

Designing a Ontario Municipal Energy Plan Program in the Town of New Tecumseth

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Report of a Major Project submitted to the Faculty of Environmental Studies in partial fulfillment of the requirements for the degree of Master in Environmental Studies, York University Ontario, Canada

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FOREWORD

This Major Research Project is the final document to satisfy the requirements of my Plan of Study in the Master in Environmental Studies Planning Program in the York University Faculty of Environmental Studies. This project assembles a case study on the Municipal Energy Plan process which draws on the three components of my Plan of Study:

1. Planning theory and practice;
2. Sustainable communities; and,
3. Energy planning theory and practice.

Component #1, 'Planning theory and practice' entails an understanding how municipalities set up strategic plans, official plans, master plans, zoning bylaws and other policy documents. Second, this component helped me to understand where and how energy planning policies fit into these traditional planning policies and provisions. This component also showed me how the spatial distribution of land use directly impacts energy systems. Third, I discovered how planning policy is used as a tool to identify energy landscapes in need of improvement, steps towards energy reduction, and different ways production can be explored. The interdisciplinary nature of my research and my project will help create more unified, sustainable and resilient communities that are supported by the Provincial Policy Statement and Planning Act.

Component #2, 'Sustainable Communities', sought to discover how sustainable communities are planned, and built to promote and maintain a lifestyle that is defined by the limitations of its surrounding environment. These limitations are unique to every community. The component was also about discovering how local or regional policies based on quantitative methodology can define the point at which an environmentally sensitive area begins to degrade and lose the ability to recover. These limitations must be respected throughout governing policies. I also sought to understand which policies are most supportive of such plans, as well as what new policies need to be implemented to ensure energy planning strategies are successful.

Component #3, 'Energy Planning Theory and Practice' sought to understand the factors defining current energy policies and systems. It also sought to explore how transitions between existing policies and infrastructure, to new policies and implementation frameworks take place. Finally I sought to understand how new sustainable energy policies impact local governments.

Each of these three components is imbedded throughout this project's research, methodology, interviews and analysis. The Planning Act and the Provincial Policy Statement incorporates language that guides and strengthens the role of renewable and

sustainable energy systems. The provincial government has dictated how policy makers should incorporate these policies into their plans. My project has focused on the provincial government's role in providing incentives, as well as process and policy frameworks, to help guide lower tier governments towards completing plans that result in significant reductions in energy use and greenhouse gas (GHG) emissions.

My project has resulted in a report to council outlining how a small lower tier municipality would enter the Ministry of Energy's Municipal Energy Plan Program (MEP). It also includes the associated application to the program. The project as a whole contains the Report to the Town of New Tecumseth's Committee of the Whole, the MEP Program Application, and the Project Reflection Paper.

COMMITTEE OF THE WHOLE

September XX, 2015

REPORT #PD-2015-XX MUNICIPAL ENERGY PLAN PROGRAM SUBMISSION TOWN OF NEW TECUMSETH

RECOMMENDATION

THAT Report #PD-2015-XX be received; and,

THAT Staff be directed to complete an application to the Ministry of Energy (MOE) pursuant to Option 1 as outlined in Report PD 2015-XX.

OBJECTIVE

The purpose of this report is to provide Council with background information regarding a proposal to introduce and apply to the province of Ontario's Municipal Energy Plan program for funding to create and implement a community energy plan.

The Municipal Energy Plan Program ("MEP Program") is designed to help municipalities better understand their local energy needs and opportunities, as well as set energy reduction or efficiency goals and develop a final implementation plan. The MEP Program has two funding streams; one that updates existing policies and the other that implements new policies. The funding provided by the provincial government occurs in each stage of the process. The Town of New Tecumseth has the opportunity enter into the MEP Program and to choose which funding stream is best suited to meet their needs.

BACKGROUND

THE MEP PROGRAM

A Municipal Energy Plan outlines sustainable energy planning tools and practices at the local level. These plans are typically prepared and implemented by local municipalities. An MEP implements policy tools that aim to reduce greenhouse gas (GHG) emissions in Ontario's communities; implement urban planning and design methods for energy-efficient communities on a spatial and temporal scale; and, implement energy management strategies that incorporate the use of sustainable energy sources as well as efficiency and conservation measures in community design and built forms. These plans set out measurable targets that can easily understood and continually re-assessed. The MEP Program proposed to council within this

report will result in tangible targets for a reduction in energy use, GHG emissions and monetary savings.

The MEP is a new initiative launched by the Ministry of Energy (MOE) in 2013, and is currently in its second year of submission acceptance. This is a unique program that reaches out to work directly with smaller to medium sized municipalities. According to the supplementary material provided by the MOE, the MOE supports municipalities that are looking to understand their local energy needs, identify opportunities for energy efficiency, and promote clean energy. This new program also supports the creation and execution of implementation strategies for obtaining the objectives listed above. These implementation strategies have the potential to be more effective if integrated into other municipal policy documents. The culmination of these strategies will result in the creation of a plan that outlines a measurable targets and measurable energy and GHG outputs.

The MOE's program allows communities to apply for funding in order to complete their own Municipal Energy Plan (MEP). The goal of the MEP program is to aid in a community's efforts to assess their energy use and Green House Gas (GHG) emissions through data collection and/or purchase of data, identify areas to reduce and conserve energy use, support local economic development, and find systems to integrate renewable and sustainable energy generation (Ontario Ministry of Energy, 2014).

The Ontario MOE is primarily focused on assisting small to medium sized municipalities (municipalities with populations under 50,000 and 150,000 respectively) in Ontario to participate in their Municipal Energy Plan program (Ontario Ministry of Energy, 2014). Small and medium sized municipalities across Ontario are looking to produce MEPs as a way to reduce overhead costs for heat and energy usage, diversify revenue, generate jobs, and invest in creating a more sustainable and resilient community, which is promising for both the municipal corporation and the greater community (Ontario Ministry of Energy, 2014).

The MOE has outlined a specific guideline process for not only the MEP itself, but for the submission process as well as the financial grant process. The MOE has set up two types of funding streams; the first is for energy plan creation where the MOE will pay half of the total costs, up to a maximum of \$90,000. The second funding stream allocates half of the eligible costs, up to a maximum of \$25,000, to update an existing plan (Ontario Ministry of Energy, 2014). Existing Plans can include an already fully developed or partially developed Municipal Energy Plan, a Climate Action Plan, or another type of energy plan (Ontario Ministry of Energy, 2014). The MOE outlines three stages within the application process and the three stages are as follows:

1. Seek input from stakeholders (community engagement strategy);
2. Collect and analyze information about energy use in all sectors (data collection and mapping); and,

3. Create a Plan and have it approved by Municipal Council.

(Ontario Ministry of Energy, 2014)

THE TOWN OF NEW TECUMSETH

Currently, the Town of New Tecumseth utilizes an Energy Conservation and Demand Management Strategy, which summarized the Town's energy usage and goals towards achieving a target of a one percent (1%) energy reduction. This plan outlines a goal of \$17,600 in annual Town energy savings which is just a start towards potential energy savings.

The plan outlines a section titled "New Tecumseth Energy Needs," which is profile on energy needs for New Tecumseth as a Corporation, but no profile has been established for the rest of the Town. Residential, commercial, and industrial energy use are a large part of the net energy consumption and therefore should be understood in order to identify community needs. Staff have recognized a need to identify the areas of high energy consumption as well as areas of high emissions, in order to implement monitoring systems and reduction plans. Overall, staff have identified the current Energy Conservation and Demand Management Strategy as a preliminary document as it does not adequately cover the breadth of study required to make a significant reduction in energy consumption and subsequent emissions. The current Energy Conservation and Demand Management Plan has no timelines for continued research, no deadlines for policy updates, and weak implementation language. The only mention a step towards reduction is a contract with Honeywell Limited to create an Energy Improvement Plan specific to the municipal corporation itself and will look to reduce energy usage by one percent (1%). This plan will look at efficiency improvements not GHG emission reduction.

In 2012, the Town of New Tecumseth spent approximately \$1,655,217 on natural gas and electricity (automotive fuel is not included within this figure). The \$8,000 Honeywell contract is forecasted to save approximately \$17,000, or one percent (1%), of total energy expense incurred by the Town. A majority of this annual energy expenditure does not stay within New Tecumseth. By creating a Community Energy Plan, the Town could retain a majority of energy costs by producing its own energy and finding further efficiencies/ reduction targets with community members. For example, creating a community partnership with common goals and targets can reduce its expenditure and impact by much more than one percent (1%). It would also strengthen community ties, and introduce a more holistic approach to reducing GHG emissions and energy usage. In order to create a more well-rounded document that includes alternative energy reduction strategies for the Town, staff have identified two potential funding options for the Town to move forward. Both options include participation in the Ontario Ministry of Energy's Municipal Energy Plan program.

OPTION 1

Enter Funding Stream to Develop a New Municipal Energy Plan:

This stream provides successful applicants with funding for 50 per cent of eligible costs, up to a maximum of \$90,000 to develop a municipal energy plan. It provides opportunity for working groups amongst fellow applicants, and MOE support.

The Town would see the following beneficial outcomes if a new Municipal Energy Plan or updated Energy Conservation and Demand Management Strategy is completed:

- Economic Benefit
 - The Town would save a large amount of energy dollars annually,
 - It will encourage private investment, and
 - There will be growth of municipal infrastructure.
- Environmental Benefit
 - Reduced air emissions,
 - Reduced GHG footprint Town-wide, and
 - Create more Town-wide education and awareness opportunities.
- Energy Resilience
 - Increased energy security and flexibility Town-wide,
 - Diversify sources of energy, and
 - Decrease costs of energy Town-wide.

OPTION 2

New Funding Stream to Enhance an Existing Energy Plan:

The ministry is introducing a second funding stream for municipalities that have already developed a complete or partial Municipal Energy Plan, Climate Action Plan, or other energy plan. This funding is for enhancing an existing energy plan, such as updating utilities or structure data and/or creating new implementation plans or maps. Successful applicants to this stream will receive 50% of eligible costs, up to a maximum of \$25,000.

This update would enhance the current Energy and Demand Management Plan, but would not offer the same scope or depth of economic, environmental, and energy benefits. The following are these benefits:

- Economic Benefit
 - Some energy savings - perhaps an additional 1%.
- Environmental Benefit
 - Municipal reduction of emissions, and
 - Minimal public interaction or education.
- Energy Resiliency
 - Resiliency for municipal buildings.

In order to understand the choices other municipalities have made to reduce their emissions, staff have spoken to MEP representatives from Wawa, Kingston, Woodstock, Newmarket and Chatham-Kent.

OTHER ONTARIO MUNICIPALITIES

Staff surveyed a number of municipalities to determine how and why other municipalities were implementing the MEP program:

Municipality of Wawa, Ontario

On October 30th, 2013, the Council of the Municipality of Wawa passed a report that began the MEP program application process. They decided to enter into the Plan creation program and, as such, are eligible for up to \$90,000 in funding. Wawa contracted the economic development department to run the program. This was done because, 1) there were qualified staff to complete the program, and 2) a main component of the MEP program is community engagement. Meaningful and more complete community engagement is planned to be accomplished with insiders who have a connection to the area and insight into the existing community groups. Wawa currently has no access to natural gas. This results in higher than average heating fuel expenses. These fuel expenses were resulting in vulnerable people having to choose between heating their home or buying food. There is also a high number of renters in the community as people are not looking to stay or cannot afford to purchase homes. This means that energy reduction renovations are not feasible, however bringing in different types of heating fuels is an option. This opportunity puts Wawa in the unique position to potentially choose a more inexpensive and efficient heating source. These higher than average energy costs were the push for Wawa entering into the MEP program. They saw it was an opportunity to create community jobs, decrease the costs associated with heating homes and businesses and an opportunity to reduce their greenhouse gas emissions.

Kingston Ontario

In 2010 Kingston created the Sustainable Kingston Plan and updated their strategic plan to incorporate a new vision and integrate complementary policies between the two documents. They began their MEP program in 2013 as part of the PCP (Partners for Climate Change Protection) program (outlined within their Sustainable Kingston Plan) in order to continue their long standing tradition of environmental stewardship. Council thought the MEP would be an asset to the program they had previously initiated. Kingston was looking to complete the PCP milestones and sought to create an MEP as part of the PCP process. Council made the decision to apply and create an MEP advisory team. Kingston applied for the full program and are seeking grant funding from both the PCP and MEP program. Kingston felt it was important to align their policies with provincial policies and continue to be a leading municipality in Ontario for promoting energy efficiency and lowering their greenhouse gas emissions.

Woodstock Ontario

Woodstock began looking to implement sustainability and healthy community policies in 2010 when a proposal to enter into the FIT program was passed by Council. Woodstock has had a history of collaboration with surrounding municipalities and Michigan in the Clean Air Partnership. Woodstock participates in the “blackout” day where all electricity is turned off in recognition of the community’s need to save energy. When the MEP program was sent out to municipalities across Ontario in 2013 Woodstock saw the program as an opportunity to move forward on their journey to establish a more liveable and sustainable community. They decided to take on the MEP plan program and applied. Woodstock was accepted into the MEP program. The CAO department oversees the program and has subsequently hired a consultant company to take over the project.

COMMENTS AND CONSIDERATIONS

PROVINCIAL POLICY STATEMENT

The push for municipalities to plan for the energy needs is deeply embedded within Ontario’s Provincial Policy Statement (PPS) which outlines that planning authorities should provide opportunities for the development of energy production, and transmission and distribution systems. Planning authorities should promote renewable energy systems and alternative energy systems, where feasible, in accordance with provincial and federal requirements.

The PPS also provides that settlement areas will be the focus of growth, and that their vitality and regeneration will be supported. Land use patterns within settlement areas will be based on a mix of land uses that efficiently use the land and energy resources, are appropriate in terms of the infrastructure and services, and minimize negative impacts while promoting energy efficiency. It also states that planning authorities should plan for growth, and that policies should reflect the subsequent additional demand for infrastructure and services such as roads, sewers and energy use. The 2014 PPS represents a shift in policy culture by recognising that reductions can be achieved at the local level by planning authorities.

ONTARIO LONG TERM ENERGY PLAN

Ontario’s 2013-2033 Long Term Energy Plan focuses specifically on conservation first planning, peak demand planning, implementing district energy, and indicates that no new nuclear or coal plants will be built in Ontario. The Ontario Long Term Energy Plan indicates a shift in Ontario’s energy production and distribution culture. It mirrors the PPS energy planning policies by focusing on using renewable and resilient energy resources to diversify Ontario’s energy sources.

COUNTY OF SIMCOE OFFICIAL PLAN

The Simcoe County Official Plan asserts that new development should be built to promote sustainability and energy efficiency. It calls for design to consider energy conservation.

Renewable and alternative forms over energy production are encouraged 31 times throughout the 165-paged document. However, there is no mention of energy policy documents, reduction targets or county initiatives. Staff have ascertained that the County of Simcoe Official Plan supports programs like the MEP program and implementing this plan would therefore conform the Official Plan.

TOWN OFFICIAL PLAN

The Town of New Tecumseth's Official Plan mentions energy conservation in section 7.7.2.2 and renewable energy production in section 7.16:

7.7.2.2 Building Design and Siting

a) The design of new buildings should achieve a complementary design relationship to existing buildings, while accommodating a diversity of architectural styles, building materials and colours, energy conservation techniques and innovative built forms.

7.16 ENERGY The Town supports the establishment and use of alternative energy sources in accordance with the Green Energy Act.

Creating a MEP would provide the opportunity to update and integrate implementation language and policies in order to plan for energy systems in New Tecumseth, which the PPS asks planning authorities to take on.

TOWN ZONING BY-LAW NO. 2014-126

The Town's Zoning By-law is silent with respect to of energy infrastructure or the location of energy infrastructure. This provides a great opportunity to integrate energy planning documents into the Zoning Bylaw to create a cohesive policy system.

ANALYSIS

Staff have identified the need for a Municipal Energy Plan to be recognized as a conformity exercise in order to become consistent with the Provincial Policy Statement and Ontario's Long Term Energy Strategy. The current Energy Conservation and Demand Management Strategy does not meet the expectations set out within either document. It does, however, meet the minimum expectations set out by the Green Energy Act. The MEP program presents an opportunity for the Town to ensure consistency with these higher level documents. At the same time, the Town of New Tecumseth would have the opportunity to reduce overhead costs for heat and energy usage, diversify revenue, generate jobs, and invest in creating a more sustainable and resilient community. This not only increases revenue, but invests in the community's health and well-being.

There are three stages to this process spread over a two year timeline. Below is a typical timeline and the cost of each stage with a 180,000 dollar budget:

1. Community Engagement Strategy- 6 months - \$42,660
2. Data Collection Analysis and Identifying Areas in Need of Improvement- 6-8 months - \$32,240
3. Creating Municipal Energy Plan- 10 months to a year- \$105,100

FINANCIAL IMPLICATIONS

As outlined in Attachment No. 2 the cost implications are broken down into each stage of policy creation. These stages are listed above. Within each stage, costs are identified by category. These categories describe the action that has taken place, ie. staff time, data collection costs and public engagement costs. The total cost of implementing the program is 180,000 dollars. The Ministry of Energy will fund half up to 90,000 dollars of the total cost of implementation. The Town can expect to pay 90,000 dollars for the MEP program. From the budgeted 90,000 dollars, 72,389.00 dollars are allocated for infrastructure improvements. These infrastructure investments will occur in the final stage of the MEP program.

RECOMMENDATION

Any comments expressed by the public and Council at the public meeting, public engagement session, or in writing, will be considered and addressed by staff and included in a comprehensive report to a future meeting of the Committee of the Whole. Comments received at any time throughout the MEP program will also be addressed as part of the Public Engagement Strategy. Staff recommends that Council considers Option 1 outlined in this report to apply to the Ministry of Energy's Municipal Energy Planning Program in order to create a Municipal Energy Plan that considers the municipality as a whole.

Respectfully submitted:

Kaitlyn Blake, BES
Planner

Attachments:

1. Application Package (12 pages)

FES Major Project Reflection Paper

Designing a Ontario Municipal Energy Plan Program in the Town of New Tecumseth

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Introduction to the Municipal Energy Plan Program

In 2013, the Ontario Ministry of Energy (MOE) began encouraging small to medium sized municipalities in Ontario to reduce overhead costs of heat and energy usage, diversify revenue, generate jobs, and invest in creating more sustainable and resilient communities. They introduced the Municipal Energy Plan program, or MEP program, to financially assist municipalities to adopt these practices. The MOE has determined small municipalities to be those with a population under 50,000 and medium sized municipalities to be those with a population between 50,000 to 150,000 (Ontario Ministry of Energy, 2014).

The research and interviews completed within my Major Project have determined this program to be much more than just a funding opportunity for the participating municipalities in Ontario. It has created a sense of community as well as a new culture of energy consciousness. Nevertheless, the most defining aspect of the MEP program is the intersection between technology and social systems.

Community Energy Planning (CEP) is a process that is emerging within sociotechnical system research. Geels (2005) introduced the concept of systems thinking to energy planning through a co-evolutionary multi-level perspective. This concept is a great way to introduce and understand both CEP and municipal energy planning as it is the result of interdisciplinary and cross-sectorial planning; integrating energy planning, land-use planning, community identity, asset planning, and local economic development into one policy system. This system connects technologies with communities in geographic and context-specific settings, as there is no one-size-

fits-all solution to energy planning. Geels argues that all energy planning needs a push and support from both the niche market (technological innovation and a local political champion) and the broader exogenous environment (public approval/acceptance of an energy system transition and strong policies to guide that transition) to revolutionize and replace the existing sociotechnical regime (Geels, 2005). He also states that the processes of systems innovation for community energy planning will be gradual, simultaneous, and multi-dimensional. These systems thinking concepts must also be applied to understanding the social aspect to MEP planning, where planners and policy makers are trying to shift political and social thinking by finding ways to embed social and technological innovation within policy.

Geels wrote his prophetic paper in 2005 and we are seeing his concepts developed into Ontario's MEP program in 2013. The MEP program encompasses Geels' steps to setting up a successful energy transition in communities. The Ontario MEP program provides the opportunity for communities to adopt Geel's 2005 suggestions. The MEP program sets up a general system where individual communities design a customized plan catering to their community's needs through public engagement, finding local and political champions, identifying areas of improvement, and implementing strong policies. The Town of New Tecumseth is a community with weak energy system implementation language and no energy consumption or greenhouse gas emission reduction targets. There is an opportunity to create energy efficiencies through reduction strategies and technology. The MEP sets up a process for success.

The MOE defines an MEP in Ontario as the following:

- *A Plan that Builds awareness of energy use, generation supply, efficiency and conservation;*
- *A Plan that informs the municipality about its energy consumption patterns by sector;*
- *A Plan that engages stakeholders in the community with an interest in energy issues;*
- *A Plan that Identifies opportunities to conserve energy and initiate green energy solutions;*
- *A Plan that helps develop long term energy strategies to implement those opportunities throughout the municipality; and finally,*
- *A plan that supports sustainable growth and development.*

(Ontario Ministry of Energy, 2014)

The MOE outlines three stages within the application process that push technology and social paradigms forward. These three components establish a stronger sense of community that can be found within all stages of the MEP program. Stakeholder engagement is that main component that establishes the community connection. The community engagement strategy has evaluation points at each stage of the process. In addition, stakeholder public involvement is a key part of being accepted into the program. The three stages of the MEP program are as follows:

1. Seek input from stakeholders (community engagement strategy)
2. Collect and analyze information about energy use in all sectors (data collection and mapping)
3. Create a Plan and have it approved by Municipal Council.

(Ontario Ministry of Energy, 2014)

The purpose of the program is to provide guidelines and guidance for municipalities to establish goals and/or targets and pathways to achieve them. The MOE acts as a governing agency, passing down expectations and funding to selected municipalities. These activities mirror a study completed in the Marche Region of Italy in 2012. Brandoni, and Polonara (2012) completed an analysis of Italy's Regional Energy Master Plan (REMP) and focused on 12 municipalities. This study highlighted the importance of the municipal role in monitoring and meeting large scale regional targets. It also stressed the importance of connecting and educating citizens through their municipalities as a way to create social cohesion and overcome NIMBYISM (an acronym for "Not In My Back Yard," a term for a person who resists unwanted development in their neighborhood).

Ontario's MOE is following a process similar to the successful program Italy's regional governments have taken. Italy implemented this Regional Energy Master Plan in 2006-2007. Five years after implementation, they took the time to re-evaluate the existing program. Brandoni, and Polonara (2012) based their paper on this evaluation. Ontario has not had five years to re-evaluate its province wide energy program as it is only in its second year of existence. Italy's Regional Energy Plan can be analyzed as an example of potential policy implementation models and language, potential problems (like public NIMBYISM), and as an example of intergovernmental interaction. Italy implemented a successful energy master plan program that outlined a pathway for public interaction, as well as reduction strategies. Ontario can learn from Italy's insight into the importance of local governments providing the platform for

direct public interaction and their importance in achieving regional energy reduction goals.

The MOE, like Italy's regional governments, is providing funding to selected municipalities. The MOE has developed two different funding streams. The first is an allocation of half of the total cost of creating the plan, up to a maximum of \$90,000 for each municipality that is selected. This stream is for municipalities looking to establish a new MEP plan. The second funding stream is for municipalities looking to update an existing plan. This funding stream provides half of the total cost of updating an existing plan up to a maximum of \$25,000 (Ontario Ministry of Energy, 2014). Existing Plans can include an already developed or partial Municipal Energy Plan, a Climate Action Plan, or another type of energy plan (Ontario Ministry of Energy, 2014).

New Tecumseth

The Town of New Tecumseth is a municipality located within the south end of Simcoe County and directly north of the Regional Municipality of York. The Town is growing substantially and is on track to almost double its population to 56,000 by 2031 (Growth Plan for the Greater Golden Horseshoe, 2013). Image 1 on page 7 shows the Town's size and location. Most MEP program participants are not as small in population as New Tecumseth and also have a culture of environmental stewardship. New Tecumseth is on the cusp of a major period of growth. How the municipality plans for energy will decide the fate of the community's health, environment, and economy. The Town is also stuck between two worlds, the first

being a rural farming community and the second being an urbanized community with local shopping and lifestyle needs. The Town of New Tecumseth was chosen for these reasons. It is currently small in population but large in geographical area, economically small, and on the cusp of immense change. The majority of Community or Municipal Energy Plan research is concentrated on larger areas but I was curious about implementing the MEP program in the type of community it is intended to assist. (Tozer, 2012).

On January 12, 2012, the Government of Ontario enacted Green Energy Act Regulation 397/11 and like all municipalities in Ontario, the Town has completed the mandated Energy and Demand Management Strategy.

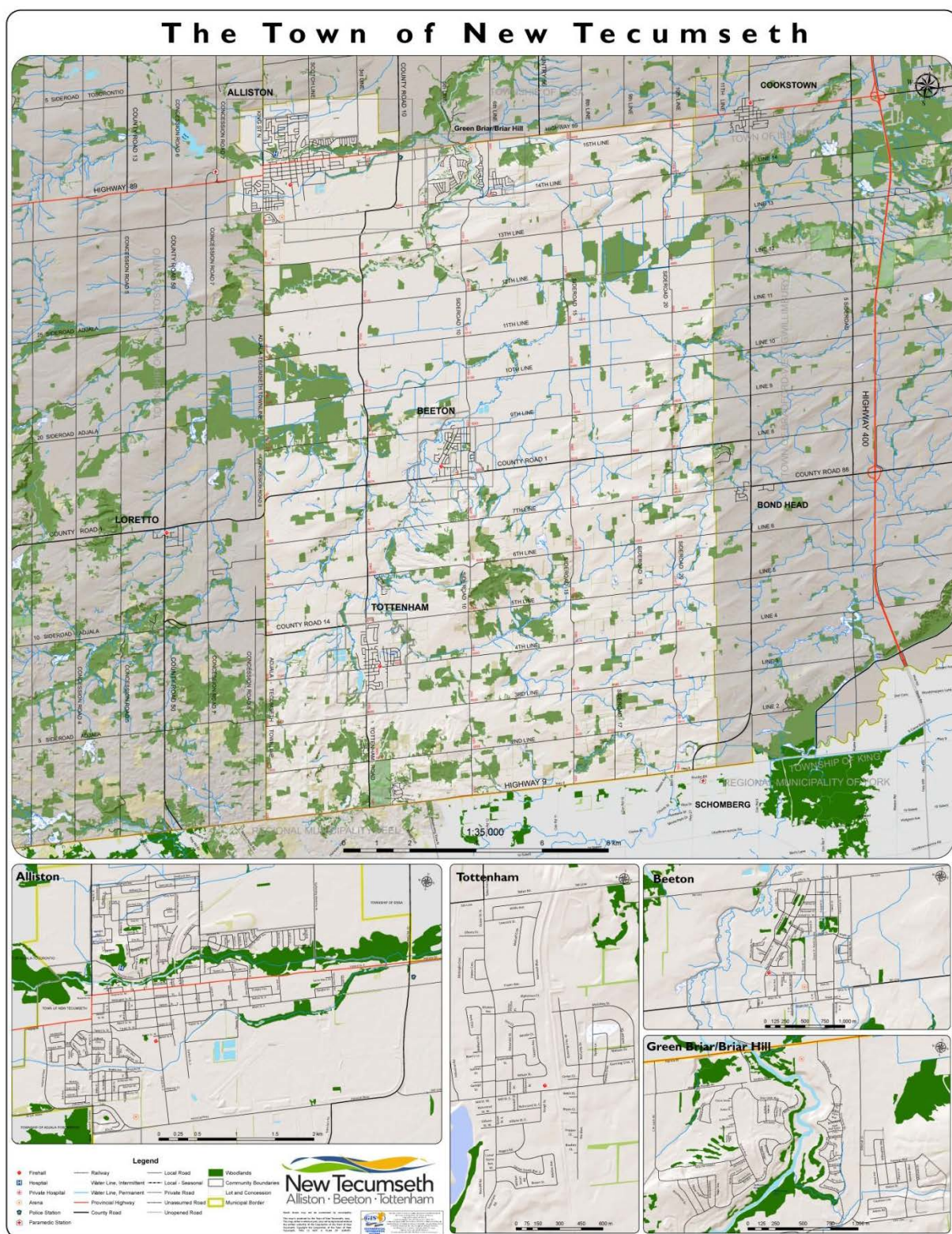


Image 1: Produced by the Town of New Tecumseth's GIS department January 2015.

Retrieved from www.newtecumseth.ca

This strategy outlines the Town's energy consumption and plans for its reduction. The Energy Conservation and Demand Management Strategy, summarizes the Town's energy usage and sets goals towards achieving a target of a 1% energy reduction. This goal would result in \$17,600/yr in Town energy savings. This is only a small portion of the potential energy savings for the Town. The plan includes a section titled "New Tecumseth Energy Needs," where the energy needs for New Tecumseth as a corporation are outlined but no profile has been established for the Town's residential, commercial, and industrial energy uses. These uses are a large part of the Town's net energy consumption and therefore should be understood in order to identify community needs. There is a need to identify the areas of high energy consumption as well as areas of high emissions, in order to implement monitoring systems and reduction plans.

Overall, staff have identified the current Energy Conservation and Demand Management Strategy as a preliminary document as it does not adequately cover the breadth of study required to make a significant reduction in energy consumption and subsequent emissions. The current Energy Conservation and Demand Management Plan has no timelines for continued research, no deadlines for policy updates, no financial allocations, and generally weak implementation language. The only mention of future planning is a contract with Honeywell Limited to create an Energy Improvement Plan - this plan will solely look at efficiency improvements within some existing infrastructure.

As a whole, the plan is quite basic and only profiles the energy needs for New Tecumseth as a corporation as required by the Green Energy Act. However, it fails to identify the community's energy needs as a whole. The Town could benefit greatly from participating within the MEP program for these reasons. As mentioned earlier, the benefits could include: economic development; economic diversity; creating new jobs; reduce energy related emissions; reduced energy costs, as well as fostering and solidifying a sense of community.

The Project and Methodology

The purpose of my Major Project was twofold:

- 1) To understand the barriers and potential benefits of implementing Municipal Energy Plans in Ontario. To also understand the role of the provincial government and how its policies and incentives affect policy creation. This provided me, and others, with knowledge of the needs of policy makers as well as the public in their desire to establish attainable goals for the improvement of health, economic development, infrastructure, resiliency and sustainability in small to medium sized municipalities.
- 2) To learn how transitions between existing policies and infrastructure to new policies and implementation frameworks take place, and to learn from the first purpose noted above in order to implement best practices for the MOE's MEP program in the Town of New Tecumseth. I learned how to apply, present, and outline a Municipal Energy Plan proposal for the Town of New Tecumseth. This

was completed by finalizing a staff report to council outlining what the MEP program is, how it will benefit the Town as well as the application for the MEP program. The report also included the initial parts of a preliminary analysis of cost considerations as well as the results from the interview process.

I utilized a professional report to council template that outlines background information, comments and considerations, policy considerations, financial considerations and a recommendation. The research component of the sections listed above was extensive but presented in a way that is accessible for all to understand. This is a very important aspect of this report as it will be read by council, other Town staff, and the public. It needed to be accessible and readable for all.

The project consisted of a large portion of semi structured interviews in order to gain insight and knowledge into each specific municipality. This was completed for the comments and consideration section of the report. Each municipality had a unique approach to the program and semi structured interviews proved to be the best way to capture their experiences. My methodology followed the guidelines set out by ENVS 6180 with Liora Salter. I also followed her 2013 forthcoming guide to research. This course taught me how to successfully delve into site specific research, grey literature research and establish interview guidelines. I followed chapter six of her upcoming book, which defines the different methodologies for interviewing. Salter defines exploratory research in class and in her upcoming book as a 'watered down version of a survey'. Exploratory research can provide a well-rounded picture and a much more detailed account of a situation. It does not follow scientific methodology,

and therefore will not provide measurable results; however, it did result in a very detailed account of decisions made by councils across Ontario. Salter states that this type of research is best completed alongside case study research which is exactly what I accomplished. I presented a full picture of what is being done in municipalities that have chosen to implement the MEP program. Kavale and Brinkmann (2009) explain, “the research interview is based on the conversations of daily life and is a professional conversation; it is an inter-view, where knowledge is constructed in the interaction between the interviewer and the interviewee” (p.2).

I utilized a semi-structured interview format in the latter stage of research because it is “a planned and flexible interview with the purpose of obtaining descriptions of the life world of the interviewee with respect to interpreting the meaning of the described phenomena” (Kavale and Brinkmann, 2009). I was interested in obtaining background information on each municipality’s journey with the MEP program. I interviewed current participants within the MEP program with the smallest population to attempt to see if any similarities could be drawn for New Tecumseth. Each story of MEP implementation was quite different and will be discussed further in the next section of this paper.

Findings:

I uncovered an abundance of information throughout my project. I also developed an understanding of the MEP process, including what each step is comprised of, how to apply to the program, how the MOE defines terms, and the

current participants within the MEP process (see Table 1). Identifying current participants was a very important step within my project as it led to my interview process.

I interviewed representatives from Newmarket, Kingston, Wawa, Woodstock and Chatham-Kent. Each of these municipalities followed the guidelines set out by the MOE. This means each community will create a community engagement strategy, energy mapping to identify areas in need of improvement and the energy plan itself. The municipalities had differing approaches to these three stages. Some had long histories of emission reduction targets and energy conscious planning, so the MEP program was just another step within their high level climate change policy document. Some created a town staff project team while others hired a consultant to complete the entire process. The larger municipalities were able to belong to different municipal organizations such as the Partners for Climate Change Protection (PCP) program. This group consists of a network of Canadian municipalities that have committed to reducing their greenhouse gas emissions. The larger municipalities were able to become members to this program because they were able to afford memberships and this organization then in turn supported the creation of higher level climate change adaptation or reduction strategy documents. The smaller municipalities stated that these types of memberships were too expensive to justify to council.

These interviews highlighted the importance of a champion in developing a MEP program. The champions that introduced the program in the municipalities that I

interviewed were either a municipal employee or a local politician. Most of the municipalities I interviewed had an associated committee that connected the program with the community through education, and building awareness. These committees are an integral part of developing an effective community engagement strategy. It became evident that if the municipality had town staff with the ability to complete the project they were utilized. If the community did not have the resources to complete the program outside help was sought. Woodstock, for example, has hired a consulting firm to handle the MEP process for them. Each municipality discussed the issue of obtaining municipal support and funding.

Each municipality has a unique situation. However, those with a history of energy conscientious policies and strong environmental considerations had a straightforward pathway towards gaining support for MEP implementation. For Kingston Ontario, the MEP program was a natural progression towards implementing their Sustainable Kingston Plan. A suggested method towards gaining support was to create a speaker and expert series to educate council, the public, and staff members. Another suggested method for small municipalities to gain support was to join organizations with like-minded municipalities to gain experience, guidance and expert methodologies. These suggestions are great introductions to the MEP program. However, they cost municipalities money. The costs of joining these organizations has become a serious barrier for some of these municipalities' MEP program development.

The political element of the MEP program is also difficult to navigate. Councils have to be convinced to invest in the program, which means extensive data accumulation and the presentation of data that provides evidence to support the cost savings associated with the MEP program. This activity takes up a large amount of staff time. Staff time must be used to complete approved work in small municipalities. These small municipalities may not have strategic planning capabilities or long term planning capabilities which typically research and present these programs for their municipalities. The importance of a grassroots champion for the MEP program became apparent. As shown in Table 1, the champion can be a local individual or organization or members of staff. The individual or group of individuals has the ability to gain council support and awareness. Council listens to public opinion and demands, therefore when the public presents information such as this to municipal staff or Council, they listen.

The information I acquired from interviewing and researching would not have been gathered if I did not have successful interviews with individuals who were willing to speak to a researcher. These successes led to a great amount of insight and are discussed below.

Table 1: Table of Interview Results

City or Town	Town History	Department Lead	Plan Champion	Policy Support	Program Setbacks

Kingston (D. Shipp, personal communication, April 8, 2015)	Joined the PCP, created Sustainable Kingston (community driven non-profit organization) both were implemented before 2010. A Municipal Vision changed within the Strategic Plan “ to become the most sustainable city in Canada” that created this change.	Department of Sustainability	Sustainable Kingston and the City of Kingston	Strategic Plan and the Sustainable Kingston Plan	1) The fall 2014 election delayed the MEP public consultation process 2) New council became an external source of uncertainty
Wawa (E. Cormier, personal communication, March 31, 2015)	No commitment until alternative heating methods were explored in 2012/ 2013 due to community needs for a less expensive fuel and a prospective industry looking to have Wawa becoming a contender for nuclear waste storage.	Economic Development Department	Economic Development Officers and Wawa’s Energy Plan Committee	Strategic Plan and economic department team has been highly supportive	1) Funding for advertising, increasing public awareness and public engagement incentives is carefully and monitored
Woodstock (D. Creery, personal communication, April 8, 2015)	2008 to present Woodstock member of the South Western Clean Air Partnership. This partnership created opportunities to adopt alternative fuels and become energy efficient. This changed the energy culture of	Chief Administrative Office and the consultant hired to complete the process	CAO	Strategic Plan	1) Justification for the plan came from strong administrative support. 2) Funding for organizations such as the PCP is costly and is the largest setback. This significantly impacts

	the community				collaboration between Woodstock and other smaller municipalities
Newmarket (Clerk's Department City of Newmarket, personal communication, April 2, 2015)	Followed AMO Sustainable Planning Toolkit which led to funding to implement a series of solar panels	Public Works	2 Former Employees, current champions/ project management not known	AMO Toolkit and Strategic Plan	1)admin staff lack general knowledge of the program and as a result I was unable to speak with the program coordinator.
Chatham-Kent (Clerk's Department City of Chatham-Kent, personal communication, April 15, 2015)	Chatham -Kent's history of sustainability is not known at this time	Cross Departmental Management including: Asset Management, Planning, Economic Development and Infrastructure Engineering	Municipal employees from each involved department are current project champions. Perhaps with upcoming community engagement, community champions will become involved.	Asset Management Plan, Sustainable Shorelines Secondary Plan, and the Energy Demand Management Plan	1)admin staff lack general knowledge of the program and as a result I was unable to speak with the program coordinator.

Project Successes

Typically, the first step in a successful project is a detailed outline. The project outline process proved to be a very successful tool which ensured the success of my project as it outlined specific timelines, methodology, reference material and process

guidelines. I am grateful of the fact that I was encouraged to ensure the methodology to my process was outlined succinctly and in full form. This led to a clear process with reasonable deadlines.

I interviewed planners, clerks, chief administrative officers, and economic development officers from, Wawa, Newmarket, Kingston, Woodstock and Chatham-Kent Ontario. All were willing to be interviewed for approximately 15 to 20 minutes which was mutually agreed upon before beginning the interview process. The questions were different for each interview as each community differed geographically and administratively. If the interviewee did not know an answer they were more than willing to direct me to a co-worker who would be better able to answer my question. For example, when interviewing Wawa, I had asked a rather in depth question into the reasoning for implementing an MEP, the interviewee answered my question with an detailed email explaining that the economic development officer was informed that the catalyst for the MEP for Wawa had to do with Wawa being a contender for nuclear waste storage. The company that was investigating Wawa as a community recommended a municipal strategic plan to be created to ensure alignment with the community goal/vision/objectives. The energy plan was identified as a priority for a variety of reasons, in particular with Wawa hydro rates being some of the highest in the province as they do not have natural gas. Coincidentally the MOE launched the MEP grant program around the same time and a renewable energy champion in the community (in particular with regards to biomass) encouraged the Economic Development Committee to move forward with

applying for the grant. They identified the other key success factor as being the energy committee. This is a group comprised of a variety of expertise and passions for Wawa.

Overall, interviewing was a positive process as well as extremely informative. The research I completed prior to the interviewing consisted of a newspaper research exercise looking for names and dates. I then completed a full review of all council meeting minutes which led to references to the reports to council. These reports to council led me to the correct department and also to municipal experts or project leads. Most project leads that I contacted to interview were ready to complete an interview with me right on the spot. Being prepared before the interview was an important step. This informed what I presented in my report to council. The setbacks I encountered have too shaped my final report as well.

Project Setbacks

Throughout the project I encountered four setbacks, though discovering and discussing project setbacks is an integral part of the learning process that seeks to improve methodology for future studies. Although the interviewing process went well, both Salter (2013), as well as Kavale and Brinkmann (2009) described the importance of in person interviews which was something that I was not able to accomplish. Due to my personal schedule and the locations of the communities I was able to contact, in person interviews could not be completed. I learned that asking municipal employees to meet after working hours for one on one meetings makes

them feel uncomfortable and suspicious of my intentions. They convey the decisions and actions of a council not their own. Those holding public positions will only discuss council decisions and will not share personal opinions freely. In order to gain information about processes and decisions, I was very careful to ask about decisions of council and questions about the community as a whole rather than asking questions these experts would not be able to answer. It was through answers that I came to understand the reasons for council decisions and the cultures of individual communities. Municipal employees seemed comfortable discussing these matters over the phone.

The most difficult aspect of this project was getting information related to project costs. Wawa was the only community that was able to provide budget information as the entire project was handled by one department. In other municipalities, the project is handled by two or more departments. Others were not willing to share cost information with me. I was left to search through many reports to council or years of budget reports attempting to piece together the financial stories. The financial considerations section of the report is not as complete as initially expected. As a result, more time will be needed to establish the rapport with communities to gather budgetary information.

The third setback I encountered was the difficulties associated with acquiring information. There was a large discrepancy among municipalities and what the definition of accessible information. There was no uniform way of reporting current status, reports to council, media releases, and other types of MEP information. Some

had no information available except in 2014 Budget Reports and others had plethora of information that included, timelines, reference material, staging, explanatory documents, and educational material available for citizens to read. Only a few municipalities provided contact information for project employees and experts. This helped in finding the MEP project lead. The municipalities who did not provide any contact information made it quite difficult to find MEP project leaders.

This difficulty led to the final setback I encountered; accessing project leads. Municipalities employ large numbers of people in their communities. In three cases, front line administrators did not know of the MEP program within their municipality and directed me to others who also did not know of the program. In some cases I could not locate project leaders. Next time, I will know to leave more time within my timelines for reaching these experts to ask for an interview. My next step after reviewing and analyzing the successes and setbacks of my Major Project is to analyze what I have learned about myself throughout the process.

Self Analysis

For me, one of the most important aspects of this project was keeping a schedule with self-made deadlines for each step of the project. This was how I was able to complete the research and interviews necessary to complete the report to council. I kept a very detailed list of completed steps and next steps. I would not have been able to complete the project on time if it was not for my organizational skills.

I also learned that to effectively conduct research, being flexible with timelines and other people's schedules is important. I realized that my research is crucial to the advancement of understanding energy use in the Town of New Tecumseth. The people leading the MEP programs in municipalities adhere to the very strict deadlines set out by the MOE. They are very busy people who could only allocate a certain amount of time to speak with me. I had to be efficient in guiding the discussion towards the questions I needed answered, but also being aware that leaving the conversation open was important as usually further information was revealed. I made certain to ask what advice they would have for municipalities entering into the program and if there was any information that I did not ask about that was particularly important. These questions led to a great amount of information.

I learned that I am very efficient at conducting interviews and analyzing them for deeper meaning about the community as a whole. As previously mentioned, I learned what municipal employees can and cannot discuss. My carefully worded interviews proved to be very effective on gathering timelines, and establishing the story behind each MEP program. That being said, I was not as successful in gathering information relating to cost considerations. Most project leads did not have that type of information or were unwilling to share the information, in some cases it had not gone through council and was not public information. It was a topic that proved to be difficult to get answers about. Looking back, I would like to have allocated more time investigating who to speak with about this sort of budgetary information.

Lasting Impacts

As a whole, I would consider the project to have been quite successful in understanding the options that New Tecumseth could choose from in order to move forward with a much more effective and comprehensive Municipal Energy Plan. Speaking with other municipalities showed me the importance of taking a step back and determining what higher level municipal policies exist to support a program. For example, establishing a strong Climate Change Action Plan would first solidify the community's commitment to adapting to a lower carbon future. Other municipalities had strong policies within their strategic plans. I had not fully comprehended the extent of the financial implications for small municipalities, as a constraint against collaboration with other municipalities. That being said, this process did open my eyes to the number of funding opportunities available to municipalities. For example, the AMO's Sustainable Communities Toolkit or Natural Resources Canada's Community Energy Planning Guide are two examples of where municipalities can obtain other types of funding to complete the MEP process. Small municipalities typically have a less diversified tax base to draw from. This poses a problem for municipalities to come up with funds to put towards this program. They either have to find funding opportunities to supplement what they need, or they need to increase taxes. Some municipalities need more than a 50% commitment from the provincial government to accommodate the program.

The scope of this project encompassed interviewing communities that were successful in implementing the MEP program and why they were able to begin the process, not municipalities who were either unsuccessful in their application or not interested in implementing the MEP program. The common elements found in each community's success were cultural support and a local champion. Not every community in Ontario has both or one of these elements. Each of the communities interviewed found out about the MEP program through an email shared by the Association of Municipalities Ontario approximately two years ago. To continue moving this program forward, small municipalities need help promoting and convincing councils to invest in a Municipal Energy Plan. This could be done through better program promotion, a speaker or education series, and generally more interaction at the local level before municipalities apply to the program.

The next influential element of this program is its timeline. The entire program is supposed to fit within a two year timeframe. In terms of municipal timelines, this is not very long. The municipalities interviewed ran into timeline issues when they could not meet deadlines due the 2014 municipal elections. Council was not in session for four to six months of the year. Councils also generally meet once to twice a month and if a deadline is not met, the program would have to wait a month to be brought forward to council. Municipalities may benefit from a more relaxed timeframe.

I did not realize that the majority of departments I spoke with would not be planning departments as I initially expected. Rather strategic initiative departments or economic development departments led the work. This fact surprised me as the

implications for land use planning within the program are significant. I was surprised to find that few planning staff were involved through the entire program development process. This could prove to be a worthwhile topic for further research. I also had not realized the importance of collaborating with other municipalities with similar goals. I feel as though the process has provided New Tecumseth with great contacts for future guidance. I also found the project confirmed the fact that implementing an MEP program for the Town would be a feasible task with attainable goals.

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