEASURES | | | | | Other |
|------------------------|---|-------------------|-------------------|---------------|----------------|-----|------------------------|
| | | Lighting Retrofit | Building controls | Replace pumps | Replace Motors | VFD | |
| Moore Arena | Indoor ice rinks | X | X | | | X | De SuperHeat |
| Centennial Museum | Cultural facilities | X | | | | | |
| Water Plant | Facilities related to the treatment of water | X | | X | | X | De Stratification Fans |
| Sewage Treatment Plant | Facilities related to the treatment of sewage | X | | | X | | |
| Riverside Lift Station | Facilities related to the pumping of sewage | X | | X | | | |
| Lisgar Lift Station | Facilities related to the pumping of sewage | X | | X | | | |
| Dufferin Lift Station | Facilities related to the pumping of sewage | X | | X | | | |
| Public Works Garage | Storage facilities where equipment or vehicles are maintained | X | | | | | Radiant Heaters |
| Civic Centre | Administrative offices and related facilities | X | | | | | De Stratification Fans |
| Fire Hall | Fire stations and associated offices and facilities | X | | | | | |
| Airport | Transportation | X | | | | | |
| Public Library | Public libraries | X | | | | | De Stratification Fans |

APPENDIX B-2

| Operation | Type | Location | Size | Hours | Electrical Consumption [kWh] | Target | Priority | Implementation Time | Savings | |
|------------------------|---|------------------|-----------|-------|------------------------------|--------|----------|---------------------|----------------------|-----------------------|
| | | | | | | | | | Energy Savings [Kwh] | Cost savings per year |
| Moore Arena | Indoor ice rinks | Maple Street | 49,779.00 | 108 | 893,018 | 24% | High | 1-2 years | 214,324.32 | \$23,575.68 |
| Centennial Museum | Cultural facilities | Monk Street | 1,538.00 | 48 | 3,596 | 35% | Low | 4 years | 1,258.6 | \$138.45 |
| Water Plant | Facilities related to the treatment of water | Water Plant Road | 5,985.00 | 168 | 594,573 | 20% | High | 1-2 years | 118,914.6 | \$13,080.61 |
| Sewage Treatment Plant | Facilities related to the treatment of sewage | Riverside Drive | 992.00 | 168 | 153,065 | 4% | High | 1-2 years | 6,122.6 | \$673.49 |
| Riverside Lift Station | Facilities related to the pumping of sewage | Riverside Drive | 450.00 | 168 | 148,334 | 3% | High | 1-2 years | 4,450.02 | \$489.50 |
| Lisgar Lift Station | Facilities related to the pumping of sewage | Lisgar Street | 392.00 | 168 | 13,681 | 0.40% | Low | 4 years | 54.724 | \$6.02 |
| Dufferin Lift Station | Facilities related to the pumping of sewage | Dufferin Street | 392.00 | 168 | 34,182 | 9% | High | 1-2 years | 3,076.38 | \$338.40 |
| Public Works Garage | Storage facilities for equipment | Martel Road | 6,520.00 | 40 | 1,467 | 7% | Medium | 3 years | 102.69 | \$11.30 |
| Civic Centre | Administrative offices and related facilities | Pine Street | 4,483.00 | 40 | 72,270 | 1% | Medium | 3 years | 722.7 | \$79.50 |
| Fire Hall | Fire stations and associated offices and facilities | Pine Street | 6,028.00 | 168 | 97,191 | 1% | Medium | 3 years | 971.91 | \$106.91 |
| Airport | | 5 Concession | 3,726 | 84 | 37,036 | 13% | High | 1-2 years | 5,000 | \$550.00 |
| Public Library | Public libraries | Pine Street | 4,946.00 | 32 | 79,746 | 1% | Medium | 3 years | 797.46 | \$87.72 |

APPENDIX C

Below are the Conservation and Demand Management Guiding Principles used by the Town of Chapleau



GUIDING PRINCIPLE I: COMMUNITY ECONOMIC AND SOCIAL DEVELOPMENT

- ✓ Invest in energy efficient technologies or local renewable energy projects that will stimulate the local economy.
- ✓ Invest in projects that will create direct and indirect employment in the local community.
- ✓ Explore future revenue streams, incentives and financial benefits for the community.

GUIDING PRINCIPLE II: EMPLOY INTEGRATED ASSESSMENT, OPERATION AND MANAGEMENT

- ✓ Implement sustainable operations and maintenance practices, to be integrated with other sustainability processes.

- ✓ Incorporate sustainable operations and maintenance practices within the appropriate business procedures.
- ✓ Assess existing condition and operational procedures of buildings and major building systems and identify areas for improvement.
- ✓ Establish operational performance goals for energy conservation and GHG emissions reduction and ensure incorporation of these goals throughout the day-to-day operations.
- ✓ Incorporate energy conservation education and ensure that it is carried out on a regular basis.
- ✓ Enhance facilities operations and maintenance as needed, using employee feedback and suggestions.

GUIDING PRINCIPLE III: OPTIMIZE ENERGY PERFORMANCE

- ✓ Demonstrate energy efficient operations.
- ✓ Use energy efficient products where available (e.g. Energy Star listed products).
- ✓ Implement renewable energy on site where possible.
- ✓ Install building level and equipment level electricity meters to track and continuously optimize energy performance.
- ✓ Consistently track and analyze energy performance data.
- ✓ Set visionary targets and refine roadmap actions.
- ✓ Undertake economically viable energy conservation initiatives

GUIDING PRINCIPLE IV: ENHANCE AIR QUALITY AND REDUCE GHG EMISSIONS

- ✓ Eliminate the use of ozone depleting compounds where alternative environmentally preferable products are available.
- ✓ Prohibit tobacco smoking within the building and within 25 feet of all building entrances, operable windows, and building ventilation intakes.
- ✓ Enhance healthier community living with improved local air quality.

ILLUSTRATIVE ENERGY CONSERVATION PYRAMID

